
I

- ▶ [Self](#)
- ▶ [Self-Concept](#)

IAT

- ▶ [Implicit Association Test](#)

ICD-11

- ▶ [International Classification of Diseases 11th Edition \(ICD-11\)](#)

Iceberg Model of Mind

- ▶ [Topographical Model](#)

Id

Eva Patrick and Elizabeth Diamond
Wright Institute, Los Angeles, CA, USA

Id is one of the three components of the psyche, according to Freud's structural model of 1923. In 1923, Freud moved his map of the mind from a

topographical model, which divides the psyche into the conscious, preconscious, and the unconscious, to a structural model. This modification emerged out of Freud's clinical experience with patients and his growing realization that the former model was insufficient to capture the central element of the analytic treatment, the internal conflict between different parts of the mind (Mitchell and Black 1995). Freud therefore suggested that the conflict primarily occurs in different structures within the unconscious rather than between the strata of consciousness (Mitchell and Black 1995). The structural model is focused on the division of the unconscious into three primary components of the psyche: the id, the ego (see: ego), and the superego (see: superego).

The id is the basic, primal, unorganized part of the psyche, which is present at birth and entirely housed in the unconscious. It is comprised of the instincts, needs, wants, impulses, and desires that clamor for immediate gratification. The id is comprised of the raw and impulsive energies or primary drives; the most significant of these instincts are sexual and aggressive in nature (Freud 1961/1923).

The id is very important when a baby is small and utterly dependent, as it ensures that an infant's needs are provided for, thereupon guaranteeing its survival. For example, when an infant is hungry or uncomfortable, he or she will emit unrelenting howls until he or she is satiated and the distress is soothed. The id maneuvers the infant's behavior in an effort to achieve

satisfaction of its demands. The id acts according to the pleasure principle, which represents the instinct to satisfy biological and psychological urges by a pursuit of pleasure and an evasion of pain. As individuals mature, other people's subjectivities collide with their own and enter their reality, and the primacy of immediate gratification is no longer appropriate or socially acceptable. Thus, the pursuit of immediate gratification will interfere with one's ability to successfully integrate and function within a civilized community (Freud 1962/1930). Therefore, the need arises to attenuate the primacy of the id and its direct influence on behavior. For this purpose, the ego begins moderating the impact of the id as an individual ages and increasingly encounters reality and the social milieu (Freud 1962/1930; Freud 2010/1920).

Additionally, the id houses the libido, which constitutes the primary source of instinctual force and the source of psychic energy that is unresponsive to the demands of reality. The id avoids strain and pressure by complying immediately with the libido and by satisfying direct sexual needs in order to discharge erotic tension. Failure to immediately fulfill these wishes results in a state of anxiety or tension (Freud 1961/1923). In other words, when the demands of reality make it impossible to adhere solely to the pleasure principle, the consequence is disquiet and stress within the psyche.

For the id and libido, there are no consequences, punitive forces, or delays. The id has been symbolized as a riderless horse (Freud 1964/1933) and as "chaos: a cauldron seething excitation" (Freud 1964/1933, p. 106). The id is composed of passions and impels the individual to pursue gratification of wishes in an impulsive manner (Mitchell and Black 1995). Because the id is entirely unconscious and unresponsive to reality, most of our knowledge of it is inferred primarily from dreams (Freud 1964/1933).

Cross-References

► [Primary Process](#)

References

- Freud, S. (1961). *The Ego and the Id*. In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 19, pp. 3–66). London, UK: Hogarth Press. (Original work published 1923).
- Freud, S. (1962). *Civilization and its discontents*. New York, NY: W.W. Norton. (Original work published 1930)
- Freud, S. (1964). *New introductory lectures*. In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 22). London, UK: Hogarth Press. (Original work published 1933).
- Freud, S. (2010). A general introduction to psychoanalysis (G. S. Hall, Trans.). New York, NY: Boni and Liveright. Retrieved from <http://www.bartleby.com/283/> (Original work published 1920)
- Mitchell, S. A., & Black, M. J. (1995). *Freud and beyond: A history of modern psychoanalytic thought*. New York: Basic Books.

Ida Bauer

► [Dora](#)

Ideal Self

Asha Ganesan
School of Psychology, The University of Sydney,
Sydney, Australia

Synonyms

[Self-actualization](#); [Self-ideal](#)

Definition

The ideal self is the part of a person's self-concept that consists of their desires, hopes, and wishes (Higgins 1987; Rogers 1959). It is a part of the self that is highly prized by the individual; thus, the ideal self is considered to be a motivator within a person's self-concept (Higgins 1987; Rogers 1959).

Introduction

The self is theorized as consisting of three domains: the actual self, the ideal self, and the ought self (Higgins 1987). Ideal self is “the self-concept which the individual would most like to possess, upon which he places the highest value for himself” (Rogers 1959, p.200). It is constructed of a person’s hopes, wishes, and goals (Higgins 1987). When a person’s ideal self is congruent with their actual self (self-attributes a person believes he/she actually possess), self-actualization occurs and the person is progressing toward becoming a fully functioning person (Rogers 1959). Both ideal and ought self are conceptually similar, but the ideal self focuses on a person’s desire, while the ought self comprises of a person’s duties, obligations, and responsibilities (Higgins 1987).

Background

Two individuals who played a key role in the current understanding of the ideal self are Carl Rogers and E. Tory Higgins. At the center of Carl Rogers’ humanistic view of psychology and client-centered therapy is how a person’s personality development is contingent on that person’s self-concept or view of themselves (Rogers 1959). The ideal self and actual self together play an active role in outcomes related to a person’s self-concept. Rogers (1959) postulates that when the ideal self and the actual self are congruent (or low on discrepancies), all types of distress or anxiety are reduced.

Building on Roger’s conceptual work, E. Tory Higgins’ empirical work suggests that the ideal self plays an active role in guiding a person’s actual self as well as reflecting the self-discrepancies between the actual self, the ought self, and the ideal self. The differences in magnitude and accessibility to these various types of self-discrepancies can be predictive of negative outcomes (Higgins 1987). The ideal self as a part of self-discrepancy plays an important role in self-regulatory processes (Higgins 1996). Thus,

if a person’s ideal self is inconsistent with one’s actual self, there is likely to be feelings of dissatisfaction or distress (Higgins 1987, 1996). For example, a student choosing an accounting major at a university as a duty to his/her parents who are also accountants (ought self) could directly oppose his/her present preference for an undecided major (actual self) as well as the choice to pursue a major in accordance to his/her dream job, theater (ideal self). As highlighted by both Rogers (1959) and Higgins (1987), this conflict may cause feelings of dissatisfaction, distress, guilt, and shame.

As the ideal self is the part of one’s self-concept that consists of who a person wishes to be, it is a construct that does not function in isolation but rather in relation to several other aspects of the self. In some ways, the ideal self can become an incentive for future behavior as well as being an evaluation of the actual self (Higgins 1987). Indeed, recent brain imaging evidence suggests that the ideal-actual self-discrepancy has neural correlates with brain regions related to the desire for external rewards (Shi et al. 2016). Thus, a student’s undecided university major could provide the motivation needed to be industrious in both accounting and theater as a way to identify which path he/she wants to pursue as a career eventually.

Since the seminal works by Rogers and Higgins, research focusing on the ideal self primarily involves studies of ideal self as a part of the self-concept and the extent of self-discrepancy. Both Rogers (1959) and Higgins (1987) suggest one’s personality and behaviors are influenced by the extent to which the ideal self is incongruent with the actual self. Therefore, the ideal self has become an important construct in studying both constructive (e.g., happiness and subjective well-being) and adverse (e.g., depression and personality and body image disorders) outcomes.

Research on Ideal Self

Since ideal self is usually studied as a part of self-discrepancy, it has important implications when

examined together with personality and individual difference variables, particularly those relevant in clinical settings. Ideal self in self-discrepancy plays a strong role in clinical depression (Thomas 2016), body image issues, and eating disorders (Grabe et al. 2008) as well as adolescent development and psychological adjustment (Hardy et al. 2014). For instance, the ideal self in body image research, usually defined as the ideal female body, is assessed based on a normative and more socially relevant standard. While the core idea of a person's wishes and goals remains, in certain aspects of a person's self, the ideal self is likely to be formed by norms and societal standards. Additionally, the ideal self and self-discrepancy both play important roles in academic achievements by influencing goal-directed behavior (Freitas and Higgins 2002) and academic self-beliefs (Valentine et al. 2004).

The study of ideal self as a part of self-concept and self-discrepancy is also particularly applicable in unique contexts and diverse samples. Studies focusing on online selves and identities provide a novel platform to study the ideal self. A person's view of self in cyberspace is proposed to be an *idealized virtual identity*, with social networking profiles and video game avatars (Przybylski et al. 2012) being a reflection of ideal qualities a person sees in themselves, which are not easily expressed in the real-world interactions.

Conclusion

The role of ideal self has diversified and evolved since its conception in psychological literature by Carl Rogers. It is relevant in studies examining aspects of the self (e.g., self-concept, self-esteem, and self-discrepancy) and has implications in individual self-evaluations as well as social interactions. While a wealth of multidisciplinary studies in the area of the self exists, there is still potential for future studies (including meta-analyses and literature reviews) to continue the progress in this area.

Cross-References

- ▶ Actual self
- ▶ Ought Self
- ▶ Self-Concept

References

- Freitas, A. L., & Higgins, E. T. (2002). Enjoying goal-directed action: the role of regulatory fit. *Psychological Science*, *13*, 1–6. <https://doi.org/10.1111/1467-9280.00401>.
- Grabe, S., Ward, L. M., & Hyde, J. S. (2008). The role of media in body image concerns among women: a meta-analysis of experimental and correlational studies. *Psychological Bulletin*, *134*, 460–476. <https://doi.org/10.1037/0033-2909.134.3.460>.
- Hardy, S. A., Walker, L. J., Olsen, J. A., Woodbury, R. D., & Hickman, J. R. (2014). Moral identity as moral ideal self: link to adolescent outcomes. *Developmental Psychology*, *50*, 45–57. <https://doi.org/10.1037/a0033598>.
- Higgins, E. T. (1987). Self-discrepancy: a theory relating self and affect. *Psychological Review*, *94*, 319–340. <https://doi.org/10.1037//0033-295X.94.3.319>.
- Higgins, E. T. (1996). The “self-digest”: Self-knowledge serving self-regulatory functions. *Journal of Personality and Social Psychology*, *71*, 1062–1083. <https://doi.org/10.1037/0022-3514.71.6.1062>.
- Przybylski, A. K., Weinstein, N., Murayama, K., Lynch, M. F., & Ryan, R. M. (2012). The ideal self at play: the appeal of video games that let you be all you can be. *Psychological Science*, *23*, 69–76. <https://doi.org/10.1177/0956797611418676>.
- Rogers, C. R. (1959). A theory of therapy, personality and interpersonal relationships as developed in the client-centered framework. In S. Koch (Ed.), *Psychology: a study of a science. Vol. 3: formulations of the person and the social context* (pp. 184–256). New York: McGraw Hill.
- Shi, Z., Ma, Y., Wu, B., Wu, X., Wang, Y., & Han, S. (2016). Neural correlates of reflection on actual versus ideal self-discrepancy. *NeuroImage*, *124*, 573–580. <https://doi.org/10.1016/j.neuroimage.2015.08.077>.
- Thomas, W. (2016). Depression, neuroticism, and the discrepancy between actual and ideal self-perception. *Personality and Individual Differences*, *88*, 219–224. <https://doi.org/10.1016/j.paid.2015.09.003>.
- Valentine, J. C., DuBois, D. L., & Cooper, H. (2004). The relation between self-beliefs and academic achievement: a meta-analytic review. *Educational Psychologist*, *39*, 111–133. https://doi.org/10.1207/s15326985ep3902_3.

Idealization

Isabelle Leduc-Cummings¹, Claire J. Starrs² and J. Christopher Perry²

¹Department of Educational and Counselling Psychology, McGill University, Montreal, QC, Canada

²Department of Psychiatry, McGill University at the Jewish General Hospital, Montreal, QC, Canada

Synonyms

To be differentiated from idolizing, narcissism, and splitting (see below). Common language phrases: “putting someone on a pedestal.”

Definition

Idealization is minor image-distorting defense whereby the individual deals with emotional conflict or internal or external stressors by attributing exaggerated positive qualities to the self or others (APA 1994, p.756; Perry 1990, p.26).

Introduction

Defense mechanisms are automatic psychological processes that protect an individual from emotional conflicts or awareness of internal or external stressors. They affect individuals' reactions to conflicts and stressors (*DSM-IV*, APA 1994). Defenses can be arranged hierarchically based on their usual level of adaptiveness. Within the hierarchy, defenses are grouped by level based on common functions. These levels include the psychotic (0), action (1), major image-distorting (2), disavowal and autistic-fantasy (3), minor image-distorting (4), neurotic (5b), hysterical (5a),

obsessional (6), and high adaptive (7) defenses (Perry 2014).

Idealization is generally considered to be at the level 4 minor image-distorting defenses (APA 1994; Perry 2014). As their name suggests, these defenses can be distinguished by their use of distortions in the image of the self or others. Their function is to protect the individual from feelings of weakness, disappointment, or poor self-esteem by temporarily reinforcing their self-image through the dismissal of all threatening material (APA 1994; Perry 2014). In idealization, this function is fulfilled by attributing exaggerated positive qualities, to the self or to others, where the individual “borrows strength” by association with strong images.

History First described by Freud in 1894, defense mechanisms are among the most significant and enduring constructs in psychoanalytic psychology. Defenses operate largely outside of awareness and underlie a wide variety of psychological phenomena, both healthy and pathological (APA 1994). The concept of idealization first appeared in Freud's discussion of narcissism. He proposed that during development, the child forms an “ego ideal,” containing rules for behavior, internalized from parents, toward which the ego strives (Freud 1914). This concept was then extended by later psychoanalytic theorists who presented idealization as a necessary mechanism for healthy childhood development, allowing the child to later move on to perceiving the self or others as complex beings with both positive and negative aspects (see Cooper 1989). Although defenses in recent decades have generally been minimally discussed in clinical training, an emerging body of research shows the clinical utility of identifying and tracking their use in psychotherapy, given their relationship with symptoms and functioning (e.g., Perry and Bond 2012).

Function Defenses protect the individual from internal and external stressors and conflicts. There are many ways to protect the self, and each defense has a specific way of doing so or, in other words, a specific *function* (Perry 2014). The key to recognizing that someone is using a

Entry to appear in Zeigler-Hill, V. & Shackelford, T.K. (Eds.), *Encyclopedia of Personality and Individual Differences*. Springer Science and Business Media

defense mechanism is based on understanding the function that the defense serves at that moment in time. In idealization, the individual attributes excessively positive qualities to the self or others; thus, the self or other is depicted as powerful, revered, important, etc. By painting oneself as such, or associating oneself with this other person or object (e.g., an institution), the individual temporarily “borrows” positive feelings and protects himself/herself from underlying feelings of powerlessness, disappointment, worthlessness, or unimportance. While shortcomings may be factually acknowledged, their significance is downplayed and dismissed in order to preserve the gratifying idealized image (Perry 1990).

Discrimination Given that each defense is hypothesized to serve a different protective function, it is important to clearly differentiate idealization from the closely related defense of splitting. In splitting, the individual deals with the conflict or stressor by viewing others or the self as either all good, or all bad, without integrating both positive and negative aspects into a cohesive image. Ambivalent views and affects are excluded from emotional awareness, and self or other images tend to alternate between polar opposites (APA 1994; Perry 1990). This is the key to differentiating idealization and splitting. Indeed, in idealization, the negative facts are not denied but downplayed, while in splitting, they remain unacknowledged (Perry 1990).

Examples The following section includes examples of idealization taken from psychotherapy sessions. The first is taken from an interview with a woman who recently received a diagnosis of breast cancer. She gave the following answer when asked to share a story about her treating team:

Patient: . . . “Dr. Swenson – uh, I’m allowed to name names? yeah, was absolutely wonderful. I mean he was extremely supportive and took the time... He said ... I said... He said, do you have any questions? I said, no, I think you’ve made it very clear. And he said, but you will. I promise you. You’ll come back – in two days we’re going to schedule another meeting – cause you’ll have more questions to ask.

And of course, he was right. And, uh, Dr. Francis and the nurses were wonderful. I have an adorable nurse who I’ll call and I’ll say, you know, I’m not feeling well, Leslie, I’ve got... med sores... Okay. Uh, Dr. Swenson was absolutely fantastic. And, uh, you know, he proceeded to go through everything. When I came back and I had questions, he answered them. He talked about the protocol. He was very supportive of my going for a second opinion. Uh, he said he would forward all the information to the doctor at The Princess Margaret Hospital. Uh, when I came back to see him, uh, he was terrific. He was absolutely wonderful.”

In this example of idealization of other, the patient idealizes the treatment team. She uses hyperbolic language to magnify their positive qualities such as “wonderful,” “adorable,” and “terrific.” By associating with this idealized object (her “wonderful” treatment team), she protects herself from underlying feelings of powerlessness and helplessness in relation to her illness.

The following second example is taken from an interview with a young man recounting an anecdote from his work as a waiter, where he gave away free coffee to a group of wealthy customers. He describes the ensuing conversation with his employer, in which he disguised his actions as a mistake, to which his employer responded that he [the employer] would have done the same. The young man comments:

Patient: . . . “And in my mind, I’m just laughing at myself. I’m saying, “[subject’s name], man, you know.” I mean, if you could even – I mean, if you would have told him yes, you had given them the free coffees, he would have given you shit from here to tomorrow, but he would have loved you, right. And here you are giving them, because – I mean, and no one had to tell me that, right? I recognized it right away and these ladies, for a cup of coffee are thankful and God knows how many cups of coffee they can buy, right? You know? But how can – you can’t tell that to anybody. Either you know it or you don’t. And I just saw. I smelt it. I said they want service and they’re going to get it. And I gave it to them and they were happy, you know.” (Perry and Presniak 2013, p.20)

In this example of idealization of self, the individual prides himself in having independently recognized the status of the customers and the importance of keeping them happy. He praises

himself for being a good salesman. By doing so, he temporarily escapes the emotional conflict stemming from the opposing duty to his employer to charge for the coffee and his self-serving action of giving away the coffee for free to gain a bigger tip.

Correlation with Health In any interview, individual defenses can be rated and summarized as overall defensive functioning (ODF), which is the average of all the defenses used, each of which is weighted by its level in the 0–7 hierarchy. Research suggests that defense mechanisms, and more broadly ODF, underlie general functioning and psychiatric symptoms (Perry and Bond 2012; Perry and Cooper 1989). Perry and Cooper (1989) examined the relationship between the use of defenses and various indicators of health. In a sample of 76 participants diagnosed with personality and affective disorders, the use of defenses, median symptom level, and mean level of global and psychosocial functioning were measured over a period of 2–3 years. Overall, lower level defenses (e.g., acting out, passive-aggression, projection, etc.) were associated with higher levels of symptoms and poorer global and psychosocial functioning than higher level defenses. Specifically idealization, at intake, was uncorrelated with the Global Assessment Scale ($r = .01$), and over a one-year follow-up, there was a small nonsignificant negative correlation between the two measures ($r = -.10$). This indicates that the use of idealization is not indicative of particularly poor or good overall functioning (Perry and Cooper 1989). This is unsurprising given that the defense of idealization is fairly commonly used in the general population. Indeed, in a study of women from the community (matched controls for women with breast cancer), 36.9% of women used it at least once (Perry et al. 2015). However, as expected, the women with breast cancer, who faced a serious health stressor, used idealization more (73.6%) than the control women.

Change in Psychotherapy Perry and Bond (2012) showed that upward shifts in ODF occur over the course of therapy, and they do so largely in

a stepwise fashion, following the hierarchy. In other words, over the course of successful treatment, patients progressively use defenses that are higher in the hierarchy. The authors also found that this upward mobility was related to long-term improvement in symptoms (e.g., depressive, anxiety, suicidality) and overall functioning. Research currently underway suggests that, as patients' use of defenses changes over the course of psychotherapy, individual defenses at lower levels may be replaced by specific higher level defenses that share some similarities in function (Perry and Bond 2012). It has been hypothesized that individuals who often use idealization tend to move up to affiliation, a higher level defense whereby one enhances one's ability to cope with a conflict or stressor by directly seeking support from others and then appropriating what others offer into one's own learning. Inversely, in the face of particularly stressful or threatening circumstances, individuals may regress and utilize notably lower level defenses. It has been hypothesized that individuals who typically use idealization tend to drop to splitting, where the individual deals with the conflict or stressor by viewing the self or others as all good or all bad, a far less adaptive defense.

Conclusion

In sum, idealization enhances the self or others' images and serves the function of temporary gratification and protection of the individual from feeling powerless, worthless, or disappointed. It is to be differentiated from splitting (of positive images), in which the subject cannot acknowledge any facts contradicting the positive image. Although further research is warranted, preliminary findings suggest that the use of idealization is not indicative of overall poor or good functioning, as it is commonly used in the general population.

Cross-References

- ▶ [Defense Mechanisms](#)
- ▶ [Psychoanalysis](#)

- ▶ [Psychodynamic Perspective](#)
- ▶ [Splitting \(Defense Mechanism\)](#)
- ▶ [Unconscious](#)

References

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders, fourth edition* (Appendix B, pp. 751–756). Washington, DC: Author.
- Cooper, S. H. (1989). Recent contributions to the theory of defense mechanisms: A comparative view. *Journal of the American Psychoanalytic Association*, 37(4), 865–891. <https://doi.org/10.1177/000306518903700401>.
- Freud, S. (1894). The neuro-psychoses of defence. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 3). London: Hogarth Press.
- Freud, S. (1914). On narcissism: An introduction. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 14). London: Hogarth Press.
- Perry, J. C. (1990). *Defense mechanism rating scale* (5th ed.). Cambridge, MA: Cambridge Hospital.
- Perry, J. C. (2014). Anomalies and specific functions in the clinical identification of defense mechanisms. *Journal of Clinical Psychology: In Session*, 70(5), 406–418. <https://doi.org/10.1002/jclp.22085>.
- Perry, J. C., & Bond, M. (2012). Change in defense mechanisms during long-term dynamic psychotherapy and five-year outcome. *American Journal of Psychiatry*, 169(9), 916–925. <https://doi.org/10.1176/appi.ajp.2012.11091403>.
- Perry, J. C., & Cooper, S. H. (1989). An empirical study of defense mechanisms, I. Clinical interview and life vignette ratings. *Archives of General Psychiatry*, 46, 444–452. <https://doi.org/10.1176/appi.ajp.2012.11091403>.
- Perry, J. C., & Presniak, M. D. (2013). Conflicts and defenses in narcissistic personality disorder. In J. S. Ogronczuk (Ed.), *Understanding and treating pathological narcissism* (pp. 147–166). Washington, DC: American Psychological Association. <https://doi.org/10.1037/14041-009>.
- Perry, J. C., Metzger, J., & Sigal, J. J. (2015). Defensive functioning among women with breast cancer and matched community controls. *Psychiatry: Interpersonal and Biological Processes*, 78(2), 156–169. <https://doi.org/10.1080/00332747.2015.1051445>.

Identical Twins

- ▶ [Monozygotic Twins](#)
- ▶ [Segal, Nancy L.](#)

Identification

Vera Békés^{1,2} and J. Christopher Perry³

¹Ferkauf Graduate School of Psychology, Yeshiva University, Bronx, NY, USA

²School of Psychology, Laval University, Montreal, QC, Canada

³Department of Psychiatry, McGill University at the Jewish General Hospital, Montreal, QC, Canada

Synonyms

[Accommodation](#); [Empathy](#); [Imitation](#); [Mimicking](#); [Sympathy](#)

Definition

Identification is an ego defense or mental mechanism through which an individual, in varying degree, makes himself or herself like someone else; he identifies with another person. This results in the unconscious taking over of various elements of another (Laughlin 1979).

Introduction

There is a noteworthy confusion and lack of clarity in the definition of identification in the literature (see Cramer 2006). Identification most often has been described as a defense mechanism and is a mostly an unconscious process, but may also have preconscious and conscious features (Schafer 1968). When using identification as a defense, the individual takes experiences with the outside world and places them inside to create new ego schemes (Laughlin 1979) or ego structures (Cramer 2006). Identification, when done consciously, is often accompanied by a simple form of imitation and a

Entry to appear in Zeigler-Hill, V. & Shackelford, T.K. (Eds.), *Encyclopedia of Personality and Individual Differences*. Springer Science and Business Media

modeling of oneself after some aspects or aspects of another (Laughlin 1979).

In identification, the person modifies his motives and behavior patterns and the related self-representations in order to experience being like or being the same as the object of identification (Schafer 1968). Identification creates an emotional alliance with the other person by making oneself like the other by unconscious taking over of thoughts, goals, behaviors, mannerisms, reactions, attributes, or character traits and emotions (Laughlin 1979). As a result the ego changes in the direction of becoming like somebody else, a group, or a cause (Cramer 2006). The function of identification is to maintain an affective relationship with a significant other and through this to develop and maintain self-esteem.

The Object of Identification In the unconscious identification with someone or some aspect of a person, the object to be identified with is more often a positive figure or aspect, someone to whom one looks up, for example, a parent, an authority, or a prominent figure or an admired, idealized, or famous person. The object of identification may also be a respected group, movement, or organization. In some cases, the object is someone or some aspect that is usually considered as negative, for example, a criminal, an aggressor, one's captors, and an unfair or oppressive authority (Freud 1936; Laughlin 1979). A notorious example of this is the so-called Stockholm syndrome, during which hostages took on the beliefs of their captors.

History Sigmund Freud introduced the term to psychoanalysis. He described primary identification in infancy as the earliest expression of an emotional tie with somebody (1921), an early, primitive attachment to an object, which results in incorporating some of its aspects into oneself. According to Freud, "the effects of the first identifications made in earliest childhood will be general and lasting. This leads us back to the origin of the ego ideal; for behind it there lies hidden an individual's first and most important identification, his identification with the father in his own personal prehistory" (1923, p. 31). In his other writings,

Freud described other types of identifications as well. In narcissistic (secondary) identification, the child, in reaction to suffering abandonment or loss, becomes attached to an object of the lost person, which allows him to maintain the relationship with the object internally (1917). In partial identification the child identifies with a certain quality of a person or a group (Meissner 1970). Other secondary identification processes include goal-orientated, object-loss, and aggressor identifications (1936). Identification with the aggressor as a defense was described by Anna Freud, when "by impersonating the aggressor, assuming his attributes or imitating his aggression, the child transforms himself from the person threatened into the person who makes the threat" (p. 113, 1936).

Function Identification is a basic process underlying all human social relations (Laughlin 1979; Menaker 1979). In childhood, identification with loved objects is necessary for healthy psychological development and emotional integration (Laughlin 1979). It plays an important role in the formation of conscience, ego ideal, and identity (Cramer 2006). In childhood, the function of identification is to modify the ego in order to become more independent and autonomous from the parents or other significant others (Cramer 2006). In late adolescence and in young adulthood, identification is commonly used for identity formation (Cramer 1991b; Cramer 1997). Identification also serves as defense against the feeling of loss by replacing a lost relationship through the internalization of the object (Menaker 1979), recreating the object internally (Cramer 2006).

It is unclear the degree to which identification is a defense in the same sense as repression, displacement, or reaction formation, which may alternately manage motives, conscience (superego), and external reality on a moment-to-moment basis. Identification is more like a process centered on learning to take on the characteristics of an external object, forming an internal object representation and in turn transforming it into a self-representation. This is a process that tends to act over time, rather than instantaneously. In the instances when identification is occurring, the use of defenses such as idealization (of the other and the self) and/or displacement (self = other) might follow.

Types Identification may be defensive or developmental. *Defensive identification* is largely unconscious and occurs when the goal is to reduce anxiety and maintain self-esteem and occurs when (1) the individual experiences or anticipates the loss of a significant other, and by identification with the object, it is recreated internally, and thus, this process decreases the anxiety triggered by the loss or anticipated loss. (2) It also occurs when the individual wishes to maintain parental approval and to control unacceptable impulses, and by internalizing parental standards and prohibitions, he modifies his ego and thus is able to maintain self-esteem. In contrast, *developmental identification* starts in early childhood with imitation of parental attributes and continues in adolescence with taking over parental values and interests. Developmental identification leads to a structural change in the self-representation, when the child identifies with certain attributes of significant other people (Cramer 2006).

Discrimination Incorporation and introjection are related concepts and are seen as the other two components of identification besides identification proper (Meissner 1974). In the primitive process of incorporation, the person wants to possess, to have, or to become merged with the object by taking all or parts of the object into himself or herself. This may occur in young children or in psychosis when there is little or no distinction between the person and the object. In introjection the person wants to achieve identity or maintain the relationship with the object by displacing the representation of either the other person or of the relationship into the inner world from the outside. This requires some level of distinction of the self and the object, and the introjected representations remain separate from the ego and do not change it. Such introjects may be split based on the feeling state or emotional valence which they represent, such as all angry, all sad, and all good. In such cases, such as borderline personality organization, the individual cannot experience polar opposite introjects at the same time (Kernberg 1967). In contrast with incorporation and introjection, identification

requires a clear differentiation of the self and the object, and it involves the modification of the ego by internalizing regulations and characteristics of a significant other (Cramer 2006).

Identifying and Examples Cramer (1987, 1991a) offers an operationalization for identifying identification in responses to TAT cards. The following are examples for different categories of identification:

1. Emulation of skills: imitating, taking over, or otherwise acquiring a skill or talent of another character or trying or wishing to do so. *Example: Maybe if I could be as great a violinist as my father.*
2. Emulation of characteristics, qualities, or attitudes: references to one character imitating, taking over, or otherwise acquiring a characteristic, quality, or attitude of another character, or trying to do so, or references to one character being like another, the same as another, or, in an extreme case, merging with another. *Example: He tries to be as honest as Abe Lincoln.*
3. Regulation of motives or behavior. *Example: His father sent him to his room because he was bad.*
4. Self-esteem through affiliation. *Example: He felt good because he had a friend.*
5. Work and delay of gratification. *Example: He practiced all his life.*
6. Role differentiation. *Examples: mention of specific adult roles, such as teacher sailor, farmer, priest, soldier, scientist, etc.*
7. Moralism. *Example: He told the truth. Honesty pays* (Cramer 1991a).

Correlation with Health Identification is commonly considered as a high level, more mature, “healthy” defense and is part of the normal developmental process (Cramer 1991a, 1997).

Development Most theories suggest that there is a developmental sequence in the emergence of defense mechanisms. As part of normal development, certain defenses occur at certain developmental stages and are typically used at certain

age. Cramer (1991a, 1999) suggests that after the early appearance of denial and projection, identification develops slowly starting in early childhood and emerges as predominant in the late adolescent period, when issues of identity formation are central, and then declines gradually (Cramer 1999).

Defensive Shifts When early development is characterized by excessive gross trauma, introjection may predominate over identification, leading to chaotic self and object representations. This will also be associated with other lower level defenses, such as the major and minor image-distorting defenses (splitting, projective identification, idealization, devaluation, and omnipotence). As such individuals improve through natural development or with psychotherapy, the internal self and object world stabilizes, and the individual is capable of using identification as a source of strengthening the self. In turn the individual will also be able to use other higher level neurotic and mature defenses (Perry and Bond 2012).

Future Directions There is a need for developing a rating system to rate when identification is occurring in real time, as is the case for other defense mechanisms. This would allow the study of identification in a wide variety of settings including psychotherapy and developmental research, using real-life interview and life vignette data.

Conclusion

Identification is a defense or mental mechanism, which allows the person to transform outside reality into self-representation. It is considered a healthy process, which occurs naturally in early childhood and continues into adulthood. The term was introduced to psychoanalysis by Sigmund Freud, and its various aspects have been studied extensively since. Its use has been operationalized in TAT responses, but future research is needed to develop a more general rating system for assessing its different forms.

Cross-References

- ▶ Defense Mechanisms
- ▶ Displacement (Defense Mechanism)
- ▶ Introjection (Defense Mechanism)
- ▶ Psychoanalysis
- ▶ Psychodynamic Perspective
- ▶ Unconscious

References

- Cramer, P. (1987). The development of defense mechanisms. *Journal of Personality*, 55, 597–614.
- Cramer, P. (1991a). *The development of defense mechanisms*. New York: Springer-Verlag.
- Cramer, P. (1991b). Anger and the use of defense mechanisms in college students. *Journal of Personality*, 59(1), 39–55.
- Cramer, P. (1997). Evidence for change in children's use of defense mechanisms. *Journal of Personality*, 65(2), 233–247.
- Cramer, P. (1999). Ego functions and ego development: Defense mechanisms and intelligence as predictors of ego level. *Journal of Personality*, 67(5), 735–760.
- Cramer, P. (2006). *Protecting the self: Defense mechanisms in action*. Guilford Press.
- Freud, S. (1917). Mourning and melancholia. *The standard edition of the complete psychological works of Sigmund Freud*, 14, 1914–1916.
- Freud, S. (1921). Group psychology and the analysis of the ego. *The standard edition of the complete psychological works of Sigmund Freud*, 18, 65–143.
- Freud, S. (1923). The ego and the id. *The standard edition of the complete psychological works of Sigmund Freud*, 19, 1–66.
- Freud, A. (1936). The ego and the mechanisms of defence. *Revised edition, The Writings of Anna Freud*, 2.
- Kernberg, O. (1967). Borderline personality organization. *Journal of the American Psychoanalytic Association*, 15(3), 641–685.
- Laughlin, H. P. (1979). *The ego and its defenses*. New York: J. Aronson.
- Meissner, W. W. (1970). Notes on identification: I. Origins in Freud. *The Psychoanalytic Quarterly*, 39, 563–589.
- Meissner, W. W. (1974). The role of imitative social learning in identificatory processes. *Journal of the American Psychoanalytic Association*, 22, 512–536.
- Menaker, E. (1979). *Masochism and the emergent ego: Selected papers of Esther Menaker*. L. Lerner (Ed.). New York: Human Sciences Press.
- Perry, J. C., & Bond, M. (2012). Change in defense mechanisms during long-term dynamic psychotherapy and five-year outcome. *American Journal of Psychiatry*, 169, 916–925.
- Schafer, R. (1968). *Aspects of internalization*. New York: International Universities Press Inc.

Identity

Corey L. Guenther, Emily Wilton and
Rachel Fernandes
Creighton University, Omaha, NE, USA

Synonyms

Self; Self-concept

Definition

Identity refers to an individual's organized constellation of traits; attitudes; self-knowledge; cognitive structures; past, present, and future self-representations; social roles; relationships; and group affiliations. Together these characteristics define who one is, heavily influence how one thinks about the self and the social world, and provide the impetus for many behaviors, judgments, and decisions.

Introduction

Self and identity as topics of intellectual inquiry have been a prominent focus of scholarly interest for centuries. Notable philosophers such as Descartes, Kant, Locke, and Hume (among others) all offered commentary on the nature of selfhood and identity (Leary and Tangney 2012). Many years later William James sparked interest in the *systematic* study of identity with his hallmark chapter on "The Consciousness of Self" (James 1890). Fast-forward to today and the scientific study of self and identity continues to hold a prominent place in the scholarly literature, receiving empirical investigation from academics in a host of disciplines including psychology, philosophy, sociology, anthropology, political science, and economics.

While often used in a singular sense, many scholars adopt a more nuanced approach to understanding identity by reducing the concept into distinguishable components. For example,

Sedikides et al. (2013) distinguish between the *individual self*, *relational self*, and *collective self* elements of identity. The *individual self* embodies a person's idiosyncratic dispositions, skills, interests, and goals. The *relational self* represents a person's important social relationships, their roles, and responsibilities within these relationships, as well as shared qualities between relationship partners. Finally, the *collective self* embodies the valued social group affiliations at the core of one's identity. This aspect of selfhood comprises the characteristics highlighted by one's group memberships (and shared with in-group members), as well as the social roles one adopts within their social groups. To be sure, Sedikides et al.'s (2013) tripartite model of the self is only one of many nuanced conceptualizations of identity available in the literature (for a comprehensive overview, see Leary and Tangney 2012). What this model (and others) demonstrates, however, is that identity is a rich, multifaceted construct and that our empirically based understanding of what comprises personal identity has expanded tremendously since the writings of our intellectual forerunners.

The sections that follow offer a brief overview of the current state of the literature on the construction and maintenance of identity and discuss research exploring the relationship between identity and behavior, judgment, and decision-making. Unfortunately, providing an exhaustive review of these literatures is beyond the scope of this article, and as such some highly influential work that has shaped the current understanding of self and identity will be omitted. Nevertheless, this review will provide the reader with an intelligible understanding of how identity is constructed and maintained and how identity shapes self-judgment, social judgment, and behavior. First, the specific mechanisms by which people acquire identity, including both personal (i.e., *individual self*) and social identity (i.e., *collective self*), will be discussed. In so doing emphasis is placed on the notion that identity formation is not a fully objective process, but, rather, is heavily influenced by strategic motivational interests. Next, research on the cognitive organization of identity-related content and the implications of

this organization for how individuals process information about the self and others is presented. Finally, the article concludes by discussing the relationship between identity and behavior, with specific emphasis on the role that contextual factors play in moderating identity's influence on behavior, judgment, and decision-making.

Identity Formation

Strategic Motives in Identity Construction and Maintenance

Identity formation and maintenance do not occur in a vacuum, but, rather, are governed by a series of core self-motives that influence what information we select, process, interpret, and incorporate into our self-concepts. The primary motives believed to guide identity acquisition are *self-assessment* (Festinger 1954), *self-enhancement* (Alicke et al. 2013), and *self-verification* (Swann and Burhmeister 2012). Self-assessment concerns the need for accuracy, or the desire to seek diagnostic feedback regarding the self's attributes, behavioral tendencies, and skill sets. Self-enhancement is the need for positivity, representing the desire to construct and maintain the most favorable self-views that reality constraints will allow. This motive not only favors the pursuit of flattering over critical (or even diagnostic) self-relevant information but also biases the interpretation and processing of past, present, and future experiences. Finally, self-verification represents the need for consistency, or the search for continuity in processing self-relevant information. This motive suggests that once an individual creates a particular self-view or identity, he or she will strive to reinforce this identity by strategically seeking out, processing, and/or interpreting relevant feedback in the social environment so as to verify existing self-conceptions.

Although each of these motives guides identity construction and maintenance in some instances, they do not appear to be equitable in their governance. Rather, self-enhancement concerns exert the strongest influence on self-appraisal and identity-maintenance behaviors, followed by the need for coherence and the need for accuracy

(Sedikides and Strube 1997). Identity acquisition generally prioritizes the construction of favorable self-views, and once this is accomplished, people work diligently to maintain/verify their positive identities through the strategic processing of self and social feedback. To be sure, there are exceptions to the primacy of the self-enhancement motive. Work in the self-verification tradition, for example, has shown that individuals with predominantly negative self-views will eschew self-enhancement in favor of feedback that confirms their unfavorable self-perceptions (see Swann and Buhrmester 2012). However, given that the vast majority of individuals hold positive self-views cross-culturally (Diener and Diener 1995), this tendency appears to be the exception rather than the rule to self-appraisal. In the sections that follow, several findings demonstrating the hierarchical preeminence of the self-enhancement motive during identity formation are discussed.

Personal Identity

Personal identity refers to the self-knowledge that represents a person's idiosyncratic characteristics, attitudes, skills, goals, and behavioral tendencies (Alicke et al. 2013). Although a person's measurable, stable traits certainly comprise a portion of his or her identity, much contemporary work in this area has focused on the process by which individuals acquire self-knowledge in the service of constructing, maintaining, and modifying their personal identity images. These constructed self-conceptions, in turn, fundamentally shape self-judgment, social judgment, and behavior (see Leary and Tangney 2012). To this end, Alicke et al. (2013) proposed an intuitive model that provides a framework for the self-appraisal literature suggesting that personal identity formation is facilitated by two mechanisms: *instrumental* and *social self-analysis*.

Instrumental self-analysis refers to evaluating oneself by directing consciousness inward and appraising one's attributes, skills, and behavioral tendencies by observing the self's interactions with the external environment. Whether one is skilled or unskilled at basketball can be determined in part by how frequently one successfully makes a shot in a certain number of attempts.

Likewise, appraising one's attitude toward sustainability can partly be accomplished by reflexively observing how often one does or does not engage in sustainable practices (recycling, turning out unnecessary lights). The idea that personal identity is constructed through such instrumental analysis is also consistent with self-perception (Bem 1972) and self-awareness (Duval and Wicklund 1972) theory, which, respectively, argue that dispositional, emotional, and behavioral self-inferences are derived in part by discerning one's behaviors much like an external audience would and by comparing these observations to one's internalized standards.

Even more fundamental to constructing enduring identity conceptions is *social self-analysis* (Alicke et al. 2013). Social self-analysis involves gauging one's traits, abilities, emotional states, and behavioral tendencies by interacting with and comparing the self to other people. Interactively, such self-understanding is achieved by interpreting how others react to one's behaviors and comments (Cooley 1902) or by appraising the self according to how one *believes* he or she is perceived by others (Shrauger and Schoenemen 1979). Comparatively, identity-related knowledge is acquired by directly comparing one's dispositional tendencies, competencies, or attitudes to those of other available targets in the environment. This view was initially advanced by Festinger's (1954) influential work on *social comparison theory* and has since been refined and extended in numerous ways to more precisely illuminate the mechanisms guiding social comparison and the factors that determine whether the comparison process yields a positive or negative effect on the self.

One essential distinction in the social comparison literature refers to the direction of the comparative evaluation: lateral, upward, or downward. Lateral comparisons occur when a person compares her attributes or competencies to those of a reasonably similar target on the relevant self-concept dimension. For example, June might assess her calculus expertise by comparing the time it takes her to solve a complex proof to that of another sophomore major in the same class. Upward comparisons involve

comparing one's abilities or attributes to those of a superior target. Thus, June could opt to evaluate her mathematical proficiency by instead comparing her performance to the time required by her professor to solve the same proof. Finally, downward comparisons involve comparing oneself to an inferior target on the relevant self-concept dimension, as if June were to gauge her calculus competence by comparing her proof performance to that of a high school freshman. Importantly, this directional distinction can be applied to both comparisons with specific targets and to comparisons with hypothetical aggregate standards (e.g., the average math major, the average math professor, etc.).

Research has also shown that, particularly in the case of upward and downward comparisons, the social comparison can produce either assimilation or contrast effects on self-evaluation (Mussweiler 2003). Assimilation effects refer to self-appraisals shifting in the direction of the comparison standard following the comparison process, whereas contrast effects refer to a self-evaluative shift away from the comparison standard. For instance, if June were to experience an assimilation effect after comparing her proof performance to that of her professor, this would result in her perceived calculus abilities being elevated beyond where she would have perceived them in the absence of the social comparison. If this comparison were to elicit evaluative contrast, however, this would lead June's calculus self-appraisals to shift downward (i.e., become less favorable) following the comparison process. Whether a given comparison elicits assimilation or contrast depends on whether standard-consistent or standard-inconsistent self-knowledge is activated during the comparison process (where the "standard" is the person, norm, or object with whom the self is being compared; Mussweiler 2003). To the extent that self-knowledge indicating similarity to the standard is activated (i.e., standard-consistent knowledge), assimilation effects are predicted to occur – an outcome that positively impacts identity conceptions following upward comparisons, but is detrimental following downward comparisons. However if cognitions highlighting the self's

dissimilarity from the standard are activated during the comparison, then evaluative contrast is likely to occur – an identity-enhancing outcome following downward comparison but a humbling experience following upward comparisons. Hence, to fully understand how social comparison shapes personal identity, one must consider both the direction of the comparison and its impact on the accessibility of domain-relevant self-knowledge.

Although social comparison theory was originally posited as a mechanism to facilitate genuine self-assessment (Festinger 1954), growing evidence continues to show that people strategically use social comparison information in the service of self-enhancement and self-protection (Alicke et al. 2013). For example, under times of self-threat, people routinely seek downward comparison targets as a means of bolstering their self-views (Wills 1981), while upward comparisons are sought when people are in need of hope, inspiration, and self-enhancement by comparing oneself to successful others (Taylor and Lobel 1989). Likewise, comparisons with hypothetical, aggregate standards also ubiquitously yield outcomes that are biased in favor of the self. Research on the better-than-average effect, for example, has shown that virtually everyone perceives themselves as “above average” across a host of important trait dimensions and skill domains, despite this being a statistically impossible reality. Likewise, people chronically perceive themselves as morally superior to others, more likely to experience positive life events than their peers, but less likely to experience tragedy (for a review, see Alicke et al. 2013). The prevalence of such comparative biases again demonstrates that social self-analysis, specifically, and personal identity formation more generally are fundamentally shaped by self-enhancement concerns.

Social Identity

Social identity is the aspect of identity that is constructed, defined, and maintained through a person’s social relationships and group associations. The idea that groups and our various affiliations with them imbue people with a sense of self-definition is at the heart of Tajfel and Turner’s

(1979) *social identity theory* (SIT). SIT asserts that an individual’s social identity is constructed when he identifies with a group and begins thinking of himself in terms of the group’s shared characteristics rather than his idiosyncratic personal attributes (a process termed *depersonalization*). For example, an undergraduate student who is an aspiring clinical psychologist could define herself as an intelligent, achievement-oriented college student who is motivated to address societal mental health (all elements of her personal identity). However, she could also define herself as a psychology major, a member of her university or her sorority, or a woman (all aspects of her social identity) if these affiliations are made particularly salient in a given social context. The more strongly a person identifies with a particular group, the more likely their self-definition is to emphasize their group membership as opposed to their unique characteristics (Brewer 1991). When social identities are activated, SIT asserts that individuals will accentuate their perceived similarity to other in-group members while also distinguishing their attributes, attitudes, and behaviors from members of groups to which they do not belong.

Importantly, SIT argues that people are motivated to construct and maintain a positive social identity. Thus, people are strategic in affiliating with groups that have a favorable social status and that are perceived as distinct from other groups (e.g., Hogg 2012). This desire for positive social identity, in turn, leads to a number of empirically supported predictions for intergroup behavior: after identifying with a particular group, people readily distinguish between in-group and out-group members; they report favoring in-group members over others and feel an emotional bond with the members of their own group; during positive times people offer in-group members more rewards than out-groups, yet do not punish their in-groups during adverse times; people are more receptive of persuasive attempts from in-group than out-group members; finally, when criticism of a group norm is presented within the group, it is usually taken constructively with the hope of positive change, yet when out-group members levy similar criticism, it is perceived as

an attack that often elicits defensive reactions. Interestingly, the aforementioned effects have even been shown when people are placed into groups at random, demonstrating that minimal group affiliations are sufficient for producing in-group bias (for reviews, see Hogg 2012, and Turner and Onorato 1999). Taken together, these findings support SIT's assertion that, consistent with a self-enhancement perspective, people strategically leverage their group memberships to construct and maintain favorable identity perceptions.

Self-categorization theory (SCT; Turner et al. 1987) is a sub-theoretical extension of SIT that describes the social-cognitive process by which people shift between personal and social identity and between their various social identities. SCT asserts that this *personalization* and *depersonalization* process is largely driven by available stimulus cues in the social environment. When social categorizations are more salient than personal identity, people self-categorize at the group level, begin thinking in a collective mindset, and perceive themselves in terms of their shared group characteristics. Which group affiliation a person most strongly identifies with in a particular situation (a university student, a woman, a volleyball player) is also a function of the relative strength of relevant group-related cues. By contrast, when individualistic or person-relevant cues are most salient in the social environment, then self-categorization occurs at the individual level, thereby enhancing the accessibility of idiosyncratic attributes, attitudes, and behavioral tendencies that comprise personal identity (Turner and Onorato 1999).

The *personalization* and *depersonalization* of self-categorization is also influenced by motivational concerns. First, people desire to strike an optimal balance between having a sense of group belonging and also maintaining personal uniqueness. Brewer (1991) argues that the degree to which identity reflects assimilation to and differentiation from others occurs along a continuum and that individuals strive to achieve optimal identity distinctiveness at the midpoint of this continuum. As group inclusiveness increases (as a function of increasing group size, for

example), a person's individuality decreases. In these instances a person's uniqueness could be threatened by being perceived as too similar to others, and this heightens the desire for personal differentiation. On the other hand, if a person feels isolated or as though his group affiliations are insufficient, this leaves him at risk for social rejection. Brewer (1991) therefore argues that social identity will be strongest for self-categorizations that maximize the degree to which one feels similar enough to the group to ensure inclusion, yet allows one to maintain adequate distinctiveness as a unique individual. Second, the shift between personal and social identity is also subjected to self-enhancement concerns. If one's group begins acting in negative ways that the individual disagrees with, they will initiate a shift toward personal identity in order to distance themselves from the negative actions of the group. However, when an affiliated group experiences a success or accomplishment (such as a team winning a game), this encourages a shift toward social identity wherein self-definition prioritizes group membership over individual uniqueness (see Cialdini et al. 1976). This strategic shifting between personal and social identity allows the individual to reap the benefits of successes and celebrations at the group level while also protecting themselves from the mistakes and hardships of their group affiliations.

Finally, social identity is also fundamentally shaped by the cultural norms where one resides. For example, Western, individualistic cultures emphasize the importance of personal identity and uniqueness over group assimilation (Markus and Kitayama 1991), resulting in the development of independent self-construals (Cross and Gore 2012). In such cultures, individual concern is typically prioritized over that of collective groups, and being too similar to others can even be frowned upon. As such, an individual's goals, desires, actions, felt obligations, and self-perceptions are all likely to be shaped by individualistic concerns before collective concerns. By contrast, Eastern, collectivistic cultures encourage a self-model wherein the group is put before the individual (Markus and Kitayama 1991), resulting in the development of interdependent

self-construals (Cross and Gore 2012). In such cultures an individual's social groups, social roles, and relationships primarily define his or her identity, and as such conformity to group norms is expected in order to garner acceptance (Cross and Gore 2012). These cultural differences fundamentally impact the way people define themselves in different parts of the world, reinforcing the notion that identity construction and maintenance is a socially oriented process.

Temporal Elements of Identity

Personal identity is also represented temporally, comprised of self-images that are future-oriented and self-directing but not yet realized. For example, *possible selves* (Markus and Nurius 1986) are mental representations of the various identity-related outcomes a person aspires to achieve (e.g., becoming a happily married husband and father, a successful small-business owner, etc.) and the dreaded outcomes a person is motivated to avoid (e.g., becoming a loveless isolate, a failed entrepreneur). These possible selves not only represent motivational incentives that guide behavior and shape goal-prioritization, but they also provide context for self-evaluation, serving as a standard against which a person appraises his or her current accomplishments and personal development. Likewise, Higgins' *self-discrepancy theory* (Higgins 1987) asserts that people possess a myriad of *ideal* and *ought* self-representations that serve as motivational guides for behavior. *Ideal selves* represent the highest dispositional standards a person hopes, wishes, and aspires to attain, whereas *ought selves* represent the minimal obligations one feels they must satisfy to avoid criticism. Feeling as if one is falling short of their *ideal* and *ought selves* produces distinguishable negative emotional reactions. Whereas perceived discrepancy between one's actual (current) and ideal selves produces dejection-related emotions such as disappointment or sadness, perceived discrepancy between the actual and ought selves produces anxiety-related reactions such as guilt or shame. Whether they serve as motivational guides, standards for self-evaluation, or sources of affective reaction, a

person's internal, future-oriented self-images are an important component of personal identity.

Simulating positive yet unrealized self-representations even has enhancing effects on current self-evaluations. Recent research by Williams and colleagues has shown not only that do people incorporate their unrealized future selves into current identity perceptions (Williams and Gilovich 2008) but, additionally, that self-perceptions are inflated by the tendency to weight one's perceived *potential* into present-day self-appraisals (Williams et al. 2012). Importantly, neither of these factors is considered to the same extent when making judgments about others. These findings further demonstrate that future-oriented self-construals figure prominently into identity representations, often doing so in a self-enhancing manner.

Identity Content and Organization

The way in which self-knowledge is cognitively organized has significant implications for how identity shapes an individual's thoughts, feelings, and behavior. The amount of self-knowledge a person possesses is vast, and consequently some degree of organization is necessary to enhance self-concept clarity. Critically, the way in which identity content is organized has direct bearing on which self-knowledge is consciously activated in a given context, which in turn has implications for a person's judgments, decisions, or behaviors in that context. For example, research by Markus and colleagues has shown that people develop complex *self-schemas* over the course of their experiences that strongly influence self- and social judgment (Markus 1977). Self-schemata are cognitive generalizations that organize self-beliefs about a particular quality or dimension. These schemata are comprised of both semantic and episodic memories related to a given dimension and are laden with affective overtones. Once developed, self-schemata impact how people process self-relevant feedback, whether such feedback is integrated into the self-concept, and how one interprets their interpersonal and social experiences (Markus 1977). To illustrate, consider an aspiring politician for whom

leadership is a quality central to her personal identity (i.e., she is *schematic* for the trait “leadership”). Compared to someone who is *aschematic* on leadership (i.e., a person who has not developed a self-schemata for leadership), she will be better able to recall her past leadership experiences and will be biased toward recalling those episodes that reinforce her self-beliefs, she will be more likely to recite “leadership” as a trait central to her identity, she will be less likely to accept the veracity of schema-incongruent feedback (i.e., that which criticizes her leadership qualities), and she will be more likely to notice leadership-related qualities in other people and attend to leadership-related stimuli in the environment (for a review, see Markus and Wurf 1987). These effects will be strongest when a given schemata is well-elaborated and chronically activated. Importantly, personal identity is comprised of multiple self-schemata, and which of these schemata most heavily influences judgment and behavior at a given moment depends on which is most accessible/activated in that particular sociocultural context (e.g., McConnell 2011). Further elaboration on the context-sensitive and dynamic nature of identity is provided in the “Malleability of Identity” section.

Research on *self-complexity* (e.g., Linville 1985) also illuminates how the cognitive organization of identity content moderates judgment, behavior, and emotional processes. Self-complexity refers to the number of self-aspects, self-schemata, or self-categories a person possesses, as well as the degree of overlap in the cognitive representations of these self-aspects. It is the extent to which particular attributes, self-perceptions, attitudes, or behavioral tendencies are shared, rather than cognitively distinct, among self-aspects or social/relational roles. Identities characterized as high in self-complexity contain a greater number of well-elaborated self-categories that evidence little overlap in their cognitive representation (i.e., each self-aspect is perceived as containing attributes, attitudes, or behavioral tendencies distinct from those associated with other self-categories). By contrast, individuals characterized as low in self-complexity possess fewer well-defined self-schemata that

evidence greater overlap in their content (i.e., they share multiple attributes and identity characteristics). One well-researched implication of self-complexity is how it moderates the emotional impact of positive and negative life events (e.g., Linville 1985; McConnell 2011). Individuals high in self-complexity (compared to low) are less prone to “affective spillover”, whereby emotional outcomes in one domain (e.g., work) impact psychological adjustment in other life domains (e.g., family). The self-category boundaries imposed by people high in self-complexity attenuate the extent to which an emotional event in a single domain implicates one’s overall identity, whereas the *lack* of such boundaries among those low in self-complexity enhances the degree to which several self-aspects are affected by a single emotional outcome. Whether this affective spillover (or lack thereof) is beneficial depends upon the valence of the event: when the news is good (e.g., getting a promotion), being low in self-complexity reaps greater emotional reward as the positive affect permeates several self-categories. However when the news is bad (e.g., getting fired), being high in self-complexity can help buffer the blow by restricting the negative affective outcome to a single life domain. Those low in self-complexity are likely to experience a greater emotional toll during bouts of adversity.

In a similar vein, Showers and colleagues’ work on *self-compartmentalization* has demonstrated that the organization of self-knowledge occurs along an evaluative dimension as well (e.g., Showers and Ziegler-Hill 2007). Self-compartmentalization refers to the degree to which positive and negative self-attributes are separated into distinct self-categories. Such organization occurs along a continuum. At one end of the continuum is *evaluative compartmentalization*, which represents an identity comprised of self-aspects that are clearly differentiated as either possessing positive or negative attributes. At the opposite end is *evaluative integration*, which refers to constructing self-aspects that contain a mix of positive and negative attributes. One upshot of this organizational difference is the emotional impact particular self-schemata have on the self once activated. For the

compartmentalized identity, an event/outcome that activates a particular self-category will likely elicit *either* a primarily positive or primarily negative emotional reaction, depending upon the valence of the self-attributes associated with that self-schema. For the integrated identity, however, a given event/outcome is likely to elicit a mixed emotional response considering most self-aspects contain both positive and negative self-attributes. Thus, although a compartmentalized identity will experience more pleasurable emotional highs following an event/outcome that activates a positive self-aspect (given this event should predominantly activate positive self-beliefs), they will also experience lower emotional lows when an event activates a negative self-category (as they do not contain the same countervailing positive self-beliefs typical of integrative identities).

Malleability of Identity

People generally perceive self-concepts and identities to be consistent, unchanging constructs that guide thought and behavior (Oyserman et al. 2012). However, research over the past few decades has shown self and identity to be dynamic and contextually sensitive in nature, with the accessibility of various self-aspects – and in turn, the strength of their influence on thought and behavior – shifting as a function of salient contextual and motivational factors. To understand the malleable nature of self and identity, contemporary theorists adopt a social-cognitive approach and apply knowledge about how the mind is organized (e.g., associative networks) and functions to explain the variable accessibility of different identities/self-aspects (e.g., McConnell 2011; Oyserman 2009; Turner et al. 1987). Importantly, the contextual sensitivity of the self need not be a consciously realized reality. Rather, the shifting accessibility of self-concepts and their variable influence on thought and behavior generally occurs nonconsciously (Oyserman 2009), a factor that likely contributes to the perceived stability of identity processes.

One intuitive representation of the context-dependent nature of identity is Oyserman and colleagues' *identity-based motivation model*

(Oyserman 2009; Oyserman et al. 2012). According to this model, consciously experienced identity is dynamically constructed on a moment-to-moment basis as a function of which self-aspect(s) is made most salient by available cues in the social landscape. Given that distinct identities (e.g., athlete, parent) are schematically associated with different behavioral tendencies, priorities, and attitudes (e.g., competitor, nurturer), once activated, the model asserts that accessible self-aspects will prescribe a mind-set and behavioral repertoire consistent with that identity, which in turn guides judgments, decisions, and behaviors (i.e., activated self-aspects produce an "action readiness"). For example, an elite soccer star competing in a high-stakes match (contextually activating her "athlete" identity) may adopt a "win at all costs" mind-set during competition, leading her to respond aggressively when challenged by a defender attempting to steal the ball and passively when a competitor falls to the turf with an injury. When this same athlete – who is also the mother of two – returns home following the match, her now highly accessible "mother" identity will motivate her to respond patiently (rather than aggressively) when her 3-year-old throws his cup at her in a fit of agitation and compassionately (rather than passively) when her daughter falls to the sidewalk and scrapes her knee. This example illustrates the model's fundamental postulate that personal identity is context dependent and that activated identities motivate identity-congruent mind-sets and action readiness.

The idea of personal identity being dynamic and context specific is echoed in the aforementioned social identity (Tajfel and Turner 1979) and self-categorization (Turner et al. 1987) theories as well. As discussed, these theories argue that behavior in a given moment is often aimed at enhancing similarity to the prescriptions of salient social identities and that the relative salience of a particular social identity (a woman, a scientist, an alumnus) varies as a function of the relevant cues present in a specific social situation. Further, whether an individual experiences identity *personalization* or *depersonalization* – and consequently whether behavior reflects one's personal or collective identity – also depends upon the strength of the person's motives, expectations, and response to

environmental cues. To be sure, some identities or self-aspects are more chronically accessible (and motivationally important) than others, leading them to exert greater influence on thought and behavior across time and situation (Markus and Wurf 1987). However, what research in these areas *has* shown is that in-the-moment situational cues can shift the relative accessibility of different self-aspects, which in turn reliably moderates behavior and mind-sets in an identity-congruent direction.

Conclusions

The intellectual study of self and identity continues to hold a prominent place in the scholarly literature. Our empirical understanding of how identity is constructed and maintained, how self-knowledge is organized, and how identity relates to judgment, affect, and behavior has expanded tremendously over the past century. Yet much remains to be learned, and the scientific study of self and identity promises to continue being a fruitful avenue for research for many years to come.

Cross-References

- ▶ [Personality Development in Childhood](#)
- ▶ [Self](#)
- ▶ [Self-Appraisals](#)
- ▶ [Self-Concept](#)

References

- Alicke, M. D., Zell, E., & Guenther, C. L. (2013). Social self-analysis: Constructing, protecting, and enhancing the self. In J.M. Olson & M.P. Zanna (Eds.), *Advances in experimental social psychology* (vol. 48, pp. 173–234). Burlington: Academic Press
- Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (vol. 6, pp. 1–62).
- Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin*, 17(5), 475–482.
- Cialdini, R. B., Borden, R. J., Thorne, A., Walker, M., Freeman, S., & Sloan, L. (1976). Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology*, 34, 366–375.
- Cooley, C. H. (1902). *Human nature and the social order*. New York: Scribner's.
- Cross, S. E., & Gore, J. S. (2012). Cultural models of the self. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (2nd ed., pp. 587–614). New York: Guilford.
- Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, 68, 653–663.
- Duval, S., & Wicklund, R. A. (1972). *A theory of objective self-awareness*. Oxford: Academic.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117–140.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94, 319–340.
- Hogg, M. A. (2012). Social identity and the psychology of groups. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (2nd ed., pp. 502–519). New York: Guilford.
- James, W. (1890). *Principles of psychology* (Vol. 1 & 2). New York: Holt.
- Leary, M. R., & Tangney, J. P. (2012). *Handbook of self and identity* (2nd ed.). New York: Guilford.
- Linville, P. W. (1985). Self-complexity and affective extremity: Don't put all of your eggs in one cognitive basket. *Social Cognition*, 3, 94–120.
- Markus, H. (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology*, 35, 63–78.
- Markus, H., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224–253.
- Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, 41, 954–969.
- Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology*, 38, 299–337.
- McConnell, A. R. (2011). The multiple self-aspects framework: Self-concept representation and its implications. *Personality and Social Psychology Review*, 15, 3–27.
- Mussweiler, T. (2003). Comparison processes in social judgment: Mechanisms and consequences. *Psychological Review*, 110, 472–489.
- Oyserman, D. (2009). Identity-based motivation: Implications for action-readiness, procedural-readiness, and consumer behavior. *Journal of Consumer Psychology*, 19, 250–260.
- Oyserman, D., Elmore, K., & Smith, G. (2012). Self, self-concept, and identity. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (2nd ed., pp. 69–104). New York: Guilford.
- Sedikides, C., & Strube, M. J. (1997). Self-evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (vol. 29, pp. 209–269). New York: Academic Press
- Sedikides, C., Gaertner, L., Luke, M. A., O'Mara, E. M., & Gebauer, J. E. (2013). A three-tier hierarchy of self-potency: Individual self, relational self, collective self. In J. M. Olson & M. P. Zanna (Eds.), *Advances in*

- experimental social psychology* (vol. 48, pp. 235–295). Burlington: Academic Press.
- Showers, C. J., & Ziegler-Hill, V. (2007). Compartmentalization and integration: The evaluative organization of contextualized selves. *Journal of Personality, 75*, 1181–1204.
- Shrauger, J. S., & Schoeneman, T. J. (1979). Symbolic interactionist view of self-concept: Through the looking glass darkly. *Psychological Bulletin, 86*, 549–573.
- Swann, W. B., Jr., & Buhrmester, M. D. (2012). Self-verification: The search for coherence. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (2nd ed., pp. 405–424). New York: Guilford.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey: Brooks/Cole.
- Taylor, S. E., & Lobel, M. (1989). Social comparison activity under threat: Downward evaluation and upward contacts. *Psychological Review, 1*, 569–575.
- Turner, J. C., & Onorato, R. S. (1999). Social identity, personality, and the self-concept: A self-categorization perspective. In T. R. Tyler, R. M. Kramer, & O. P. John (Eds.), *The psychology of the social self* (pp. 11–46). Mahwah: Erlbaum.
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford: Blackwell.
- Williams, E. F., & Gilovich, T. (2008). Conceptions of the self and others across time. *Personality and Social Psychology Bulletin, 34*, 1037–1046.
- Williams, E. F., Gilovich, T., & Dunning, D. (2012). Being all that you can be: The weighting of potential in assessments of self and others. *Personality and Social Psychology Bulletin, 38*, 143–154.
- Wills, T. A. (1981). Downward comparison principles in social psychology. *Psychological Bulletin, 90*, 245–271.

Identity Crisis

Nicholas Papouchis¹ and David Eisenach²

¹Long Island University, Brooklyn, NY, USA

²West End Psychological Services, Toronto, Canada

“Miller (1958) I just can’t take hold, Mom. I can’t take hold of some kind of a life.” -Biff, Arthur Miller’s *Death of a Salesman*

Erik Erikson’s Identity Theory

The father of the term “identity crisis,” Erik Erikson, later lamented the ubiquity of the concept

due to its “singular and often erratic appeal” (1968, p. 11). Identity, that vague and malleable construct embraced from ego to pop psychology, therefore warrants a careful definition within the context of Erikson’s developmental theory. Erikson’s conceptualization of identity can be understood as the reciprocal influence of the internal and the external: the integration of “a subjective sense of sameness and continuity” with “a unity of personal and cultural identity rooted in an ancient people’s fate” (1968, p. 20). To exemplify the internal sense of identity, Erikson drew upon William James’s state of intense aliveness during which a voice inside says, “This is the real me!” (1920, p. 199). For cultural identity, Erikson looked to Freud, whose Jewish identity prepared him “to join the Opposition” (Freud 1926). These two prongs of identity, located at the cores of both the individual and her culture, gradually come together in a predominantly unconscious process through which the individual perceives both her own unique sense of continuity and the fact that others recognize this sense of continuity in her.

Beginning with the first recognition of self and other between mother and infant, the identity develops and differentiates continuously throughout life as the interpersonal circle gradually widens from the caregiver to all of mankind. Simultaneously, the child internalizes the images of caregivers and other significant figures, gradually fusing these identifications into a coherent identity that is recognized as a unique subjectivity by the community. In sum, Erikson formulated ego identity as the product of three processes – the biological, the social, and the psychological – which mutually influence each other to create one’s organized and continuous sense of a unique self in solidarity with our group affiliation.

Identity Crisis and Confusion

The term “identity crisis” was first used by Erikson in his work with World War II veterans who he felt were not simply shell-shocked but instead suffering the loss of “a sense of personal sameness and historical continuity” (1968, p. 17) that he equated with ego identity. In this context, the term crisis is not meant to suggest

catastrophe, but instead a critical turning point in an individual's development. Erikson's developmental model can be understood as a progression of such crises, which, in their successful resolution, lead to differentiation and individuation, allowing a greater sense of unity, capacity for good judgment, and ability to live up to one's standards. In adolescence, the individual confronts his historical and cultural moment for the first time and must define his identity in relation to the time and place in which he resides. This can only be achieved through the adoption of an adult set of ethics, which Erikson identifies as the "true criterion of identity" (1968, p. 39). It is in this blooming recognition of ethical responsibilities to the next generation and the development of lifelong commitments that one can ultimately transcend one's individual identity. A reciprocal relationship develops between the culture and the individual in which the culture recognizes the adolescent's unique sensibility and energy and the adolescent recognizes society as a "living process" (1968, p. 241), instilling loyalty and allegiance.

Erikson defined the identity crisis as the "psychosocial aspect of adolescence" (1968, p. 91). The adolescent is faced with numerous conflicts when forming her identity, including seeking out elders and ideas to have faith in without appearing foolish or overly trusting; freely choosing a duty without being forced into one that could be shameful; imagining what one might become while resisting any limitations on one's ambition; and finding meaningful and satisfying work instead of being forced into a predetermined career. When unsuccessfully resolved, this struggle to synthesize interpersonal and cultural introjects can lead to the development of a "negative identity" (Erikson 1968, p. 87) defined in contrast to these values. When this identity confusion results from doubts about one's sexual or ethnic identity or is paired with longstanding hopelessness, delinquent behavior and psychotic episodes may occur. This crisis can also lead adolescents to over-identify with idols and heroes as a defense against a fear of identity loss; while this is sometimes achieved through romantic

love, it can also occur through intolerance of those who are different in appearance or culture.

Identity confusion occurs at the crisis point when the individual must commit to the daunting combination of physical intimacy, healthy competition, choice of a fulfilling occupation, and self-definition in the context of her culture. For Erikson, identity confusion represents a continuum of function ranging from "mild" to "aggravated" confusion (Erikson 1968, p. 212). Erikson framed the most severe end of the identity confusion continuum as a confluence of four themes: the problem of intimacy, diffusion of time perspective, diffusion of industry, and choice of a negative identity. With regards to the problem of intimacy, the adolescent suffering from identity confusion will either withdraw from any opportunities for true intimacy or engage in promiscuity that precludes self-abandon or genuine interpersonal integration with another. With regards to the diffusion of time perspective, adolescents will often simultaneously feel a sense of urgency while remaining generally unconcerned with the passage of time, speaking to an underlying belief that things will never change coupled with the fear that they indeed may at any moment. With regards to the diffusion of industry, more severe forms of identity confusion can result in either an inability to concentrate on necessary tasks or an unhealthy preoccupation with a specific activity, accompanied by a resistance to the competitiveness inherent to adult occupations, which eventually results in a loss of the individual's ability to work, play, and socialize. Finally, the choice of a negative identity is based on those identifications which were presented as most dangerous and objectionable throughout development, often in reaction to unreachable parental ideals or achievements. These various components of identity confusion often combine to form a painful self-consciousness, in which the individual fixates on the discrepancy between her aggrandized self-image and the appraisal of her identity through the eyes of others. In sum, identity confusion represents a failure to attain one's role in society, resulting in a collapse into an identity that was never fully formed and cannot therefore sustain a healthy and balanced self-esteem.

James Marcia and beyond

Erikson's rich conceptualization of identity formation looms large over the field of identity theory. In a similar fashion, James Marcia has had a profound impact on the operationalization and extension of Erikson's theories into the realm of research, inspiring hundreds of empirical investigations (Marcia 1993). Marcia achieved this by synthesizing Erikson's identity framework into a model centered on two dimensions: exploration and commitment. Exploration refers to the attempts to better understand oneself and one's environment in order to make major life decisions, while commitment involves choosing and adhering to the specific goals and values discovered through exploration. It is only through the process of exploration and eventual commitment that an individual can develop fidelity, which refers to a continuity of purpose that wards off identity confusion. Marcia created a grid of high and low levels for both exploration and commitment, resulting in four distinct identity statuses: diffusion, foreclosure, moratorium, and achievement, which correlate more with personality types than developmental stages (Marcia 1966). Moratorium (high exploration, low commitment) involves critical thinking about weighty decisions in life with little action, while foreclosure (low exploration, high commitment) represents a close-minded and rigid clinging to predefined ideals and relationships with little interest in or exploration of possible alternatives. Identity achievement is considered the most mature of these statuses, as it entails both a thorough exploration of and successful commitment to a unique set of values resulting in increased capacity for decision-making and meaningful relationships. Its opposite status is found in identity diffusion, which occurs in those individuals with low levels of both exploration and commitment. This results in apathy, maladaptive behaviors, and a lack of a consistent set of values to guide important life decisions. Empirical studies have linked identity diffusion with academic problems (Berzonsky 1985), depression, (Marcia 1993), and among other inter- and intra-personal difficulties (see Schwartz 2001). In

these respects, Marcia's identity diffusion is a close descendent of Erikson's identity confusion, as both represent the failure to achieve a coherent and consistent identity following the adolescent crisis.

The great efforts Marcia made to operationalize identity theory paved the way for the development of multiple empirical measures, including among others: the Identity Status Interview (Marcia 1966), the Ego Identity Interview (Grotevant and Cooper 1981), and the Extended Objective Measure of Ego Identity Status II (Adams et al. 1989). This profusion of objective measurements in turn spurred a great number of studies that have allowed theories of identity crisis to blossom in a variety of different directions. Much attention has turned to the different domains and contexts across which an individual's identity varies. Grotevant and Cooper (1981) extended identity theory into the interpersonal domain, introducing more systematic explorations of various relationships and sex roles. Domains have been categorized into the clusters of psychological (such as sense of self), interactional (including different types of relationships), and social-structural (cultural attitudes such as political or ethical beliefs) (Côté 1996). As the field has expanded, it has also faced some criticism, including concerns about cross-cultural validity (Schwartz 2001) and suggestions that the operationalization of identity status has oversimplified the complex dynamics of Eriksonian identity theory (van Hoof 1999). As such, the prodigious development of identity theory and research has begun to inspire contemporary psychologists to look back to Erikson's multilayered and dynamic conceptualization of the identity crisis as a means of moving forward.

References

- Adams, G. R., Bennion, L. D., & Huh, K. (1989). *Extended objective measure of ego identity status: A reference manual*. Unpublished manuscript, Utah State University, Logan.
- Berzonsky, M. D. (1985). Diffusion within Marcia's identity status paradigm: Does it foreshadow academic problems? *Journal of Youth and Adolescence*, 14, 527-538.

- Côté, J. E. (1996). Identity: A multidimensional analysis. In G. R. Adams, R. Montemayor, & T. P. Gullotta (Eds.), *Psychosocial development in adolescence: Advances in adolescent development* (pp. 130–180). Newbury Park: SAGE.
- Erikson, E. (1968). *Identity: Youth and crisis*. New York: W.W. Norton Company.
- Freud, S. (1926). Address to the society of B'nai B'rith. In J. Strachey (Ed.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 20, pp. 7–70). London: Hogarth Press.
- Grotevant, H. D., & Cooper, C. R. (1981). Assessing adolescent identity in the areas of occupation, religion, politics, friendships, dating, and sex roles: Manual for the administration and coding of the interview. *Journal Supplement Abstract Service Catalog of Selected Documents in Psychology*, 11, 52–53.
- Marcia, J. E. (1966). Development and validation of ego identity status. *Journal of Personality and Social Psychology*, 5, 551–558.
- Marcia, J. E. (1993). The ego identity status approach to ego identity. In J. E. Marcia, A. S. Waterman, D. R. Matteson, S. L. Archer, & J. L. Orlofsky (Eds.), *Ego identity: A handbook for psychosocial research* (pp. 1–21). New York: Springer-Verlag.
- Miller, A. (1958). *Death of a salesman*. New York: Viking.
- Schwartz, S. J. (2001). The evolution of Eriksonian and neo-Eriksonian identity theory and research: A review and integration. *Identity: An International Journal of Theory and Research*, 1(1), 7–58.
- van Hoof, A. (1999). The identity status field re-reviewed: An update of unresolved and neglected issues with a view on some alternative approaches. *Developmental Review*, 19, 497–556.

Identity Distinctiveness

- ▶ [Optimal Distinctiveness Theory](#)

Identity Versus Role Confusion

- ▶ [Ego Identity Versus Role Confusion](#)

Ideocentrism vs. Allocentrism

- ▶ [Individualistic Cultures](#)

Idiocentrism and Allocentrism

- ▶ [Individualism-Collectivism](#)

Idiographic Approach to Personality

- ▶ [Personology \(Murray\)](#)

Idiographic Personality

- ▶ [Temporal Dynamics](#)

Idiographic Study of Personality

Baptiste Barbot
 Department of Psychology, Pace University,
 New York, NY, USA
 Child Study Center, Yale University, New Haven,
 CT, USA

Synonyms

Dynamic systems; Idiothetic approach; Intraindividual structure and variation; N=1; Psychography; Single-case research design; Within-subject variability

Definition

In its primary meaning (Windelband formalization), the idiographic study of personality explores individual cases, their individuality and uniqueness as integrated people, rather than the commonalities between individuals associated with inferences and general theories that apply to the population level (i.e., nomothetic approach).

Introduction

To be qualified as idiographic, studies of personality should focus on describing themes and patterns of characteristics that are unique to an individual's life (regardless of method employed) and possibly predict future behaviors for that individual, rather than focusing on basic traits or underlying causes common to all people. Additionally, the idiographic approach refers primarily to a philosophical position or an "objective" to describe and explain an individual phenomenon (e.g., Robinson 2011), rather than referring to a specific method or set of methods. Since the fairly recent revival of the concept, the meaning of idiographic research is often inaccurately interpreted as an antonym of the concept of nomothetic research. Accordingly, idiographic research is thought to encompass a broad range of methods, such as the single-case design ($N = 1$ research), interviews, or the analysis of intensive repeated measurement data, to study intraindividual variability. These methods are often contrasted with classic quantitative methods representative of the nomothetic approach. Although they may all help to explain specific individual phenomena, they are not inherently idiographic or nomothetic. In fact, one of the most common interpretations of the idiographic approach refers to the study of intraindividual variability (e.g., Molenaar 2004), yet many studies of intraindividual variation are nomothetic studies because they attempt to decipher common trends or universal underlying mechanisms based on multiple person-specific variation patterns. Recent attempts, however, challenge the idiographic-nomothetic dichotomy by integrating both approaches conceptually and empirically (e.g., Epskamp et al. 2016).

Roots of the Idiographic Approach and the Idiographic Versus Nomothetic Debate

The concepts of "nomothetic" and "idiographic" were introduced by the German philosopher Windelband in the 1890s, with the intent to refer

to different forms of evidence-based knowledge and illustrate how universal theories are necessarily derived on the basis of single specimens, that is, how the "specific" (person) and the "general" (commonalities among individual cases) are complementary components of all science (e.g., Lamiell 2014; Robinson 2011; Valsiner 2016). Simply put, these concepts distinguish between people in general (nomothetic) and the person in particular (idiographic). The focus on individuality, also coined "psychographic approach," received strong support from influential psychologists of Windelband's era such as Cattell, Stern, or Binet, in a context of emerging empiricism where psychological findings (be it experimental or clinical) were still reported as single cases or series of case studies (e.g., Robinson 2011). Since then, there has been a growing misinterpretation of the concepts, now often treated as "irreconcilable opposites" (Valsiner 2016), which traces back to at least Thorndike (1911) who influentially equated the study of individuality with the (quantitative and statistical) study of individual differences (Lamiell 2013). This confusion was then unintentionally reinforced by Allport (1937), interpreting idiographic approaches as "case study research" (to thoroughly describe individual personalities in-depth), while defining nomothetic approaches as group-based methodology (Robinson 2011).

Since then, proponents of the nomothetic approach and "trait psychology" have often viewed idiographic research essentially as a non-scientific methodology, whereas proponents of the idiographic approach have often rejected the search for basic traits common to all people, on the grounds that population-based theories cannot be used to make valid inference about specific individuals (e.g., Lamiell 2013; Molenaar and Campbell 2009). For general conclusions to apply at the case level, strong statistical assumptions such as *ergodicity* (each specimen must be equally representative of the whole) must indeed be met (e.g., Molenaar 2004). Ergodicity, a process in which the structure of interindividual variations is equivalent to the structure of intraindividual variation, holds only under very rare conditions. For example, using

30 Big Five items repeatedly measured during 90 days among 22 cases, Molenaar and Campbell (2009) showed that, while standard factor analysis of interindividual variation was consistent with the Big Five model of personality (i.e., the structure of individual differences across the 30 items was best explained by five factors theoretically consistent with the Big Five model), none of the 22 cases' intraindividual structure of the 30-item variation over time was consistent with a five-factor solution (as captured by P-technique factor analysis of intraindividual variation). In other words, the Big Five model did not explain the structure of intraindividual variation in personality at the individual level: the intraindividual models differed by subject not only in the number of factors (none of the intraindividual structures yielded five factors) but also in their substantive meaning (i.e., subject-specific patterns of factor loadings).

Directions in the Idiographic Study of Personality

Idiographic approaches focusing on intraindividual variability analyze “occasions \times variables” data matrices obtained with limited number of cases and consider the person as the unit of analysis, while nomothetic approaches analyze “persons \times variables” data matrices on one or few measurement occasions with a focus on the group as the unit of analysis. Three main applications of the idiographic approach are currently prevalent in psychology (Barbot and Percec 2015): (a) the “single-case experimental design” grounded in experimental psychology and most often aiming to test intervention effects on a case-by-case basis; (b) the “scientific idiographic approach,” grounded in differential psychology and focusing on intraindividual variation of single-case time series; and (c) the “dynamic systems theory approach” which represents an individual state-space trajectory across nested temporal scales. These methods and related extensions have led to many applications and successful developments in the field of personality research.

A salient direction of the past decade is the increased effort to integrate nomothetic and idiographic approaches (Barlow and Nock 2009; Beltz et al. 2016; Epskamp et al. 2016) not only on a conceptual standpoint but also through new statistical techniques. For example, Epskamp et al. (2016) applied Gaussian graphical model (GGM) methodology to time series analyses of multiple subjects, to separate between-subjects effects as well as within-subjects temporal and within-subjects contemporaneous effects. Similarly, the Group Iterative Multiple Model Estimation (GIMME) method combines both idiographic and nomothetic focuses to analyze neural networks or behavioral time series data and derive person-specific maps that contain a group-level structure (Beltz et al. 2016). In an attempt to integrate interindividual and intraindividual structures, Voelkle and colleagues (Voelkle et al. 2014) outline strategies to control for basic factors that contribute to their non-ergodicity (e.g., mean differences, gender differences). Accordingly, controlling for those factors substantially increases the equivalence of interindividual and intraindividual structures. However, Voelkle and colleagues note that the more stable and trait-like the construct under investigation (such as personality), the less likely these constructs are to show ergodicity (sources of variation of intra- and interindividual structures will be increasingly different).

Together, these recent integrative attempts hold great promise for the field of personality research and, notably, developments into individualized assessment (Haynes et al. 2009) and the personalization of psychotherapy (e.g., Fisher and Boswell 2016).

Conclusion

According to the classic Windelband formalization, the idiographic study of personality aims to illuminate an individual case's characteristics (themes and patterns of behaviors that are unique to an individual's life) and is not relying on a specific method (e.g., qualitative vs. quantitative) nor does it focus on states rather than traits – the emphasis on intraindividual

variability may lead to that confusion – or in a “bottom-up” approach that would lead to making inferences at the population level (contrasting with classic nomothetic “top-down” approaches). There has been a long tradition of thought that has seen the idiographic and nomothetic approaches as antagonistic rather than complementary (Robinson 2011), but supported by advances in intensive longitudinal collection methods (e.g., phone-based experience sampling applications) as well as development in statistical techniques to process such data, it becomes increasingly evident that an idiographic lens can fundamentally augment the nomothetic study of personality.

Cross-References

- ▶ [Experience Sampling Methods](#)
- ▶ [Personology \(Murray\)](#)
- ▶ [Single-Case Research Design](#)
- ▶ [Stern, William](#)

References

- Allport, G. W. (1937). *Personality: A psychological interpretation*. New York: H. Holt and Company.
- Barbot, B., & Percec, C. (2015). New directions for the study of within-individual variability in development: The power of “N=1”. *New Directions for Child and Adolescent Development*, 2015(147), 57–67.
- Barlow, D. H., & Nock, M. K. (2009). Why can’t we be more idiographic in our research? *Perspectives on Psychological Science*, 4(1), 19–21.
- Beltz, A. M., Wright, A. G., Sprague, B. N., & Molenaar, P. C. (2016). Bridging the nomothetic and idiographic approaches to the analysis of clinical data. *Assessment*, 23(4), 447–458.
- Epskamp, S., Waldorp, L. J., Möttus, R., & Borsboom, D. (2016). Discovering psychological dynamics: The Gaussian graphical model in cross-sectional and time-series data. *arXiv Preprint arXiv:1609.04156*. Retrieved from <https://arxiv.org/abs/1609.04156>.
- Fisher, A. J., & Boswell, J. F. (2016). Enhancing the personalization of psychotherapy with dynamic assessment and modeling. *Assessment*, 23(4), 496–506.
- Haynes, S. N., Mumma, G. H., & Pinson, C. (2009). Idiographic assessment: Conceptual and psychometric foundations of individualized behavioral assessment. *Clinical Psychology Review*, 29(2), 179–191.
- Lamiell, J. T. (2013). Statisticism in personality psychologists’ use of trait constructs: What is it? How was it contracted? Is there a cure? *New Ideas in Psychology*, 31(1), 65–71.
- Lamiell, J. T. (2014). Nomothetic and Idiographic Approaches. In T. Teo (Ed.), *Encyclopedia of Critical Psychology* (pp. 1248–1253). New York: Springer. https://doi.org/10.1007/978-1-4614-5583-7_202.
- Molenaar, P. C. (2004). A manifesto on psychology as idiographic science: Bringing the person back into scientific psychology, this time forever. *Measurement*, 2(4), 201–218.
- Molenaar, P. C., & Campbell, C. G. (2009). The new person-specific paradigm in psychology. *Current Directions in Psychological Science*, 18(2), 112–117.
- Robinson, O. C. (2011). The idiographic/nomothetic dichotomy: Tracing historical origins of contemporary confusions. *History and Philosophy of Psychology*, 13(2), 32–39.
- Thorndike, E. L. (1911). *Individuality*. New York: Houghton-Mifflin.
- Valsiner, J. (2016). The Nomothetic Function of the Idiographic Approach: Looking from Inside out. *Journal for Person-Oriented Research*, 2(1–2), 5–15. <https://doi.org/10.17505/jpor.2016.02>.
- Voelkle, M. C., Brose, A., Schmiedek, F., & Lindenberger, U. (2014). Toward a unified framework for the study of between-person and within-person structures: Building a bridge between two research paradigms. *Multivariate Behavioral Research*, 49(3), 193–213.

Idiosyncratic

- ▶ [Eccentricity](#)

Idiothetic Approach

- ▶ [Idiographic Study of Personality](#)

Idioverse

Kassandra Cain and Steven M. Dunn
University of Central Oklahoma, Edmond,
OK, USA

Synonyms

[Kosmos](#); [Propriospect](#)

Definition

Idioverse is a term that represents the culmination or sum of one's personal and subjective experience and understanding of the world we live in.

Introduction

Many tenants of psychology contend that a stimulus elicits a response, some strictly while others less strict. For instance, behaviorists did not consider an individual's experiences as it pertained to the response, such as what motivated it. This large gap within the field was quickly filled by cognitive psychologists who explored a person's individual differences, made up by their personal experiences (Rosenzweig and Pratt 1951). The concept of studying a person's individual world and how it effects their responses brought about a new revelation.

Behaviorism vs. Cognition

It was once thought that due to innate processes, certain stimuli would cause certain responses. It was believed that these responses were simple reflexes to those stimuli. Within the field of behaviorism, Watson insisted that people's responses were the direct cause of the stimuli. This ensured that all variables could be measured sufficiently and objectively. This changed when cognitive psychology emphasized a growing need to look at mental processes. Psychologists believe that stimuli are not the only factor in a person's behavior. This encouraged other researchers to investigate mental processes such as emotion and motivation, to predict and account for individual behaviors (Rosenzweig and Pratt 1951).

Three-Circle Paradigm

The idioverse, being an individual person's perception or world, can easily be brought back to the three-circle paradigm. It is known within psychology that there are three large components that play

a role in an individual's personal being: phylogeny, ontogeny, and epistemology. Within the confines of phylogeny stands a person's genetic makeup. This means that a person's self-perception, decisions, and emotions can partly be attributed to one's genes. This is the biological predictor or personality or behavior. The ontogeny section focuses on a person's immediate social circle. This indicates that a person's immediate environment is also a factor in how a person behaves and thinks. While epistemology is also attributable to a social context, it becomes broader, extending to the culture surrounding a person and its effects on their behaviors and well-being. The totality of these three factors influence a person's perceptions as well as their actions. Individuals are different because of the different factors and experiences they have.

Society of Mind

The concept of idioverse can be extended into the theory of mind, which indicates that the human mind is a collective society of small, separate processes described as agents. These agents are individual from each other and when added together create the mind as a whole. To expand from the previous concept, a community consists of many individual people and experiences. These experiences, or idioverses, are combined to create a whole community. This indicates that diversity is imperative because it assists in creating as many different experiences to better understand the community as a whole (Minsky 1988).

Conclusion

An idioverse consists of a person's individual experiences that, when added together, create a person's own unique world. This world has the ability to influence a person's thoughts and behaviors. While certain stimuli can affect individuals, it is not simply the stimuli that have the ability to elicit a response; it can also be attributed to a person's past thoughts and experiences. This whole view of a person assists in elucidating the

individual differences that make our societies diverse (Rosenzweig 2004). Psychological understanding should maintain this understanding of the individual rather than only relying on expressions understood through “objective” measures. The crux of the problem of researching people regarding the Newtonian view of knowing through simplicity, generalizability, and verifiability is the loss of the variable human, or individual, in the equation (Rupp 2007).

References

- Minsky, M. (1988). *The society of mind*. New York: Simon & Schuster.
- Rosenzweig, S. (2004). Saul Rosenzweig’s purview: From experimenter/experimentee complementarity to idiodynamics. *Journal of Personality Assessment*, 82(3), 257–272.
- Rosenzweig, S., & Pratt, C. (1951). Idiodynamics in personality theory with special reference to projective methods. *Psychological Review*, 58(3), 213–223.
- Rupp, G. (2007). Constellation, uncertainty, and incompleteness: Towards a human(e) science. *The Journal of Scientific Psychology*, 32–46. October.

If-Then Behavioral Contingencies

Ayla X. Rubenstein and Heather K. Terrell
University of North Dakota, Grand Forks,
ND, USA

Synonyms

[Behavioral signatures](#); [Cognitive-affective model of personality](#); [If-then behavioral contingencies](#); [Personality signatures](#)

Definition

If-then behavioral contingencies are a way of understanding and explaining behavior. This framework gives precedence to the situation in which a behavior occurs rather than the personal-ity traits of individuals engaging in the behavior.

Introduction

Mischel and Shoda (1995) introduced a cognitive-affective personality theory to account for previously unacknowledged differences in behavior based on situational factors. A core component of this theory is the idea of *If...Then* behavioral contingencies. *If...Then* contingencies outline a general formula to explain how people’s actions vary based on differing situations. Rather than defining people based on their traits, *If...Then* contingencies are based on the simple that if x situation occurs, then y behavior is likely to result.

Background

The cognitive-affective model was introduced as an alternative to the popular trait theory first developed by Allport (1937). Trait theory asserts that an individual’s behavior is dependent upon underlying traits that permeate all situations and should thus lead to generally consistent behaviors. Mischel (1968) argued that trait theory failed to acknowledge the influence of situational factors on behavior.

Mischel (1968) argued that one of the greatest challenges in personality research is what he referred to as the *personality paradox* – the apparent discontinuity between people behaving inconsistently across situations, yet subjectively feeling like consistent, stable individuals. Mischel and Shoda (1995) later developed the cognitive-affective model of personality to account for previously unexplained differences in personality across situations. They argued that an individual’s perception of internal consistency is tied to the stability of *behavioral* or *personality signatures*, which are distinctive but stable patterns of *If...Then* behavioral contingencies.

Connections to Other Theories

Although it may seem as if trait theory and cognitive-affective theory are fundamentally incompatible, Mischel and Shoda (1995) point

out that many *If...Then* contingencies are stable over time. Others have suggested that both theories fit together to form a more inclusive theory of personality (Yang et al. 2014). This idea is similar to that proposed by Lewin (1936). Lewin presented a theory of human behavior – known as the Lewin Equation – in 1936 in his book, *Principles of Topological Psychology*. Lewin's equation is stated as $B = f(P, S)$, where P = person, S = situation, and B = behavior. In other words, Lewin argued that behavior is a function of the situation and person and that in order to predict and understand human behavior, one must first have knowledge about the person (enduring traits) as well as the situation in which the individual is presented with. Yang et al. (2014) expanded this idea to argue that another element to consider is the role of subjective explanations on the part of the target individual. The addition of explanations to this general framework takes into consideration the cognitive aspects that mediate the influence of the situation on behavior.

Applications

If...Then contingencies can be applied to a wide variety of situations. An understanding of these contingencies has been used to inform of interventions to enhance romantic relationships (Lydon et al. 2008) and to promote preventative health behaviors (Neter et al. 2014). This framework has also been used to observe and understand behavioral patterns in children (Pauletti et al. 2014) and adults (Smith et al. 2009).

One of the more famous applications of *If...Then* contingencies is related to delay of gratification. Mischel et al. (1989) studied young children's ability to delay gratification in return for a bigger reward via the "Marshmallow Task." Children were presented with a marshmallow and instructed that they could either eat it immediately with no extra reward or wait until the researcher returned to receive an additional marshmallow. Mischel and colleagues found that focusing on abstract features of a rewarding stimulus, as opposed to focusing on its concrete rewarding qualities, made it easier to delay gratification. They also found that

stable differences in self-control were observable at a young age and that the children who were able to delay gratification longer were more likely to achieve higher scholastic performance and cope better with frustration and stress later in life. Mischel and colleagues suggested that self-restraint for delayed gratification may have genetic roots but may also be learned and further enhanced in the form of *If...Then* contingencies.

Conclusion

In reflecting on how his 1968 seminal work on personality theory changed the course of psychological research, Mischel (2009) emphasized that not all situations have the same associations or evoke the same emotions for people. Mischel argued that these individual differences make people, their personalities, and their behavior unique from one another. An understanding of how particular situations interact with underlying traits to produce specific behaviors is the crux of the cognitive-affective model of personality and *If...Then* contingencies.

Cross-References

- ▶ [Allport, Gordon](#)
- ▶ [Cognitive-Affective Model of Personality](#)
- ▶ [Delay of Gratification](#)
- ▶ [Person × Situation Interaction](#)
- ▶ [Person-Situation Interactions](#)
- ▶ [Trait](#)

References

- Allport, G. W. (1937). *Personality; a psychological interpretation*. New York: Holt and Company.
- Lewin, K. (1936). *Principles of Topological Psychology*. New York: McGraw-Hill.
- Lydon, J. E., Menzies-Toman, D., Burton, K., & Bell, C. (2008). If-then contingencies and the differential effects of the availability of an attractive alternative on relationship maintenance for men and women. *Journal of Personality and Social Psychology*, 95, 50–65.
- Mischel, W. (1968). *Personality and assessment*. New York: Wiley.

- Mischel, W. (2009). From personality and assessment (1968) to personality science, 2009. *Journal of Research in Personality, 43*, 282–290.
- Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review, 102*, 246–268.
- Mischel, W., Shoda, Y., & Rodriguez, M. L. (1989). Delay of gratification in children. *Science, 244*(4907), 933–938.
- Neter, E., Stein, N., Barnett-Griness, O., Rennert, G., & Hagoel, L. (2014). From the bench to public health: Population-level implementation interactions in colorectal cancer screening. *American Journal of Preventative Medicine, 46*, 273–280.
- Pauletti, R. E., Cooper, P. J., & Perry, D. G. (2014). Influences of gender identity on children's maltreatment of gender-nonconforming peers: A person x target analysis of aggression. *Journal of Personality and Social Psychology, 106*, 843–866.
- Smith, R. E., Shoda, Y., Cumming, S. P., & Smoll, F. L. (2009). Behavioral signatures at the ballpark: Intraindividual consistency of adults' situation-behavior patterns and their interpersonal consequences. *Journal of Research in Personality, 43*, 187–195.
- Yang, Y., Read, S. J., Denson, T. F., Xu, Y., Zhang, J., & Pedersen, W. C. (2014). The key ingredients of personality traits: Situations, behaviors, and explanations. *Personality and Social Psychology Bulletin, 40*, 79–91.

If-Then Signatures

- ▶ [Situation-Behavior Signatures](#)

Illusion of Control

- ▶ [Positive Illusions](#)

Illusory Superiority

- ▶ [Self-Enhancement Bias](#)

Image

- ▶ [Dreams](#)

Imaginal Flooding

- ▶ [Flooding](#)

Imagination

Hannah Rachel Scott and Sophie von Stumm
Department of Psychology, Goldsmiths,
University of London, London, UK

Synonyms

[Absorption](#); [Daydreaming](#); [Fantasy](#); [Mental imagery](#); [Visualization](#)

Definition

Imagination refers to creating mental representations of concepts, ideas, and sensations in the mind that are not contemporaneously perceived by the senses. Imagination ranges from the re-creation of images or sensory perceptions in the mind that were previously seen or experienced in reality (i.e., reproductive imagination) to crafting images anew independent of prior actual sensory input (i.e., productive imagination).

Introduction

Imagination is both a cognitive process and a trait dimension of individual differences. With regards to the cognitive process, the functions of imagination range from filling the gaps in our perception of the world around us to taking other people's perspective to forecasting future outcomes for ourselves as well as others. When viewing imagination as a trait dimension of individual differences, all the cognitive process functions are considered, although the focus is on people's differences in imaginative behavior engagement, ranging from daydreaming to fantasizing to visualizing and re-creating information in the mind.

As a result of its many functions and behavioral implications, imagination emerges as a key variable for learning, because it carries into effect the transition from experience to conceptual knowledge.

Engaging in imaginative behaviors is not always voluntary, as is the case in many psychiatric disorders, in which the distinction between perception and imagination is blurred. For example, individuals with obsessive compulsive disorder (► [OCD](#)) have a heightened sensitivity to perceiving threats, which are essentially delusions but cause engaging in strict, ritualistic behaviors. Many severe psychiatric conditions are characterized by experiencing psychotic or hallucinogenic episodes, in which imagined sensory information like sounds and images become indistinguishable from real sensory input (DSM-5 2013). However, imagination per se refers to nonpathological mental activity rather than clinical conditions. Some philosophical and spiritual writers have suggested that imagination bridges the conscious, unconscious, and spirits, and that it is inherent to the success of various meditation and mindfulness techniques. In this perspective, imagination is a force that cautiously moves the individual away from reality and toward fantastical thinking, while intentional control is maintained over the images and concepts that form in the mind.

Differentiating the Construct Space of Imagination

The imagination construct space is commonly differentiated into productive and reproductive imagination. Reproductive imagination refers to the formation of previously experienced images or concepts, whilst productive imagination refers to the construction of novel images or concepts. However, this distinction of imagination has been challenged for two reasons. For one, the simple reproduction of images is likely to be associated with the ability to visualize rather with imagination. For the other, all imagination is inevitably in part reproductive because the creation of new images or ideas requires the initial input of some sensory information. In other words, no imagination occurs and develops in a vacuum.

Imagination and Creativity

Imagination is often mentioned in the same breath as creativity, as if they described the same psychological faculty. Alas, they do not. ► [Creativity](#) is defined as the production of something novel and useful (Sternberg and Lubart 1996), while imagination refers to the creation of mental representations of things not concurrently present to the senses (see above). It follows that imagination is a prerequisite of creativity, which will not occur without imagination. By contrast, imagination does not guarantee that creativity will occur or that any kind of output or product will be achieved. Imagination only occurs within the mind and no directly observable manifestation follows. As a consequence, quantifying imagination is even more difficult than quantifying creativity, which can be directly and objectively observed in terms of creative achievement.

Imagination and Intelligence

Although both are thought to be positively related to learning achievement, imagination and intelligence have long been understood to be at least distinct, if not separate entities. Francis Galton (1880) conducted the first psychological study in history on individual differences mental imagery, where he sought to "...define the different degrees of vividness with which different persons have the faculty of recalling familiar scenes under the form of mental pictures, and the peculiarities of the mental visions of different persons" (p. 301). Galton began "questioning friends in the scientific world, as they were the most likely class of men to give accurate answers concerning this faculty of visualising" (p. 301). He was astonished to find that his friends "protested that mental imagery was unknown to them" (p. 301). Galton proceeded to studying mental imagery in "general society," who – to his satisfaction – confirmed experiencing diverse mental imagery. To account for his findings, Galton argued that the ability to vividly visualize was a skill under voluntary control of the intellectually gifted, who were typically so absorbed by abstract thought that they rarely relied on visualizations. He concluded that "an over-readiness to perceive clear mental pictures" (p. 301) was antagonistic to higher

intelligence and thus that imagination was inherently a nonintellectual trait dimension.

McGeoch (1924) followed up Galton's work and tested the relationship between intelligence and imagination in a sample of "roughly 100 cases." He used inkblot, word-building, and linguistic ability tests to measure imagination and correlated the scores with the Army Alpha, a standard IQ test created to evaluate the intellectual functioning of American soldiers during World War I. Intelligence correlated moderately with the world-building test but not with the other two measures of imagination. Although the different imagination tests were only weakly inter-correlated and thus, likely to assess different constructs, McGeoch concluded that intelligence and imagination were separate domains.

► **Visualization** is likely to be a key concept for understanding the relationship between intelligence and imagination. Tests for visualization generally comprise of mentally rotating objects and are used as part of general intelligence measures (McGrew 2009). Similar to imagination being a predecessor of creativity, visualization may be an essential condition of imaginative thinking, although it does not imply the creation of novel or original images. However, the clarity and vividness of visualization are likely to vary as a function of intelligence or general cognitive ability rather than as a function of individual differences in imagination.

Assessing Individual Differences in Imagination

Imagination can be thought of as an ability, referring to an individual's maximum performance or what they can do. An alternative approach is to think of imagination in terms of typical performance, or what a person is most likely to do (► **Intelligence-Personality Associations**). Currently, no consensus has been achieved about the "correct" conceptualization of imagination. Accordingly, both ability- and trait-type measures coexist to assess individual differences in imagination, which are likely to capture different aspects of the imagination construct space.

Below, the tests of imagination most widely used in psychological science are discussed.

Openness to Experience Within the Five-Factor Model

According to its most popular measurement (NEO-PI-R; Costa and McCrae 1992), the Five Factor Model's dimension of openness to experience (► **Big-Five Model**) spans six facets, including fantasy, which is defined as receptivity to the inner world of imagination. Individuals who score high on fantasy have a vivid imagination and an active fantasy life, and they daydream not to escape but to create an interesting inner world for themselves. Presumably because of the measure's brevity (i.e., eight items), several aspects of imagination – for example, future scenarios or specific imaginative behaviors like having imaginative friends – are not assessed.

Vividness of Visual Imagery

The vividness of visual imagery questionnaire (VVIQ) is a self-report measure that tests the propensity to forming mental images (Marks 1973). Participants are asked to imagine four different scenarios, such as the rising sun, and rate the vividness of different elements of the image that they perceive. The VVIQ only assesses the visual aspect of imagination that is closely linked to visualization, which, as previously discussed, is not interchangeable with imagination. Although the VVIQ was frequently administered in psychological studies throughout the 1980s and 1990s, it is now mostly used as a benchmark measure in the development of other, more reliable and objective tests for imagination.

Measures of Absorption

Both the Creative Imagination Scale (Wilson and Barber 1978) and the Tellegen Absorption Scale (Tellegen and Atkinson 1974) were developed to assess imaginative suggestibility and individual differences in the susceptibility to being hypnotized. The Creative Imagination Scale uses a hypnotic script to get participants to imagine a series of scenarios and perceptual manipulations, such as increasing the temperature of their hand, before rating how similar they believe the imagined

experience is to reality. Unlike the VVIQ above, the Creative Imagination Scale relies on a variety of sensory inputs and does not focus exclusively on visualization. The Tellegen Absorption Scale assesses individual differences in the openness to absorbing and self-altering experiences, including the tendency to remove oneself mentally from the current reality. Overall, measures of absorption focus more on capturing individual differences in being captured within their mind rather than in creating mental representations of ideas, concepts, and previous sensory experiences.

Conclusions

A principal difficulty for studying imagination lies in its intrinsic nature and its dissociation from directly observable behaviors. As a result, an objective, reliable, and comprehensive measures of imagination are currently not available. Notwithstanding its challenges, the empirical study of imagination is readily justified by the theoretical relevance of imaginative behavior engagements for learning and cognitive function. Future research is needed to develop and apply new methods that will elucidate imagination and its nomothetic network.

Cross-References

- ▶ [Creativity](#)
- ▶ [Five Factor Model](#)
- ▶ [OCD](#)
- ▶ [Visualization](#)

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Publishing.
- Costa, P. T., & McCrae, R. R. (1992). Four ways five factors are basic. *Personality and Individual Differences*, *13*(6), 653–665.
- Galton, F. (1880). Statistics of mental imagery. *Mind*, *19*, 301–318.
- Marks, D. F. (1973). Visual imagery differences in the recall of pictures. *British Journal of Psychology*, *64*(1), 17–24.

- McGeoch, J. A. (1924). The relationships between three tests of imagination and their correlation with intelligence. *Journal of Applied Psychology*, *8*(4), 439.
- McGrew, K. S. (2009). CHC theory and the human cognitive abilities project: Standing on the shoulders of the giants of psychometric intelligence research. *Intelligence*, *37*(1), 1–10.
- Sternberg, R. J., & Lubart, T. I. (1996). Investing in creativity. *American Psychologist*, *51*(7), 677.
- Tellegen, A., & Atkinson, G. (1974). Openness to absorbing and self-altering experiences (“absorption”), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology*, *83*(3), 268.
- Wilson, S. C., & Barber, T. X. (1978). The creative imagination scale as a measure of hypnotic responsiveness: Applications to experimental and clinical hypnosis. *American Journal of Clinical Hypnosis*, *20*(4), 235–249.

Imbalance

- ▶ [Self-Discrepancies](#)

Imitation

- ▶ [Identification](#)

Immoral Behaviors

- ▶ [Seven Deadly Sins](#)

Immoral Thoughts

- ▶ [Seven Deadly Sins](#)

Immune System Responses to Stress

April Scott and Suzanne Segerstrom
University of Kentucky, Lexington, KY, USA

Introduction

Psychological stress is ubiquitous in human life. Perceptions of stress and stressful events are

known to influence the function of our immune system, and the field of psychoneuroimmunology seeks to understand that relationship. Although much is left to be understood about how psychological stressors such as caregiving can influence physical health through immune functioning, empirical evidence has made great progress in showing that exposure to stressful stimuli may lead to deleterious long-term effects in immune functioning that has implications for broader health outcomes such as disease risk and mortality.

Conceptualization of Stress

Stress can be conceptualized as anything that disturbs the body's normal physical or mental equilibrium. These stressors may trigger the "fight or flight" response of the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis. In early parts of human history, this physiological response would have been beneficial in helping one survive threats such as attacks by predators. Although "fight or flight" may still remain useful in some instances (e.g., during a natural disaster or combat), humans are not exposed to the same stressors that they were early in their evolutionary past.

Everyone experiences stress at various points throughout his or her life, whether it be physical (e.g., a wound) or psychological (e.g., an academic examination, a relationship breakup). Short periods of stress, also known as *acute stress*, can be beneficial. This stress response can provide the energy needed to get through situations such as examinations or a deadline at work. This type of stress can be induced in the laboratory through tasks such as mental arithmetic and public speaking, although the theoretical utility of these inductions is debatable given that they pose no actual threat to the person and therefore may not be true stressors (Kagan 2016). However, when stress becomes more persistent, or *chronic*, it can become detrimental to both one's psychological and physical health. More chronic stressors include things like caregiving for a spouse with dementia or living with disability after traumatic injury. Individuals often must restructure their

lives and identity to cope with chronic stressors, and this may lead to long-term detrimental effects in regards to health.

Overview of the Immune System

There are many ways to divide components of the immune system, but for the purposes of understanding the immune system's response to stress, it is useful to distinguish between *natural* and *specific* immunity. The *natural* immune response is characteristic of both lower-order (e.g., sponges) and higher-order organisms (e.g., mammals). It is a nonspecific response that can act quickly, over minutes to hours, when the immune system is challenged and works to contain the infection until the body can mount a full *specific* immune response, which may take up to several days. It is only present in higher-order organisms.

Cells Involved in Natural Immunity

Cells involved in *natural* immunity are nonspecific and therefore do not defend against any particular pathogen. The largest family of cells involved in the natural immune response are *granulocytes*, a special type of white blood cell. This group includes *neutrophils*, which are phagocytic cells (meaning they eat or *phagocytose* their targets) that work to remove invading organisms such as bacteria. *Macrophages* are phagocytic and also serve other functions, including the release of *pro-inflammatory cytokines* (e.g., tumor necrosis factor [TNF α] and interleukin-6 [IL-6]). These are a class of communication molecules that serve to induce broad changes on the organism in response to immune challenges (e.g., fever, wound healing). *Natural killer cells* are thought to be important in early stages of viral infections and in the removal of malignant self-cells (cancer cells). They recognize a lack of self-molecules on infected or malignant cells and lyse them by releasing toxic substances onto them.

Cells Involved in Specific Immunity

The *specific* immune response acts more slowly than the natural immune response, and it may take up to several days for a full response. Until that time, the body must rely on natural immunity. The

primary cell type involved in the specific immune response is *lymphocytes*, a subtype of leukocytes which have receptor sites on their cell surface that can bind only one molecular shape or *antigen*. During immune challenge, antigens will bind to these receptor sites and cause those lymphocytes to become activated. Then, during a process called *clonal proliferation*, these activated lymphocytes divide to create a population of cells with the same antigen specificity.

T and *B lymphocytes* are the main cells of the specific immune response. *T cells* include both *T-cytotoxic* and *T-helper* cells, and each performs a separate function. *T-cytotoxic* cells kill infected cells by lysing them with toxic substances, whereas *T-helper cells* manufacture pro-inflammatory cytokines and assist in upregulating the specific immune response. *B cells* are the major cells involved in the production of antibodies (*immunoglobulins*), which can perform numerous functions in the immune response.

Stress Effects on the Immune System

The effects of psychological stress on the immune system differ markedly between acute stress (e.g., laboratory stress) and more long-term, naturalistic stressors (e.g., examination periods, caregiving). Acute stress can be induced in the laboratory in numerous ways including public speaking, mental arithmetic, and remembering distressing events. Robust effects of this type of stressor in laboratory conditions have been found for increased circulating levels of the pro-inflammatory cytokines IL-6 and IL-1 β . This finding has been replicated in a variety of populations, including those with autoimmune disease such as rheumatoid arthritis and multiple sclerosis. Effects of induced cytokine production, in which cells are stimulated to produce cytokines outside the body, are unclear, as the existing research is inconsistent (Steptoe et al. 2007).

Acute stress can be characterized by a quick and marked increase in NK cell counts in peripheral blood, sometimes up to a 100% increase. A primary source of this influx of NK cells is a group of cells attached to the inner surface of

blood vessels. The migration of NK cells into circulation following acute stress may create an increase in circulating inflammatory markers (Steptoe et al. 2007). Evidence for NK migration following acute stress has been a major finding of meta-analyses of stress and immune parameters (Denson et al. 2009; Segerstrom and Miller 2004). Variables associated with imminent threat to the self or one's social status may result in the largest responses in NK cells (Denson et al. 2009).

The migration of NK cells from the vessel walls to the peripheral blood is consistent with the view that acute stressors such as those modeled in laboratory tasks cause immune cells to redistribute to the areas where they will be the most effective against this challenge (Segerstrom and Miller 2004). Broadly, this creates an upregulation of natural immunity and downregulation or brief suspension of specific immunity and relevant proliferative responses. This has been demonstrated in studies investigating emotional responses to acute stressors. Emotions that are associated with immediate threat (e.g., surprise or anticipation) were not related to increased total lymphocyte counts but resulted in the downregulation of T-lymphocyte and B-lymphocyte proliferative responses (Denson et al. 2009). Such a shift from specific to natural immunity might be beneficial in evolutionary terms, as it would allow for a quicker immune response to any tissue damage or infection.

The effects of longer-term, naturalistic stressors on the immune system are also associated with immunological changes. Brief, naturalistic stressors are time-limited and include challenges such as final examination week for college students. Unlike acute stressors, this type of stressor is not significantly associated with an increase of cells in peripheral blood. Rather, it induces a number of functional changes marked by downregulation of the production of cytokines characteristic of cellular immunity (such as IL-2) and upregulation of those associated with humoral immunity (such as IL-10). Aging may contribute to vulnerability to these changes in functional parameters (Segerstrom and Miller 2004). Other types of naturalistic stressors include stressful event sequences that include the sequelae of a

stressful event (e.g., loss of a spouse) and distant stressors (e.g., traumatic events that occurred in the past, such as childhood abuse). They have not been found to have consistent effects on immune parameters (Segerstrom and Miller 2004).

Chronic stressors include ongoing circumstances such as living with a disability after traumatic injury or caregiving for a spouse with dementia. Individuals do not know if or when the challenges produced by these stressors will cease and therefore often have to restructure their lives and identities. Like other naturalistic stressors, significant changes are not seen in the percentage of different kinds of immune cells in peripheral blood, but there are robust negative effects on almost all functional parameters, including slower and weaker natural and specific immune responses. Immune responses to chronic stress did not vary across age groups or sex (Segerstrom and Miller 2004).

These stress-related alterations in immune function may have implications for health. Chronic stress is thought to sensitize the immune response, leading to heightened responsiveness to subsequent challenge. Such persistent activation causes wear and tear of the immune system, eventually causing it to become less able to mount appropriate responses. Although a causal relationship has not been established, the empirical findings in this area strongly support that notion. Early life stress (e.g., poverty, maltreatment, and neglect) has been associated with higher basal levels of inflammatory markers such as circulating C-reactive protein (CRP; Coehlo et al. 2014). It is thought that psychological stressors such as caregiving for a spouse with dementia may have similar physiological effects as chronological aging and therefore may “accelerate” the aging of immune cells. Caregivers have lower lymphocyte proliferation and increased pro-inflammatory cytokine levels (Segerstrom and Miller 2004). They also show decreased antibody production after inoculation with the influenza vaccine (Kiecolt-Glaser et al. 1996). Chronic stress is also associated with impaired and slower wound healing (Walburn et al. 2009). Further, chronic exposure to stressors can enhance one’s risk for developing illnesses as well as exacerbate the

symptoms of current psychological and physical illness. For example, sustained cortisol activity during stress in individuals with irritable bowel syndrome has been associated with increases in gastrointestinal symptoms (Kennedy et al. 2014).

Conclusion

Psychological stress is omnipresent in human life and can alter immune function in several ways. Acute stressors, including those induced in the laboratory, cause the immune system to shift toward the natural immune response. This is evolutionarily beneficial because it allows one to mount a quick response, which is essential when facing imminent threats. Naturalistic stressors include those that are associated with real life challenges. Brief naturalistic stressors are those with a foreseeable end and result in shifts from cellular to humoral immune responses. Exposure to chronic stressors is thought to be most toxic (as compared with acute stressors), as it can sensitize and heighten the immune response to subsequent stressors. These long-term alterations may have implications for health outcomes including poorer wound healing, increased risk of developing infectious illnesses, as well as exacerbated symptoms in disorders such as irritable bowel syndrome (Kennedy et al. 2014).

References

- Coehlo, R., Viola, T. W., Walss-Bass, C., Brietzke, E., & Grassi-Oliveira, R. (2014). Childhood maltreatment and inflammatory markers: A systematic review. *Acta Psychiatrica Scandinavica*, *129*, 180–192.
- Denson, T. F., Spanovic, M., & Miller, N. (2009). Cognitive appraisals and emotions predict cortisol and immune responses: A meta-analysis of acute laboratory social stressors and emotion inductions. *Psychological Bulletin*, *135*(6), 823–853.
- Kagan, J. (2016). An overly permissive extension. *Perspectives on Psychological Science*, *11*, 442–450.
- Kennedy, P. J., Cryan, J. F., Quigley, E. M. M., Dinan, T. G., & Clarke, G. (2014). A sustained hypothalamic-pituitary-adrenal axis response to acute psychosocial stress in irritable bowel syndrome. *Psychological Medicine*, *44*, 3123–3134.

Kiecolt-Glaser, J. K., Glaser, R., Gravenstein, S., Malarkey, W. B., & Sheridan, J. (1996). Chronic stress alters the immune response to influenza virus vaccine in older adults. *Proceedings of the National Academy of Sciences*, *93*, 3043–3047.

Segerstrom, S. C., & Miller, G. E. (2004). Psychological stress and the human immune system: A meta-analytic study of 30 years of inquiry. *Psychological Bulletin*, *130*, 601–630.

Stephens, A., Hamer, M., & Chida, Y. (2007). The effects of acute psychological stress on circulating inflammatory factors in humans: A review and meta-analysis. *Brain, Behavior, and Immunity*, *21*, 901–912.

Walburn, J., Vedhara, K., Hankins, M., Rixon, L., & Weinman, J. (2009). Psychological stress and wound healing in humans: A systematic review and meta-analysis. *Journal of Psychosomatic Research*, *67*, 253–271.

Immunity from Blame

- ▶ [Claims \(Horney\)](#)

Immunoassays

- ▶ [Hormone Assays](#)

Immunological Assays

- ▶ [Hormone Assays](#)

Impaired Ability to Experience Desire

- ▶ [Anhedonia](#)

Impaired Ability to Experience Pleasure

- ▶ [Anhedonia](#)

Impaired Ability to Learn from Rewards

- ▶ [Anhedonia](#)

Impaired Ability to Pursue Rewards

- ▶ [Anhedonia](#)

Impaired Hedonic Impact

- ▶ [Anhedonia](#)

Impatience

- ▶ [Temperament](#)

Impett, Emily A.

Emily Impett
University of Toronto, Mississauga, Canada

Emily A. Impett is an associate professor of psychology at the University of Toronto Mississauga, Canada.

Her research applies and blends social psychological theories of close relationships and sexuality to understand when “giving” to a partner – both inside and outside of the bedroom – helps versus harms relationships.

Her research has been supported by grants from the National Institutes of Health, the Social Sciences and Humanities Research Council, the Ontario Ministry of Research and Innovation, the Canadian Institutes of Health Research, and the Canadian Foundation for Innovation. She has received several research awards, including the Sage Young Scholar Award from the Society of

Personality and Social Psychology, the award for Early Career Achievement from the International Association for Relationship Research, and the Caryl Rusbult Early Career Award from the Relationships Researchers Interest Group from the Society of Personality and Social Psychology. She is also a fellow of the Society of Personality and Social Psychology.

Educational Background

Dr. Impett earned her B.S. in psychology with honors from James Madison University in Virginia in 1997 where she worked under the mentorship of Dr. Arnold Kahn. She then completed her M.S. in psychology in 1998 and her Ph.D. in social psychology with a minor in measurement and psychometrics in 2004 – both from the University of California, Los Angeles – where she worked under the mentorship of Dr. Letitia Anne Peplau and Dr. Shelly Gable.

Professional Career

After earning her Ph.D., Dr. Impett worked as a postdoctoral fellow at the Center for Research on Gender and Sexuality at San Francisco State University from 2004 to 2007 under the mentorship of Dr. Deborah Tolman. She completed a second postdoctoral fellowship in the Institute for Personality and Social Research at the University of California Berkeley where she worked with Dr. Dacher Keltner and Dr. Oliver John to gain additional training in emotions and personality. In 2010, she joined the Department of Psychology at the University of Toronto Mississauga as an assistant professor and earned tenure as an associate professor in 2015. She has authored 70 publications in journals spanning a variety of disciplines such as *Psychological Science*, *Journal of Personality and Social Psychology*, *Journal of Personality*, *Social Psychological and Personality Science*, *Proceedings of the National Academy of Sciences*, *Personal Relationships*, *Archives of Sexual Behavior*, and more. She presently serves as a consulting editor at five journals including

Journal of Personality and Social Psychology, *Personality and Social Psychology Bulletin*, *Personal Relationships*, *Journal of Social and Personal Relationships*, and *Canadian Journal of Human Sexuality*.

Research Interests

Dr. Impett's research is centrally focused on understanding when and for whom "giving" in the context of close relationships helps and when it hurts. In their close relationships, people are motivated to give to others, and they do so in a variety of ways. For example, parents make huge sacrifices for their children, and people go to great lengths to help a romantic partner in need. Sometimes, people engage in sexual activity when they are not "in the mood" in order to please their romantic partner. Some of these acts of giving are made at considerable cost to the self. What motivates people to give in the face of personal costs? When is giving rewarding and when might good intentions backfire and potentially detract from the quality of relationships? How do people regulate the strong emotions they might feel when they sacrifice for others? Do some people enjoy giving more than others? To answer these questions, Dr. Impett conducts three main lines of research that draw upon theories of approach-avoidance motivation, emotion regulation and authenticity, and communal relationships. In all of her work, Dr. Impett is highly committed to the use of rich, ecologically valid methods – including experience sampling and longitudinal and dyadic methods – to understand how real-life giving and sacrifice shape people's emotional experiences and the quality of their close relationships.

Approach-Avoidance Motivation

Why do people give to others even when it is costly for themselves? In one line of research, Dr. Impett applies approach-avoidance theories of social motivation to understand what motivates people to give to or make sacrifices for close

others, as well as the personal and relationship consequences of giving in pursuit of different goals. Approach-avoidance motivational theory draws an important distinction between approach goals, which, in the context of relationships, involve pursuing positive experiences such as a partner's pleasure or increased intimacy, and avoidance goals, which involve averting negative experiences such as a partner's disappointment or relationship conflict. Dr. Impett's research has shown that behaviors motivated by approach goals promote positive emotions and relationship quality, whereas behaviors undertaken to avoid negative outcomes arouse negative emotions and can have harmful consequences for relationships.

Emotion Regulation and Authenticity

Sometimes negative emotions such as irritation, resentment, or even anger can arise when people give up what they personally want to benefit their partner. Because intense emotions are inherent to sacrifice, how people deal with or regulate these emotions may be crucial. What should people do when their actual emotional experience is incongruent with what they personally hope to feel or would like others to feel? Is it beneficial to try to conceal or suppress negative emotions in these situations? In some ways, suppressing emotions could be seen as an intuitive way to keep the peace and manage situations of conflicting interests in relationships. However, Dr. Impett's research has been crucial in showing that when people actively try to conceal their feelings about sacrifice from their partner or when they purposely try to amplify their positive emotions, they feel that they are not being authentic or "true to themselves," and these resulting feelings of inauthenticity detract from both partners' emotional experiences and feelings about the relationship.

Communal Relationships

Why do some people actually seem to enjoy making sacrifices? Many studies have now shown that receiving care or social support from others can be good for the self. However, a small but growing

body of research is beginning to show that giving care to others can paradoxically be rewarding for the person who provides care. In communal relationships – such as those with family members, romantic partners, and close friends – people provide care noncontingently, that is, they prioritize giving care to the person who needs it most and do not expect to be reciprocated for their efforts. Dr. Impett investigates the rewards that communally motivated individuals receive from giving to others, as well as the ways in which communal giving benefits relationships. Her work has shown that highly communal people are more willing to care for and make sacrifices for others, and that they do not give to others begrudgingly – they actually enjoy giving up their own interests to benefit a relationship partner. Her work has demonstrated the benefits of being communal in a variety of contexts – for example, for sacrifices made in daily life, when people "give" to their partner in the bedroom, and when parents care for their children.

Selected Bibliography

- Impett, E. A., & Peplau, L. A. (2003). Sexual compliance: Gender, motivational, and relationship perspectives. *Journal of Sex Research, 40*, 87–100.
- Impett, E. A., Gable, S. L., & Peplau, L. A. (2005a). Giving up and giving in: The costs and benefits of daily sacrifice in intimate relationships. *Journal of Personality and Social Psychology, 89*, 327–344.
- Impett, E. A., Peplau, L. A., & Gable, S. L. (2005b). Approach and avoidance sexual motivation: Implications for personal and interpersonal well-being. *Personal Relationships, 12*, 465–482.
- Impett, E. A., Sorsoli, L., Schooler, D., Henson, J. M., & Tolman, D. L. (2008a). Girls' relationship authenticity and self-esteem across adolescence. *Developmental Psychology, 44*, 722–733.
- Impett, E. A., Strachman, A., Finkel, E. J., & Gable, S. L. (2008b). Maintaining sexual desire in intimate relationships: The importance of approach goals. *Journal of Personality and Social Psychology, 94*, 808–823.
- Impett, E. A., Gordon, A., Kogan, A., Oveis, C., Gable, S. L., & Keltner, D. (2010). Moving toward more perfect unions: Daily and long-term consequences of approach and avoidance goals in romantic relationships. *Journal of Personality and Social Psychology, 99*, 948–963.
- Impett, E. A., Kogan, A., English, T., John, O., Oveis, C., Gordon, A., & Keltner, D. (2012). Suppression sours sacrifice: Emotional and relational costs of suppressing

- emotions in romantic relationships. *Personality and Social Psychology Bulletin*, *38*, 707–720.
- Impett, E. A., Muise, A., & Peragine, D. (2014). Sexuality in the context of relationships. In D. L. Tolman, L. M. Diamond, J. A. Bauermeister, W. H. George, J. G. Pfaus, & L. M. Ward (Eds.), *APA handbook of sexuality and psychology* (Vol. 1, pp. 269–315). Washington, DC: American Psychological Association.
- Kogan, A., Impett, E. A., Oveis, C., Hui, B., Gordon, A., & Keltner, D. (2010). When giving feels good: The intrinsic benefits of sacrifice in romantic relationships for the communally motivated. *Psychological Science*, *21*, 1918–1924.
- Le, B. M., & Impett, E. A. (2013). When holding back helps: Suppressing negative emotions during sacrifice feels authentic and is beneficial for highly interdependent people. *Psychological Science*, *24*, 1809–1815.
- Le, B. M., & Impett, E. A. (2015). The rewards of caregiving for communally motivated parents. *Social Psychological and Personality Science*, *6*, 758–765.
- Le, B. M., & Impett, E. A. (2016). The costs of suppressing negative emotions and amplifying positive emotions during parental caregiving. *Personality and Social Psychology Bulletin*, *42*, 323–336.
- Muise, A., & Impett, E. A. (2016). Applying theories of communal motivation to sexuality. *Social and Personality Psychology Compass*, *10*, 455–467.
- Muise, A., Impett, E. A., Kogan, A., & Desmarais, S. (2013). Keeping the spark alive: Being motivated to meet a partner's sexual needs sustains sexual desire in long-term romantic relationships. *Social Psychological and Personality Science*, *4*, 267–273.
- Muise, A., Stanton, S. C. E., Kim, J. J., & Impett, E. A. (2016). Men under (not over) perceive their romantic partner's sexual desire in established intimate relationships. *Journal of Personality and Social Psychology*, *110*, 725–742.

Implicit Association Test

Christian H. Jordan
Wilfrid Laurier University, Waterloo, ON, Canada

Synonyms

IAT

Definition

The Implicit Association Test (IAT) is a computer-based, response-mapping task that is designed to

measure the relative strength of implicit cognitive associations between four target concepts. Common applications of the IAT are for measuring implicit attitudes, prejudices, stereotypes, self-concept, and self-esteem. The IAT was developed by Greenwald, McGhee, and Schwartz in 1998 and is a widely used measure of implicit associations.

Introduction

The Implicit Association Test (IAT) was developed by Greenwald et al. (Greenwald et al. 1998) to measure implicit cognitive associations between target concepts. Drawing on evidence of distinct implicit and explicit memory systems, Greenwald and Banaji (1995) proposed that people may possess implicit attitudes, stereotypes, and self-esteem. These implicit constructs can be conceptualized, respectively, as strong cognitive associations between attitude objects and positive or negative evaluations (implicit attitudes), social categories and stereotypic attributes (implicit stereotypes), and the self- and positive or negative evaluation (implicit self-esteem).

Implicit associations may be activated unintentionally, may be difficult to control, and may operate largely without conscious guidance or awareness. Seeing an elderly person, for example, may automatically activate a positive or negative evaluative reaction (i.e., implicit prejudice toward the elderly). Such an association may be inaccessible (or only partially accessible) to introspection and so cannot be assessed directly by self-report. Accordingly, the IAT was developed as a computer-based, response-mapping task to assess the strength of one's implicit associations. It does not ask respondents to report their beliefs or attitudes; the strength of one's implicit associations, rather, is inferred from the speed with which participants complete the task.

The logic of the IAT may be illustrated through an analogy of sorting a deck of 52 playing cards into two piles rapidly (Greenwald and Farnham 2000). First imagine sorting hearts and diamonds into one pile and spades and clubs into another. This task should be relatively easy because these

suits are naturally associated by a common feature (color). Now imagine sorting diamonds and clubs into one pile and hearts and spades into another. This version of the task is likely to be more difficult and take longer because these suits are not so naturally associated for most people. Note, however, that this second task may differentiate individuals who play bridge from those who do not, because hearts and spades are associated in bridge by being the two higher-ranking suits. Bridge players may thus sort cards faster than non-bridge players when hearts and spades are paired together. The IAT uses similar logic to assess the strength of implicit cognitive associations.

Within an IAT, respondents sort stimuli (generally words or pictures), which appear sequentially on a computer screen, into categories as quickly and accurately as possible. Categorizations are made according to two pairs of contrasting categories, which represent two superordinate category dimensions. A series of stimulus exemplars are used to represent these categories. One category dimension, for example, may be represented by the category labels of “young” and “old,” with a series of photos of young and elderly individuals used to represent these categories. The other category dimension may be evaluative, with the category labels of “good” and “bad” being represented by words such as *vomit*, *party*, *gift*, and *holiday*. These two sets of categorizations are meant to be unambiguous and clear so that they are, individually, easy.

In the critical phases of the IAT, however, the two sets of categorizations are combined such that two category labels (one from each dimension) share a single response. In our example, in one critical phase, respondents would categorize “young” photos and “bad” words with one response (and “old” photos and “good” words with the other). In the other critical block, respondents would categorize “young” photos and “good” words with the same response (and “old” photos and “bad” words with the other). The extent to which a respondent is faster using one pairing than the other is taken to indicate the strength of their association of those concepts. In our example, being faster when “old” and “bad” are paired together (than when “old” and “good” are paired) reflects implicit prejudice against the elderly, relatively to younger individuals. (For

more detailed descriptions of IAT procedures, see Greenwald et al. 1998; Nosek et al. 2007).

The implicit associations measured by the IAT can be altered by changing the categorizations required of respondents. Using the categorizations of “Black” and “White” individuals and “good” and “bad” measures implicit prejudice toward Black individuals (relative to White individuals); using the categorization of “male” and “female” individuals and “assertive” and “unassertive” attributes measures the stereotype of males as more assertive than females; and using the categorization of “self” and “others” with “good” and “bad” evaluation measures implicit self-esteem. Many adaptations of the IAT have been developed and studied across a wide range of substantive research areas (see Nosek et al. 2007).

Psychometric Properties

The reliability and validity of the IAT depend significantly on the specific category labels and stimulus exemplars used in a specific adaptation. They depend on the psychological coherence of the underlying associations being assessed (whether they do, in fact, reflect associations contained in people’s mental representations), as well as the selection of category labels and exemplars (Nosek et al. 2007). The exemplars should be easy to categorize and clearly representative of the categories of interest. Exemplars should, moreover, be representative of *only* the categories they are intended to represent. An IAT intended to measure implicit attitudes toward women (relative to men), for example, could inadvertently assess racial prejudice if all of its female exemplars were Black and its male exemplars White. These issues notwithstanding the IAT have been widely studied in several specific adaptations, and some general comments about its reliability and validity can be made.

Reliability

The IAT generally demonstrates better reliability than other implicit measures of the same constructs (e.g., Bosson et al. 2000). With respect to internal consistency, the IAT often displays moderate to

high estimates of Cronbach's alpha and split-half reliability (ranging from 0.7 to 0.9; Greenwald and Nosek 2001). Test-retest reliability is less relevant for measures of constructs that vary widely from situation to situation. Although early theorizing about automatic processes emphasized their inflexibility and stability, it is now widely recognized that implicit associations are affected by context (e.g., Blair 2002; Dagsgupta and Greenwald 2001). Nevertheless, implicit associations assessed within the same context at different points in time should demonstrate stability. The IAT does display reasonably high test-retest reliability (median estimate = 0.56; Schmukle and Egloff 2005).

Validity

One indicator of a measure's validity is the extent to which it correlates highly with measures of the same construct. Different implicit measures of the same constructs, including the IAT, however often demonstrate low or nil correlations with each other (e.g., Bosson et al. 2000). These discouraging correlations may reflect, in part, the generally poor reliability of implicit measures (which limit the magnitude of observable correlations). Different implicit measures might also assess somewhat different cognitive processes (Nosek et al. 2007).

Correlations between implicit and self-report measures of the same construct are more variable. Early evidence demonstrated negligible correlations between the IAT and corresponding self-report measures (Greenwald et al. 1998). These low correlations may reflect the fact that people do not report their implicit associations because they are not fully aware of them or because they actively reject them (because they conflict with their beliefs or values). Other evidence, however, demonstrates that some IATs correlate highly with self-report measures of the same constructs (e.g., attitudes toward political candidates; Hofmann et al. 2005; Nosek et al. 2005). This may be particularly so when the IAT assesses attitudes that are not particularly socially sensitive. These findings thus provide some support for the construct validity of the IAT.

The construct validity of the IAT is also suggested by its predictive validity. Some meta-analyses suggest that the IAT can significantly predict relevant

behaviors, judgments, and physiological responses. IAT measures of prejudice, for example, were observed to be more predictive of discriminatory behavior than were self-report measures of the same prejudices (Greenwald et al. 2009). This conclusion, however, has been challenged on both conceptual and statistical grounds (e.g., Blanton et al. 2009). The predictive validity of the IAT in other domains, such as for self-esteem (Buhrmester et al. 2011), has been similarly challenged.

Other challenges to the validity of the IAT have been raised because some factors, which are presumed to be irrelevant to cognitive associations, affect IAT scores. Cognitive fluency (or individual differences in average speed of responding to reaction time tasks) is associated with smaller IAT effects (Greenwald et al. 2003). Respondent age (which is inversely related to cognitive fluency) is associated with larger IAT effects (Greenwald and Nosek 2001). The critical phase of the IAT that is completed first tends to bias IAT scores in favor of the association it represents. In studies where more than one IAT is completed, the number of IATs completed reduces the magnitude of IAT effects. The effect of these extraneous factors may be minimized by using the *D* scoring algorithm advocated by Greenwald et al. (2003) or by increasing the number of practice trials included in the IAT (Nosek et al. 2005). Other extraneous factors, such as salience asymmetries (i.e., the fact that IAT effects favor the association of the two most salient categories), may be more difficult to overcome (Rothermund and Wentura 2004).

It is thus generally accepted that the IAT can produce valid measurement, but its validity depends on the specific categories being measured and the exemplars used. The validity of particular adaptations of the IAT (e.g., to measure prejudice or self-esteem) remains contested.

The IAT as a Relative Measure of Associations

Perhaps the most significant procedural limitation of the IAT is that it requires two contrast categories to represent each nominal dimension (Greenwald et al. 1998; Nosek et al. 2007). To measure implicit prejudice toward Black individuals, for example,

requires a contrast category, typically White individuals. For this reason, the IAT measures the relative strength of associations. In our example, it would measure a preference for White individuals relative to Black individuals. For some research purposes, however, one might wish to measure the absolute strength of implicit attitudes toward Black individuals (independent of attitudes toward White individuals). For this reason, variants of the IAT have been developed to specifically assess associations to single categories, such as the Go/No-Go Association Task (Nosek and Banaji 2001) and the Single-Category IAT (Karpinski and Steinman 2006).

Conclusion

The IAT was developed to measure implicit associations that may be, at least partly, unavailable to introspection. It is a computer-based, response-mapping procedure that requires respondents to categorize stimulus exemplars according to two sets of contrasting categories. Common applications of the IAT are for measuring implicit attitudes, prejudices, stereotypes, self-concept, and self-esteem. Although the reliability and validity of the IAT depend on its specific adaptation (i.e., the specific categories being studied and the category labels and exemplars used to represent them), evidence suggests that the IAT can achieve reasonable reliability and validity. Its validity for assessing particular kinds of implicit associations, such as prejudice and self-esteem, however, has been challenged.

Cross-References

- ▶ [Implicit Attitudes](#)
- ▶ [Implicit Measures of Personality](#)
- ▶ [Implicit Self-Esteem](#)

References

Blair, I. V. (2002). The malleability of automatic stereotypes and prejudice. *Personality and Social Psychology Review*, 6, 242–261.

- Blanton, H., Jaccard, J., Klick, J., Mellers, B., Mitchell, G., & Tetlock, P. E. (2009). Strong claims and weak evidence: Reassessing the predictive validity of the IAT. *Journal of Applied Psychology*, 94, 567–582.
- Bosson, J. K., Swann, W. B., Jr., & Pennebaker, J. W. (2000). Stalking the perfect measure of implicit self-esteem: The blind men and the elephant revisited? *Journal of Personality and Social Psychology*, 79, 631–643.
- Buhrmester, M. D., Blanton, H., & Swann, W. B., Jr. (2011). Implicit self-esteem: Nature, measurement, and a new way forward. *Journal of Personality and Social Psychology*, 100, 365–385.
- Dagsgupta, N., & Greenwald, A. G. (2001). On the malleability of automatic attitudes: Combating automatic prejudice with images of admired and disliked individuals. *Journal of Personality and Social Psychology*, 81, 800–814.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4–27.
- Greenwald, A. G., & Farnham, S. D. (2000). Using the Implicit Association Test to measure self-esteem and self-concept. *Journal of Personality and Social Psychology*, 79, 1022–1038.
- Greenwald, A. G., & Nosek, B. A. (2001). Health of the Implicit Association Test at age 3. *Zeitschrift für Experimentelle Psychologie*, 48, 85–93.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, 74, 1464–1480.
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, 85, 197–216.
- Greenwald, A. G., Poehlman, T. A., Uhlmann, E. L., & Banaji, M. R. (2009). Understanding and using the implicit association test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology*, 97, 17–41.
- Hofmann, W., Gawronski, B., Gschwendner, T., Le, H., & Schmitt, M. (2005). A meta-analysis on the correlation between the implicit association test and explicit self-report measures. *Personality and Social Psychology Bulletin*, 31, 1369–1385.
- Karpinski, A., & Steinman, R. B. (2006). The single category implicit association test as a measure of implicit social cognition. *Journal of Personality and Social Psychology*, 91, 16–32.
- Nosek, B. A., & Banaji, M. R. (2001). The Go/No-Go Association task. *Social Cognition*, 19, 625–666.
- Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and using the implicit association test: II. Method variables and construct validity. *Personality and Social Psychology Bulletin*, 31, 166–180.
- Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2007). The implicit association test at age 7: A methodological and conceptual review. In J. A. Bargh (Ed.), *Automatic processes in social thinking and behavior* (pp. 265–292). New York: Psychology Press.

- Rothermund, K., & Wentura, D. (2004). Underlying processes in the implicit association test: Dissociating salience from associations. *Journal of Experimental Psychology: General*, *133*, 139–165.
- Schmukle, S. C., & Egloff, B. (2005). A latent state-trait analysis of implicit and explicit personality measures. *European Journal of Psychological Assessment*, *21*, 100–107.

Implicit Attitudes

Konrad Schnabel
International Psychoanalytic University, Berlin,
Germany

Introduction

Implicit attitudes can be defined as associations between social objects and positive or negative attributes that are accessible by the use of implicit measurement procedures without requiring introspective self-report (Greenwald et al. 2002). During the last three decades, social cognition research has made enormous progress with developing both reliable and valid measures of implicit attitudes (cf. Bar-Anan and Nosek 2014). The family of implicit attitude measures is composed of a variety of measurement instruments as diverse as the Implicit Association Test (IAT), Evaluative Priming Tasks, Affect Misattribution Procedure, and Approach-Avoidance Tasks. Many but not all of these procedures use response time latencies in order to assess the strength of evaluative associations. A core characteristic of the IAT and many other implicit measures is that they assess relative association strengths by contrasting speed of responses between two different combinations of two bipolarly opposed target and two bipolarly opposed attribute concepts (e.g., response latencies in the ingroup-good and outgroup-bad versus the ingroup-bad and outgroup-good blocks). As a consequence, the output of these measures cannot be interpreted as an indicator of absolute attitude strengths (e.g., in the sense of absolutely positive ingroup or absolutely negative outgroup attitudes). From a theoretical perspective, implicit and explicit attitudes can be linked to two different

ways of information processing (Gawronski and Bodenhausen 2011). Whereas implicit attitudes are conceptualized to tap into processes of association activation that are driven by principles of similarity and contiguity, explicit attitudes are referred to processes of propositional validation that are guided by principles of logical consistency.

Incremental Validity

Implicit measurement instruments as a complement to explicit self-assessment are especially relevant in socially sensitive domains where explicit self-reports can be distorted by self-presentation concerns as well as by introspective limits. Consistently, implicit attitude measures were shown to add incremental validity to the prediction of behavior over and above explicit measures especially in the domain of racial prejudices and intergroup attitudes (Greenwald et al. 2009). For instance, the predictive validity of the Black-White race IAT reached approximately $r = 0.20$ in recent meta-analyses (Greenwald et al. 2015). Even though this correlation is only small in terms of effect sizes, it may become a source of large societal consequences and produce considerable cumulative impacts on discrimination in various domains including personnel decisions, criminal justice decisions, educational decisions, and health-care decisions (Greenwald et al. 2015). Several studies showed that implicit as well as explicit attitudes can be changed based on suitable interventions (Lai et al. 2014). Dissociations between implicit and explicit attitudes can be measured already in infancy (e.g., Newheiser and Olson 2012). Similar to explicit attitude measures, implicit attitude measures are susceptible to faking instructions, but without detailed information about how to fake their results, faking effects on implicit attitude measures are considerably smaller than what can be observed for explicit attitude measures (e.g., Cvencek et al. 2010).

Conclusion

Future research should elucidate the various dynamic interactions between implicit and explicit attitudes and elaborate on underlying

cognitive mechanisms that are responsible for convergences and divergences between explicit and implicit measures as well as between different alternatives of implicit attitude measures (Gawronski and De Houwer 2014). Whereas many implicit measures show satisfactory internal consistencies, their test-retest reliabilities are surprisingly low (e.g., Bar-Anan and Nosek 2014). Because retest reliabilities are much lower than what is considered acceptable, implicit attitude measures should not be used for individual diagnosis in clinical assessments or job selection procedures. However, implicit measures are highly suitable to raise public awareness of implicit bias and prejudice against various social groups (e.g., groups of different ethnicity, gender, and age). Future research should try to develop alternative implicit attitude measures with better retest reliabilities or identify the reasons that cause the gap between internal consistency and retest reliability.

Cross-References

- ▶ [Unconscious Personality Processes](#)

References

- Bar-Anan, Y., & Nosek, B. A. (2014). A comparative investigation of seven implicit measures of social cognition. *Behavior Research Methods*, *46*, 668–688. <https://doi.org/10.3758/213428-013-0410-6>.
- Cvencek, D., Greenwald, A. G., Brown, A. S., Gray, N. S., & Snowden, R. J. (2010). Faking of the Implicit Association Test is statistically detectable and partly correctable. *Basic and Applied Social Psychology*, *32*, 302–314. <https://doi.org/10.1080/01973533.2010.519236>.
- Gawronski, B., & Bodenhausen, G. V. (2011). The associative-propositional evaluation model: Theory, evidence, and open questions. *Advances in Experimental Social Psychology*, *44*, 59–127. <https://doi.org/10.1016/B978-0-12-385522-0.00002-0>.
- Gawronski, B., & De Houwer, J. (2014). Implicit measures in social and personality psychology. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (2nd ed., pp. 283–310). New York: Cambridge University Press. <https://doi.org/10.1017/CBO9780511996481>.
- Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., & Mellott, D. S. (2002). A unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review*, *109*(1), 3–25. <https://doi.org/10.1037/0033-295X.109.1.3>.
- Greenwald, A. G., Poehlman, T. A., Uhlmann, E. L., & Banaji, M. R. (2009). Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology*, *97*, 17–41. <https://doi.org/10.1037/a0015575>.
- Greenwald, A. G., Banaji, M. R., & Nosek, B. A. (2015). Statistically small effects of the Implicit Association Test can have societally large effects. *Journal of Personality and Social Psychology*, *108*, 553–561. <https://doi.org/10.1037/pspa0000016>.
- Lai, C.K., Marini, M., Lehr, S. A., Cerruti, C., Shin, J.E., Joy-Gaba, J.A., . . . , Nosek, B.A. (2014). Reducing implicit racial preferences: I. A comparative investigation of 17 interventions. *Journal of Experimental Psychology: General*, *143*, 1765–1785. <https://doi.org/10.1037/a0036260>.
- Newheiser, A., & Olson, K. R. (2012). White and Black American children’s implicit intergroup bias. *Journal of Experimental Social Psychology*, *48*, 264–270. <https://doi.org/10.1016/j.jesp.2011.08.011>.

Implicit Beliefs About Intelligence

- ▶ [Implicit Theories of Intelligence](#)

Implicit Cognition

- ▶ [Unconscious Personality Processes](#)

Implicit Egotism

Brett Pelham
Montgomery College, Montgomery County,
MD, USA

Definition

Implicit egotism refers to an unconscious preference for things that resemble the self. Just as people named Mark or Michelle may prefer M&Ms over other equally delicious candies, they may also prefer each other, as friends or

marriage partners. Implicit egotism applies to a wide variety of decisions including product preferences, career decisions, choice of a street address, workgroup productivity, and romantic attraction (Pelham and Carvallo 2015; Polman et al. 2013; Stieger 2010).

Introduction

Research on implicit egotism builds on research showing, for example, that most people prefer the letters in their own first or last name, or the numbers in their birthdays, over other letters or numbers (e.g., see Nuttin 1985). Along similar lines, research on the mere ownership effect has shown that as soon as we receive an object as a gift, we consider the object more valuable than usual. A pen, mug, or painting is worth more than usual to the person who just became its owner. Research also shows that the mere ownership effect is stronger than usual when people have recently experienced a mild self-concept threat (Beggan 1992). Even generic pronouns associated with the self are evaluated very favorably. Words such as “I” or “me” lead to a more positive automatic response than equally common words such as “it” or “they” (Perdue et al. 1990). Finally, we like other people more than usual when they either mirror our non-verbal behavior or speak in ways that resemble our own speaking style (e.g., see Chartrand and Bargh 1999). Research on implicit egotism integrates all of these distinct phenomena by suggesting that they all reflect the highly favorable implicit associations that most people have about themselves.

Early research on implicit egotism focused mainly on people’s choices of careers and places of residence. Thus, Pelham et al. (2002) showed that whereas people named Dennis tended to gravitate toward dentistry, people named Lawrence tended to gravitate toward law. They also showed that people seem to gravitate toward states and cities that resemble their own first or last names. Jones et al. (2004) extended this logic to interpersonal attraction. In both experimental and archival research they found that people were more attracted than usual to others who had names or birthday numbers that resembled people’s own

names or birthday numbers. In one experiment, Jones et al. (2004) classically conditioned people to like a 2-digit number by repeatedly pairing it with people’s own full names. Later people had to evaluate a woman whose jersey number did or did not match this specific number. People rated the woman more favorably when her jersey number happened to have been the one that had been paired with their own names. Implicit egotism has been documented in many other settings and for a wide variety of judgments. For example, Chandler et al. (2008) showed that people were more likely than usual to donate money to hurricane relief efforts when the hurricane that had hit a particular area began with the same letter as their own first name (e.g., people named Ken, Karen, or Katrina were more likely than usual to donate money to victims of hurricane Katrina).

Critics of research on implicit egotism have argued that implicit egotism may have more to do with ethnic or economic confounds than with an unconscious preference for the self. According to this argument, Johnsons marry Johnsons more often than they marry Smiths because Johnson is a more common name than Smith is among African-Americans. Although laboratory experiments on implicit egotism would seem to address such concerns, it is conceivable that implicit egotism is such a small effect that it has little punch in the field.

The release of detailed US Census data in 2013 made it possible to address these criticisms in a highly rigorous way. Pelham and Carvallo (2015) showed that for every male occupation that also happened to double as a common surname (e.g., Baker, Carpenter, Foreman, Miller, Painter) men were overrepresented in that occupation when it happened to be their exact surname (despite a roughly 500-year gap between the evolution of these surnames and the timing of these career decisions). Further, Pelham and Carvallo showed that these effects held up even when they controlled for both ethnicity and education (in case some ethnic groups disproportionately held jobs that matched surnames that were more common than usual in their ethnic group). In another study set, Pelham and Carvallo showed that men named Cal and Tex disproportionately moved to the US states that resembled their own first names. They also found

that in comparison with men who had not gravitated toward the state that resembled their names, those who did so had elevated name–letter liking (e.g., Cals who had moved to California liked the letter C more than Cals who had moved to Texas). Finally, they showed that implicit egotism applies to birthday number preferences and marriage. People were disproportionately likely to get married if they and their potential spouse shared either their birth month or their birthday number. Unlike surnames, birthday months do not vary with ethnicity. Thus, it is very difficult to chalk up this effect to ethnic matching.

Finally, laboratory research on implicit egotism shows that implicit egotism grows stronger than usual after a mild self-concept threat. For example, Jones et al. (2004) found that men were especially likely to be attracted to a woman whose last name ostensibly resembled their own after they had just been asked to think about their personal flaws as a dating partner. In keeping with other studies of implicit and explicit self-regulation, findings such as these suggest that implicit egotism really is grounded in self-evaluation. The tendency to love things that resemble the self seems to grow stronger than usual once the integrity of the self has just been challenged.

Conclusions

There are several important implications of research on implicit egotism. First, this research suggests that self-concept processes influence a wide array of personal decisions. Second, because laboratory research suggests that implicit egotism can truly be implicit (i.e., unconscious), this research suggests that people are not always aware of the true basis of important life decisions. We may not have nearly as much free will as we like to imagine.

Cross-References

- ▶ Classical Conditioning
- ▶ Implicit Self-Esteem
- ▶ Self-Appraisals
- ▶ Self-Enhancement Bias
- ▶ Self-Regulation

References

- Beggan, J. K. (1992). On the social nature of nonsocial perception: The mere ownership effect. *Journal of Personality and Social Psychology*, *62*, 229–237.
- Chandler, J., Griffin, T. M., & Sorensen, N. (2008). In the “I” of the storm: Shared initials increase disaster donations. *Judgment and Decision making*, *3*, 404–410.
- Chartrand, T. L., & Bargh, J. A. (1999). The chameleon effect: The perception-behavior link and social interaction. *Journal of Personality and Social Psychology*, *76*, 893–910.
- Jones, J. T., Pelham, B. W., Carvallo, M., & Mirenberg, M. C. (2004). How do I love thee? Let me count the Js: Implicit egotism and interpersonal attraction. *Journal of Personality and Social Psychology*, *87*, 665–683.
- Nuttin, J. M., Jr. (1985). Narcissism beyond Gestalt and awareness: The name letter effect. *European Journal of Social Psychology*, *15*, 353–361. <https://doi.org/10.1002/ejsp.2420150309>.
- Pelham, B. W., & Carvallo, M. R. (2015). When Tex and Tess Carpenter build houses in Texas: Moderators of implicit egotism. *Self and Identity*, *14*, 692–723.
- Pelham, B. W., Mirenberg, M. C., & Jones, J. K. (2002). Why Susie sells seashells by the seashore: Implicit egotism and major life decisions. *Journal of Personality and Social Psychology*, *82*, 469–487.
- Perdue, C. W., Dovidio, J. F., Gurtman, M. B., & Tyler, R. B. (1990). Us and them: Social categorization and the process of intergroup bias. *Journal of Personality and Social Psychology*, *59*, 475–486.
- Polman, E., Pollmann, M. M. H., & Poehlman, T. A. (2013). The name-letter effect in groups: Sharing initials with group members increases the quality of group work. *PLoS One*, *8*(11), 7.
- Stieger, S. (2010). Name-letter branding under scrutiny: Real products, new algorithms, and the probability of buying. *Perceptual and Motor Skills*, *110*, 1089–1097.

Implicit Knowledge

- ▶ Unconscious Personality Processes

Implicit Learning

- ▶ Incidental Learning

Implicit Measures

- ▶ Thematic Apperception Test

Implicit Measures of Personality

Marco Perugini, Juliette Richetin and
Giulio Costantini
University of Milano-Bicocca, Milan, Italy

Synonyms

Implicit personality; Implicit self-concept; Indirect measure of personality

Definition

Implicit measures of personality that for reasons addressed below could be better named indirect are used to reflect the relation between “self” and a given personality feature and allow to infer one’s implicit self-concept indirectly from behavioral responses in specifically designed computer tasks instead of relying on a direct self-assessment. Hence, they can provide information about personality aspects that people may be unable or unwilling to report when asked directly and have demonstrated predictive validity of relevant criteria, especially under certain conditions (De Cuyper et al. 2017; Greenwald et al. 2009; Perugini et al. 2010).

Introduction

The most common way to measure personality is via self-report. Basic personality structures such as the Big Five (McCrae and Costa 2008) and the Big Six (Ashton et al. 2004) are based on direct self-report measures, that is, by asking people about some aspects of their personality such as how frequently they act in a certain way or what kind of reactions they have in a certain context. Despite the many advantages of personality self-reports (e.g., ease of administration, flexibility) and cumulated evidence concerning their validity (e.g., Ozer and Benet-Martínez 2006), there is shared awareness that people are sometimes unwilling or unable

to provide accurate reports of their own personality. Another less common but still popular way to measure personality is by using peer reports, the main difference being that this time the source of information is someone else, typically one or more well-acquainted individuals. Although these measures suffer less from introspective biases, self-presentational tendencies, and social desirability (Vazire and Carlson 2011), their validity for personality assessment is not unequivocally superior to self-reports, nor should they be seen as substitute for the latter (Paunonen and O’Neill 2010) especially when trait observability is low and the focus is on self-concepts. During the last two decades, starting from the seminal work of Greenwald et al. (1998), another way of measuring the self-concept of personality has been developed that reduces participants’ ability to control their responses, and it is less reliant on introspection, hence reducing the potential biases recalled above. These types of measures are commonly referred to as implicit or indirect, in contrast with traditional self-reports that can be described as explicit or direct.

Implicit Versus Indirect

The implicit versus indirect issue has been frequently addressed (e.g., Gawronski and De Houwer 2014; Perugini et al. 2015), and a certain consensus seems to have emerged in recent years. On the one hand, implicit refers to the way by which a psychological attribute influences measurement outcomes if this influence is unintentional, resource-independent, unconscious, or uncontrollable. It does not refer to the measurement procedure itself or the underlying psychological construct. On the other hand, indirect refers to measurement procedures when the measurement outcome is not based on a direct assessment of the to-be-measured attribute (e.g., conscientiousness is inferred from reaction times to a categorization task containing stimuli related to the trait and to the self). Therefore, an indirect measure is a task that reflects the to-be-measured construct through automatic processes that operate in the relative absence of awareness, intention, cognitive resources, or time (Gawronski and De

Houwer 2014). This type of measures have thus the potential to tap into aspects of the self that are not, fully or partially, accessible through introspection or willing to be disclosed.

Self-Concept

Indirect measures for personality research rely on the self-concept. Self-concepts are defined at an abstract level and incorporate summary beliefs about oneself (e.g., outgoing) instead of contextualized specific behavioral episodes (e.g., being the first to start a conversation with strangers during a party). These beliefs become connected over time to one's self-representation (see Back et al. 2009, for a model of how this can happen). The content of these personality-related beliefs can range from motivational to gender identity, among others. Although a compelling case could be made that they are all related to personality in a broader sense provided that they refer to relatively stable aspects of the individual (Baumert et al. 2017), for pragmatic reasons we will consider here only personality traits and self-esteem. With this restriction in mind, we can define therefore the self-concept of personality as a collection of attributes (i.e., stimuli) describing relatively stable personality traits (i.e., categories) that are paired with the concept of the self. Examples of stable personality traits are broad traits such as the Big Five or Big Six or narrower traits such as anxiety or aggressiveness. The most commonly used attributes are personality-descriptive adjectives (e.g., threatening), but they can also be other types of words, such as verbs (e.g., to threaten). When the attributes refer to a general valence dimension (e.g., positive vs. negative), we talk about self-esteem. When the assessment method is direct and aims at capturing one's knowledge about oneself, we refer to as a measure of explicit self-concept, whereas when it is indirect and aims at reflecting one's automatic beliefs about oneself, we refer to as a measure of implicit self-concept. Note that we explicitly avoided using the term "associations" in contrast with standard definitions in the field. The reason is that recent theorizing and empirical evidence suggest that what are commonly called

associations might in fact be also the result of the automatic activation and formation of propositions (see De Cuyper et al. 2017). It seems important therefore to use the more neutral term beliefs instead of associations and to leave as an empirical question whether automatically activated beliefs include also relational qualifiers (e.g., I am) instead of assuming that they are associations, hence by definition without relational qualifiers (De Houwer 2014).

Paradigms

Several indirect measurement tasks have been used to measure specific or broad implicit self-concepts of personality and implicit self-esteem. Table 1 reports a list of tasks with examples of research applications. We provide procedural and validity details for some of them.

The most frequently used paradigm to assess the implicit self-concept of personality is Greenwald et al.'s (1998) IAT (see De Cuyper et al. 2017). The IAT is a classification task during which words appearing one by one in the middle of a computer screen are assigned to four categories – two attribute categories (e.g., moral vs. immoral) and two target categories (e.g., self vs. others) – by pressing one of two keys, as fast and accurately as possible. There are usually five different tasks starting with a single classification block of attributes (i.e. moral vs. immoral) and a single classification block of targets (i.e. self vs. others), then one critical block, a reverse classification block of targets (i.e. others vs. self), and finally a second critical block. During the critical blocks, one target and one attribute category (e.g., moral and self) are classified with one key, and the other two categories (e.g., immoral and others) are assigned to the other response key. The key assignments of the categories vary between the two critical blocks. The underlying principle of the IAT is that if an individual's one's automatic beliefs about him-/herself have more to do with morality rather than with immorality, he/she will perform better (faster and more accurate responses) in the critical block in which moral and self-stimuli are classified with the same key

Implicit Measures of Personality, Table 1 Main indirect personality measurement tasks

Tasks	Examples
Implicit Association Test (IAT; Greenwald et al. 1998)	Self-esteem (e.g., Bosson et al. 2000)
	Shyness (e.g., Asendorpf et al. 2002)
	Big Five dimensions (e.g., Schmukle et al. 2008)
Single Category IAT (SC-IAT; Karpinski and Steinman 2006)	Perfectionism (e.g., De Cuyper et al. 2013)
Brief Implicit Association Test (BIAT; Sriram and Greenwald 2009)	Self-esteem (e.g., Krause et al. 2011)
Extrinsic Affective Simon Task (EAST; De Houwer 2003)	Shyness, anxiousness, and angeriness (Teige et al. 2004)
Implicit Association Procedure (IAP; Schnabel et al. 2006)	Shyness (e.g., Schnabel et al. 2006)
Go/No-Go Association Task (GNAT; Nosek and Banaji 2001)	Big Five dimensions (Boldero et al. 2007)
Semantic Misattribution Procedure (SMP; Sava et al. 2012)	Conscientiousness, neuroticism, and extraversion (Sava et al. 2012)
Irrelevant Feature Task (IFT; Huntjens et al. 2014)	Self-control (Huntjens et al. 2014)
Implicit Relational Assessment Procedure (IRAP; Barnes-Holmes et al. 2006)	Actual vs. ideal self (e.g., Remue et al. 2014)

than in the critical block in which immoral and self-stimuli are classified with the same key. The difference in performance (errors and reaction time) between the two critical categorization tasks is reflected in a D-score (Greenwald et al. 2003).

Although far from being systematic, evidences of validity for the self-concept IATs are present in many research. Schmukle et al. (2008) validated the five personality factor structure at the implicit level using the IAT, demonstrating a structural equivalence between implicit and explicit measures. Asendorpf et al. (2002) showed that a shyness IAT uniquely predicted spontaneous but not deliberate behavior, whereas self-reports uniquely predicted deliberate but not spontaneous behavior (double dissociation pattern; for other examples of

patterns of prediction, see Perugini et al. (2010)). Few variants of the IAT have also been used to study aspects of the self-concept of personality. For example, the Single Category IAT (SC-IAT; Karpinski and Steinman 2006), in which only one attribute category is assessed, is useful for concepts that do not have a natural opposite such as perfectionism (e.g., De Cuyper et al. 2013). The Brief IAT (BIAT; Sriram and Greenwald 2009) that is a third shorter than the standard IAT in terms of trials and allows focusing on just two of the four IATs' category-response mappings in each combined task has been used to assess implicit self-esteem (e.g., Krause et al. 2011).

Schnabel et al. (2006) developed the IAP to assess the implicit personality self-concept of shyness. Participants pushed a joystick toward or away from oneself dependent on whether a stimulus had to be paired with me or not me. Similar to the IAT, the IAP combined attribute discriminations (shy vs. non-shy) with target discriminations (me vs. not me). However, unlike in the IAT, only the me label was present on the screen, not me describing the non-self-relevant alternatives and allowing thus the assessment of beliefs with unipolar concepts. Participants first discriminated, as quickly and accurately as possible, me and not me words; then, with the addition of shy and non-shy words, they had to pull them toward or push them away from themselves, respectively (combined block 1); and, finally, shy and non-shy words responses were reversed (combined block 2). Error feedbacks were given in case of incorrect, too slow, or too fast responses. The IAP score was the difference in reaction times between the two combined blocks. The IAP showed satisfactory internal consistency and correlated with a shyness IAT and with explicit shyness. However, a double dissociation pattern where indirect measures predicted spontaneous and direct measures predicted controlled behavior (Asendorpf et al. 2002) could not be replicated.

Among the other measures, the EAST (De Houwer 2003) was adapted by Teige et al. (2004) to assess shyness, anxiousness, and angeriness together with IATs and direct self-ratings. In a first block, participants had to discriminate, as quickly and accurately as possible, the white stimuli of the category Others vs. Me by pressing two

keys, thus defining an “Others-key” and a “Me-key.” In a second block, participants had to discriminate colored attribute stimuli (shy vs. non-shy, anxious vs. secure, and angry vs. self-controlled) according to their color (blue vs. green) but by pressing the same left “Others-key” or right “Me-key.” The tasks were combined in two test blocks. The EAST showed low internal consistencies and correlated neither with the IATs nor with the direct measures.

Huntjens et al. (2014) elaborated the Irrelevant Feature Task used for assessing the implicit self-concept of self-control. Each trial was preceded by a 1,500 ms prime “I am” vs. “Others are.” After a fixation cross of 500 ms, the stimulus was displayed. The stimuli consisted of self-control congruent words (e.g., controlled, calm) and self-control incongruent words (e.g., chaotic, impulsive). Participants had to answer orally and as fast as possible “Yes” (vs. “No”) to uppercase letters and “No” (“Yes”) to lowercase letters. The relationship between relevant feature (i.e., upper or lower case) and relevant response (“Yes” or “No”) was counterbalanced across participants. Response latencies were recorded through a voice key and errors by a research assistant. Although the evidence was obtained on a small sample, the IFT showed predictive validity for spontaneous self-control behavior.

With the Semantic Misattribution Procedure, Sava et al. (2012) assessed the implicit personality self-concept related to conscientiousness, neuroticism, and extraversion. Each trial was structured with a sequence of a 200 ms prime, a 125 ms mask, a 200 ms neutral Chinese pictograph, and a gray rectangular noise pattern until the participant responded. Participants indicated whether they would like each Chinese character to be printed on a personalized T-shirt by responding “Fits me” or “Does not fit me.” Descriptors for each pole of each trait were used as primes. A SMP score was obtained by summing “fits” responses to high conscientiousness (neuroticism) primes and “does not fit” responses to low conscientiousness (neuroticism) primes. Results showed good convergent validity of the SMP scores with self-reports and predictive validity for both self-reported and objective behaviors.

Boldero et al. (2007) used the GNAT (Nosek and Banaji 2001) to assess Big Five dimensions (neuroticism, extraversion, openness, agreeableness, conscientiousness) using idiographically generated roles. The extraversion/introversion GNAT had two blocks, one in which the target categories were “self” and extraversion whereas in the other they were “self” and introversion. The distractor terms were “not self” roles and alternate personality terms (i.e., introversion terms for the self-extraversion block). For each of the single Big Five factors, there was only one block in which the target categories were “self” and the to-be-measured trait and the distractor categories were “not self” roles and the alternate personality traits (i.e., terms from the other four traits). Participants had to press the spacebar as quickly as possible (response window of 700 ms) if the term belonged to a target category or do nothing if it did not. They received performance feedback. Split-half reliabilities of the d' and D indices were adequate. Implicit extraversion, openness, and agreeableness predicted their respective explicit measures.

Remue et al. (2014) adapted the IRAP (Barnes-Holmes et al. 2006) to assess the actual and the ideal selves. Different from the other measures presented here, the IRAP can allow differentiating between beliefs related to being bad and wanting to be good using different types of stimulus combinations. In the actual self-esteem IRAP, each block consisted of trials that presented one of two self-related stimuli (e.g., “I Am” or “I Am Not”) in the presence of one of two types of target stimuli (positive or negative words) and required participants to provide “True” or “False” response. In this way, there were four different types of trials (self-positive, self-not positive, self-negative, and self-not negative). In the ideal self-esteem IRAP, participants responded to the same stimuli in terms of “I Want To Be” or “I Don’t Want To Be.” Whereas the IAT was not able to distinguish between dysphoric and non-dysphoric participants, the two IRAPs were able to do so such that there was no difference between actual and ideal self-esteem for non-dysphorics, whereas dysphorics demonstrated lower actual than ideal self-esteem.

Focusing more specifically on the psychometric properties, De Cuyper et al. (2017) with their systematic review of implicit self-concept of personality measures showed that there is evidence for reliability and construct and predictive validity but not for all measures and all domains of personality. Reliability was higher for the IAT compared to Single Category and Brief IAT and compared to SMP. Concerning the IAT, the meta-analysis provides evidence of construct and predictive validity, especially in the extraversion and agreeableness domains. Current evidence suggest that the IAT is the best available indirect measure and that alternatives do not approach the level of the IAT in terms of psychometric properties (De Cuyper et al. 2017; Sava et al. 2012). Moreover, Bosson et al. (2000) tested the psychometric properties of seven measures of implicit self-esteem and showed that only three measures correlated with some criterion variables, with the IAT showing the best performances in terms of predictive validity. The IAT should therefore be considered as the most established indirect measurement task for assessing the self-concept of personality.

Process of Development of an Indirect Measure

Each of the indirect measurement procedures described above can be implemented in very different ways, thereby a procedure such as the IAT or the IRAP should be conceived of as “class of measures” rather than as “a measure.” Knowledge that the IAT is in general a valid procedure from a psychometric standpoint does not imply that each specific implementation will be valid nor that all implementations are equally valid (Perugini et al. 2015). When developing an indirect measure, researchers face several choices that affect substantially the properties of the measure. First, one has to identify a measure that is suitable for assessing the construct at hand. Whereas the IAT seems to possess good psychometric qualities in general, other measures can be more suitable for specific purposes. For instance, whereas the IAT requires a contrast attribute category, other

procedures such as the SC-IAT do not have this requirement. Furthermore, the IAT cannot easily assess propositions, a possibility that is instead straightforward with the IRAP (Remue et al. 2014).

Second, it is important to choose an appropriate level of abstractness for the construct. For example, in the case of the self-concept of personality, one could choose to assess a broad dimension, such as one of the Big Five (Schmukle et al. 2008) or its facets separately (Costantini et al. 2015). In the case of the IAT, it is important that the construct selected is sufficiently cohesive, such that the stimuli can be easily paired with the corresponding category (De Cuyper et al. 2017). It is also important to choose an appropriate set of stimuli to assess the construct. Whereas the importance of stimuli (i.e., items) is clearly recognized for direct measures, it is often underestimated when it comes to indirect measures (Perugini et al. 2015). One possibility is to identify a valid set of markers for each construct through a preliminary study, which gives also the possibility of validating an additional direct measure of the construct against known validated measures and establishing convergent and discriminant validity (e.g., Costantini et al. 2015). When examining candidate stimuli for self-concept measures, adjectives and nouns are often preferred; however, some empirical evidence suggests that verbs may perform better when assessing constructs that are strongly connected to action tendencies, such as aggressiveness (see De Cuyper et al. 2017). Furthermore, stimuli can also be personalized for each participant (e.g., Boldero et al. 2007). Apart from the choice of stimuli, several other details of the implementation of an indirect measure can affect its psychometric properties (Krause et al. 2011; Remue et al. 2014). Among these aspects, one that is particularly important is the choice of a scoring algorithm. Different ways of treating errors and extreme latencies can make a difference for the psychometric properties of a measure (Greenwald et al. 2003; Krause et al. 2011; Richetin et al. 2015). For instance, the IAT and its variants are often scored using the algorithm developed by Greenwald et al. (2003). However, incorporating

robust statistical concepts in the scoring procedures, for instance, to handle extreme latencies, may improve reliability and validity (Richetin et al. 2015).

Relation Between Direct and Indirect Measures

A recent meta-analysis on direct and indirect measures of self-concept (excluding self-esteem) did find an average correlation of around 0.20 (De Cuyper et al. 2017), which indicates a modest but not negligible amount of convergence. It should be noted however that research using indirect measures was initially focused on patterns of double dissociation (e.g., Asendorpf et al. 2002) as a way to show evidence of incremental validity of indirect measures as well as of divergence with direct measures such as self-reports. An initial mainstream assumption was that the more the two types of measures diverged, the better, both because this was creating better conditions to show evidence of validity of indirect measures and because it was an indication that they were actually tapping into different processes and mental contents. However, Greenwald et al. (2009) did find in their meta-analysis of the IAT that the strongest significant moderator of the IAT predictive validity was its correlation with direct measures, meaning that IATs were more predictive with increasing correlations with indirect measures. The explanation given by Greenwald et al. (2009) is that the constructs assessed by indirect and direct measures tap likely reinforce each other in determining behavior (see also Perugini et al. 2010). Conversely, discrepancies between measures have been taken to indicate unpleasant psychological states or the asymmetric effect of additional factors such as social desirability concerns, affective focus, and validation processes (Gawronski and Hahn *in press*). However, from a methodological point of view, discrepancies between measures could be due to lower reliability of indirect measures, to violations of the principle of correspondence (i.e., degree of matching content in the relevant target object), of the principle of structural fit (i.e., degree of methodological similarity between two different measures), and to a poor

process of development of an indirect measure leading to mediocre psychometric properties, including their validity (Gawronski and De Houwer 2014; Perugini et al. 2010, 2015). One implication is that before interpreting divergence between direct and indirect measures in terms of theoretical implications, one should make sure that it is not a by-product of psychometrically deficient measures. More in general, the current practice of the process of development and validation of an indirect measure needs improvements to achieve the standards established over the years for the development of direct measures (e.g., self-reports for personality traits).

Conclusions

Indirect measures have started to be used in the personality field mainly during the last two decades following the seminal contribution of Greenwald et al. (1998) where the IAT was first introduced. Their use has been increasing over time although not as much as in the attitudinal fields. The evidence in terms of their validity accumulated so far is encouraging, especially for the IAT. Alternative paradigms of indirect measures have been developed during the years and some of them appear promising, although the evidence is still too limited and future studies are needed to establish their validity. Increasing attention to methodological issues can lead to improvements in the research area.

Cross-References

- ▶ [Actual Self](#)
- ▶ [Big-Five Model](#)
- ▶ [Conscious Versus Unconscious Determinants of Behavior](#)
- ▶ [Conscious, Preconscious, and Unconscious](#)
- ▶ [Extrinsic Affective Simon Task](#)
- ▶ [Ideal Self](#)
- ▶ [Identity](#)
- ▶ [Implicit Self-esteem](#)
- ▶ [Self-Appraisals](#)
- ▶ [Self-Esteem](#)

References

- Asendorpf, J. B., Banse, R., & Mücke, D. (2002). Double dissociation between implicit and explicit personality self-concept: The case of shy behavior. *Journal of Personality and Social Psychology, 83*(2), 380–393. <https://doi.org/10.1037/0022-3514.83.2.380>
- Ashton, M. C., Lee, K., Perugini, M., Szarota, P., de Vries, R. E., Di Blas, L., . . . , De Raad, B. (2004). A six-factor structure of personality-descriptive adjectives: Solutions from psycholexical studies in seven languages. *Journal of Personality and Social Psychology, 86*(2), 356–366. <https://doi.org/10.1037/0022-3514.86.2.356>
- Back, M. D., Schmukle, S. C., & Egloff, B. (2009). Predicting actual behavior from the explicit and implicit self-concept of personality. *Journal of Personality and Social Psychology, 97*(3), 533–548. <https://doi.org/10.1037/a0016229>
- Barnes-Holmes, D., Barnes-Holmes, Y., Power, P., Hayden, E., Milne, R., & Stewart, I. (2006). Do you know what you really believe? Developing the Implicit Relational Evaluation Procedure (IRAP) as a direct measure of implicit beliefs. *Irish Psychologist, 32*(7), 169–177.
- Baumert, A., Schmitt, M., Perugini, M., Johnson, W., Blum, G., Borkenau, P., . . . , Wrzus, C. (2017). Integrating personality structure, personality process, and personality development. *European Journal of Personality, 31*(5), 503–528.
- Boldero, J. M., Rawlings, D., & Haslam, N. (2007). Convergence between GNAT-assessed implicit and explicit personality. *European Journal of Personality, 21*(3), 341–358. <https://doi.org/10.1002/per.622>
- Bosson, J. K., Swann, W. B., & Pennebaker, J. W. (2000). Stalking the perfect measure of implicit self-esteem: The blind men and the elephant revisited? *Journal of Personality and Social Psychology, 79*(4), 631–643. <https://doi.org/10.1037/0022-3514.79.4.631>
- Costantini, G., Richetin, J., Borsboom, D., Fried, E. I., Rhemtulla, M., & Perugini, M. (2015). Development of indirect measures of conscientiousness: Combining a facets approach and network analysis. *European Journal of Personality, 29*(5), 548–567. <https://doi.org/10.1002/per.2014>
- De Cuyper, K., Pieters, G., Claes, L., Vandromme, H., & Hermans, D. (2013). Indirect measurement of perfectionism: Construct and predictive validity. *Journal of Social and Clinical Psychology, 32*(8), 844–858. <https://doi.org/10.1521/jscp.2013.32.8.844>
- De Cuyper, K., De Houwer, J., Vansteelandt, K., Perugini, M., Pieters, G., Claes, L., & Hermans, D. (2017). Using indirect measurement tasks to assess the self-concept of personality: A systematic review and meta-analyses. *European Journal of Personality, 31*(1), 8–41. <https://doi.org/10.1002/per.2092>
- De Houwer, J. (2003). The extrinsic affective Simon task. *Experimental Psychology, 50*(2), 77–85. <https://doi.org/10.1026/1618-3169.50.2.77>
- De Houwer, J. (2014). A propositional model of implicit evaluation. *Social and Personality Psychology Compass, 8*(7), 342–353.
- Gawronski, B., & De Houwer, J. (2014). Implicit measures in social and personality psychology. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (2nd ed., pp. 283–310). New York: Cambridge University Press. <https://doi.org/10.1017/CBO9780511996481.016>
- Gawronski, B., & Hahn, A. (in press). Implicit measures: Procedures, use, and interpretation. In H. Blanton & G. D. Webster (Eds.), *Foundations of social psychological measurement*. New York: Taylor & Francis.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74*(6), 1464–1480. <https://doi.org/10.1037/0022-3514.74.6.1464>
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology, 85*(2), 197–216. <https://doi.org/10.1037/0022-3514.85.2.197>
- Greenwald, A. G., Poehlman, T. A., Uhlmann, E. L., & Banaji, M. R. (2009). Understanding and using the implicit association test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology, 97*(1), 17–41. <https://doi.org/10.1037/a0015575>
- Huntjens, R. J. C., Rijkeboer, M. M., Krakau, A., & de Jong, P. J. (2014). Implicit versus explicit measures of self-concept of self-control and their differential predictive power for spontaneous trait-relevant behaviors. *Journal of Behavior Therapy and Experimental Psychiatry, 45*(1), 1–7. <https://doi.org/10.1016/j.jbtep.2013.07.001>
- Karpinski, A., & Steinman, R. B. (2006). The single category implicit association test as a measure of implicit social cognition. *Journal of Personality and Social Psychology, 91*(1), 16–32. <https://doi.org/10.1037/0022-3514.91.1.16>
- Krause, S., Back, M. D., Egloff, B., & Schmukle, S. C. (2011). Reliability of implicit self-esteem measures revisited. *European Journal of Personality, 25*(3), 239–251. <https://doi.org/10.1002/per.792>
- McCrae, R. R., & Costa, P. T. (2008). Empirical and theoretical status of the five-factor model of personality traits. In G. Boyle, G. Matthews, & D. Saklofske (Eds.), *SAGE handbook of personality theory and assessment: volume 1 – Personality theories and models* (pp. 273–294). London: SAGE Publications. <https://doi.org/10.4135/9781849200462.n13>
- Nosek, B. A., & Banaji, M. R. (2001). The go/no-go association task. *Social Cognition, 19*(6), 625–666. <https://doi.org/10.1521/soco.19.6.625.20886>
- Ozer, D. J., & Benet-Martinez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology, 57*, 401–421. <https://doi.org/10.1146/annurev.psych.57.102904.190127>
- Paunonen, S. V., & O'Neill, T. A. (2010). Self-reports, peer ratings and construct validity. *European Journal of Personality, 24*(3), 189–206. <https://doi.org/10.1002/per.751>

- Perugini, M., Richetin, J., & Zogmaister, C. (2010). Prediction of behavior. In B. Gawronski & B. K. Payne (Eds.), *Handbook of implicit social cognition* (pp. 255–278). New York: Guilford Press.
- Perugini, M., Costantini, G., Richetin, J., & Zogmaister, C. (2015). Implicit association test, then and now. In T. M. Ortner & F. J. R. van de Vijver (Eds.), *Behavior based assessment in psychology: Going beyond self-report in the personality, affective, motivation, and social domains* (pp. 15–28). Göttingen: Hogrefe.
- Remue, J., Hughes, S., De Houwer, J., & De Raedt, R. (2014). To be or want to be: Disentangling the role of actual versus ideal self in implicit self-esteem. *PLoS One*, *9*(9), e108837. <https://doi.org/10.1371/journal.pone.0108837>
- Richetin, J., Costantini, G., Perugini, M., & Schönbrodt, F. (2015). Should we stop looking for a better scoring algorithm for handling implicit association test data? Test of the role of errors, extreme latencies treatment, scoring formula, and practice trials on reliability and validity. *PLoS One*, *10*(6), e0129601. <https://doi.org/10.1371/journal.pone.0129601>
- Sava, F. A., Maricutoiu, L. P., Rusu, S., Macinga, I., Virgă, D., Cheng, C. M., & Payne, B. K. (2012). An inkblot for the implicit assessment of personality: The semantic misattribution procedure. *European Journal of Personality*, *26*(6), 613–628. <https://doi.org/10.1002/per.1861>
- Schmukle, S. C., Back, M. D., & Egloff, B. (2008). Validity of the five-factor model for the implicit self-concept of personality. *European Journal of Psychological Assessment*, *24*(4), 263–272. <https://doi.org/10.1027/1015-5759.24.4.263>
- Schnabel, K., Banse, R., & Asendorpf, J. (2006). Employing automatic approach and avoidance tendencies for the assessment of implicit personality self-concept. The Implicit Association Procedure (IAP). *Experimental Psychology*, *53*(1), 69–76. <https://doi.org/10.1027/1618-3169.53.1.69>
- Sriram, N., & Greenwald, A. G. (2009). The brief implicit association test. *Experimental Psychology*, *56*(4), 283–294. <https://doi.org/10.1027/1618-3169.56.4.283>
- Teige, S., Schnabel, K., Banse, R., & Asendorpf, J. B. (2004). Assessment of multiple implicit self-concept dimensions using the extrinsic affective Simon task (EAST). *European Journal of Personality*, *18*(6), 495–520. <https://doi.org/10.1002/per.531>
- Vazire, S., & Carlson, E. N. (2011). Others sometimes know us better than we know ourselves. *Current Directions in Psychological Science*, *20*(2), 104–108. <https://doi.org/10.1177/0963721411402478>

Implicit Personality

- ▶ [Conditional Reasoning](#)
- ▶ [Implicit Measures of Personality](#)

Implicit Personality Measures

- ▶ [Projective Tests](#)

Implicit Self-Concept

- ▶ [Implicit Measures of Personality](#)

Implicit Self-Esteem

Christian H. Jordan¹ and Virgil Zeigler-Hill²

¹Wilfrid Laurier University, Waterloo, ON, Canada

²Oakland University, Rochester, MI, USA

Definition

Implicit self-esteem is commonly defined as highly efficient self-evaluations that occur unintentionally and outside of awareness. In this sense, implicit self-esteem refers to relatively automatic self-evaluations. It is unclear, however, whether or how implicit self-esteem (as it is commonly measured) actually is nonconscious. Accordingly, implicit self-esteem has been otherwise conceptualized as the strength of cognitive association between one's self-concept and positive or negative evaluations.

Introduction

Most research on self-esteem in psychology has relied on self-report measures: Participants are asked to report directly on their self-feelings and the extent to which they like or value themselves. This approach is sensible because people arguably have unique insight into their subjective self-feelings. However, this approach is limited by the fact that individuals may be unable or unwilling to report on all aspects of their self-feelings (Greenwald and Farnham 2000).

Drawing on evidence, from cognitive psychology, of the existence of distinct explicit and implicit memory systems (i.e., memories that are formed with or without conscious awareness), Greenwald and Banaji (1995) proposed that self-esteem may also operate both explicitly and implicitly. They defined implicit self-esteem as, “the introspectively unidentified (or inaccurately identified) effect of the self-attitude on evaluation of self-associated and self-dissociated objects” (p. 11). As this definition suggests, they focused on the ways that self-esteem may influence people’s behavior unintentionally and without conscious guidance. Since Greenwald and Banaji’s seminal paper, however, theorists have generally conceptualized implicit self-esteem as an individual difference that is distinct from explicit self-esteem. Specifically, implicit self-esteem is typically conceptualized as automatic self-evaluations (i.e., highly efficient self-evaluations that occur unintentionally and outside of awareness). Explicit self-esteem, in contrast, is defined as relatively controlled self-evaluations (i.e., more deliberative self-evaluations of which people are fully aware). Explicit self-esteem is what people report on self-report measures. Notably, the two forms of self-esteem may be consistent or they may disagree with each other, such that someone may report high explicit self-esteem but display relatively negative implicit self-esteem (or vice versa).

Implicit self-esteem may have been commonly defined as nonconscious – operating outside of conscious awareness – because the construct of implicit self-esteem was extrapolated from research on implicit memory (i.e., memories that form without conscious guidance or awareness). This assumption, however, has been questioned. Although implicit self-esteem may be automatic in some respects (e.g., occurring effortlessly and unintentionally), people may nevertheless have conscious experiences of their implicit self-esteem. Although measures of implicit and explicit self-esteem are typically uncorrelated, people report explicit self-esteem that is more consistent with their implicit self-esteem when their cognitive resources are

depleted by a demanding mental task (Koole et al. 2001). This pattern of results suggests that people may consciously experience implicit self-esteem, but sometimes report self-evaluations that differ from it (e.g., when they have sufficient cognitive capacity to override their automatic self-evaluations and report different, more reasoned self-evaluations). People may, for example, experience negative, automatic self-evaluations (i.e., low implicit self-esteem) but view them as invalid. They may report higher (explicit) self-esteem than would be suggested by their implicit self-esteem. Other evidence suggests the people may experience implicit self-esteem as intuitive self-evaluations or gut feelings about themselves. Individuals who typically focus on their intuition, or those who are specifically encouraged to do so, report self-esteem that is more consistent with their implicit self-esteem (Jordan et al. 2007).

Measures of Implicit Self-esteem

Multiple measures of implicit self-esteem have been devised (see Bosson et al. 2000, for a review). Whereas explicit self-esteem is measured by self-report, implicit self-esteem is typically measured indirectly by nonreactive measures that require responses that are not obviously related to self-evaluation or that are difficult to control. The two most common approaches to measuring implicit self-esteem are the self-esteem variant of the Implicit Association Test (IAT; Greenwald and Farnham 2000) and the Name-Letter Task (NLT; Nuttin 1985).

The IAT is a response-mapping procedure that requires respondents to categorize stimuli (usually words, presented by computer) as quickly and accurately as possible. Participants make two distinct categorizations during the test. For the self-esteem IAT, participants categorize words (e.g., me, myself) as either self-related or not-self-related. The contrast category for “self” is often “other” (e.g., they, them; Greenwald and Farnham 2000) or “object” (e.g., it, that; Jordan et al. 2003). Respondents also categorize words (e.g., party, gift; vomit, cockroach) as “pleasant”

or “unpleasant.” There are two critical blocks, during which participants make both categorizations, alternately, with a single set of response keys. In one critical block, “self” and “pleasant” share a response, while “other” or “object” and “unpleasant” share the other response. In the second critical block, “self” and “unpleasant” share a response, while “other” or “object” and “pleasant” share the other. The self-esteem IAT is based on the logic that people with high implicit self-esteem naturally associate the self with positivity more than negativity and should therefore be faster to categorize stimuli when “self” and “pleasant” share a response rather than when “self” and “unpleasant” share a response. The magnitude of this facilitation effect serves as an index of individual differences in implicit self-esteem. The self-esteem IAT is thus designed to assess the strength of cognitive association between the self-concept and positive and negative evaluations.

The NLT, in contrast, focuses on evaluations of stimuli associated with the self. People tend to like objects or stimuli more when they are associated with the self, relative to when they are not. Specifically, people tend to like the letters in their name, especially their initials, more than do people who do not share those name letters (Nuttin 1985). In order to measure implicit self-esteem through the NLT, respondents rate how much they like each of the letters of the alphabet. The extent to which they like the letters in their names, or simply their initials, more than other respondents (who do not share those name letters) like those same letters is taken as an index of implicit self-esteem. The greater the magnitude of liking for one’s own name-letters, relative to people who do not share them, is taken as an index of implicit self-esteem because individuals’ positive (implicit) self-evaluations color their liking of their name letters.

Although the IAT and NLT have been widely used to research implicit self-esteem, they remain somewhat contentious. Measures of implicit self-esteem tend to demonstrate poor reliability, though the IAT and NLT display better reliability than other measures of implicit self-esteem (likely

contributing to their popularity in research; Bosson et al. 2000). Their validity, however, has also been questioned for at least two reasons (Buhrmester et al. 2011). First, measures of implicit self-esteem do not generally correlate with each other, as they would be expected to if they measure the same underlying construct. Secondly, they are not generally related to outcomes known to be associated with explicit self-esteem (Bosson et al. 2000; Buhrmester et al. 2011). It is nevertheless possible that implicit self-esteem, as a distinct construct, should not be expected to relate to the same outcomes as explicit self-esteem. One study found, for example, that explicit self-esteem predicted self-judgments of anxiety during a self-relevant interview but not apparent anxiety (as assessed by observers), whereas implicit self-esteem predicted apparent anxiety but not self-judgments of anxiety (Spalding and Harding 1999).

Discrepant Implicit and Explicit Self-esteem and Defensiveness

Implicit self-esteem may also be particularly relevant to defensiveness and self-enhancement. As noted earlier, measures of implicit and explicit self-esteem are typically uncorrelated, so some individuals report high explicit self-esteem but simultaneously display low implicit self-esteem. This combination of high explicit and low implicit self-esteem is consistent with longstanding theories that some individuals maintain outwardly positive, boastful self-views that conceal less conscious self-doubts and insecurities (see Zeigler-Hill and Jordan 2010). Such individuals may be especially invested in maintaining their positive self-views and react defensively to potential threats to their high self-esteem. Indeed, individuals with high explicit but low implicit self-esteem defensively rationalize their decisions and display in-group bias (i.e., favor members of their own social groups relative to other groups; Jordan et al. 2003). They may also enhance their self-views when they are not

threatened. Individuals with high explicit but low implicit self-esteem, for example, view their actual selves as more similar to their ideal selves, display more unrealistic optimism, and view flattering personality profiles as more self-descriptive than other individuals (without this self-esteem discrepancy; Bosson et al. 2003). Indeed, the finding that discrepant high self-esteem (i.e., high explicit self-esteem combined with low implicit self-esteem) is associated with defensive and self-serving biases is the most consistent finding in research on implicit self-esteem (Buhrmester et al. 2011).

Conclusion

The possibility that people possess implicit self-esteem was extrapolated from evidence of implicit learning in cognitive psychology, demonstrating that people can learn information without conscious awareness (Greenwald and Banaji 1995). Accordingly, implicit self-esteem was conceptualized as the effects of self-evaluations that may occur without individual's awareness. As research on implicit self-esteem developed, it became viewed as an individual difference that is distinct from explicit self-esteem (i.e., an individual's self-report of his or her self-esteem). Implicit self-esteem is measured indirectly, with measures that require responses that are not obviously related to self-evaluations or that are difficult to control. The two most common measures of implicit self-esteem are the self-esteem variant of the implicit association test and the name-letter task. These measures remain somewhat controversial, but may predict outcomes that differ from those that are predicted by explicit self-esteem. Notably, the combination of high explicit but low implicit self-esteem may be related to defensiveness and self-enhancement. Although research suggests that people possess implicit self-esteem that may sometimes disagree with their explicit, more reasoned self-esteem, more research is needed to establish valid measures of implicit self-esteem and determine how they relate to self-relevant outcomes.

Cross-References

- ▶ [Fragile Self-Esteem](#)
- ▶ [Implicit Association Test](#)
- ▶ [Implicit Egotism](#)
- ▶ [Self-Esteem](#)

References

- Bosson, J. K., Swann, W. B., & Pennebaker, J. W. (2000). Stalking the perfect measure of implicit self-esteem: The blind men and the elephant revisited? *Journal of Personality and Social Psychology, 79*, 631–643.
- Bosson, J. K., Brown, R. P., Zeigler-Hill, V., & Swann, W. B., Jr. (2003). Self-enhancement tendencies among people with high explicit self-esteem: The moderating role of implicit self-esteem. *Self and Identity, 2*, 169–187.
- Buhrmester, M. D., Blanton, H., & Swann, W. B. (2011). Implicit self-esteem: Nature, measurement, and a new way forward. *Journal of Personality and Social Psychology, 100*, 365–385.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review, 102*, 4–27.
- Greenwald, A. G., & Farnham, S. D. (2000). Using the implicit association test to measure self-esteem and self-concept. *Journal of Personality and Social Psychology, 79*, 1022–1038.
- Jordan, C. H., Spencer, S. J., Zanna, M. P., Hoshino-Browne, E., & Correll, J. (2003). Secure and defensive high self-esteem. *Journal of Personality and Social Psychology, 85*, 969–978.
- Jordan, C. H., Whitfield, M., & Zeigler-Hill, V. (2007). Intuition and the correspondence between implicit and explicit self-esteem. *Journal of Personality and Social Psychology, 93*, 1067–1079.
- Koole, S. L., Dijksterhuis, A., & van Knippenberg, A. (2001). What's in a name: Implicit self-esteem and the automatic self. *Journal of Personality and Social Psychology, 80*, 669–685.
- Nuttin, J. M. (1985). Narcissism beyond Gestalt awareness: The name letter effect. *European Journal of Social Psychology, 15*, 353–361.
- Spalding, L. R., & Harding, C. D. (1999). Unconscious unease and self-handicapping: Behavioral consequences of individual differences in implicit and explicit self-esteem. *Psychological Science, 10*, 535–539.
- Zeigler-Hill, V., & Jordan, C. H. (2010). Two faces of self-esteem: Implicit and explicit forms of self-esteem. In B. Gawronski & B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 392–407). New York: Guilford Press.

Implicit Theories of Intelligence

Andrew J. Martin, Keiko Bostwick,
Rebecca J. Collie and Ana L. Tarbetsky
School of Education, University of New South
Wales, Sydney, NSW, Australia

Synonyms

Entity beliefs; Entity theories; Fixed mind-set; Growth mind-set; Implicit beliefs about intelligence; Incremental beliefs; Incremental theories; Mind-set

Definition

Implicit theories of intelligence refer to the beliefs individuals hold about the nature of intelligence. Individuals tend to see intelligence as something that is a fixed and immutable entity (entity theory or entity belief) or as a malleable dimension that can be changed or improved upon (incremental theory or incremental belief).

Introduction

According to Dweck (2000, 2006), individuals develop theories, beliefs, and deeply held schema about human attributes. These beliefs help individuals explain and understand their world. Implicit theories of intelligence (sometimes also referred to as implicit beliefs about intelligence) refer to the beliefs individuals hold about the malleability of intelligence. Individuals can either see intelligence as something that is a fixed and immutable entity (entity theory or entity belief) or as a dimension that can be changed or improved upon with effort (incremental theory or incremental belief) (Dweck 2000, 2006). Although we

focus on the terms “implicit theories,” “implicit beliefs,” and the like, it is worth noting recent use of more popularized terminology reflecting the “growth” dynamics underpinning the theoretical framework. Thus, the term “mind-set” is increasingly used, with fixed and growth mind-sets broadly reflecting entity and incremental beliefs about intelligence, respectively (Dweck 2006). There has been much research into individuals’ implicit beliefs across domains as diverse as business, sport, the creative and performing arts, and parenting (see Dweck 2006 for reviews). For the purposes of this review, we focus on the academic domain as a means to describe and explain implicit theories of intelligence. Students’ perspectives on the nature of intelligence are an important factor influencing their motivation, engagement, and achievement at school and in schoolwork. Here we consider the role of implicit theories in relation to each of these major academic factors and processes.

Implicit Beliefs and Academic Motivation and Engagement

We define academic motivation and engagement in terms of the thoughts, behaviors, and emotions relevant to students’ academic development (Martin 2007, 2009). This brings into consideration a range of factors and processes relevant to students’ pathways through and beyond school, including their self-worth, their choice of tasks and task difficulty, their academic resilience and adaptability, their engagement, the goals they set, their attributional patterns, and their persistence. Here we consider a number of these factors and processes, identifying ways in which they are associated with students’ implicit theories of intelligence.

Self-Worth

Implicit theories of intelligence have implications for an individual’s self-worth. For example, entity theorists (who believe intelligence is fixed) tend to feel good about themselves when they demonstrate relative ability (Dweck and Leggett 1988). In contrast, incremental theorists (who believe

Thanks are extended to the Australian Research Council for funding.

intelligence is malleable) tend to feel good about themselves when they develop mastery (Dweck and Leggett 1988). This has implications for students' self-worth and its impact on their academic development in that the entity view "puts self-esteem and self-development in conflict with each other" (Dweck 1991, p. 209). Thus entity theorists' need for self-worth can impede their learning and development needs. In contrast, for incremental theorists, self-worth needs are consistent with their learning needs because self-worth increases when learning and mastery increase (Dweck 1991).

Task Choice

The implicit theory an individual adopts also has implications for task choice. Incremental theorists tend to adopt learning goals; they embrace tasks that involve the possibility of making errors, which are difficult and which, therefore, involve some possibility of "failure" (Dweck 2006). Entity theorists, on the other hand, tend to choose tasks in which success is assured. In an effort to minimize mistakes, entity theorists tend to seek out tasks that they already know how to complete and do not require a lot of effort. These tasks are generally not very challenging and there is a relatively low risk of failure. However, as a result of this, their capacity to grow academically can be compromised. On the other hand, incremental theorists prefer challenging tasks that teach them new things, thereby enhancing their capacity to grow academically (Dweck 2006).

Resilience

Yeager and Dweck (2012) suggest that implicit theories might also predict individuals' responses to adversity and challenge. They found that a view that intelligence can be developed (an incremental theory of intelligence) leads to increased resilience in academic settings. Similarly, with a desire for challenge and acquiring new knowledge, individuals who hold incremental beliefs have been shown to be more resilient in the face of setback

because they view failure as a natural component of long-term learning and mastery (Dweck 2000; Dweck and Leggett 1988). Indeed, in a longitudinal study, Martin et al. (2013) found that incremental beliefs about intelligence predicted academic buoyancy (students' capacity to effectively respond to academic challenge, setback, and adversity).

Adaptability

Along similar lines, Martin et al. (2013) suggested that adaptability (students' capacity to effectively adjust to novel, uncertain, and variable situations and circumstances) is also shaped by students' beliefs about the malleability of intelligence. Individuals with an incremental view tend to see academic and nonacademic outcomes as factors that can be addressed through cognitive, emotional, and/or behavioral modification (i.e., effortful regulation). In contrast, individuals holding an entity view tend to see their intelligence as fixed, leading to less inclination to make psycho-behavioral adjustments. Accordingly, Martin and colleagues (2013) found that incremental beliefs about intelligence predicted adaptability. Other work has shown that implicit theories of intelligence predict academic trajectories during times of academic transition and change through school (Blackwell et al. 2007).

Task Engagement and Task Enjoyment

When task difficulty is low, both entity and incremental theorists are equally engaged (Diener and Dweck 1978; Mueller and Dweck 1998) and report similar levels of task enjoyment and intended future persistence (Mueller and Dweck 1998). However, once a task becomes difficult to accomplish, those with an entity view tend to report lower levels of task engagement (Diener and Dweck 1978). Diener and Dweck (1978) showed that children with a helpless response pattern (associated with an entity view of intelligence) were prone to reporting that difficult tasks were boring when, only moments earlier, they had

reported interest in the same task if they had succeeded on it. Later, Mueller and Dweck (1998) found that an entity view was associated with less task enjoyment and less persistence post-failure, whereas an incremental view was associated with stable or increased task enjoyment and sustained persistence.

Goals

Burnette and colleagues (2013) argue for a model in which implicit theories impact self-regulatory strategies that individuals use, including their goals. Learning goals are described as a desire to increase mastery or skill in a domain; performance goals are aimed at demonstrating relative competence or ability (Elliot 2006). An entity view of intelligence has been associated with performance goals, whereas an incremental view has been associated with learning goals (Dweck and Leggett 1988; Dweck 2000). Similarly, a recent experiment by Dinger and Dickhäuser (2013) suggested that implicit theories predict achievement goals, in particular, mastery goals. Likewise, a meta-analysis by Burnette et al. (2013) found that incremental theories, in contrast to entity theories, negatively predicted performance goals and positively predicted learning goals. Interestingly, however, recent longitudinal cross-lagged panel research has debated the directional nature of implicit theories and goals, with Martin (2015) finding growth goals predicting incremental (positively) and entity (negatively) beliefs about intelligence, rather than implicit beliefs about intelligence predicting goals.

Persistence

It is also the case that students with an entity view are more likely to exhibit a helpless response and less persistence in the face of academic difficulty. According to them, if the task is difficult now, it is likely to be difficult later. Combining this with their fixed beliefs about intelligence can lead to counter-productive cognitions and behaviors such as task avoidance, withdrawal, or

self-handicapping (Diener and Dweck 1978; Martin et al. 2001, 2003). On the other hand, those with an incremental view of intelligence believe they can rise to the challenge of difficulty, leading to greater persistence in the face of this difficulty. Moreover, if failure occurs, the incremental theorist believes mistakes can be corrected, once more underpinning elevated persistence (Dweck and Licht 1980).

Attributions

Entity and incremental theorists have different attributional patterns. Attributions are the causal connections drawn between an outcome and the events preceding it (Weiner 2010). In academic settings, students draw causal connections between internal (e.g., ability and effort) and external factors (e.g., task difficulty and luck) and the outcomes (e.g., achievement) that follow from them. These attributional patterns contribute to differences in students' responses to difficulty, goal orientations, and task choice. If, for example, performance on a task is unsuccessful, entity theorists (who attribute outcomes to relatively fixed factors) see little point in persisting because they believe they have little control over the outcome, thereby laying the foundation for a helpless response (see Hong et al. 1999). On the other hand, incremental theorists tend to attribute their performance to controllable factors such as effort. Consequently, this lays the foundation for greater academic development.

Implicit Beliefs and Achievement

Implicit beliefs about intelligence have also been linked to achievement, not just motivation and engagement (summarized above). Incremental beliefs tend to have a positive effect on academic achievement (Dinger et al. 2013). For instance, after being presented with difficult material, those holding incremental beliefs are able to maintain problem-solving skills and even increase their level of effort, leading to higher achievement (Dweck and Leggett 1988). This has been supported in other studies, with incremental beliefs associated with higher grades (Aronson et al. 2002; Henderson and Dweck 1990). More recently, incremental

beliefs were found to predict achievement, even after controlling for prior levels of achievement (Tarbetsky et al. 2015). In contrast, individuals holding entity beliefs tend to demonstrate lower levels of achievement (Stipek and Gralinski 1996).

Research has also shown that students holding entity beliefs experience declines in performance, particularly when faced with failure (Dweck and Leggett 1988), use maladaptive strategies that undermine achievement (Martin et al. 2001, 2003; Stipek and Gralinski 1996), and show relatively marked declines in classroom academic standing (Henderson and Dweck 1990). In other research, Blackwell et al. (2007) found that students who held an incremental view of intelligence evinced a greater gain on a standardized measure of math achievement at the end of 3 years than students who endorsed an entity view of intelligence. Blackwell et al. (2007) also tested an intervention that primed students for an incremental view of intelligence (teaching them about the malleability of the brain and the potential for intelligence to grow). Students who received the intervention performed significantly better than students in the control condition (who received study tips, but no incremental priming), indicating that holding an incremental theory of intelligence is not just associated with, but also leads to gains in academic achievement.

Implicit Beliefs and Other Critical Considerations

It is clear, then, that implicit theories of intelligence play a role in students' academic motivation, engagement, and achievement. Alongside these key connections, there are other issues useful to consider in gaining a more complete understanding of implicit theories. Here we focus on three: approaches to operationalization, domain generality and domain specificity, and diverse student populations.

Implicit Beliefs: Operationalizing as One Factor or Two?

The main approach to operationalizing implicit beliefs about intelligence is to ask individuals to indicate the degree to which they agree with

statements that highlight either an entity or incremental view. For example, statements aligned with an entity view of intelligence may be: "Your intelligence is something about you that you can't change very much" or "Some kids will never be smart, no matter how hard they try." Incremental statements would read: "No matter who you are, you can significantly change your intelligence level" or "You can get smart by working hard in school" (Dweck 2000; Stipek and Gralinski 1996).

Some researchers use these items to operationalize implicit beliefs about intelligence as a unidimensional construct (e.g., Dweck 2000; Tarbetsky et al. 2015) such that entity is at one end of the continuum and incremental is at the other. Others use these items to develop two factors, seeing entity and incremental views as separate constructs (e.g., Martin et al. 2001, 2013; Stipek and Gralinski 1996). Thus, the unidimensional approach assumes that entity and incremental beliefs about intelligence lie on opposite ends of a continuum. This assumption allows researchers to reverse score responses to one view (typically the entity view) and combine them with responses to the other view to create a single score (high scores typically reflect an incremental view). The two-factor approach is based on the assumption that entity and incremental views are distinct constructs. This approach creates two implicit belief scores (one entity score and one incremental score), and both scores are included as separate factors in a given analytical model.

Although some researchers have looked at incremental and entity beliefs separately (e.g., Martin 2015; Martin et al. 2001, 2003, 2013; Wang and Ng 2012), most have measured implicit beliefs via a unidimensional scale using a combined measure (e.g., Blackwell et al. 2007; Dinger and Dickhäuser 2013; Dinger et al. 2013; Dweck and Leggett 1988; Tarbetsky et al. 2015). The decision to adopt one approach over the other will typically be driven by the research need. It may be of interest to understand students' orientation with regard to both factors. This may also allow for more differentiated and focused intervention by addressing one or both of entity and incremental beliefs as distinct factors. In other

cases, it may be of greater interest to understand where students reside on a broader fixed-incremental continuum. Indeed, this may be more parsimonious for data analysis and interpretation.

Implicit Beliefs and Students from Diverse Backgrounds

Research examining implicit beliefs has largely focused on “mainstream” student populations. However, some researchers have explored the role of implicit beliefs among students from diverse backgrounds. For example, researchers have shown that African-American students are more likely to hold entity beliefs about intelligence and that this can represent a barrier to their achievement (Aronson et al. 2002). Framing these findings theoretically, Aronson and colleagues (2002) suggested that this may be linked with the concept of “stereotype threat.” This refers to the cognitive and emotional burden on students who face stereotypes that they are inferior to others because of their ethnicity, gender, or other personal characteristics (Aronson et al. 2002; Steele and Aronson 1995). According to these researchers, students affected by ability stereotypes may adopt entity beliefs given “the troubling implication that he or she is intellectually limited, with little or no hope for improvement” (Aronson et al. 2002). Importantly, Aronson and colleagues (2002) also found that when these students attended sessions promoting incremental beliefs, significant improvements in achievement were found (Aronson et al. 2002).

Recently, Tarbetsky and colleagues (2015) conducted research among Australian Indigenous (Aboriginal) students. They found that Indigenous students were less inclined than their non-Indigenous peers to hold incremental beliefs and that this led to lower levels of academic achievement. Further, there was no direct association between Indigenous status and academic achievement; instead, the relationship between Indigenous status and achievement operated via reduced incremental beliefs. Research with other ethnic and sociocultural subgroups such as

Latinos (Gonzales et al. 2002) and students of low socioeconomic status (Croizet and Claire 1998) has suggested other negative findings with regard to implicit beliefs and achievement. Implicit beliefs, then, seem to play a role in the academic development of students from diverse backgrounds.

Implicit Beliefs, Domain Generality, and Domain Specificity

Research investigating a given phenomenon across school subjects is referred to as domain-general research. Research focusing on specific domains within school, such as in specific school subjects, is referred to as domain-specific research. With respect to implicit beliefs of intelligence, one question concerns the extent to which they are domain general or domain specific. Some researchers suggest incremental and entity beliefs are appropriate as domain-general constructs given that entity and incremental views are not found to result in subject-specific factors for mathematics and social science (e.g., Stipek and Gralinski 1996; see also Dweck 1986). However, other researchers have suggested that implicit beliefs are appropriate for domain-specific research and can be operationalized as domain-specific constructs (Tarbetsky et al. 2015). Thus far, there is not yet well-established data on whether or not implicit beliefs about intelligence function in a specific academic domain (e.g., impacting mathematics engagement and achievement) in the same way they function in school generally (e.g., impacting academic engagement and achievement as a whole).

Conclusion

Implicit theories (or implicit beliefs) of intelligence are deeply held perspectives about intelligence, competence, and ability that impact individuals’ motivation, engagement, and achievement. People vary in the degree to which they believe these capacities have the potential to change. Accordingly, some people hold the view

that they are bound to particular abilities (entity theorists), while others believe that their abilities can develop (incremental theorists). As discussed here, these implicit beliefs have effects on important outcomes throughout an individual's life – including through their academic life.

Cross-References

- ▶ Achievement Motives
- ▶ Attributions
- ▶ Goals
- ▶ Persistence
- ▶ Self-Regulation

References

- Aronson, J., Fried, C. B., & Good, C. (2002). Reducing stereotype threat and boosting academic achievement of African-American students: The role of conceptions of intelligence. *Journal of Experimental Social Psychology*, *38*, 113–125. <https://doi.org/10.1006/jesp.2001.1491>.
- Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, *78*, 246–263. <https://doi.org/10.1111/j.1467-8624.2007.00995.x>.
- Burnette, J. L., O'Boyle, E. H., VanEpps, E. M., Pollack, J. M., & Finkel, E. J. (2013). Mind-sets matter: A meta-analytic review of implicit theories and self-regulation. *Psychological Bulletin*, *139*, 655–701.
- Croizet, J. C., & Claire, T. (1998). Extending the concept of stereotype threat to social class: The intellectual underperformance of students from low socioeconomic backgrounds. *Personality and Social Psychology Bulletin*, *24*, 588–594. <https://doi.org/10.1177/0146167298246003>.
- Diener, C. I., & Dweck, C. S. (1978). An analysis of learned helplessness: Continuous changes in performance, strategy, and achievement cognitions following failure. *Journal of Personality and Social Psychology*, *36*, 451–462. <https://doi.org/10.1037/0022-3514.36.5.451>.
- Dinger, F. C., & Dickhäuser, O. (2013). Does implicit theory of intelligence cause achievement goals? Evidence from an experimental study. *International Journal of Educational Research*, *61*, 38–47. <https://doi.org/10.1016/j.ijer.2013.03.008>.
- Dinger, F. C., Dickhäuser, O., Spinath, B., & Steinmayr, R. (2013). Antecedents and consequences of students' achievement goals: A mediation analysis. *Learning and Individual Differences*, *28*, 90–101. <https://doi.org/10.1016/j.lindif.2013.09.005>.
- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, *41*, 1040–1048. <https://doi.org/10.1037/0003-066X.41.10.1040>.
- Dweck, C. S. (1991). Self-theories and goals: Their role in motivation, personality, and development. In R. A. Dienstbier (Ed.), *Perceptions on motivation: Nebraska symposium on motivation* (Vol. 38). Lincoln: University of Nebraska Press.
- Dweck, C. S. (2000). *Self-theories: Their role in motivation, personality, and development*. New York: Psychology Press.
- Dweck, C. S. (2006). *Mindset*. New York: Random House.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, *95*, 256–273. <https://doi.org/10.1037/0033-295X.95.2.256>.
- Dweck, C. S., & Licht, B. G. (1980). Learned helplessness and intellectual achievement. In J. Garber & M. E. P. Seligman (Eds.), *Human helplessness theory and applications* (pp. 197–221). New York: Academic.
- Elliot, A. J. (2006). The hierarchical model of approach-avoidance motivation. *Motivation and Emotion*, *30*, 111–116. <https://doi.org/10.1007/s11031-006-9028-7>.
- Gonzales, P. M., Blanton, H., & Williams, K. J. (2002). The effects of stereotype threat and double-minority status on the test performance of Latino women. *Personality and Social Psychology Bulletin*, *28*, 659–670. <https://doi.org/10.1177/0146167202288010>.
- Henderson, V. L., & Dweck, C. S. (1990). Achievement and motivation in adolescence: A new model and data. In S. Feldman & G. Elliot (Eds.), *At the threshold: The developing adolescent*. Cambridge, MA: Harvard University Press.
- Hong, Y., Chiu, C., Dweck, C. S., Lin, D. M.-S., & Wan, W. (1999). Implicit theories, attributions, and coping: A meaning system approach. *Journal of Personality and Social Psychology*, *77*, 588–599. <https://doi.org/10.1037/0022-3514.77.3.588>.
- Martin, A. J. (2007). Examining a multidimensional model of student motivation and engagement using a construct validation approach. *British Journal of Educational Psychology*, *77*, 413–440. <https://doi.org/10.1348/000709906X118036>.
- Martin, A. J. (2009). Motivation and engagement across the academic lifespan: A developmental construct validity study of elementary school, high school, and university/college students. *Educational and Psychological Measurement*, *69*, 794–824. <https://doi.org/10.1177/0013164409332214>.
- Martin, A. J. (2015). Implicit theories about intelligence and growth (personal best) goals: Exploring reciprocal relationships. *British Journal of Educational Psychology*, *85*, 207–223. <https://doi.org/10.1111/bjep.12038>.
- Martin, A. J., Marsh, H. W., & Debus, R. L. (2001). Self-handicapping and defensive pessimism: Exploring a model of predictors and outcomes from a self-protection perspective. *Journal of Educational Psychology*, *93*, 87–102.
- Martin, A. J., Marsh, H. W., & Debus, R. L. (2003). Self-handicapping and defensive pessimism: A model of

- self-protection from a longitudinal perspective. *Contemporary Educational Psychology*, 28, 1–36.
- Martin, A. J., Nejad, H., Colmar, S., & Liem, G. A. D. (2013). Adaptability: How students' responses to uncertainty and novelty predict their academic and non-academic outcomes. *Journal of Educational Psychology*, 105, 728–746. <https://doi.org/10.1037/a0032794>.
- Mueller, C. M., & Dweck, C. S. (1998). Praise for intelligence can undermine children's motivation and performance. *Journal of Personality and Social Psychology*, 75(1), 33–52. <https://doi.org/10.1037/0022-3514.75.1.33>.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69, 797–811. <https://doi.org/10.1037/0022-3514.69.5.797>.
- Stipek, D., & Gralinski, J. H. (1996). Children's beliefs about intelligence and school performance. *Journal of Educational Psychology*, 88, 397–407. <https://doi.org/10.1037/0022-0663.88.3.397>.
- Tarbetsky, A. L., Collie, R. J., & Martin, A. J. (2015). The role of implicit theories of intelligence and ability in predicting achievement for Indigenous (Aboriginal) Australian students. *Contemporary Educational Psychology*. <https://doi.org/10.1016/j.cedpsych.2016.01.002>.
- Wang, Q., & Ng, F. F.-Y. (2012). Chinese students' implicit theories of intelligence and school performance: Implications for their approach to schoolwork. *Personality and Individual Differences*, 52, 930–935. <https://doi.org/10.1016/j.paid.2012.01.024>.
- Weiner, B. (2010). The development of an attribution-based theory of motivation: A history of ideas. *Educational Psychologist*, 45, 28–36. <https://doi.org/10.1080/00461520903433596>.
- Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational Psychologist*, 47, 302–314.

Importance of Agreeableness, The

Ethan Campbell and Matthew P. Kassner
Centre College, Danville, KY, USA

Introduction

The study of personality can provide important insights concerning how an individual's disposition affects their behavior in a variety of contexts. Part of the importance of agreeableness lies in its capacity to assist in the comprehension of

complex human behavior. As a personality trait reflecting the motivation to establish and maintain positive relations with others, agreeableness is an ideal candidate to potentially forecast a diverse array of social behaviors including interpersonal conflict and cooperation, responses to ostracism and influence, aggression, prosocial behavior, and prejudice.

Understanding how agreeableness relates to a number of social behaviors entails grasping its potential origins and utility. Effortful control is a system of self-regulation that tempers emotionality, sociability, and activity (Buss and Plomin 1984) and emerges at approximately 6–12 months of age (Rothbart et al. 1994; Ruff and Rothbart 1996; Jensen-Campbell et al. 2002a). Ahadi and Rothbart (1994) propose a developmental connection between early childhood manifestation of effortful control and individual differences later in life. Specifically, the function of this regulatory system in dealing with the frustration which arises from the emotional challenges of interacting with others is said to predict later development of agreeableness. This notion is supported by the evidence that agreeableness predicts Stroop reaction times and Wisconsin Card Sorting Task (WCST) performance (Jensen-Campbell et al. 2002a), both validated neuropsychological tests which index cognitive inhibition and flexibility. These findings concerning regulation of attention demonstrate that agreeable persons likely have dispositionally elevated cognitive regulation, a mechanism that extends to social situations in which agreeable individuals regulate their behavior to maintain positive interactions. This is further supported by the finding that high agreeable individuals work harder to suppress negative emotions during social interaction (Tobin et al. 2000).

The impact of individual differences in agreeableness is evident as early as 10–12 years of age. In a study of fifth- and sixth-grade students, Jensen-Campbell et al. (2002b) found that student agreeableness was associated with a decrease in student victimization over time. Agreeableness also moderated the association between victimization and behavioral risk factors for victimization (e.g., internalizing behaviors and

low prosocial skills). These effects were present when controlling for two self-concept variables, global self-esteem and self-perceived peer acceptance, leaving the authors to posit that the mechanism explaining this relationship is likely related to specific social-interactional processes (Jensen-Campbell et al. 2002b).

Interpersonal Conflict and Cooperation

Given the relationship between agreeableness and effortful control, individual differences in this domain should be especially apparent in contexts of interpersonal conflict that often elicit frustrated emotional responses which require inhibition. Research by Graziano et al. (1996) found that those low in agreeableness were more likely to rate power assertion tactics of conflict resolution (e.g., physical action, threats, and criticisms) as more effective than those high in agreeableness, using vignettes involving well-acquainted relationship partners. These findings indicate that individuals low in agreeableness are more prone to endorse less constructive tactics of interpersonal conflict resolution. Results from face-to-face conflict resolution paradigms showed that more highly agreeable individuals saw less conflict in their interactions with others and rated them more positively than their low agreeable peers. Additionally, those low in agreeableness elicited more feelings of conflict from their partners than did those high in agreeableness, and behavioral observers saw more behavioral indications of tension in low agreeable partners than high agreeable partners. A very similar pattern of findings has been found in young adolescents (Jensen-Campbell et al. 1996), lending support to the notion that agreeableness influences attitudes about and behavioral demonstration of conflict management strategies.

Research by Graziano et al. (1997) has demonstrated that agreeable individuals tend to reduce the discrepancy between cooperative and competitive goal structures. Triads of individuals with differential ratings of agreeableness were told that they would receive rewards either as a collective or as individuals for their contribution

to the construction of a block tower. As the number of high agreeable individuals increased, so too did performance in a competitive goal structure, whereas performance in a cooperative goal structure decreased. Furthermore, dispositional competitiveness mediated the relationship between agreeableness and group performance. These findings seem to reflect the tendency of agreeable individuals to transform competitive scenarios into cooperative ones by virtue of their motivation to maintain social harmony with others (Graziano and Tobin 2017).

There's also evidence that the relationship between agreeableness and cooperative behavior is moderated by situational factors like threat to collective resources. Koole et al. (2001) found that agreeable individuals cooperated more frequently in a multi-trial resource depletion dilemma wherein groups of individuals gathered points that could be exchanged for a material reward. The threat of resource depletion (e.g., feedback that a group's current consumption wouldn't be sustainable over the course of the simulation) caused high agreeable individuals to decrease their resource use dramatically compared to low agreeable individuals whose use remained high throughout the simulation.

Among adolescents, agreeableness negatively predicted self-reported direct (e.g., yelling, insults, and physical attacks) and indirect aggression (e.g., spreading rumors, insulting individuals behind their back, and damaging property), with the relationship being stronger for direct aggression (Gleason et al. 2004). Additionally, agreeableness predicted adolescent peer reports of aggression, and these reports mediated the relationship between agreeableness and teacher-rated adjustment (e.g., a student's academic performance, same and opposite-sex relations, and classroom behavior). These findings support the role of agreeableness in modulating interpersonal interactions as early as 12–13 years of age.

Ostracism

Given the relationship between agreeableness and peer reports of aggression, it might be expected

that agreeableness has an effect on the degree to which persons are faced with social exclusion. Recent research by Hales et al. (2016) has found that low agreeableness is associated with chronic ostracism and that individuals are more likely to ostracize an individual who is described as disagreeable. Moreover, the researchers found that being ostracized can lead to higher levels of state disagreeableness and that this relationship is mediated by feelings of anger. This is consistent with the notion that low agreeableness reflects differences in affective regulatory capacity but also that certain phenomena and circumstances could potentially give rise to or at least exacerbate undesirable personality changes.

Influence

Although there seems to be good evidence that agreeableness does impact the way persons engage in interpersonal interaction and conflict management, evidence that those high in agreeableness are more susceptible to tactics of influence and persuasion is more uncertain. Barry and Friedman (1998) found evidence that in a distributive bargaining paradigm, wherein a buyer and seller attempted to maximize their respective gains, high agreeable individuals were more susceptible to anchoring tactics – meaning that the opposite party's initial offer more greatly affected the final negotiated price for high agreeable persons. They also found that, among sellers, agreeableness was associated with lower gains. An important caveat is that this effect was moderated by the level of individuals' aspirations, in that agreeableness had little impact when an individual's aspirations were high.

Some evidence suggests that agreeableness may be associated with obedience. Using a Milgram paradigm, Bègue et al. (2014) found that agreeableness predicted the intensity of shocks delivered to victims as instructed by an apparent television show host. In spite of these findings, an overview of the literature by Graziano and Tobin (in press) on an empirical link between agreeableness and compliance-related behavior yielded largely null outcomes. In fact, some research suggests that the contrary may be the case. Habashi et al.

(2016) found that those high in agreeableness were less persuaded by weak arguments but were more persuaded by strong arguments, suggesting that agreeableness is more a matter of responsiveness to others than a disposition to conform. Graziano and Tobin (in press) conclude that the evidence does not support the notion that agreeableness is related to capitulation, conformity, or compliance. Additional research investigating potential moderating situational variables (e.g., the relationship with potential influencers) would shed light on these mixed findings.

Prosocial Behavior

Another potential outcome related to the desire for positive relationships with others is behavior which aims to benefit others, potentially undergirding those relationships. Penner et al. (1995) formulated a measure of the prosocial personality that predicted a myriad of prosocial thoughts, actions, and behaviors. Interestingly, research by Penner and Fritzsche (1993) found that only one factor of this measure, other-oriented empathy, was correlated with agreeableness, whereas no relationship was found with the other factor, helpfulness. This is an important distinction, as helpfulness was thought to be related to important elements of deciding to *act* prosocially, such as self-efficacy (Penner et al. 1995).

In investigating the prosocial propensity of agreeableness, Graziano et al. (2007) found that persons low in agreeableness offered less help to a narrower range of individuals than their high agreeable peers, who were more likely to endorse helping nonkin and volunteer to help an outgroup victim. Additionally, the authors found that inducing empathy increased the chance of helping behavior from low agreeable individuals but had no effect on those high in agreeableness, suggesting that agreeableness is associated with innate prosocial motivation that is unaffected by empathic manipulation. Evidence from this research also suggested that low agreeable individuals respond less prosocially in response to self-centered negative affect, as helping behavior was attenuated among disagreeable individuals in a high-cost situation.

Hilbig et al. (2014) noted a discrepancy in the literature on agreeableness and prosocial behavior between null findings and evidence that five-factor agreeableness predicts prosocial behavior in certain contexts. They addressed this issue by looking at the distinction between HEXACO agreeableness and honesty-humility. The HEXACO model, developed by Ashton and Lee (2007), accounts for a sixth factor of personality called honesty-humility. This trait is associated with sincerity, fairness, unpretentiousness, and a lack of greed, and its inclusion narrows the breadth of agreeableness and neuroticism relative to the five-factor model. Honesty-humility predicted increased prosocial allocation of money (e.g., allotting more money for interaction partners than for oneself). Even in direct comparison to five-factor agreeableness, honesty-humility better accounted for variance in prosocial behavior. The authors suggest that agreeableness predicts capricious prosocial effects because it shares elements with honesty-humility (e.g., modesty and straightforwardness) but is lacking other elements (e.g., fairness, the subfacet which authors found most predicted prosocial allocation of funds), which may better predict prosociality.

Prejudice

Another potential implication of differences in agreeableness is whether or not the preference for positive relations extends to a reduction in prejudiced attitudes and behaviors. Those high in agreeableness are generally more positive about a wider variety of social groups than are those low in agreeableness (Caprara et al. 2010; Graziano et al. 2007; Sibley and Duckitt 2008). Graziano and Habashi (2010) propose an opponent process model to explain unconditioned distressed responses to targets of prejudice as well as targets for helping behavior. Across time, this fight-flight response is regulated by an opposing care-based motivational system that alleviates the negative affect associated with the preceding state. They then suggest that individual differences in agreeableness reflect variations in this internal regulation of prejudice toward others rather than inherently lower levels of prejudice.

The opponent process model proposed by Graziano and Habashi (2010) is consistent with the idea that agreeableness is developmentally forecasted by effortful control. Thus, it may be the case that agreeableness is related to prejudiced behavior in particular contexts in which high agreeable persons may be given license to disinhibit prejudiced attitudes. This is supported by evidence that high agreeable individuals will display more prejudice toward overweight persons than their low agreeable peers when provided with limited justification in the form of simple individuating information (e.g., a person's counter-normative dislikes about their university) or a person's mistake in an experimental setting (Graziano et al. 2007).

Research conducted by Kassner et al. (2017) found that agreeableness was associated with lower expressed prejudice toward overweight persons. However, this prejudice did not interact with weight or sex variables, indicating that those high in agreeableness didn't necessarily lack anti-fat prejudice but were simply more positive about people in general. Persons high in agreeableness were less differentially prejudiced against overweight individuals than persons low in agreeableness, indicating that there was less discrepancy between their attitudes about normal-weight versus overweight individuals. Among those high in agreeableness, women differed from men in that women expressed more anti-fat prejudice against male targets. This gender difference did not emerge among those low in agreeableness. Kassner et al. (2017) conclude that anti-fat prejudice may be related to other forms of prejudice, but given that perceived attractiveness predicted prejudice against overweight individuals, anti-fat prejudice could be distinct in its relationship with contextual variables, such as that of physical attraction.

There is evidence that agreeableness may not be particularly efficacious at indexing prejudiced attitudes and behaviors. Statistically accounting for empathic concern and the dark triad (Machiavellianism, narcissism, psychopathy; Paulhus and Williams 2002) renders agreeableness unrelated to prejudice (Hodson et al.

2009; Bergh and Akrami 2016). Additionally, using the HEXACO model diminishes the relationship between agreeableness and prejudice. Bergh and Akrami (2016) found that while five-factor model agreeableness strongly correlated with measures of sexist and racist prejudice, correlations with HEXACO agreeableness were unsubstantial. This indicates that measures of conventional prejudice don't seem to relate to agreeableness globally but are contingent on the inclusion of other facets that the HEXACO model places under honesty-humility and the interstitial trait of altruism which shares characteristics with agreeableness, honesty-humility, and emotionality (HEXACO neuroticism). These findings support the idea that the relationship between agreeableness and prejudice is more complicated and may only yield distinct effects in particular contexts.

Conclusion

Several avenues of research indicate that the impact of agreeableness is not inconsequential. However, the need for further research is demonstrated by the nuances and complexities present in the literature. In basic interpersonal interaction, disagreeableness is associated with the endorsement of less constructive conflict management tactics and increased behavioral indications of tension in conflict resolution scenarios (Graziano et al. 1996). Agreeable persons tend to guide competitive scenarios so that there is more cooperation (Graziano et al. 1997), and agreeable adolescents are rated by their peers as displaying less signs of direct and indirect aggression (Gleason et al. 2004). This lends itself to the recent finding that disagreeable persons are more likely to be excluded by their peers (Hales et al. 2016). Although some evidence suggests that agreeable persons are more susceptible to particular forms of influence and persuasion (Barry and Friedman 1998; Bègue et al. 2014), Graziano and Tobin's (in press) review of the evidence concludes no appreciable support for

the apparent conjecture of agreeable persons being more likely to acquiesce to compliance tactics.

Some findings indicate that agreeableness predicts an increased likelihood of engaging in prosocial behavior (Graziano et al. 2007). However, these findings are challenged by consideration of the HEXACO model (Hilbig et al. 2014) and the comparatively stronger influence of honesty-humility in predicting variance in helping behavior. With regard to prejudice, Graziano et al. (2007) found that while agreeable persons are more positive about a wider variety of social groups, they will express anti-fat prejudice when given only slim justification. Kassner et al. (2017) found that while agreeable persons expressed lower levels of differential prejudice against overweight persons, this was mediated by situational factors such as attractiveness. Again, however, research by Bergh and Akrami (2016), employing the HEXACO model and other personality measures as well as measures of attitudinal racism and sexism, found the influence of agreeableness to be null. It is of note here that experimental research exploring agreeableness as a moderator has yielded more evidence that agreeableness is related to helping and prejudice than more generalized correlational research. This is likely an important consideration for future research, which may be able to reconcile this disparity.

As psychological analysis moves into more complex territory with increased potential for moderating variables (e.g., social relationships, affective and motivational states, and additional personality traits), the influence of these variables should be given more attention by future personality researchers. If anything can be said for the body of research on the importance of agreeableness as a whole, it is that certain contextual variables likely play a more imperative role in moderating how this trait influences behavior than had previously been assumed. Understanding the nuances of the relationship between agreeableness and its behavioral outcomes should be a staple in future research on individual differences and their importance.

References

- Ahadi, S. A., & Rothbart, M. K. (1994). Temperament, development, and the Big Five. In C. F. Halverson Jr., G. A. Kohnstamm, & R. P. Martin (Eds.), *The developing structure of temperament and personality from infancy to adulthood* (pp. 189–207). Hillsdale: Erlbaum.
- Ashton, M. C., & Lee, K. (2007). Empirical, theoretical, and practical advantages of the HEXACO model of personality structure. *Personality and Social Psychology Review, 11*(2), 150–166.
- Barry, B., & Friedman, R. A. (1998). Bargainer characteristics in distributive and integrative negotiation. *Journal of Personality and Social Psychology, 74*(2), 345–359.
- Bègue, L., Beauvois, J. L., Courbet, D., Oberlé, D., Lepage, J., & Duke, A. A. (2014). Personality predicts obedience in a Milgram paradigm. *Journal of Personality, 83*(3), 299–306.
- Bergh, R., & Akrami, N. (2016). Are non-agreeable individuals prejudiced? Comparing different conceptualizations of agreeableness. *Personality and Individual Differences, 101*, 153–159.
- Buss, A. H., & Plomin, R. (1984). *Temperament: Early developing personality traits*. Hillsdale: Earlbaum.
- Caprara, G. V., Alessandri, G., Di Giunta, L., Panerai, L., & Eisenberg, N. (2010). The contribution of agreeableness and self-efficacy beliefs to prosociality. *European Journal of Personality, 24*(1), 36–55.
- Gleason, K. A., Jensen-Campbell, L. A., & South Richardson, D. (2004). Agreeableness as a predictor of aggression in adolescence. *Aggressive Behavior, 30*(1), 43–61.
- Graziano, W. G., Hair, E. C., & Finch, J. F. (1997). Competitiveness mediates the link between personality and group performance. *Journal of Personality and Social Psychology, 73*(6), 1394–1408.
- Graziano, W. G., & Habashi, M. M. (2010). Motivational processes underlying both prejudice and helping. *Personality and Social Psychology Review, 14*(3), 313–331.
- Graziano, W. G., Jensen-Campbell, L. A., & Hair, E. C. (1996). Perceiving interpersonal conflict and reacting to it: The case for agreeableness. *Journal of Personality and Social Psychology, 70*(4), 820.
- Graziano, W. G., Bruce, J., Sheese, B. E., & Tobin, R. M. (2007). Attraction, personality, and prejudice: Liking none of the people most of the time. *Journal of Personality and Social Psychology, 93*(4), 565.
- Graziano, W. G., & Tobin, R. M. (2017). Agreeableness and the five factor model. In T. A. Widiger (Ed.), *The Oxford handbook of the five factor model* (pp. 105–132). New York: Oxford University Press.
- Habashi, M. M., Xia, J., Clark, J. K., Wegener, D. T. (unpublished manuscript). Agreeableness and message-based persuasion.
- Hales, A. H., Kassner, M. P., Williams, K. D., & Graziano, W. G. (2016). Disagreeableness as a cause and consequence of ostracism. *Personality and Social Psychology Bulletin, 42*(6), 782–797.
- Hilbig, B. E., Glöckner, A., & Zettler, I. (2014). Personality and prosocial behavior: Linking basic traits and social value orientations. *Journal of Personality and Social Psychology, 107*(3), 529.
- Hodson, G., Hogg, S. M., & MacInnis, C. C. (2009). The role of “dark personalities” (narcissism, Machiavellianism, psychopathy), Big Five personality factors, and ideology in explaining prejudice. *Journal of Research in Personality, 43*(4), 686–690.
- Jensen-Campbell, L. A., Graziano, W. G., & Hair, E. C. (1996). Personality and relationships as moderators of interpersonal conflict in adolescence. *Merrill-Palmer Quarterly, 42*, 148–163.
- Jensen-Campbell, L. A., Rosselli, M., Workman, K. A., Santisi, M., Rios, J. D., & Bojan, D. (2002a). Agreeableness, conscientiousness, and effortful control processes. *Journal of Research in Personality, 36*(5), 476–489.
- Jensen-Campbell, L. A., Adams, R., Perry, D. G., Workman, K. A., Furdella, J. Q., & Egan, S. K. (2002b). Agreeableness, extraversion, and peer relations in early adolescence: Winning friends and deflecting aggression. *Journal of Research in Personality, 36*(3), 224–251.
- Kassner, M. P., Gadke, D. L., Graziano, W. G., & Tobin, R. M. (2017). *Searching for the prejudiced personality: Linking personality and discriminatory behavior*. Unpublished manuscript.
- Koole, S. L., Jager, W., van den Berg, A. E., Vlek, C. A., & Hofstee, W. K. (2001). On the social nature of personality: Effects of extraversion, agreeableness, and feedback about collective resource use on cooperation in a resource dilemma. *Personality and Social Psychology Bulletin, 27*(3), 289–301.
- Paulhus, D. L., & Williams, K. M. (2002). The dark triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality, 36*(6), 556–563.
- Penner, L. A., & Fritzsche, B. A. (1993). *Measuring the prosocial personality: Four construct validity studies*. Paper presented at the annual meeting of the American Psychological Association, Toronto.
- Penner, L. A., Fritzsche, B. A., Craiger, J. P., & Freifeld, T. R. (1995). Measuring the prosocial personality. *Advances in Personality Assessment, 10*, 147–163.
- Rothbart, M. K., Derryberry, D., & Posner, M. I. (1994). A psychobiological approach to the development of temperament. In J. E. Bates, & T. D. Wachs (Eds.), *Temperament: Individual differences at the interface of biology and behavior* (pp. 83–116). Washington, D. C.: American Psychological Association.
- Ruff, H. A., & Rothbart, M. K. (1996). *Attention in early development: Themes and variations*. New York: Oxford University Press.
- Sibley, C. G., & Duckitt, J. (2008). Personality and prejudice: A meta-analysis and theoretical review. *Personality and Social Psychology Review, 12*(3), 248–279.
- Tobin, R. M., Graziano, W. G., Vanman, E. J., & Tassinary, L. G. (2000). Personality, emotional experience, and efforts to control emotions. *Journal of Personality and Social Psychology, 79*(4), 656.

Importance of Replication, The

Christopher J. Holden^{1,2} and Garrett S. Goodwin¹

¹Western Carolina University, Cullowhee, NC, USA

²Appalachian State University, Boone, NC, USA

Synonyms

[Replication](#); [Reproducibility](#); [Reproducibility project](#)

Definition

Replication is a crucial part of scientific practice. Replication involves following the methods and procedures of a previous study in an attempt to reproduce the findings of that study. This is done to ensure that the findings and any theoretical conclusions are valid.

Introduction

Replication and falsification are at the core of scientific practice. Replication is the effort to reproduce findings from previous research using the same, or similar, methods to further validate these findings and build theory. Similarly, falsification is the practice of generating predictions (i.e., hypotheses) that can be demonstrated to be false and adjusting theory as observations either support or refute these predictions. These principles extend back to the likes of Sir Francis Bacon, Karl Popper, and R.A. Fisher (Bacon 1859; Fisher 1925; Popper 1992). Furthermore, they are often used to delineate between science and pseudoscience (Open Science Collaboration 2012; OSC) and are often the first things discussed in courses on research methods, both at the graduate and undergraduate level. However, the importance afforded to and the focus on tenets of science are often left in the classroom. That is, the practitioners of science often ignore replication to

focus on their own work. In fact, there may be a number of reasons why replication is not incentivized (OSC 2012). However, recent movements within the field of psychology are targeted at changing that. This entry outlines the role that replication has played in psychological research in recent years, how psychology came to focus on replication, and some of the practices that are being promoted to increase reproducibility.

Avoidance of Replication in Psychology

Unfortunately, psychology has had a tradition of avoiding replications. It has been argued that there is a greater impetus put on developing original studies than there is on replications of established work, so much so that it may even be considered risky to do so (OSC 2012). This is true across all aspects of the discipline, from journals, to funding agencies, to the ways in which scientific practices are taught, to tenure and promotion for professors, and to graduate students and the pressures placed on them while they pursue a degree. It could be argued that psychology has a culture of “anti-replication” that stems from the broader “publish or perish” culture in academia.

This culture of anti-replication stems from actions and decisions by individuals in various positions within the field. For example, the editors of academic journals in psychology place an importance on novel research, and reviewers may prefer original studies over replications (Hüffmeier et al. 2016). Additionally, when replications are published, they are often conceptual replications, which may help to solidify a theoretical construct, but in many ways bypass direct replication. While attempts have been made to counter this avoidance of replications and journals focusing on replication have been established, they often struggle (Hüffmeier et al. 2016). This leaves researchers with few options to publish their replication research and maintains the culture of avoiding replication.

Similar messages are received from the decision-makers at funding agencies, who often place the upmost importance on novel research, making it hard for researchers to find funding for

simple replications, despite this being a core tenant of science (Hüffmeier et al. 2016). Adding to this is the fact that tenure and promotion are often tied to the publication of research, and although there is variability in the importance placed on publishing and the quality of publishing across universities, the type of research that young faculty members conduct is shaped by journals and funding agencies. Furthermore, this process starts as psychologists begin their academic training in graduate school. Outside of developing a dissertation, which is typically focused on novel findings, graduate students are pressured to develop projects that lead to publications, which can make graduate students more competitive on the job market. With a short timeline and the same norms of anti-replication faced by faculty members, it is more worthwhile for graduate students to focus on developing new hypotheses. Taken together, this suggests that there may be a structure of incentives working against replication in psychology. This idea has been suggested elsewhere (OSC 2012) and is used here to argue that the incentive structure should be changed, to return to placing an importance on replication. Indeed, many such practices are underway and will be discussed later in this entry. However, it is equally important to understand how the field of psychology came to this point and what prompted some of these changes.

The Replication Crisis in Psychology

In 2011, a now infamous paper was published in the *Journal of Personality and Social Psychology* (JPSP) wherein the author, Daryl Bem, argued for the existence of psi phenomena. Psi phenomena are what otherwise might be called paranormal or extrasensory phenomena and consist of abilities such as precognition and premonition, which occur when events or information of the future retroactively have influence on the current state of the individual. Many psychologists were rightfully skeptical of this paper, as there was no previous theory to support the existence of psi phenomena. However, this study was published in what is arguably the top journal in its field,

contained multiple empirical studies, met all of the criteria for what was considered rigorous science at the time, and was published by a notable psychologist. Although it is not entirely uncommon for new studies to be published that spawn a revisiting of central theories within the field, the ideas proposed in this paper were so outside of the realm of what is considered possible both psychologically and physically; psychologists were faced with the possibility that there may be something else that led to the publication of such an article. Namely, that the methods and procedures used in the field were flawed.

As it seemed more likely that the methods used in the field were flawed, some psychologists began to cast a critical eye to the practices within the field. Psychologists began appraising the use of certain statistical techniques (e.g., the use of p-values in statistical interpretation), the ways in which hypotheses are decided upon and reported, and, most importantly, why replications were not being conducted. Out of these efforts came the reproducibility project (OSC 2012), which sought to critically examine and, if possible, reproduce results reported in articles that had been recently published in top-tier psychology journals.

The reproducibility project was spearheaded by Brian Nosek, who also founded the Center for Open Science, which has been critical in the advancement of open science practices within psychology. Many of these open science practices are still developing and are discussed later in the entry. However, one of the first efforts was to replicate influential studies in psychology within the recent decade. This was done not only to gain better insight to what led to the publication of the Bem (2011) study but also to reinstate the important role that replication plays in science within the field of psychology. Replications of studies from three top-tier journals were attempted, and multiple metrics were used. However, only 36% of the replications were found to have statistically significant results (i.e., at a standard alpha of $p < 0.05$; OSC 2015). For many, this was alarming. Not only were the current scientific practices leading to conclusions that are impossible but also many of the studies conducted were failing to meet one of the basic criteria of science:

reproducibility. Thus, the field entered what many refer to as the replication crisis.

This replication crisis in psychology has been covered on various media platforms (Gelman 2016; Maxwell et al. 2015; Yong 2016). However, it is important to note that other fields have experienced similar crises. For example, the replication crisis in psychology led to the critical examination of practices within cancer researchers, which has turned up replicability rates similar to those seen in psychology (e.g., Freedman et al. 2015). More importantly, psychologists have begun to develop and use a number of open science practices, many of which serve to increase the rate of replication, and the incentives around it, while deterring practices such as *p*-hacking, HARKing, and selectively reporting results (e.g., Bruns and Ioannidis 2016; Kerr 1998).

Open Science Practices Surrounding Replication

Following the replication crisis, there have been a number of developments aimed at advancing the field and responding to the replication crisis. Many of these have been focused on open science, which is making all aspects of the scientific process transparent, accessible, and cataloged to avoid questionable research practices (for a review, see John et al. 2012). This includes everything from hypothesizing to plans for data collection and analysis, as well as reporting of results. A number of these practices are detailed below, with discussion about how they relate to replication.

One of the largest efforts in the open science movement is the practice of preregistration. Preregistration is the practice of stating all hypotheses and procedures prior to the collection of data. Although there is some variation in this, a majority of preregistrations are quite detailed. With more structured formats, such as those found on the Open Science Framework, researchers are asked to report a number of aspects of their study. These include the research questions and hypotheses, a description of all measures used, how these measures will be scored, how the data will be analyzed, how statistical inferences will be

made (e.g., *p*-value cutoffs), and whether any exploratory analyses will be conducted. This often involves the publishing of all study materials, including the measures as they appear to participants, scoring procedures, syntax or code for data analysis, and any other study materials. Thus, a complete overview of the study is given prior to data collection. Although some of this information is eventually reported in journal articles, it is important to note that journal articles do not have the same level of detail, and it is not always necessary to report in the way that is required for a preregistration. Furthermore, there is often little control over what is and is not reported in a journal article, whereas it is a requirement to be specific in the preregistration.

While preregistration helps to curb questionable research practices, it also makes it easier to complete replication studies. To do so, a researcher would simply have to find the preregistration and follow the procedures as documented by the original researcher. This is a stark contrast from having to dig through the methods section of a published article (which may have been altered to tell a more consistent story) and making guesses or contacting authors when the procedures are not clearly defined in the methods section of a paper. This process is made easier with preregistration, especially if materials are made open and provided with the preregistration. Thus, preregistration not only curbs questionable research practices but may also increase replication efforts.

Registered reports, which are a variant of preregistration, further incentivize replications. More specifically, registered reports ultimately serve to ensure that replication studies are published, regardless of their outcome. To do this, many journals, such as *Perspectives on Psychological Science*, are ensuring publication of any registered report that follows protocol. This protocol involves not only preregistration of hypotheses and procedures by the authors who intend to conduct the replication but also a peer review of the methods by the authors of the original study. This peer review occurs prior to data collection and is done to ensure that the methods of the replication align with the methods of the original study and that the methods used are sound enough to

provide evidence for or against the findings of the original study. Once approved, the authors of the replication are free to conduct the study and submit their findings to the journal for a second peer review before publication, ensuring that the reporting of the replication is in accordance with the standards of the field.

This dual peer review process is not necessarily unique to the registered reports model. In fact, general preregistration through the Open Science Framework can be submitted to peer review prior to publication. It should be noted that this is optional, but there are incentives for doing so (e.g., currently there is a “Preregistration Challenge” wherein all preregistrations are eligible for a \$1,000 prize). Furthermore, peer review of preregistrations and registered reports ensures that appropriate methods are used in psychological research. In turn, the use of appropriate measures increases the likelihood that replication is possible, as error is reduced making initial inferences much easier, as well as decisions regarding support for or against the hypothesis when replicated. Essentially, the promotion of open science practices increases replicability.

Conclusion

This entry has provided a brief overview of the importance of replication from a scientific standpoint, as well as concerns surrounding replication in psychology. Although the field of psychology has faced what many consider to be a replication crisis, psychologists have also begun to adopt a number of practices (e.g., preregistration) that serve to avoid many of the practices that led to the replication crisis and, most importantly, to increase reproducibility within the field. In a sense, the replication crisis has led to a methodological revolution that places replication at the forefront of scientific concerns.

Cross-References

- ▶ Reliability
- ▶ Test-Retest Reliability
- ▶ Validity

References

- Bacon, R. (1859). *Fr. Rogeri Bacon Opera quaedam hactenus inedita. Vol. I. Containing I. – Opus tertium. II. – Opus minus. III. – Compendium philosophiae.* London: Longman, Green, Longman and Roberts. Retrieved from <http://books.google.com/books?id=wMUKAAAAYAAJ>. (Original work published 1267).
- Bem, D. J. (2011). Feeling the future: Experimental evidence for anomalous retroactive influences on cognition and affect. *Journal of Personality and Social Psychology, 100*, 407–425.
- Bruns, S. B., & Ioannidis, J. P. (2016). P-curve and p-hacking in observational research. *PLoS One, 11*. <https://doi.org/10.1371/journal.pone.0149144>.
- Fisher, R. (1925). Theory of statistical estimation. *Mathematical Proceedings of the Cambridge Philosophical Society, 22*, 700–725.
- Freedman, L. P., Cockburn, I. M., & Simcoe, T. S. (2015). The economics of reproducibility in preclinical research. *PLoS Biology, 13*. <https://doi.org/10.1371/journal.pbio.1002165>.
- Gelman, A. (2016, October 03). Why does the replication crisis seem worse in psychology? Retrieved from http://www.slate.com/articles/health_and_science/science/2016/10/why_the_replication_crisis_seems_worse_in_psychology.html
- Hüffmeier, J., Mazi, J., & Schultze, T. (2016). Reconceptualizing replication as a sequence of different studies: A replication typology. *Journal of Experimental Social Psychology, 66*, 81–92.
- John, L. K., Loewenstein, G., & Prelec, D. (2012). Measuring the prevalence of questionable research practices with incentives for truth telling. *Psychological Science, 23*, 524–532.
- Kerr, N. L. (1998). HARKing: Hypothesizing after the results are known. *Personality and Social Psychology Review, 2*, 196–217.
- Maxwell, S. E., Lau, M. Y., & Howard, G. S. (2015). Is psychology suffering from a replication crisis? What does “failure to replicate” really mean? *American Psychologist, 70*, 487–498.
- Open Science Collaboration. (2012). An open large-scale, collaborative effort to estimate the reproducibility of psychological science. *Perspectives on Psychological Science, 7*, 657–660.
- Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science, 349*, 1–8.
- Popper, K. (1992). *The logic of scientific discovery.* New York: Routledge. (Original work published 1934).
- Yong, E. (2016, March 04). Psychology’s replication crisis can’t be wished away. Retrieved from <https://www.theatlantic.com/science/archive/2016/03/psychologys-replication-crisis-cant-be-wished-away/472272/>

Imposter Phenomenon

- ▶ Impostor Phenomenon

Impostor Feelings

► [Impostor Phenomenon](#)

Impostor Phenomenon

Stephanie Le Nguyen and Aya Shigeto
Nova Southeastern University, Fort Lauderdale,
FL, USA

Synonyms

[Impostor feelings](#); [Imposter phenomenon](#); [Impostor syndrome](#)

Introduction

Academic and professional prowess is a valuable asset in industrialized societies, particularly for those pursuing white-collar career paths (e.g., teachers, medical professionals, entrepreneurs). For some individuals, the path to gain expertise in their fields may be filled with pressures to succeed, emotional distress, and characteristics related to the impostor phenomenon (IP). Impostors, those who experience the IP, possess a strong sense of intellectual incompetence and believe that they are untalented and undeserving of their success and recognition. Impostors regularly worry about reproducing past successes and maintaining high expectations. When left unaddressed, the IP has the potential to deteriorate a person's mental health, which has negative implications for academic and workplace performances. Familial and cultural factors can contribute to the development and exacerbation of the IP, while a strong sense of identity can serve as a buffer.

The Impostor Phenomenon

The impostor phenomenon (IP) is the intrapersonal experience of feeling like an intellectual

fraud, wherein impostors possess difficulty internalizing their success (Clance and Imes 1978). Impostors believe that others have been misguided into thinking that they are smarter than they actually are and persistently worry that their facade of competence will one day be exposed. The IP has been observed among varying age groups, ranging from children as young as 10 years old (Chayer and Bouffard 2010) to working adults as old as 67 years old (Rohrman et al. 2016). Additionally, the IP can impact people across different cultures, sexes, and professions (e.g., Dancy and Brown 2011). Researchers speculate that levels of impostorism – the beliefs, feelings, and behaviors related to the IP – can be maintained and potentially worsened by the impostor cycle.

The Impostor Cycle

Impostors' cognitive and behavioral patterns can be predicted by the impostor cycle (Clance 1985; Sakulku and Alexander 2011). The cycle begins with the encounter with a new academic or professional task, wherein impostors reactively experience self-doubt that they will not be able to adequately complete the task at the same caliber of their own past successes or peers'. They also worry that if they fail, they will surely be revealed as an incompetent fraud. Overwhelmed by the sense of imminent failure, impostors may try to lessen their anxiety by distracting themselves from the task through procrastination, followed by a frenzied scramble to get the task completed at the last moment. Alternatively, they may excessively overprepare for the task by obsessively fixating on getting all parts of the task completed perfectly, to the detriment of other tasks. Both approaches may be ultimately successful in getting the task completed. But for the impostor, relief is temporary, because a new task is always around the corner, evoking recurring worry, distress, and fear of being unveiled as an intellectual fraud. If the impostor cycle is permitted to persist unchecked, impostors may eventually crumble under tremendous self-imposed pressures and jeopardize their psychological well-being and academic/professional performances. Indeed, individuals with greater impostorism often report

lower levels of self-worth, self-efficacy, and overall life satisfaction as well as greater symptoms of anxiety and depression relative to those lower in or without impostorism (September et al. 2001; Sonnak and Towell 2001).

Illusion of Incompetency

The illusion of incompetency is a major constituent of the IP experience that can be perpetuated by the impostor cycle. Impostors often uphold an illusion of incompetency, wherein they doubt their intelligence despite having met objective measures that are commonly demonstrative of high capabilities, such as obtaining high standardized test scores, earning postsecondary degrees, and outcompeting for esteemed workplace positions. Several factors can contribute to this illusion, including faulty social comparisons, fixed view of intelligence, attributional biases, and maladaptive high self-expectations.

Impostors often make faulty social comparisons. They tend to remember their past failures more often than their past successes, and then they proceed to compare their failures to their cohorts' greatest accomplishments (Langford and Clance 1993). For instance, a first-year college student experiencing the IP at a greater intensity than his peers might compare his presentation to a third-year college student and feel unsatisfied by his own work for not producing work that is as remarkable as the third-year's. However, what the first-year fails to realize is that the third-year was once a novice presenter herself and that she has had years of practice to reach her current status. The tendency to make performance comparisons can impair the first-year's ability to objectively self-evaluate and acknowledge that his presenting skills may be superior relative to his first-year peers. In other words, impostors tend to hyperfocus on the end product rather than the intermediate processes. Langford and Clance (1993) explained that impostors may be overly concerned with appearing smart rather than prioritizing the learning process because it allows impostors to gain approval from others, particularly parents, and to compensate for feelings of insecurity and low self-esteem.

Impostors tend to believe that true intelligence should be innate and effortless, which could

further fuel their illusory belief of incompetence (Langford and Clance 1993). This fixed view of intelligence can be problematic because it opposes the idea that part of learning is accomplished by challenging oneself. Thus, individuals who are motivated by performance goals, or the desire to prove their intelligence, may start to develop impostor feelings of incompetence when they become unable to complete work with ease. Impostors who maintain that intelligence is fixed rather than malleable often display less resilience when encountering failures, which can lead to avoiding or withdrawing from challenging tasks.

Impostors also tend to attribute their successes or failures in a problematic way. Nonimpostors are naturally inclined to engage in a self-serving bias to maintain and promote self-esteem, wherein they take personal credit for their successes (internal attribution) while blaming failures to bad luck or uncontrollable circumstances (external attribution) (Shepperd et al. 2008). By contrast, impostors often display a reversed attributional bias (Clance and Imes 1978). Impostors typically make external attributions for their successes, believing that knowing the right people to get them into a job position, for example, may be the real reason for their successes. For their failures, on the other hand, they make external attributions, blaming their personal dispositions, such as not being intelligent or talented enough.

Many impostors display maladaptive perfectionistic traits; whenever high-achieving impostors are unable to completely fulfill their high expectations, they often exhibit self-dissatisfaction and self-chastisement (Thompson et al. 2000). Unfortunately, because their self-imposed standards are almost always unreasonably high, impostors frequently believe that their work or performances are mediocre and thus undeserving of praise or promotion (Kets de Vries 2005).

Familial Influence on the IP

Some individuals are at greater risk of experiencing the IP due to their parents' parenting behaviors. Impostors are indeed likely to report having parents who are high in demandingness,

expectations, and competitiveness (King and Cooley 1995). Controlling parenting is associated with higher IP scores partly because parents who are overly controlling can undermine children's sense of autonomy and competency, which can in turn exacerbate their sense of self-sufficiency – confidence and ability to successfully complete tasks on their own (Li et al. 2014).

Dysfunctional family relationships are also associated with greater impostorism. Parents who are drug addicts or alcoholics create unstable rearing environments for children. Children of alcoholics regularly undergo parentification whereby they are forced to assume adult roles, such as acting as caretakers to younger siblings or working part-time jobs (Castro et al. 2004). By making personal sacrifices to meet the needs of family members, parentified children as adults commonly have difficulty forming independent self-identities and achieving a sense of understanding of their full abilities, which are common characteristics of impostors.

Cultural Influence on the IP

Culture influences one's cognitive and psychological functioning, but relatively limited research has been done on cultural influences on the IP. Among the few that exist is the study by Cokley et al. (2013), in which they found that Asian American college students reported higher IP scores than Hispanic and Black American college students. Although a subsequent study found no ethnic differences in impostorism (Cokley et al. 2017), there is enough empirical evidence supporting that Asian American college students indeed experience the greatest impostorism above other ethnic group members. Past studies found that Asian parents, compared to European and Western parents, are more demanding and strict, which in turn has been associated with better academic performance among Asian American children (Leung et al. 1998), but not among European American counterparts (Masud et al. 2015). Asian American children also show the highest academic achievement (Musu-Gillette et al. 2017) and make up the highest percentage

with a bachelor's degree or higher among all racial/ethnic groups in the USA (U.S. Census Bureau 2016). However, it seems to come at a price; authoritarian parenting behaviors puts Asian American children at greater risk for poor psychological adjustment (e.g., Carrera and Wei 2017; Shen et al. 2018), perhaps including impostorism.

More work is clearly needed not only to help interpret inconsistent findings about ethnic minorities but also to examine mean-level differences between European Americans and ethnic minorities. However, if ethnic minorities are indeed at greater risk of the IP, racial discrimination is partly to blame. Indeed, Bernard et al. (2018) found that African American college students who had been racially discriminated against reported greater impostorism later. Stronger ethnic identity, however, has been identified as a protective factor against elevated impostorism. For example, Black and Hispanic students with stronger identification with their ethnicity (i.e., high affinity and sense of belonging) showed lower impostorism and better mental health than ethnic minority students with lower ethnic identities (McClain et al. 2015). Possessing a stable and secure sense of self may be particularly important for ethnic minorities, because it helps minimize feelings of vulnerability or self-doubt when tackling new tasks and environments and therefore protect them from the IP.

Academic and Career Implications

There is no longitudinal study to date that demonstrated long-term implications of higher levels of impostorism for academic and workplace performance. However, as Clance and O'Toole (1988) stated, impostors can experience paralysis when attempting to reach their full potential wherein their overwhelming fear of being found out as an intellectual fraud stifles originality and prevents them from acting beyond the status quo. Also, researchers suggested that impostors' fear of being unable to keep up an image of success can negatively impact career planning and motivation among both students and working professionals

(Neureiter and Traut-Mattausch 2016). Despite genuine interest and talent in their current discipline, students with intense impostorism may change majors or drop out of school entirely for the belief that they are incompetent. Alternatively, due to their intense dread of evaluations from others, impostors may have an extremely difficult time being in the spotlight or strive for leadership positions.

Conclusion

The impostor phenomenon (IP) is an experience that consists of thoughts and behaviors that altogether lead to the feeling of intellectual incompetence despite evidence to the contrary. The IP can affect individuals across different ages and contexts and undermine their psychological well-being and, in turn, their academic or work performances. Individuals can experience the IP without showing any observable indicator of it, but when they do exhibit characteristics of impostorism, professors and therapists should take note and play an active role in addressing it. Because impostors tend to shy away from exposing their weaknesses, a strong social support can help buffer the impact of the IP on impostors' daily lives as well as long-term academic and professional careers. Friends, mentors, and coworkers can also offer support by serving as a confidante, especially when impostors explore unfamiliar terrain. However, it is important that impostors receive feedback that is not overly positive but realistic so that they can have a more realistic understanding of their true capabilities.

Cross-References

- ▶ [Attributional Styles](#)
- ▶ [Internal and External Attributions](#)
- ▶ [Perfectionistic Cognitions](#)
- ▶ [Role of the Family in Personality Development, The](#)
- ▶ [Self-Enhancement Bias](#)
- ▶ [Self-Handicapping](#)

References

- Bernard, D. L., Hoggard, L. S., & Neblett, E. W., Jr. (2018). Racial discrimination, racial identity, and impostor phenomenon: A profile approach. *Cultural Diversity and Ethnic Minority Psychology, 24*, 51–61. <https://doi.org/10.1037/cdp0000161>.
- Carrera, S. G., & Wei, M. (2017). Thwarted belongingness, perceived burdensomeness, and depression among Asian Americans: A longitudinal study of interpersonal shame as a mediator and perfectionistic family discrepancy as a moderator. *Journal of Counseling Psychology, 64*, 280–291. <https://doi.org/10.1037/cou0000199>.
- Castro, D. M., Jones, R. A., & Mirsalimi, H. (2004). Parentification and the impostor phenomenon: An empirical investigation. *American Journal of Family Therapy, 32*, 205–216. <https://doi.org/10.1080/01926180490425676>.
- Chayer, M., & Bouffard, T. (2010). Relations between impostor feelings and upward and downward identification and contrast among 10- to 12-year-old students. *European Journal of Psychology of Education, 25*, 125–140. <https://doi.org/10.1007/s10212-009-0004-y>.
- Clance, P. R. (1985). *The impostor phenomenon: Overcoming the fear that haunts your success*. Atlanta: Peachtree.
- Clance, P. R., & Imes, S. A. (1978). The impostor phenomenon in high achieving women: Dynamics and therapeutic intervention. *Psychotherapy: Theory, Research & Practice, 15*, 241–247. <https://doi.org/10.1037/h0086006>.
- Clance, P. R., & O'Toole, M. A. (1988). The impostor phenomenon in high achieving women: Dynamics and therapeutic intervention. *Psychotherapy: Theory, Research and Practice, 15*, 241–247. https://doi.org/10.1300/J015V06N03_05.
- Cokley, K., McClain, S., Enciso, A., & Martinez, M. (2013). An examination of the impact of minority status stress and impostor feelings on the mental health of diverse ethnic minority college students. *Journal of Multicultural Counseling and Development, 41*, 82–95. <https://doi.org/10.1002/j.2161-1912.2013.00029.x>.
- Cokley, K., Smith, L., Bernard, D., Hurst, A., Jackson, S., Stone, S., . . . Roberts, D. (2017). Impostor feelings as a moderator and mediator of the relationship between perceived discrimination and mental health among racial/ethnic minority college students. *Journal of Counseling Psychology, 64*, 141–154. <https://doi.org/10.1037/cou0000198>.
- Dancy, T. E., & Brown, M. C. (2011). The mentoring and induction of educators of color: Addressing the impostor syndrome in academe. *Journal of School Leadership, 21*, 607–634.
- Kets de Vries, M. F. R. (2005). The dangers of feeling like a fake. *Harvard Business Review, 83*, 108–116, 159.
- King, J. E., & Cooley, E. L. (1995). Achievement orientation and the impostor phenomenon among college students. *Contemporary Educational Psychology, 20*, 304–312. <https://doi.org/10.1006/ceps.1995.1019>.

- Langford, J., & Clance, P. R. (1993). The impostor phenomenon: Recent research findings regarding dynamics, personality and family patterns and their implications for treatment. *Psychotherapy: Theory, Research, Practice, Training*, 30, 495–501. <https://doi.org/10.1037/0033-3204.30.3.495>.
- Leung, K., Lau, S., & Wai-Lim, L. (1998). Parenting styles and academic achievement: A cross-cultural study. *Merrill – Palmer Quarterly*, 44, 157.
- Li, S., Hughes, J. L., & Thu, S. M. (2014). The links between parenting styles and impostor phenomenon. *Psi Chi Journal of Psychological Research*, 19, 50–57. <https://doi.org/10.24839/2164-8204.JN19.2.50>.
- Masud, H., Thurasamy, R., & Ahmad, M. S. (2015). Parenting styles and academic achievement of young adolescents: A systematic literature review. *Quality and Quantity*, 49, 2411–2433. <https://doi.org/10.1007/s11135-014-0120-x>.
- McClain, S., Beasley, S. T., Jones, B., Awosogba, O., Jackson, S., & Cokley, K. (2015). An examination of the impact of racial and ethnic identify, impostor feelings, and minority status stress on the mental health of Black college students. *Multicultural Counseling and Development*, 44, 101–117. <https://doi.org/10.1002/jmcd.12040>.
- Musu-Gillette, L., de Brey, C., McFarland, J., Hussar, W., Sonnenberg, W., & Wilkinson-Flicker, S. (2017). *Status and Trends in the Education of Racial and Ethnic Groups 2017 (NCES 2017–051)*. U.S. Department of Education, National Center for Education Statistics: Washington, DC. Retrieved from <http://nces.ed.gov/pubsearch>
- Neureiter, M., & Traut-Mattausch, E. (2016). An inner-barrier to career development: Preconditions of the impostor phenomenon and the consequences for career development. *Frontiers in Psychology*, 7, 1–15. <https://doi.org/10.3389/fpsyg.2016.00048>.
- Rohrmann, S., Bechtoldt, M. N., & Leonhardt, M. (2016). Validation of the impostor phenomenon among managers. *Frontiers in Psychology*, 7, 11.
- Sakulku, J., & Alexander, J. (2011). The impostor phenomenon. *International Journal of Behavioral Science*, 6, 73–92.
- September, A. N., McCarrey, M., Baranowsky, A., Parent, C., & Schindler, D. (2001). The relation between well-being, impostor feelings, and gender role orientation among Canadian university students. *The Journal of Social Psychology*, 141, 218–232. <https://doi.org/10.1080/00224540109600548>.
- Shen, J. J., Cheah, C. S. L., & Yu, J. (2018). Asian American and European American emerging adults' perceived parenting styles and self-regulation ability. *Asian American Journal of Psychology*, 9, 140–148. <https://doi.org/10.1037/aap0000099>.
- Shepperd, J., Malone, W., & Sweeny, K. (2008). Exploring causes of the self-serving bias. *Social and Personality Psychology Compass*, 2, 895–908. <https://doi.org/10.1111/j.1751-9004.2008.00078.x>.
- Sonnak, C., & Towell, T. (2001). The impostor phenomenon in British university students: Relationships between self-esteem, mental health, parental rearing style and socioeconomic status. *Personality and Individual Differences*, 31, 863–874. [https://doi.org/10.1016/S0191-8869\(00\)00184-7](https://doi.org/10.1016/S0191-8869(00)00184-7).
- Thompson, T., Foreman, P., & Martin, F. (2000). Impostor fears and perfectionistic concern over mistakes. *Personality and Individual Differences*, 29, 629–647.
- U.S. Census Bureau. (2016). *Education attainment in the United States: 2015 population characteristics*. Retrieved from <https://www.census.gov/content/dam/Census/library/publications/2016/demo/p20-578.pdf>

Impostor Syndrome

► Impostor Phenomenon

Impression Management

Matthias Ziegler¹ and Ursula Hess²

¹Humboldt-Universität zu Berlin, Berlin, Germany

²Department of Psychology, Humboldt University of Berlin, Berlin, Germany

Definition

Impression management has been defined as “the goal-directed activity of controlling information about some person, object, idea, or event to audiences” (p. 201, Schlenker and Pontari 2000).

Introduction

Impression management is a popular research phenomenon in social and personality psychology. The concept overlaps with faking and social desirability. Yet, whereas those terms are often used when describing response distortions in questionnaires, impression management is used when people interact. In recent years, impression management has had a strong indirect influence on personality research. This is related to the rise of interest in subclinical narcissism. In what follows, we will define and describe key aspects of impression management and tie those to narcissism as an example of an interindividual difference construct.

Leary and Kowalski (1990) defined two discreet processes related to impression management: impression motivation and impression construction. According to their two-component model, motivation to impress is given when the impressions are goal relevant (Ziegler et al. 2011), when the goals are desirable (Ziegler 2011), and when there is a discrepancy between the impressions one thinks others have and the ones intended. The actual impression construction is then driven by five primary factors. Two of these factors can be described as intrapersonal variables (self-concept and desired identity), whereas the other three can be regarded as interpersonal determinants (role constraints, target values, and current or potential social image). According to Leary and Kowalski, impressions created are often highly related to the actual self-concept but at the same time can be influenced by a desire to create a specific identity. The normative role expectations as well as the presumed values of the interaction partner also influence impression management. Finally, it is suggested that the perceived current image and the potential image one can create in the future influence impression management.

With respect to narcissism, these issues become relevant when considering the initial popularity of narcissists (Back et al. 2010; Paulhus 1998). This phenomenon was originally found by Paulhus and later replicated by Back and colleagues. Both research groups used student samples of people meeting strangers.

Impression Motivation and Narcissism

For impression motivation, all of the antecedents mentioned above were present in the settings used by Paulhus and Back et al., described above. Thus, narcissists strive for positive feedback and the admiration by others (Morf and Rhodewalt 2001). Moreover, it can be assumed that especially when meeting others for the first time, there is a discrepancy between the way narcissists think they are perceived and the way they want to be perceived (but also see Giacomin and Jordan, 2014). The latter two aspects clearly speak in favor of impression management motivation for narcissists in settings like the ones described.

Impression Construction and Narcissism

Narcissists are described as possessing a grandiose self-concept (Morf and Rhodewalt 2001). Thus, according to Leary and Kowalski (1990), their self-presentations are more likely to reflect this grandiosity in order to maintain consistency between private and public self and to avoid harm to their vulnerable self-concept (Morf and Rhodewalt 2001). Jones and Paulhus (2010) detailed that the narcissists' desired identity is one of superiority and entitlement. This further lends support to the notion that the self-presentation of narcissists likely contains substantial self-enhancing aspects. This is a typical aspect of impression management which further underscores the close relation between narcissism and impression management.

Going one step further, the question arises which impression management tactics are being used in general and by narcissistic people in particular. Referring to Schneider (1981), Stevens and Kristof (1995) list verbal statements, nonverbal or expressive behaviors, modifications of one's physical appearance, and integrated behavior patterns (e.g., favor rendering) as most likely impression management styles. Schneider specifically stressed the role of expressive behaviors. In other words, a good impression manager applies a mix of different styles. Thus, analyses need to focus on what is being said as well as on how it is being said. More specifically assertive and defensive impression management tactics are differentiated (Stevens and Kristof 1995).

Two assertive tactics have been described in the literature. The first tactic, ingratiation in the form of other-enhancement and opinion conformity, is less likely to be used by people scoring higher on narcissism. The second tactic, self-promotion in the form of entitlement (claims of responsibility for positive events), enhancement (exaggerating one's role in positive events), or descriptions of overcoming obstacles, is much more likely to be used by individuals higher in narcissism. Interestingly, whereas ingratiation seeks to elicit general liking, self-promotion aims at eliciting specific character attributions (e.g., respect). Defensive tactics are used in order to correct a potential negative impression

(Schlenker and Weigold 1992). Mainly people use excuses or claims of not being responsible for negative events and justifications or claims that the negative event actually is not as bad.

Thus, based on the literature, it can be concluded that participants higher in narcissism are motivated to construct positive impressions and that they use preferentially self-promotion to create specific positive attributions and justifications to correct negative impressions. Finally, an impression management tactic mentioned in all of the literature cited so far but not discussed here is nonverbal behavior.

Impression Management and Emotion Expressions

The role of emotions in impression management is substantiated in the two-component model by Leary and Kowalski (1990). These authors emphasized the necessity to consider not only verbal but also nonverbal communication and behavior. Schlenker and Pontari (2000) put emotions and their display into a prominent role for impression management. Next to automatic effects of the sociality of the situation on emotion expressions, people also can successfully fake emotion expressions in order to achieve a specific impression in others (DePaulo 1992). Thus there is a clear and direct link between the use of impression management tactics and emotional displays.

Conclusion

Impression management as a phenomenon influences our daily lives and has consequently been the focus of many research attempts. At present there are two research traditions, one which is rather social psychologically oriented focuses on the direct interaction between people. Another, more personality psychologically oriented focuses more on response biases in test taking. However, in recent years, the intensified research into subclinical narcissism has helped to unify these research traditions. In the future, personality psychologist could use the detailed knowledge regarding impression management to inform process models describing how interindividual differences influence behavior in dyads and groups.

Cross-References

- ▶ [Faking](#)
- ▶ [Faking Behavior](#)
- ▶ [Social Desirability Response Style](#)

References

- Back, M. D., Schmukle, S. C., & Egloff, B. (2010). Why are narcissists so charming at first sight? Decoding the narcissism–popularity link at zero acquaintance. *Journal of Personality and Social Psychology*, *98*(1), 132–145.
- DePaulo, B. M. (1992). Nonverbal behavior and self-presentation. *Psychological Bulletin*, *111*(2), 203.
- Giacomin, M., & Jordan, C. H. (2014). Down-regulating narcissistic tendencies: Communal focus reduces state narcissism. *Personality and Social Psychology Bulletin*, *40*(4), 488–500. <https://doi.org/10.1177/0146167213516635>.
- Jones, D. N., & Paulhus, D. L. (2010). Differentiating the dark triad within the interpersonal circumplex. In L. M. Horowitz & S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment and therapeutic interventions* (pp. 249–268). New York: Wiley.
- Leary, M. R., & Kowalski, R. M. (1990). Impression management: A literature review and two-component model. *Psychological Bulletin*, *107*(1), 34–47.
- Morf, C. C., & Rhodewalt, F. (2001). The paradoxes of narcissism: Unraveling model processing a dynamic self-regulatory processing model. *Psychological Inquiry*, *12*(4), 177–196.
- Paulhus, D. L. (1998). Interpersonal and intrapsychic adaptiveness of trait self-enhancement: A mixed blessing? *Journal of Personality and Social Psychology*, *74*(5), 1197–1208.
- Schlenker, B. R., & Pontari, B. A. (2000). The strategic control of information: Impression management and self-presentation in daily life. In A. Tesser, R. B. Felson, & J. M. Suls (Eds.), *Psychological perspectives on self and identity* (pp. 199–232). Washington, DC: American Psychological Association. <https://doi.org/10.1037/10357-008>.
- Schlenker, B. R., & Weigold, M. F. (1992). Interpersonal processes involving impression regulation and management. *Annual Review of Psychology*, *43*(1), 133–168.
- Schneider, D. J. (1981). Tactical self-presentations: Towards a broader conception. In J. T. Tedeschi (Ed.), *Impression management theory and social psychology* (pp. 23–40). New York: Academic.
- Stevens, C. K., & Kristof, A. L. (1995). Making the right impression – A field-study of applicant impression management during job interviews. *Journal of Applied Psychology*, *80*(5), 587–606.

Ziegler, M. (2011). Applicant faking: A look into the black box. *TIP: The Industrial-Organizational Psychologist*, 49(1), 29–36. Retrieved from <http://www.sio.org/tip/july11/06ziegler.aspx>.

Ziegler, M., MacCann, C., & Roberts, R. D. (2011). Faking: Knowns, unknowns, and points of contention. In M. Ziegler, C. MacCann, & R. R. Roberts (Eds.), *New perspectives on faking in personality assessment* (pp. 3–16). New York: Oxford University Press.

Impressionability

- ▶ [Sensitivity](#)

Imprint

- ▶ [Archetypes](#)

Impulse Control

- ▶ [Reality Principle](#)

Impulses

- ▶ [Desire](#)
- ▶ [Instincts \(Biological\)](#)

Impulsive

- ▶ [Psychopathy](#)

Impulsive Action

- ▶ [Impulsivity](#)

Impulsive Behavior

- ▶ [Acting Out \(Defense Mechanism\)](#)

Impulsive Choice

- ▶ [Impulsivity](#)

Impulsivity

Catharine Winstanley
University of British Columbia, Vancouver,
BC, Canada

Synonyms

Antonyms: [impulse control](#), [cognitive restraint](#);
[Behavioral disinhibition](#); [Impulsive action](#);
[Impulsive choice](#)

Definition

A personality trait that reflects a predisposition toward rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions to the individual or to others (Moeller et al. 2001).

Introduction

Impulsivity, loosely defined as action without sufficient forethought, is a personality trait that can be both beneficial and disadvantageous in everyday life. The ability to act rapidly, on impulse, can allow us to seize a valuable opportunity when the moment arises, but also make a disastrous decision we then live to regret. High levels of impulsivity are not only socially unacceptable but are also a key symptom in a range of psychiatric disorders, including attention-deficit hyperactivity disorder (ADHD), bipolar disorder, and personality disorders (APA 2013). Increased impulsivity is also thought to represent an important risk factor for the development of addiction disorders. As such, numerous research teams and clinicians are keen to understand more about the neurobiological systems regulating impulse control. The International Society for Research into

Impulsivity (InSRI; www.impulsivity.org) was formed in 2003 specifically to try and bring together researchers in this field, and this organization has published a number of position papers trying to clarify key issues in impulsivity research.

Impulsivity is a Non-unitary Construct

Just as there are many types of memory (working memory, long-term memory, declarative, episodic, motor, etc.), it is clear that there are many forms of impulse control, and these are regulated by overlapping yet partly dissociable brain regions and neurotransmitter systems.

In human subjects, impulsivity can be measured through a number of questionnaires such as the 11 point Barratt Impulsiveness Scale (BIS-11), which suggests that impulsivity consists of at least three independent domains: motor disinhibition, impulsive choice, and inattention (Patton et al. 1995). The more recent UPPS-P scale also measures impulsive behavior across five distinct subscales based on the Five Factor Model of personality: urgency, premeditation, perseverance, sensation-seeking, and positive urgency (Whiteside and Lynam 2001). While patients with clinically significant levels of impulsivity typically score high across all measures of impulsivity, these different components of impulsivity can vary significantly across healthy populations, such that moderate levels of one form of impulsivity do not necessarily predict equivalent expression of another. In order to probe the neurobiological basis of impulsivity, laboratory-based paradigms have been developed that tap into one or more forms of impulsivity. These can be broadly divided into those that measure some form of impulsive action/motor impulsivity versus those that measure impulsive choice/decision making. Many of these paradigms have been successfully translated into cognitive tasks that laboratory rodents and nonhuman primates can perform (see Winstanley (2011) for discussion).

Impulsive Action

Although all tests of impulsive action require the subject to inhibit some form of potent motor

response, the behavioral tasks vary with respect to whether the subject is required to refrain from action initiation (RAI) or stop an ongoing action (SOA) (Hamilton et al. 2015a). A commonly used exemplar of the former would be the go/no-go task (e.g., Hogg and Evans 1975), in which a signal presented at the start of each trial indicates whether the subject should make the “go” response, or not (“no-go”). The go signal is often more frequent, thereby encouraging a tendency to respond that must then be effortfully inhibited when the no-go signal is presented. In contrast, the stop signal task is the prototypical task requiring cancellation of an already-initiated action (see Verbruggen and Logan (2009) for review). Here, the subject is required to respond rapidly to a target on every trial, but to inhibit this action in response to a stop signal that is presented at varying times after initiation of the “go” response.

Impulsive Choice

The prototypical assessment of impulsive decision making reflects impulsivity as an intolerance to delayed gratification (Hamilton et al. 2015b). In these delay-discounting tasks (also sometimes described as inter-temporal choice tasks), subjects choose between a smaller-sooner versus a larger-later reward. Delays to reward delivery decrease the subjective value of the reward, such that subjects judge a smaller yet more rapidly available reward to be of greater worth. More rapid discounting of the larger reward’s value, such that the smaller-sooner reward is preferred even when the delay to the larger reward is relatively short, reflects greater impulsive choice. By varying the size of the smaller and larger reward, as well as the delay to their delivery, it is possible to obtain a delay-discounting function that reflects how readily incremental increases in delay-to-reward erode the larger reward’s value. Such functions are typically hyperbolic in shape and can be fitted to an equation of the form $V = 1 / (1 + k \cdot D)$, in which K indicates the discounting rate (Ainslie 1975).

Risky Decision Making

The degree to which risky decision making should be considered a part of impulsivity is currently

under debate. While it is true that highly impulsive individuals can make risky decisions, the act of making a risky choice can be carefully considered, and as such does not seem to capture the lack of adequate forethought characteristic of impulsivity. However, a predilection to make risky choices, and to favor outcomes associated with immediate rather than delayed gratification, may both reflect an underweighting of the negative consequences of such choices.

Conclusion

Impulsivity is an umbrella term that covers a range of cognitive processes related to cognitive control and information processing. These subtypes of impulsivity can be measured using self-report questionnaires and cognitive tests. While different aspects of impulsivity may be independently expressed, and regulated by at least partially dissociable brain regions and neurotransmitter systems, high impulsivity as assessed across multiple domains is an important feature of certain psychiatric conditions.

Cross-References

- ▶ Delay of Gratification
- ▶ Disinhibition
- ▶ Personality and Attentional Deficits
- ▶ Personality and Sexual Addiction
- ▶ Personality Disorder
- ▶ Response Inhibition
- ▶ UPPS Model of Impulsivity

References

- Ainslie, G. (1975). Specious reward: A behavioral theory of impulsiveness and impulse control. *Psychological Bulletin*, 82(4), 463–498.
- APA. (2013). *Diagnostic and statistical manual 5* (5th ed.). Washington, DC: American Psychiatric Press.
- Hamilton, K. R., Littlefield, A. K., Anastasio, N. C., Cunningham, K. A., Fink, L. H., Wing, V. C., et al. (2015a). Rapid-response impulsivity: Definitions, measurement issues, and clinical implications. *Personal Disord*, 6(2), 168–181. <https://doi.org/10.1037/per0000100>.

- Hamilton, K. R., Mitchell, M. R., Wing, V. C., Balodis, I. M., Bickel, W. K., Fillmore, M., et al. (2015b). Choice impulsivity: Definitions, measurement issues, and clinical implications. *Personality Disorders*, 6(2), 182–198. <https://doi.org/10.1037/per0000099>.
- Hogg, J., & Evans, P. L. (1975). Stimulus generalization following extra-dimensional training in educationally subnormal (severely) children. *British Journal of Psychology*, 66(2), 211–224.
- Moeller, F. G., Barratt, E. S., Dougherty, D. M., Schmitz, J. M., & Swann, A. C. (2001). Psychiatric aspects of impulsivity. *American Journal of Psychiatry*, 158, 1783–1793.
- Patton, J., Stanford, M., & Barratt, E. (1995). Factor structure of the barratt impulsiveness scale. *Journal of Clinical Psychology*, 51(6), 768–774.
- Verbruggen, F., & Logan, G. D. (2009). Models of response inhibition in the stop-signal and stop-change paradigms. *Neuroscience and Biobehavioral Reviews*, 33(5), 647–661.
- Whiteside, S. P., & Lynam, D. R. (2001). The five factor model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and Individual Differences*, 30(4), 669–689. [https://doi.org/10.1016/S0191-8869\(00\)00064-7](https://doi.org/10.1016/S0191-8869(00)00064-7).
- Winstanley, C. A. (2011). The utility of rat models of impulsivity in developing pharmacotherapies for impulse control disorders. *British Journal of Pharmacology*, 164(4), 1301–1321.

Impulsivity/Anxiety System

- ▶ BIS/BAS Systems

In Vivo Flooding

- ▶ Flooding

Inattentiveness

- ▶ Distractibility

Incentive Motivation, Motives

- ▶ Personality in Sport and Exercise: A Motivational Perspective

Incidental Learning

Markus Martini¹ and Robert Gaschler²

¹University of Innsbruck, Innsbruck, Austria

²FernUniversität in Hagen, Hagen, Germany

Synonyms

Covariation learning; Implicit learning; Statistical learning

Definition

People can acquire knowledge about regularities in the environment or task material despite having no intention to learn. While the terms incidental and implicit learning have in part been used synonymously, Frensch (1998) suggested to differentiate the concepts. Both are characterized by the absence of intention to learn. Yet incidental learning leads to knowledge that can be verbalized, while implicit knowledge cannot be verbalized.

Introduction

There are environmental regularities to be picked up in many situations in everyday life. For instance, while being instructed to pay attention to the color of the traffic light, the position is also informative, as the red light is on top. While likely never been told directly, we learn which letters and letter combinations can occur at the beginning of a word or the end of a word in a language (e.g., there are words starting with “ll” in Spanish but not in French; cf. Pacton et al. 2001). When presented several subtraction problems of the form $a + b - b = ?$ (e.g., $7 + 2 - 2 =$; $5 - 3 + 3 =$; ...), a second grader might notice that calculating seems unnecessary as the result of these problems is equal to the first number (cf. Siegler and Stern 1998).

Learning and Deciding to Use Incidentally Acquired Knowledge

Here we characterize how motivational factors and learning can contribute to performance

change in some of the frequently used incidental learning tasks in the lab. Studies on incidental learning in the lab target the phenomenon on a smaller time scale, taking hours rather than years. They demonstrate that we can concentrate to perform a task as instructed but at the same time acquire knowledge about regularities in the task material that might help us to simplify task processing. Studies converge in underlining the importance of motivational factors when it comes to performance changes in incidental learning: people seem to weigh the pros and cons of applying incidentally acquired knowledge for the simplification of task processing or, alternatively, continue to perform the task as instructed (cf. Shenhav et al. 2013). As long as the second grader (example above) has not yet understood that the covariation is based on a structural necessity, he/she might be hesitant about whether it can be applied to future arithmetic problems not practiced so far.

Incidental learning studies in the lab make use of arbitrary covariations in order to be able to study learning without confound by prior knowledge. For instance, the traffic light example was adapted for a laboratory study on incidental learning by Schuck et al. (2015). Adult participants were instructed to respond to the position of a stimulus (press right when stimulus is in upper left or lower right corner; press left when stimulus is in upper right or lower left). As with the traffic light, position was correlated with color. The task material contained a simple regularity that could be learned and used to simplify task processing: the stimulus was red whenever the instructed stimulus response mapping suggested to press right and green whenever the left key was due. Spatially ambiguous stimuli were used to behaviorally assess whether a participant at a given point in practice already had started to use color for selecting what to respond. In line with the view that participants covertly simulate the new color strategy before overtly using it, pattern decoding of the fMRI signal showed that color became represented in medial prefrontal cortex even *before* participants started to use it. Despite several hundred trials of exposure to the covariation between color and position, only a minority of the

participants eventually started to simplify the task by using color. Others reported afterward that they either had not noticed the regularity or that they had decided not to use color as this was against the instructions.

With respect to interindividual difference variables related to using vs. foregoing to use incidentally acquired knowledge, many contributions come from studies on age differences. For instance, similar to checking whether an item presented in the supermarket is on the (never changing) grocery shopping list, participants of Tournon and Hertzog (2004) had to compare a target word pair to a constant set of word pairs on the screen. While younger adults shifted from a visual to a memory strategy as soon as they had remembered the list to a sufficient extent, older adults were reluctant to do so even when they had acquired comparable memory strength about the list and were confident that they in principle could perform the task based on memory rather than visual checking.

A large part of the work on implicit (e.g., Kaufman et al. 2010) and incidental learning (e.g., Gaschler et al. 2014) has been performed with the serial reaction task (SRT). Typically, a stimulus is presented in one of four positions in each trial, and participants are instructed to press the spatially corresponding key as quickly as possible. Participants can in principle perform this task at high speed and low error rate without taking advantage of the fixed repeating sequence of responses and stimuli. The instructed task requires neither problem-solving nor other forms of generating and testing of hypotheses. The instructions provide no hint concerning the underlying regularity and instead underline the need to perform the task as instructed, focusing on reacting as quickly and accurately as possible. Importantly, the SRT allows to assess implicit and explicit sequence knowledge: participants who cannot verbalize or intentionally generate sequential regularities when probed after the sequence learning task might still perform at higher speed on the practiced sequence as compared to unpracticed material. Thus, the SRT allows to study implicit learning (i.e., involuntary learning that does not lead to verbalizable

knowledge) and incidental learning (i.e., involuntary learning that leads to verbalizable knowledge).

One setup recently optimized to study interindividual variability in incidental learning is visual statistical learning (Bogaerts et al. 2016). Participants watch a stream of visual shapes in which some transitions are more probable than others. Later on participants have to decide which sequences of shapes had frequently occurred and which had not. Individuals differ in efficiency of encoding of the shapes and learning of the transitions. Incidental knowledge can only be applied in the test phase in which participants are told to do so. Hence, the motivational component of deciding to use vs. forego using incidentally acquired knowledge is spared in this paradigm.

Interindividual Differences in Task Processing Predict What Is Being Picked Up

Interindividual differences in implicit or incidental learning might be related to interindividual differences in processing speed and analogical reasoning (cf. Kaufman et al. 2010) or working memory (cf. Martini et al. 2015). Whatever makes people better in performing a task might also put them in a better position with respect to incidental or implicit learning as both can be regarded as a by-product of task processing. Picking up regularities in the task material will necessitate fast and accurate processing. Only when a person is categorizing stimuli and selecting and executing responses with decent accuracy, covariations among features can be learned. While high performance in the instructed task should foster learning, the relationship between interindividual differences in executive functioning and application of incidentally acquired knowledge is less straightforward when motivational factors are of relevance. While a participant with high aptitude to perform well on a task should be in a good position to incidentally acquire knowledge about regularities in the task material, he/she can expect comparatively small performance gains from deciding to employ the knowledge for a shortcut. He/she is doing well anyways.

Conclusion

Incidental learning is targeted with many different research paradigms. In many cases motivational and cognitive factors seem to influence learning and performance. Assessing incidental learning at the latent construct level is difficult due to spillover effects. Due to motivational factors, there is transfer across incidental learning tasks – even when tasks fully differ in stimuli, responses, and stimulus-response mapping (Gaschler et al. 2014). It is sufficient for transfer effects to occur when incidental learning tasks employed one after the other have in common that there is *some sort of* regularity in the material that can be discovered and employed for simplification of task processing.

Cross-References

- ▶ [Automaticity](#)
- ▶ [Classical Conditioning](#)
- ▶ [Conformity](#)
- ▶ [Conscientiousness](#)
- ▶ [Conscious, Preconscious, and Unconscious](#)
- ▶ [Developmental Changes in Personality Traits](#)
- ▶ [Habits](#)
- ▶ [Implicit Measures of Personality](#)
- ▶ [Insight](#)
- ▶ [Intuition](#)
- ▶ [Multitasking](#)
- ▶ [Observational Learning](#)
- ▶ [Priming Effects](#)
- ▶ [Selective Attention](#)
- ▶ [Speeded Response](#)
- ▶ [Stimulus](#)

References

- Bogaerts, L., Siegelman, N., & Frost, R. (2016). Splitting the variance of statistical learning performance: A parametric investigation of exposure duration and transitional probabilities. *Psychonomic Bulletin & Review*, 23(4), 1250–1256.
- Frensch, P. A. (1998). One concept, multiple meanings: On how to define the concept of implicit learning. In M. A. Stadler & P. A. Frensch (Eds.), *Handbook of implicit learning* (pp. 47–104). Thousand Oaks: Sage.
- Gaschler, R., Marewski, J. N., Wenke, D., & Frensch, P. A. (2014). Transferring control demands across incidental

- learning tasks – Stronger sequence usage in serial reaction task after shortcut option in letter string checking. *Frontiers in Psychology*, 5, 1388.
- Kaufman, S. B., DeYoung, C. G., Gray, J. R., Jimenez, L., Brown, J. B., & Mackintosh, N. (2010). Implicit learning as an ability. *Cognition*, 116, 321–340.
- Martini, M., Sachse, P., Furtner, M. R., & Gaschler, R. (2015). Why should working memory be related to incidentally learned sequence structures? *Cortex*, 64, 407–410.
- Pacton, S., Perruchet, P., Fayol, M., & Cleeremans, A. (2001). Implicit learning out of the lab: The case of orthographic regularities. *Journal of Experimental Psychology: General*, 130(3), 401–426.
- Schuck, N. W., Gaschler, R., Wenke, D., Heinzle, J., Frensch, P. A., Haynes, J.-D., & Reverberi, C. (2015). Medial prefrontal cortex predicts internally driven strategy shifts. *Neuron*, 86, 1–10.
- Shenhav, A., Botvinick, M. M., & Cohen, J. D. (2013). The expected value of control: An integrative theory of anterior cingulate cortex function. *Neuron*, 79, 217–240.
- Siegler, R. S., & Stern, E. (1998). Conscious and unconscious strategy discoveries: A microgenetic analysis. *Journal of Experimental Psychology: General*, 127(4), 377–397.
- Touron, D. R., & Hertzog, C. (2004). Distinguishing age differences in knowledge, strategy use, and confidence during strategic skill acquisition. *Psychology and Aging*, 19, 452–466.

Inclusion

Enoch Leung
 Department of Educational and Counselling
 Psychology, McGill University, Montreal, QC,
 Canada

Synonyms

[Acceptance](#); [Diversity](#); [Inclusive education](#); [Universal design](#)

Definition

Inclusion, in its most common use, is an approach, developed from the inclusion movement, used to eliminate exclusionary processes, and is a process in being conscious of diversity in relation to perceived abilities, ethnicity, social class, gender, and race, where individuals fully belong and are

included in their community (Qvortrup and Qvortrup 2018). Though the focus of inclusion has emphasized inclusion of disabilities, by definition, inclusion is a mindset to be conscious in identifying the needs and removing barriers for every individual, building a community based on strengths, and learning to treasure diversity of those typically excluded.

Introduction

Historically, inclusion came from a place of exclusion within the field of special education, where there were disregard for individuals with disabilities and were forced to undergo sterilization and euthanasia (Jaeger 2018). In early history, exclusion was common, where education was only for the privileged, based on Binet's IQ assessment (Fuchs et al. 2003).

Moving from exclusion, in the 1800s, there was a movement toward institutionalization where separate residential schools for individuals with visible disabilities were placed in separate institutions, but education was still only for the elite. Moving into the 1900–1950s, segregation came about where public education systems were created and special schools and classes were formed to segregate those who were considered “disabled” (Kavale and Forness 2000). This segregation and categorization, further emphasizing the importance of testing and labeling, increased numbers and categories of special classes (Hardy and Woodcock 2015).

In the 1970s, education moved toward mainstreaming where students were to be placed in the least restrictive environment, where the focus began to be on the child (Kavale and Forness 2000). The least restrictive environment came about as part of the Individuals with Disabilities Education Act (IDEA), stating that children who receive special education should learn in the least restrictive environment (Hardy and Woodcock 2015). This meant that they should be educated within regular classes and removal of students from regular classroom environments should only occur when the disability is severe and requires a separate environment to learn to their maximum extent (Kavale and Forness 2000).

In the 1980s, society moved toward integration which placed a greater emphasis on the environment students are situated in, enforcing that students with disabilities should be integrated in the general classroom (Kavale and Forness 2000).

Finally, inclusion came about as a focus on the environment and not simply integrating students with disabilities in the general classroom but also the need to adapt the environment to meet the broader range of needs, therefore focusing on the strategies used within the environment to accommodate for students with exceptionalities (Qvortrup and Qvortrup 2018). The result of the inclusion movement provided educators and other stakeholders, such as families and communities, to emphasize the need to create a universal design for teaching and learning, planning with every individual's needs in mind, placing on what can be changed and accommodated for the individual to be able to perform to their fullest ability.

Current Applications of Inclusion in Society

Inclusion can be primarily broken down into three distinct levels: (1) society, (2) organizations, and (3) interactions. At the society level, inclusion and exclusion reflect the social systems in place within the society, such as physical barriers entering buildings (Qvortrup and Qvortrup 2018). Part of the call is for better accessibility, such as increasing wheelchair ramps and signs and materials in braille.

At the organizational level, this would reflect membership and the criteria of being included or excluded in a certain organization, such as memberships of clubs (Qvortrup and Qvortrup 2018).

At the interaction level, this would reflect the social thoughts and interactions that take place with the presence of people, such as the decision of who is allowed to enter a new line that opened in the checkout section of a grocery store, emphasizing the social interactions that can present inclusive decision-making (Qvortrup and Qvortrup 2018).

Historically though, the definition of inclusion means inviting those who have been historically locked out to “come in” (Hughes and Talbot

2017). This type of definition is slightly flawed in that there appears to be two groups of individuals, those who have the authority to be excluding others and those who are excluded. At this point, in current society, no one has the right to invite others. It becomes a societal responsibility to remove all barriers which uphold exclusion since none of us have the authority to “invite” others in. Inclusion then is to recognize the universal oneness and interdependence. The action of inclusion means fighting against exclusion and all of the social diseases exclusion gave birth to, including racism, sexism, ableism, homophobia, and transphobia. Fighting for inclusion also involves assuring that all support systems are available to those who need such support.

Universal design, then, is a by-product of inclusion, in that thinking of product development from an architectural perspective, the design of products and environments should be inclusive for all. The designs should be usable by all people to the greatest extent possible, without needing to adapt. Similarly, Universal Design for Learning (UDL) applies the same concept of universal design to learning. UDL maintains that curriculum should be thought of and designed to account and accommodate diverse learners. Within a UDL framework, educators have to be conscious of their teaching and learning process in the classroom (Ok et al. 2016). In education, UDL focuses on three core principles providing (1) multiple means of representation to provide a variety of methods for learners to acquire information and knowledge, (2) multiple means of expression to provide learners options in demonstrating their knowledge, and (3) multiple means of engagement to take into account learners’ interests, challenge, and motivate them to learn (Ok et al. 2016). The overarching goal of UDL is to increase access by reducing organizational, cognitive, intellectual, social, and physical barriers to learning, which leads to implementing inclusionary practices in the classrooms. This came about during the inclusion movement, around when the No Child Left Behind (NCLB) legislation came about to present a need for a practice of teaching and learning that will accommodate all learners (Hardy and Woodcock 2015). UDL focuses not

only on disabilities but also on being inclusive of students with all exceptionalities, on both end of the spectrum, those with disabilities and those who are gifted, as UDL is inclusive of teaching and learning for all students (Ok et al. 2016).

Inclusion has placed a great emphasis on being inclusive of all kinds of academic, behavioral, and physical needs as many identified barriers that are removed are those that accommodate learners that vary in ability or in learning styles, as well as ensuring that the school environment removes barriers where students with physical needs can be accommodated, ideally prior to retrofitting (Hardy and Woodcock 2015).

Retrofitting is a concept where there is an addition of new technology to older systems in order to adapt to the needs of the individuals and communities. This concept grounds in the fact that inclusion was not taken into account prior to developing the product and that it is taking into account after the fact (Johnson 2015). The goal of retrofitting in products such as existing buildings, environments, and other products such as curriculum design or designing policies is to be more cost-effective. The goal should be to create an inclusive building by applying a universal, holistic design process, either thinking prior or being conscious of accounting of inclusion of marginalized populations.

Common applications of inclusion can be evidenced in schools, architectural planning of buildings, and occupational policies. Aspects of inclusion here are evidenced in being inclusive of students’ individual needs, taking into account not only their academic and learning needs to be varied to reduce the barriers that prevent them from learning to their maximum capability with respect to schools (Hardy and Woodcock 2015), being conscious of physical barriers in buildings such as stairs that can be changed to ramps and elevators, and being inclusive of individual’s social background in workplace (Ree et al. 2018), in that policies and physical environments should be inclusive in that everyone is able to function and work in a safe environment. This can include policies that are inclusive of gender inclusion (gender-inclusive bathrooms), cultural inclusion (respecting cultural holidays that is not

just the mainstream), and inclusion of other marginalized groups such as ethnicity and gender-based marginalization (Gibson and Fernandez 2018).

Conclusion

Inclusion, at its core, is the state of being included. Inclusion is a term, approach, and framework commonly used by disability rights activists to advocate for the belief that all individuals should be treated equitably. Inclusion is being attentive of environments, designs, policies, and other products and how these designs can be openly accommodated without restrictions or facing any barriers which can delineate an inclusive-exclusive marginalization. Consequently, inclusion is based on a human rights approach in overcoming the disabling barriers and to ensure consciousness of positive processes and outcomes, treating all people with dignity and respect. Inclusion is about considering all individuals, providing equal access and opportunities, and removing barriers, such as discrimination, that prevent maximal involvement.

Cross-References

► [Integration](#)

References

- Fuchs, D., Mock, D., Morgan, P. L., & Young, C. L. (2003). Responsiveness-to-intervention: Definitions, evidence, and implications for the learning disabilities construct. *Learning Disabilities, 18*(3), 157–171. <https://doi.org/10.1111/1540-5826.00072>.
- Gibson, S., & Fernandez, J. (2018). *Gender diversity and non-binary inclusion in the workplace: The essential guide for employers*. London: Jessica Kingsley Publishers.
- Hardy, I., & Woodcock, S. (2015). Inclusive education policies: Discourses of difference, diversity and deficit. *International Journal of Inclusive Education, 19*(2), 141–164. <https://doi.org/10.1080/13603116.2014.908965>.
- Hughes, M. T., & Talbott, E. (2017). *The Wiley handbook of diversity in special education*. Hoboken: Wiley.
- Jaeger, P. T. (2018). Designing for diversity and designing for disability: New opportunities for libraries to expand their and advocacy for people with disabilities. *International Journal of Information, Diversity, & Inclusion, 2*(1), 52–66.
- Johnson, E. S. (2015). Integrating special education teachers into a statewide teacher evaluation system. *Journal of Special Education Leadership, 28*(2), 82–88.
- Kavale, K. A., & Forness, S. R. (2000). History, rhetoric, and reality: Analysis of the inclusion debate. *Remedial and Special Education, 21*(5), 279–296. <https://doi.org/10.1177/074193250002100505>.
- Ok, M. W., Rao, K., Bryant, B. R., & McDougall, D. (2016). Universal design for learning in pre-K to grade 12 classrooms: A systematic review of research. *Special Education Journal, 25*(2), 116–138. <https://doi.org/10.1080/09362835.2016.1196450>.
- Qvortrup, A., & Qvortrup, L. (2018). Inclusion: Dimensions of inclusion in education. *International Journal of Inclusive Education, 22*(7), 803–817. <https://doi.org/10.1080/13603116.2017.1412506>.
- Ree, E., Johnsen, T. L., Harris, A., & Malterud, K. (2018). Workplace inclusion of employees with back pain and mental health problems: A focus group study about employee's experiences. *Scandinavian Journal of Public Health*, Advance online publication. <https://doi.org/10.1177/1403494818799611>.

Inclusive Education

► [Inclusion](#)

Inclusive Fitness

Gregory D. Webster
University of Florida, Gainesville, FL, USA

Synonyms

[Kin investment](#)

Definition

Inclusive fitness an evolutionary biology term that expands the concept of reproductive fitness – propagating genes into the next generation – to include copies of genes carried by kin or relatives.

Introduction

Explaining helping behavior is an important goal of some research in personality and individual differences; human altruism has deep roots in evolutionary biology (Kurzban et al. 2015). Shedding light on human altruism, *inclusive fitness* is an evolutionary biology term that expands the concept of reproductive fitness – propagating genes into the next generation – to include the copies of genes carried by kin. From a genetic perspective, because animals have blood relatives, and because the probability of sharing a focal gene or allele in common is a function of familial relatedness, one's reproductive fitness is not simply limited to one's own offspring or direct descendants, but also includes genes shared by family. Thus, a "gene's-eye view" of reproductive fitness should account for the inherent dependencies of blood relatives (i.e., multiple copies of genes) nested within families. Inclusive fitness theory has potentially profound implications for both evolutionary biology and human psychology.

Theory, Assessment, and Mechanisms

To adequately describe inclusive fitness theory, its assessment must be understood. First, because the probability of sharing a common focal gene or allele with a relative is central to the concept of inclusive fitness, it must be quantified using a relatedness coefficient. Specifically, in humans and most animals, first-order relatives have a 0.5 probability of sharing a common focal gene or allele (e.g., one's parents, children, full siblings). Second-order relatives have a 0.25 probability of the same (e.g., one's grandparents, grandchildren, half siblings, aunts, uncles, nieces, nephews). And, decreasing by half again, third-order relatives have a 0.125 probability of the same (e.g., one's great grandparents, great grandchildren, first cousins, great aunts, great uncles, grandnieces, grandnephews). Of course, fourth- and fifth-order relatives may also be relevant with relatedness coefficients of 0.0625 and 0.03125, but beyond this point, because of diminishing returns, a random nonkin conspecific has similar chances

of sharing a given gene or allele. Also note that identical or monozygotic twins share relatedness coefficients of 1.0; from a genetic perspective, twins are essentially the same person. The genetic overlap that families possess suggests that helping or altruistic behavior among them is indirectly self-serving from a genetic perspective, because a cost to the self could translate into a benefit for one or more family members that share copies of the same focal gene or allele.

Once relatedness coefficients are established, we can assess Hamilton's (1964) rule or inequality,

$$rB > C, \quad (1)$$

where r is the relatedness coefficient (or sum of multiple relatedness coefficients), B is the benefit to the would-be altruist, and C is the cost to the would-be altruist. Hamilton (1964) theorized that, for altruism to be naturally selected over time, it must confer some reproductive advantage indirectly via kin (vs. directly through the self), and this inequality provides such a mechanism. For example, imagine a young woman has to choose whether to risk her life to save her three young siblings who have fallen through a hole in an icy pond. Hamilton's (1964) rule suggests she would act altruistically because the benefit of saving her three siblings (i.e., $3 \times 0.5 = 1.5$) exceeds the cost of risking her own life (i.e., $1.5 > 1.0$). In contrast, Hamilton's (1964) rule also expects that she would not save her three cousins (i.e., $3 \times 0.5 = 0.375$) because the net benefit (0.375) does not exceed the cost (1.0). Thus, Hamilton's (1964) rule provides a way for evolutionary biologists and social scientists to quantify altruistic behavior as a function of inclusive fitness via genetic relatedness.

Inclusive fitness theory assumes that individuals can recognize and discriminate not only kin from nonkin but also among close and more distant kin. Many social animals, from ground squirrels (i.e., prairie dogs; Sherman 1977, 1981) to humans (Lieberman et al. 2007), are able to reliably detect kin and distinguish among closer and more distant genetic relatives. It follows that inclusive fitness is unlikely to explain kin-based altruism among animals that cannot reliably detect or distinguish among kin.

Research in Social, Personality, and Evolutionary Psychology

Although inclusive fitness has had its greatest influence on evolutionary biology and anthropology, it has also had some impact on social science, especially in the domains of social, personality, and evolutionary psychology. In psychology, research pertaining to inclusive fitness includes laboratory experiments as well as archival, correlational, and field studies.

Perhaps the most highly cited experimental research in psychology guided by inclusive fitness theory is Burnstein et al.'s (1994) pioneering work on human helping behavior. Specifically, this research distinguished between substantial help, in which the helper might die, and helping that is comparatively trivial, in which there is little potential cost. In short, this research had three key findings. First, people's perceptions of kinship largely reflected actual kinship. That is, people were generally accurate in perceiving relatedness as a function of genetic relatedness coefficients. Second, people were more likely to offer help to closer relatives than more distant ones or non kin, and this association was fairly linear across relatedness coefficients of 0.5, 0.25, 0.125, and 0.0 (nonkin). Third, the kinship-helping association (slope) described above was stronger for life-or-death helping situations (more akin to true altruism) than it was for everyday helping situations.

Although Burnstein et al.'s (1994; see also Burnstein 2005) research helped blaze trails for future experimental studies, correlational work based on field studies or archival data also supported inclusive fitness theory in humans (Essock-Vitale and McGuire 1985). Specifically, multiple archival analyses of wills have shown that people reliably leave greater proportions of their estates (a) to kin than nonkin (e.g., friends, charities, nonprofit organizations) and (b) to closer kin than more distant kin as a function of genetic relatedness (Judge and Hrdy 1992; Smith et al. 1987; Webster et al. 2008).

More recent psychological studies on inclusive fitness have blended correlational and experimental approaches and explored both mediating

processes and moderating variables. For example, Korchmaros and Kenny (2001, 2006; see also Kruger 2003) were among the first to use mediation models to suggest that individual differences in emotional closeness and other factors (e.g., obligation, similarity, propinquity, social interaction) at least partially explain the link between genetic relatedness and helping behavior in families.

Others research has focused on economic games in which participants are asked to allocate fictional lottery amounts (dollars) to their blood relatives (Webster 2003, 2004). These studies have not only shown the typical pattern of people allocating greater proportions of resources (dollars) to closer genetic relatives, but also that this association is moderated by two factors. First, the kinship-allocation association was stronger (more evolutionarily conservative) when people were randomly assigned smaller dollar amounts, choosing to give more money to close (vs. more distant) relatives (Webster 2003). Conversely, people randomly assigned larger dollar amounts were more egalitarian, making less-strong allocation distinctions as a function of relatedness coefficients. Second, the kinship-allocation association was also stronger among direct or lineal kin (e.g., grandparents, parents, children, grandchildren) than among collateral kin, which reflect sibling-based relations (e.g., siblings, aunts, uncles, nieces, nephews, cousins; Webster 2004).

Psychological research has even looked to kinship and inclusive fitness theory to provide a possible link between altruistic and aggressive behavior – or between cooperation and conflict (Kurland and Gaulin 2005) – thus attempting to unite prosocial and antisocial behaviors under a common theoretical framework. For example, the kinship, acceptance, and rejection model of altruism and aggression (KARMAA; Webster 2008; Webster et al. 2012) attempts to link kinship (i.e., genetic relatedness) to both (a) altruistic behavior, mediated by attitudes or behaviors associated with acceptance (e.g., affiliation, emotional closeness); and (b) aggressive behavior, mediated by attitudes or behaviors associated with rejection (e.g., insults, social exclusion). The KARMAA

has been applied to the link between kin-based insults (e.g., making negative comments about a stranger's vs. one's cousin's vs. one's sister's status or sexual reputation) and people's anticipated aggression in response to the insult (Gesselman and Webster 2012). Supporting the KARMAA and inclusive fitness theory in general, insults directed toward kin (vs. nonkin) evoked more aggressive reactions on average.

Limitations and Implications

Although inclusive fitness theory has greatly influenced evolutionary biology, it is not without its shortcomings. First, although helping behavior as a function of genetic relatedness is often a robust and reproducible finding across many species, there are other, more proximal processes that may partially – or perhaps even fully – explain the kinship-helping link. As mentioned above, social, environmental, and individual difference variables (e.g., emotional closeness, social interaction, attachment) often mediate the kinship-helping link. Second, although the two are not mutually exclusive, inclusive fitness per se cannot easily explain reciprocal altruism that exists in some social species, especially humans (Trivers 1971). Perhaps in part because of these limitations, inclusive fitness often has difficulty explaining actual altruistic behavior in humans. For example, whether a woman chooses to save her three siblings versus cousins drowning in a frozen pond likely depends a great deal more on other social and personality factors than the simple calculus of inclusive fitness via Hamilton's (1964) rule. Nevertheless, inclusive fitness has provided more consistent links with helping behavior in some animal models than in human ones, and the direction of the effect – people choosing to aid closer kin over more distant kin and non-kin – is rarely, if ever, inverted.

If inclusive fitness does indeed influence human psychology, then the implications are potentially profound. Specifically, it suggests that personality and social psychological research on altruism and helping behavior must also

consider kinship (or lack thereof) when the targets are relatives. For example, personality psychology (Buss 1984, 1991), social cognition (Daly et al. 1997), and the science of close relationships (Faulkner and Schaller 2007) could each benefit from adopting evolutionary perspectives, especially with regard to inclusive fitness theory.

Conclusion

Inclusive fitness theory provides a biologically based evolutionary framework for explaining the emergence and persistence of altruistic and helping behavior in many species, including humans. Inclusive fitness relies in part on kin recognition and relatedness coefficients, which reflect the probability of sharing a given gene or allele between two relatives. For example, first-, second-, and third-order relatives have relatedness coefficients of 0.5, 0.25, and 0.125, respectively. Hamilton's rule (see Eq. 1) quantifies these relatedness coefficients and incorporates them into a cost-benefit inequality that helps predict when a would-be altruist would choose to help their kin. In short, would-be altruists will only choose to help their kin if the benefit outweighs the cost from a gene-level perspective. In other words, because a person's kin contain copies of his or her genes, he or she will only help their kin if the net benefit to those copies of genes (e.g., saving multiple kin) outweigh the potential costs to his or her own genes (e.g., death from a failed rescue attempt). Although inclusive fitness theory has received some support from both animal and human studies using a variety of experimental, archival, and correlational methods, the strength of the kinship-helping link appears to be (a) stronger in other animals than in humans, (b) at least partially mediated by proximal processes (e.g., emotional closeness), and (c) moderated by situational variables (e.g., available resources). Both personality and social psychological accounts of altruism and helping behavior should consider the role of inclusive fitness whenever the actor or would-be altruist is genetically related to the target or recipient of the altruistic act.

Cross-References

- ▶ Environment of Evolutionary Adaptedness (EEA)
- ▶ Evolutionary Perspective
- ▶ Kin Selection

References

- Burnstein, E. (2005). Altruism and genetic relatedness. In D. M. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 528–551). Hoboken: Wiley.
- Burnstein, E., Crandall, C., & Kitayama, S. (1994). Some neo-Darwinian decision rules for altruism: Weighing cues for inclusive fitness as a function of the biological importance of the decision. *Journal of Personality and Social Psychology*, *67*, 773–789. <https://doi.org/10.1037/0022-3514.67.5.773>.
- Buss, D. M. (1984). Evolutionary biology and personality psychology: Toward a conception of human nature and individual differences. *American Psychologist*, *39*, 1135–1147. <https://doi.org/10.1037/0003-066X.39.10.1135>.
- Buss, D. M. (1991). Evolutionary personality psychology. *Annual Review of Psychology*, *42*, 459–491. <https://doi.org/10.1146/annurev.ps.42.020191.002331>.
- Daly, M., Salmon, C., & Wilson, M. (1997). Kinship: The conceptual hole in psychological studies of social cognition and close relationships. In J. A. Simpson & D. T. Kenrick (Eds.), *Evolutionary social psychology* (pp. 265–296). Mahwah: Erlbaum.
- Essock-Vitale, S. M., & McGuire, M. T. (1985). Women's lives viewed from an evolutionary perspective. II. Patterns of helping. *Ethology and Sociobiology*, *6*, 155–173. [https://doi.org/10.1016/0162-3095\(85\)90028-7](https://doi.org/10.1016/0162-3095(85)90028-7).
- Faulkner, J., & Schaller, M. (2007). Nepotistic nosiness: inclusive fitness and vigilance of kin members' romantic relationships. *Evolution and Human Behavior*, *28*, 430–438. <https://doi.org/10.1016/j.evolhumbehav.2007.06.001>.
- Gesselman, A. N., & Webster, G. D. (2012). Inclusive fitness affects both prosocial and antisocial behavior: Target sex and insult domain moderate the link between genetic relatedness and aggression. *Evolutionary Psychology*, *10*, 750–761. <https://doi.org/10.1177/147470491201000409>.
- Hamilton, W. D. (1964). The genetical evolution of social behaviour. I and II. *Journal of Theoretical Biology*, *7*, 1–52. [https://doi.org/10.1016/0022-5193\(64\)90039-6](https://doi.org/10.1016/0022-5193(64)90039-6).
- Judge, D. S., & Hrdy, S. B. (1992). Allocation of accumulated resources among close kin: Inheritance in Sacramento, California, 1890–1984. *Ethology and Sociobiology*, *13*, 495–522. [https://doi.org/10.1016/0162-3095\(92\)90014-U](https://doi.org/10.1016/0162-3095(92)90014-U).
- Korchmaros, J. D., & Kenny, D. A. (2001). Emotional closeness as a mediator of the effect of genetic relatedness on altruism. *Psychological Science*, *12*, 262–265. <https://doi.org/10.1111/1467-9280.00348>.
- Korchmaros, J. D., & Kenny, D. A. (2006). An evolutionary close-relationship model of helping. *Journal of Social and Personal Relationships*, *23*, 21–43. <https://doi.org/10.1177/0265407506060176>.
- Kruger, D. J. (2003). Evolution and altruism: Combining psychological mediators with naturally selected tendencies. *Evolution and Human Behavior*, *24*, 118–125. [https://doi.org/10.1016/S1090-5138\(02\)00156-3](https://doi.org/10.1016/S1090-5138(02)00156-3).
- Kurland, J. A., & Gaulin, J. C. (2005). Cooperation and conflict among kin. In D. M. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 447–482). Hoboken: Wiley.
- Kurzban, R., Burton-Chellew, M. N., & West, S. A. (2015). The evolution of altruism in humans. *Annual Review of Psychology*, *66*, 575–599. <https://doi.org/10.1146/annurev-psych-010814-015355>.
- Lieberman, D., Tooby, J., & Cosmides, L. (2007). The architecture of human kin detection. *Nature*, *445*, 727–731. <https://doi.org/10.1038/nature05510>.
- Sherman, P. W. (1977). Nepotism and the evolution of alarm calls. *Science*, *197*, 1246–1253. <https://doi.org/10.1126/science.197.4310.1246>.
- Sherman, P. W. (1981). Kinship, demography and Belding's ground squirrel nepotism. *Behavioral Ecology and Sociobiology*, *8*, 251–259. <https://doi.org/10.1007/BF00299523>.
- Smith, M. S., Kish, B. J., & Crawford, C. B. (1987). Inheritance of wealth as human kin investment. *Ethology and Sociobiology*, *8*, 171–182. [https://doi.org/10.1016/0162-3095\(87\)90042-2](https://doi.org/10.1016/0162-3095(87)90042-2).
- Trivers, R. L. (1971). The evolution of reciprocal altruism. *Quarterly Review of Biology*, *46*, 35–57. <https://doi.org/10.1086/406755>.
- Webster, G. D. (2003). Prosocial behavior in families: Moderators of resource sharing. *Journal of Experimental Social Psychology*, *39*, 644–652. [https://doi.org/10.1016/S0022-1031\(03\)00055-6](https://doi.org/10.1016/S0022-1031(03)00055-6).
- Webster, G. D. (2004). Human kin investment as a function of genetic relatedness and lineage. *Evolutionary Psychology*, *2*, 129–141. <https://doi.org/10.1177/147470490400200119>.
- Webster, G. D. (2008). The kinship, acceptance, and rejection model of altruism and aggression (KARMAA): Implications for interpersonal and intergroup aggression. *Group Dynamics: Theory, Research, and Practice*, *12*, 27–38. <https://doi.org/10.1037/1089-2699.12.1.27>.
- Webster, G. D., Bryan, A. D., Crawford, C. B., McCarthy, L., & Cohen, B. H. (2008). Lineage, sex, and wealth as moderators of kin investment: Evidence from inheritances. *Human Nature*, *19*, 189–210. <https://doi.org/10.1007/s12110-008-9038-0>.
- Webster, G. D., Cottrell, C. A., Schember, T. O., Crysel, L. C., Crosier, B. S., Gesselman, A. N., & Le, B. M. (2012). Two sides of the same coin? Viewing altruism and aggression through the adaptive lens of kinship. *Social and Personality Psychology Compass*, *6*, 575–588. <https://doi.org/10.1111/j.1751-9004.2012.00449.x>.

Incongruence

- ▶ [Anxiety and Defense \(Rogers\)](#)

Incongruity

- ▶ [Self-Discrepancies](#)

Inconsistency

- ▶ [Cognitive Dissonance Theory](#)

Inconsistent Attitude

- ▶ [Ambivalence](#)

Incorporation

- ▶ [Introjection \(Defense Mechanism\)](#)

Incremental Beliefs

- ▶ [Implicit Theories of Intelligence](#)

Incremental Theories

- ▶ [Implicit Theories of Intelligence](#)

Independence

Yoi Tibbetts
University of Wisconsin-Madison, Madison,
WI, USA

Synonyms

[Agency](#); [Autonomous](#); [Egocentric](#); [Individualism](#); [Self-contained](#); [Separate](#)

Definition

Independence can refer to a self-construal characterized by using one's self as the primary referent for thoughts, feelings, and actions and a sense of the self as being separate, distinct, or independent from others (Markus and Kitayama 1991, 2010). An independent self-construal often includes an assumption of equality with others and valuing self-expression and personal influence (Stephens et al. 2014).

Introduction

Independence is often researched in reference to self-construals and cultural norms. Since Markus and Kitayama (1991) seminal piece summarizing differences between independent and interdependent cultures was published, both independence and interdependence have become an immense source of social-psychological research with much of the focus on examining cross-cultural differences in the two constructs.

Research on Independence

Independence may be most extensively studied in research examining cross-cultural differences. Broadly construed, cross-cultural research has produced a plethora of content exploring how western countries (e.g., America) differ from many East

Asian countries (e.g., Japan) in terms of adopting independent self-construal and cultural ideals. The conclusion is often that East Asian countries adopt more interdependent values and self-construals (i.e., a focus on the self as being inextricably interconnected with others), whereas western countries tend to be marked by more independent (e.g., viewing the self as distinct and separate) norms. Researchers have also been careful to point out that there is considerable within-group differences in terms of a culture's propensity to adopt independent or interdependent cultural ideals as well (e.g., Fiske et al. 1998). Relatedly, it has been found that independence and interdependent are not mutually exclusive and that indeed we all possess both sets of self-construals to varying degrees (Greenfield 2009; Triandis 1995). More recently, psychological research examining social class has documented how independent values vary across different social classes (e.g., Stephens et al. 2012). For example, in America, individuals from lower social-class backgrounds have been shown to place less value on being independent and more value on their interdependence when compared to individuals from higher social-class backgrounds (Stephens et al. 2012; Tibbetts et al. 2016). This carries implications for when individuals socialized with one set of cultural norms are placed in contexts that idealize a different set of cultural norms. For example, some contexts tend to champion norms of independence (e.g., traditional institutions of higher education in the United States) which may be experienced as potentially threatening to individuals socialized with more interdependent norms (e.g., individuals from lower social classes). Current research has focused on how best to create inclusive contexts that benefit all individuals regardless of which self-construals and normal they are socialized with (Stephens et al. 2012; Tibbetts et al. 2016).

Conclusion

Independence has proven to be an important construct of study across a number of psychological disciplines. Research on self-construal, culture,

personality, norms, conformity, socialization, and more have all benefited from exploring how independence is portrayed and experienced by individuals. As a construct, independence has progressed from being mostly studied within cross-cultural research to being a more focal point of social-psychological research in general.

Cross-References

- ▶ [Agentic](#)
- ▶ [Autonomy](#)
- ▶ [Cross-Cultural Research](#)
- ▶ [Individualistic Cultures](#)
- ▶ [Interdependence](#)

References

- Fiske, A. P., Kitayama, S., Markus, H., & Nisbett, R. E. (1998). The cultural matrix of social psychology. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (Vol. II). Boston: McGraw-Hill.
- Greenfield, P. M. (2009). Linking social change and developmental change: Shifting pathways of human development. *Developmental psychology*, 45(2), 401.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological review*, 98(2), 224.
- Markus, H. R., & Kitayama, S. (2010). Cultures and selves: A cycle of mutual constitution. *Perspectives on Psychological Science*, 5(4), 420–430.
- Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R. (2012). Unseen disadvantage: How American universities' focus on independence undermines the academic performance of first-generation college students. *Journal of Personality and Social Psychology*, 102(6), 1178.
- Stephens, N. M., Markus, H. R., & Phillips, L. T. (2014). Social class culture cycles: How three gateway contexts shape selves and fuel inequality. *Annual Review of Psychology*, 65, 611–634.
- Tibbetts, Y., Harackiewicz, J. M., Canning, E. A., & Boston, J. S. (2016). Attitudes and social cognition: Affirming independence: Exploring mechanisms underlying a values affirmation intervention for first-generation students. *Journal of Personality and Social Psychology*, 110(5), 635–659.
- Triandis, H. C. (1995). *Individualism & collectivism*. Boulder: Westview Press.

Independence and Interdependence

► [Individualism-Collectivism](#)

Independence vs. Interdependence

► [Individualistic Cultures](#)

Independent Variable

Sven Hilbert

Department of Psychology, Psychological Methods and Assessment, Munich, Germany
 Faculty of Psychology, Educational Science, and Sport Science, University of Regensburg, Regensburg, Germany
 Psychological Methods and Assessment, LMU Munich, Munich, Germany

Synonyms

[Covariable](#)

Definition

The independent variable is a variable whose variation is statistically related to variation in the dependent variable.

Short Summary

In the investigation of covariation between variables, they are usually labeled as either “independent” or “dependent” (variables). In this context, variation in the independent variable(s) is produced – optimally in a systematic manner – while the effect of this variation on the dependent variable(s) is

observed. Since the direction of causation is not necessarily clear (i.e., which variable causes variation and which one depends on variation in the other) and a direct causal relationship between the variables need not be present at all, the labeling of the variables has to be defined by theoretical assumptions postulated by the researcher investigating the relationship.

The independent variable is particularly important in experimental settings: experiments are defined by the systematic variation of an independent variable, which creates different experimental conditions defined by the different variations (states) of the independent variable. Differences in the dependent variable are then compared between the experimental conditions to draw conclusions about the relationship in question.

For a more extensive description of independent variables, see ► [Dependent Variable](#).

Cross-References

► [Dependent Variable](#)

Indignation

► [Rage](#)

Indirect Effect Models

Todd M. Thrash¹, Will C. M. Belzak²,

Lena M. Wadsworth³ and Yoon Young Sim⁴

¹College of William and Mary, Williamsburg, VA, USA

²University of North Carolina, Williamsburg, VA, USA

³University of Colorado, Williamsburg, VA, USA

⁴University of Maryland, Williamsburg, VA, USA

Synonyms

[Causal mediation](#); [Conditional process analysis](#); [Intervening variable models](#); [Mediation models](#)

Definition

An *indirect effect model* is a statistical model of the process(es) through which intervening variables transmit effects from causal variables to outcome variables.

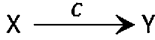
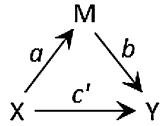
Introduction

Indirect effect models are pervasive in personality psychology and the social sciences generally. An indirect effect model specifies that a causal variable has an effect on an outcome variable via one or more intervening variables called *mediators*. In one of the earliest known indirect effect theories, Plato proposed that the muse inspires audiences indirectly. The muse inspires the poet, who inspires the performer, who inspires the audience. In contemporary personality psychology, the hierarchical model of approach-avoidance motivation posits that motives exert indirect effects on outcomes, mediated by the goals that individuals pursue (Elliot and Church 1997). An indirect effect hypothesis may be tested empirically using a statistical model grounded in sound theory and supported by a research design that lends a causal interpretation to parameter estimates. This article provides an introduction to the statistical and methodological considerations involved in establishing indirect effect models.

Statistical Approaches

Path analysis. The study of indirect effects has its roots in Sewall Wright’s (1921) technique of *path analysis*. Imagine that a researcher hypothesizes that variable X has a causal effect on outcome Y and that this effect is explained by intervening variable M. A path model is presented in Model 2 in Table 1. Arrows specify theorized causal effects, and the path coefficients *a*, *b*, and *c'* are parameter estimates based on a data set. A given path coefficient indicates the expected change in the variable after the arrow given a one-unit increase in the variable before the arrow while holding constant any other variables that are

Indirect Effect Models, Table 1 Decomposition of a total effect into indirect and direct effects

Effect	Model 1 	Model 2 
Indirect effect of X on Y	N/A	$a \times b$
Direct effect of X on Y	N/A	c'
Total effect of X on Y	c	$a \times b + c'$

specified to directly influence the variable after the arrow. Given a matrix of observed covariances or correlations among X, M, and Y, Wright’s approach allows for the simultaneous estimation of path coefficients *a*, *b*, and *c'*.

Path analysis may be used to distinguish indirect and direct effects. The *indirect effect* of X on Y via M refers to the expected change in Y attributable to a change in M given a one-unit increase in X. The indirect effect is calculated as the product $a \times b$. The *direct effect* of X on Y refers to the expected change in Y not attributable to a change in M given a one-unit increase in X. The direct effect is equal to c' . The *total effect* of X on Y refers to the overall expected change in Y given a one-unit increase in X. The total effect is equal to c from Model 1, in which the mediator is excluded. The total effect is also equal to the sum of the indirect and direct effects, $a \times b + c'$. Although path analysis provides a point estimate of the indirect effect ($a \times b$), it does not provide a significance test.

Causal steps approach. Baron and Kenny (1986) outlined a strategy for deciding whether a mediation hypothesis is consistent with the data. This approach, now called the causal steps approach, involves testing the following conditions using regression analyses: (1) path *c* differs significantly from 0; (2) path *a* differs significantly from 0; and (3) path *b* differs significantly from 0. The first condition may be interpreted as a precondition – absent a total effect of X on Y, mediation is assumed to be inapplicable, because

there is no effect to be mediated. The latter two conditions may be viewed as providing a test of the indirect effect through piecemeal analyses of the component paths.

Most methodologists discourage continued use of the causal steps approach. One problem is that the first condition is unnecessarily restrictive. Consider a scenario in which X influences Y through two causal processes: X has a positive indirect effect on Y via M , and X has a negative direct effect. For example, Wright (1921) proposed that guinea pig litter size has a positive indirect effect on gestation period via lower rate of growth, as well as a negative direct effect. In such instances of *inconsistent mediation*, in which the indirect and direct effects (or two indirect effects) differ in sign, the indirect and direct effects offset rather than augment one another, yielding a total effect that is weaker, and less likely to be significant, than the indirect effect. Thus, an indirect effect may be present even if the first condition of the causal steps approach is not satisfied.

A second problem with the causal steps approach is that the piecemeal strategy represented by the second and third conditions is likewise unnecessarily restrictive, because a statistically reliable indirect effect may exist even if the a or b path does not differ significantly from 0. The requirement that paths a and b both differ from 0 is reminiscent of the saying that a chain is only as strong as its weakest link. As it turns out, this is true of physical chains, but not of mediational pathways, where stronger links may compensate for weaker ones. Consider three scenarios that all yield the same (standardized) indirect effect: (1) $a = 0.15$ and $b = 0.60$; (2) $a = 0.30$ and $b = 0.30$; (3) $a = 0.60$ and $b = 0.15$. Although the indirect effect is the same in these scenarios ($a \times b = 0.09$), the causal steps approach is at risk of failing to detect mediation in the first and third scenarios, in which one path is relatively weak and may not differ significantly from 0.

Product approaches. Contemporary *product approaches* supplement the point estimate of the indirect effect, $a \times b$, with inferential tests such as null hypothesis tests or confidence intervals (CIs). From the perspective of the causal steps approach,

one may view the product approaches as dropping the first condition and as replacing the second and third conditions with a single test of the significance of the indirect effect per se. Several widely used product approaches are discussed below (for details, see Hayes 2018).

The *normal theory approach*, also called the delta method or Sobel test, uses traditional statistical theory to estimate the standard error of the product $a \times b$, assuming normality of its sampling distribution. This standard error may be used to conduct a null hypothesis test or to construct a CI that is symmetric around the point estimate. Most methodologists no longer recommend the normal theory approach, because the sampling distribution of a product tends to be skewed rather than normal. This problem is overcome by the *distribution of the product approach*, in which statistical theory that does not rest on the normality assumption is used to construct an appropriately asymmetric CI.

Asymmetric CIs may also be obtained through simulation procedures. The *Monte Carlo confidence interval approach* generates a CI through Monte Carlo simulation. Possible values of the parameters a and b are repeatedly sampled from normal distributions modeled after one's data set, and the resulting asymmetric distribution of the product is used to construct a CI. The *bootstrap confidence interval approach* constructs an asymmetric distribution through resampling with replacement from one's data set. In each instance of resampling, a new bootstrap sample is selected randomly and the product $a \times b$ is estimated. The resulting distribution is used to construct a CI. Bootstrapping performs particularly well in terms of power, validity, and flexibility, although the distribution of the product and Monte Carlo approaches have advantages in some contexts. Although less intensively studied in the context of indirect effect models, Bayesian Markov chain Monte Carlo (MCMC) estimation provides a flexible and computationally powerful framework for the generation of point estimates and credible intervals.

Generalizations of the product approach. All approaches that use the product $a \times b$ as the point estimate of the indirect effect rest on several

restrictive assumptions. In the following, we identify some of these assumptions and identify generalized approaches that subsume the point estimate $a \times b$ as a special case. For discussions of compatible methods of significance testing, see the sources cited below.

First, use of path analysis or regression to estimate $a \times b$ rests on the assumption that X, M, and Y are perfectly reliable and valid indicators of underlying constructs. In practice, the single indicators used in such analyses contain random and systematic error. *Structural equation modeling* may be used to replace single indicators with latent variables based on multiple assessment methods (Cole and Preacher 2014).

Second, the product approaches assume independence of observations. Clustering of observations within higher-level units (e.g., individuals within classrooms) often violates the independence assumption. *Multilevel structural equation modeling* accommodates tests of indirect effects in the presence of clustering. It also allows decomposition of between-cluster and within-cluster indirect effects in relevant designs (Preacher et al. 2010).

Third, the product approaches assume that there is no $X \times M$ interaction – that is, the effect of M on Y does not depend on X (and vice versa). *Conditional process analysis* provides a framework for estimating indirect effects in the presence of an $X \times M$ interaction and in moderated mediation models more generally (Hayes 2018).

Fourth, the product approaches assume that M and Y are continuous. The *causal mediation* framework provides a general, nonparametric approach to analysis of indirect effects that accommodates categorical (e.g., binary) M and Y variables. This approach also accommodates nonlinear effects, including $X \times M$ interactions (Pearl 2014).

All statistical approaches rest on the assumption that the model is correctly specified – for instance, the ordering of variables is correct, and confounding and suppression effects are accounted for. Even when a model specification is defensible on theoretical grounds, this assumption is unlikely to be satisfied in the absence of a

study design that yields path coefficients that are interpretable as causal effects.

Study Designs

Cross-sectional designs. Cross-sectional designs generally do not provide an adequate foundation for testing indirect effects, because such designs do not lend a causal interpretation to either path a or path b . Most researchers are appropriately skeptical of causal inferences based on cross-sectional data. Researchers ought to be even more skeptical of claims of indirect effects, which involve multiple causal effects.

Researchers who are tempted to claim mediation on the basis of cross-sectional data should consider the fact that Model 2 in Table 1 is one of 18 *equivalent models*, which are equally capable of explaining the observed relations among X, M, and Y (Kline 2015). Worse yet, some of these models are also indistinguishable from the indirect effect model in the sense that they yield the same standardized parameter estimates and significance levels. Consider a model in which the causal direction of the a path in Model 2 is reversed. In this model, in which M is a common cause of X and Y rather than a mediator, $a \times b$ and c' no longer indicate indirect and direct effects – they now indicate spurious and nonspurious effects of X on Y. Thus, a significant $a \times b$ may indicate that the effect of X on Y is confounded, rather than mediated, by M (MacKinnon et al. 2000).

Longitudinal designs. Longitudinal and experimental designs are better suited for testing indirect effect models, because they yield path coefficients that are more veridical as causal parameters. Longitudinal designs (Selig and Preacher 2009) allow temporal separation of X, M, and Y, allow dynamic change processes to be disentangled from individual differences, and allow the impact of confounders to be further reduced through statistical control of covariates. The primary weakness of longitudinal designs is the assumption that the effects of all confounders have been controlled, an assumption often violated in practice.

Experimental designs. Experiments facilitate causal inference, because possible confounds are eliminated through manipulation of independent variables. However, the benefits of the experimental design often do not apply to inferences about indirect effects. A traditional experiment, in which X is manipulated and M and Y are measured, is well-suited for establishing causal effects of X on M and Y but is poorly suited for establishing a causal effect of M on Y. Consequently, it is poorly suited for establishing causal indirect and direct effects of X on Y. Supplemental statistical strategies may bolster causal inference (MacKinnon and Pirlott 2015).

Alternatively, some methodologists advocate manipulating not only X but also M, although this approach too has limitations (Bullock et al. 2010). Because mediators often are intrapsychic states that are not subject to random assignment (e.g., self-esteem), in practice the researcher is likely to manipulate an external antecedent of the mediator (e.g., positive feedback), Z, rather than M per se. The problem is that M, at best, remains a mediator in this design ($Z \rightarrow M \rightarrow Y$). Even if Z influences M as desired, X and Z may influence M for different subsets of the population. Moreover, Z may influence not only M but also unmeasured processes (e.g., positive affect) that impact Y independent of M. The sobering fact is that researchers generally have experimental control over stimuli and situational conditions, not the intrapsychic responses that are often posited as mediators in psychological theories (Thrash et al. 2010). A systematic program of research that includes state-of-the-art longitudinal and experimental designs is often the most compelling strategy for drawing robust conclusions about indirect effects.

Conclusion

The study of indirect effects is at the heart of scientific theories, statistical modeling techniques, and contemporary research designs. It is through the integration of theory, statistical modeling, and study design that veridical and

replicable scientific conclusions accrue efficiently, illuminating the mechanisms and processes of personality.

References

- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182. <https://doi.org/10.1037//0022-3514.51.6.1173>.
- Bullock, J. G., Green, D. P., & Ha, S. E. (2010). Yes, but what's the mechanism? (Don't expect an easy answer). *Journal of Personality and Social Psychology*, *98*, 550–558. <https://doi.org/10.1037/a0018933>.
- Cole, D. A., & Preacher, K. J. (2014). Manifest variable path analysis: Potentially serious and misleading consequences due to uncorrected measurement error. *Psychological Methods*, *19*, 300–315. <https://doi.org/10.1037/a0033805>.
- Elliot, A. J., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, *72*, 218–232. <https://doi.org/10.1037/0022-3514.72.1.218>.
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). New York: Guilford Press.
- Kline, R. M. (2015). The mediation myth. *Basic and Applied Social Psychology*, *37*, 202–213. <https://doi.org/10.1080/01973533.2015.1049349>.
- MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding, and suppression effect. *Prevention Science*, *1*, 173–181.
- MacKinnon, D. P., & Pirlott, A. G. (2015). Statistical approaches for enhancing causal interpretation of the M to Y relation in mediation analysis. *Personality and Social Psychology Review*, *19*, 30–43. <https://doi.org/10.1177/1088868314542878>.
- Pearl, J. (2014). Interpretation and identification of causal mediation. *Psychological Methods*, *19*, 459–481. <https://doi.org/10.1037/a0036434>.
- Preacher, K. J., Zyphur, M., & Zhang, Z. (2010). A general multilevel SEM framework for assessing multilevel mediation. *Psychological Methods*, *15*, 209–233. <https://doi.org/10.1037/a0020141>.
- Selig, J. P., & Preacher, K. J. (2009). Mediation models for longitudinal data in developmental research. *Research in Human Development*, *6*, 144–164. <https://doi.org/10.1080/15427600902911247>.
- Thrash, T. M., Elliot, A. J., Maruskin, L. A., & Cassidy, S. E. (2010). Inspiration and the promotion of well-being: Tests of causality and mediation. *Journal of Personality and Social Psychology*, *98*, 488–506. <https://doi.org/10.1037/a0017906>.
- Wright, S. (1921). Correlation and causation. *Journal of Agricultural Research*, *20*, 557–585.

Indirect Effects Analysis

- ▶ [Mediation \(Statistical\)](#)

Indirect Measure of Personality

- ▶ [Implicit Measures of Personality](#)

Individual

- ▶ [Proprium](#)

Individual Difference

- ▶ [Personality and Physical Attractiveness](#)

Individual Differences

- ▶ [Animal Personality](#)
- ▶ [Avoidant Attachment Style](#)
- ▶ [Comparative Perspective](#)
- ▶ [EAS Temperament Model](#)
- ▶ [Genetic Basis of Traits](#)
- ▶ [Personality and Stress](#)
- ▶ [Personality and Teamwork](#)
- ▶ [Personality and Work Behavior](#)
- ▶ [Personality Neuroscience: Why It Is of Importance to Consider Primary Emotional Systems!](#)
- ▶ [Social Mammals](#)
- ▶ [Three-Factor Model of Personality](#)

Individual Differences in Existential Psychology

- ▶ [Existential Approaches to Personality](#)

Individual Psychology (Adler)

Jon Sperry¹ and Len Sperry²

¹Lynn University, Boca Raton, FL, USA

²Florida Atlantic University, Boca Raton, FL, USA

Synonyms

[Adlerian psychology](#)

Definition

Developed by Alfred Adler, Individual Psychology is a theory of human behavior and a therapeutic approach that encourages individuals to make positive contributions to society as well as to achieve personal happiness.

Introduction

Also known as Adlerian Psychology, Individual Psychology is a theory of human behavior that focuses on the basic need of belonging and the importance of engaging in constructive actions (Adler 1956). Alfred Adler, its founder, believed that all behavior is goal oriented and that individuals are motivated to seek “belonging” or significance and meaning in their lives by the way they function in social systems (Adler 1956). Adler believed that human beings first learn how to belong and interact with others in their initial social environment, their family. He emphasized the individual’s position in the family system, psychological birth order, family dynamics, and attempt to avoid feelings of inferiority (Carlson et al. 2006).

Adler called these various influences, the family constellation.

Adler highlighted subjective and private beliefs, which he called “private logic.” This logic serves as a reference for attitudes; subjective and phenomenological views of self, others and world; and behavior which he called the life-style.

Individuals form their life-style as they seek to relate to others, to overcome “feelings of inferiority,” and to find a sense of belonging in the world. Additionally, Adler believed that healthy and productive individuals display more “social interest” whereas those with mental disorders typically show less social interest and tend to be self-focused.

Individual Psychology is a strength-based theory that assumes a positive view of human nature. Happiness and suffering is the result of choices made by individuals in their efforts to meet various life goals. Additionally, human suffering is conceptualized through understanding that discouragement results from inferiority feelings that occur as a result of unhelpful personality traits. Adlerian Therapy techniques assist individuals in modifying faulty life-style convictions and increasing sense of belonging by finding healthier life goals.

Individual Psychology utilizes four basic principles (Carlson et al. 2006).

1. Individuals are viewed holistically within their culture and context (body-mind-spirit).
2. Behavior is goal-directed or purposive.
3. Individuals determine their own meaning of life experiences.
4. Individuals are born with a desire to belong in social settings and among family. This is also called social interest.

Adler, Alfred (1870–1937)

Adler was born on February 7, 1870, in Rudolfsheim, a suburb of Vienna, Austria, as the second of seven children to a Jewish couple. As a child, Adler suffered from rickets, which prevented him from walking until he was four, and was later hospitalized with pneumonia. These early experiences inspired Adler to pursue medical school at the University of Vienna where he also met his future wife, Raissa Timofeyewna Epstein, at a social political meeting. They went on to have four children together, Valentine, Alexandra, Kurt, and Cornelia. Adler graduated from medical school in 1895 as an

ophthalmologist, later moving into general practice, though his interest in psychology, philosophy, and sociology continued. His curiosity in the psychological aspects of his patients influenced his final transition to psychiatry.

Developments and Current Status

Adler was a colleague of Sigmund Freud (1856–1939) and a member of the Vienna Psychoanalytic Society (1856–1939). In 1911, Adler left the Psychoanalytic Society due to differing views of human behavior. While Freud stressed a medical model of psychological conceptualization (biological, sexual, and physiological), Adler emphasized the importance of external dynamics (social and environmental), adopting a more holistic view of the individual. Adler was the first dissenter from traditional psychoanalysis. Shortly after his break from Freud, Adler founded the *Society for Individual Psychology* in 1912.

The Individual Psychology movement gained considerable momentum during the early 1900s as Adler spoke internationally and opened clinics throughout the world. Additionally, Adler taught at Columbia University as well as Long Island College of Medicine which prompted him to move his family permanently to the United States in 1934. Adler died of heart complications during a lecture tour in Aberdeen, Scotland, on May 28, 1937.

Dreikurs, Rudolph (1897–1972)

Rudolph Dreikurs was a psychiatrist and educator who advanced the theory and practice of Individual Psychology. Dreikurs was a student and eventually close colleague of Adler. After Adler’s death, Dreikurs went on to spread the ideas of Individual Psychology around the world through various organizations, trainings, and publications. Among his various contributions to the theory of Individual Psychology, Dreikurs articulated a model used to interpret and respond to misbehaving children and called the four goals of misbehavior. When children misbehave they are

operating from one of the four “mistaken goals”: attention seeking, revenge, power, or display of inadequacy. Dreikurs helped children reduce their “acting out behaviors” by seeking to enhance their cooperation and development of belonging skills by empowering them to feel that they are valuable contributors to the classroom or family.

In 1952, Dreikurs founded the North American Society of Adlerian Psychology (NASAP) and served as an active leader until his death in 1972. He founded the Alfred Adler Institute in 1952, now called Adler University in Chicago, Illinois. In 1962, he also established the International Committee for Adlerian Summer Schools and Institutes (ICASSI) which is an international training program that occurs every summer in a different country.

Adlerian Therapy

Adlerian Therapy is a psychotherapy approach derived from the theory of Individual Psychology. The theory emphasizes the individual’s life-style, connectedness with others (belonging), meeting the life tasks (work, love, and social relationships), and contributions to society (social interests) are considered the hallmarks of mental health.

Adlerian therapy can be utilized in counseling therapy by modifying cognitive, affective, behavior, and relational change. Although individual clients seeking counseling may not be fully aware of their specific patterns and goals, through analysis of birth order and repeated coping patterns and early memories, the psychotherapist infers a goal as a working hypothesis. By recognizing these patterns, the therapist helps the individual to see life from another perspective. Change occurs when the individual is able to see his or her problem from another view, so he or she can explore and practice new behavior and a new philosophy of life.

Besides gathering traditional intake material, e.g., present concerns, mental status exam, and general social, occupational, and developmental history, the Adlerian psychotherapist collects and analyzes the client’s family constellation and life-style convictions. The family constellation

consists of the client’s birth order, relationships with parents and peers, and family values. Life-style convictions are inferred from both habitual coping patterns and early recollections. Because the recollection of their earliest memories reflect past childhood events in light of the client’s current life-style convictions, early recollections are a powerful projective technique that quickly and accurately provide working hypotheses for the ways clients views themselves, others, and the world. The therapist elicits three or more memories and the themes of these memories are analyzed to derive the client’s life-style convictions.

Individuals develop three life-style convictions: (1) self-view – convictions about who they are; (2) world view – convictions about how the world treats them, how it should be, and what it expects of them; (3) ethical view – convictions about their personal moral code. When there is conflict between the self-concept and the ideal-self, inferiority feelings develop. It is important to point out that feelings of inferiority are not considered abnormal; however, when the individual begins to *act* inferior rather than *feel* inferior, the individual expresses an “inferiority complex.” Furthermore, inferiority feelings are universal and normal; the inferiority complex reflects the discouragement of individuals struggling with mental health issues.

The goal of treatment is not merely symptom relief, but the adoption of a way of living that involves contributing to others and the world. This value-based theory of personality hypothesizes that the values a client holds and lives by are learned, and when these values no longer work as evidenced by suffering or lack of happiness, the client can re-learn values and life-styles that work more “effectively.” Some Adlerian therapists believe that a client’s life-style is best viewed as a personal schemas or narratives. Because maladaptive schemas or basic mistakes are believed to be true for the individual, the individual acts accordingly. Adler noted that these basic mistakes are overgeneralizations, e.g., “people are hostile,” “life is dangerous” or misperceptions of life, “life doesn’t give me any breaks” which are expressed in the client’s physical behavior, language, assumptions, dreams, values, etc. The goal of

intervention in Adlerian therapy is re-education and reorientation of the client to beliefs, behaviors, and goals that work “better.” The actual techniques employed are used to this end. Adlerians tend to be action-oriented and encouragement-focused. They also believe the concept of insight is just a proxy for immobility. Insight is not a deep understanding that one must have before change can occur. For Adlerian therapists, insight is understanding translated into action. It reflects the client’s understanding of the purposeful nature of their behavior.

Adlerian Therapy is structured around four basic overlapping phases.

Relationship. In the relationship phase, the goal is to establish a strong working relationship between therapist and client in which the client feels understood and accepted by the therapist.

Establishing a mutual and collaborative relationship is essential for effective therapeutic outcomes to be achieved.

Assessment. In the assessment phase, the purpose is to evaluate the client’s presenting problems and objective and subjective circumstances. In addition to the traditional, initial assessment information, the Adlerian therapist elicits family constellation information, early memories, and life-style conviction material. This phase is described in more detail below.

Insight. In the insight phase, the purpose is to assist the client in developing and incorporating insight into their life-style convictions, mistaken goals, and self-defeating behavior patterns. Although such a corrective cognitive experience is usually necessary for treatment to be effective, it is not necessarily at the heart of change. Furthermore, insight does not always precede emotional and behavior change which are the cornerstones of reorientation. Thus, while theoretically distinct, the insight and reorientation phases often overlap in clinical practice.

Reorientation. In the reorientation phase, the purpose is to help clients to consider alternatives to problems, behaviors, or situations and to commit to change. It involves strengthening the client’s social interest. Reorientation attempts to bring each individual to an optimal level of personal, interpersonal, and occupational

functioning. In so doing, exaggerated self-protection, self-absorption, and self-indulgence is replaced with courageous social contribution while also accepting the fact that all humans are imperfect beings. Therapeutic techniques include creative and dramatic approaches to treatment such as the push-button technique, role-play, life-style analysis, spitting in the client’s soup, acting “as-if,” and psychodrama.

Conclusion

Individual Psychology is considered one of the most influential theories among contemporary psychotherapy and counseling approaches. Overall, Adlerian therapy is a psychotherapy approach that reflects various family systems, constructivist, positive psychology, existential, psychodynamic, cognitive-behavioral, and humanistic principles. Yet, it is unique in its focus on personality (also called life-style) and its emphasis on belonging, meeting the life tasks, and how individuals strive for superiority based on inferiority feelings. Adler influenced many of the legends in psychotherapy, including Karen Horney, Gordon Allport, Aaron Beck, Albert Ellis, and Abraham Maslow. Maslow, Rollo May, Carl Rogers, and Viktor Frankl all studied under Adler and credited him with influencing their own views.

Cross-References

- ▶ [Birth Order](#)
- ▶ [Parental Influence on Personality Development \(Adler\)](#)
- ▶ [Psychoanalysis](#)
- ▶ [Psychodynamic Perspective](#)

References

- Adler, A. (1956). In H. Ansbacher & R. R. Ansbacher (Eds.), *The individual psychology of Alfred Adler* (p. 1956). New York: Harper & Row.
- Carlson, J., Watts, R., & Maniaci, M. (2006). *Adlerian therapy: Theory and practice*. Washington, DC: American Psychological Association.

Further Reading

- Dinkmeyer, D., & Sperry, L. (2000). *Counseling and psychotherapy: An integrated individual psychology approach* (3rd ed.). Columbus: Prentice-Hall.
- Dreikurs, R. (1998). *The challenge of marriage*. Philadelphia: Taylor & Francis Group.
- Mosak, H. H., & Di Pietro, R. (2006). *Early recollections: Interpretative method and application*. New York: Routledge.
- Orgler, H. (1963). *Alfred Adler: The man and his work*. New York: Capricorn Books.
- Sperry, L., Carlson, J., Duba, J., & Sperry, J. (Eds.). (2014). *Psychopathology and psychotherapy: DSM-5 diagnosis, case conceptualization, and treatment* (3rd ed.). New York: Routledge.

Individual Tendencies

- ▶ [Developmental Changes in Personality Traits](#)

Individualism

- ▶ [Independence](#)
- ▶ [Interdependent and Independent Self-Conceptualization](#)

Individualism vs. Collectivism

- ▶ [Individualistic Cultures](#)

Individualism-Collectivism

Ryan S. Hampton and Michael E. W. Varnum
Arizona State University, Tempe, AZ, USA

Synonyms

[Gemeinschaft and Gesellschaft; Idiocentrism and allocentrism; Independence and interdependence](#)

Introduction

There are different ways of viewing the self. People who are more individualistic view the self as

distinct and separate from others. Individualism emphasizes personal goal pursuit and autonomy. People who are more collectivistic view the self as overlapping with and interconnected to others. Collectivism emphasizes maintaining relationships and social harmony (Hofstede 1980; Hofstede et al. 2010; Markus and Kitayama 1991; Singelis 1994; Triandis 1995; Varnum et al. 2010). Individualism and collectivism have also been referred to as independence and interdependence (Markus and Kitayama 1991), idiocentrism and allocentrism (Triandis et al. 1985), and Gemeinschaft and Gesellschaft (Greenfield 2013).

How Individualism-Collectivism Is Measured

Individualism-collectivism (IC) is measured in many ways ranging from self-report to neural measures. The most frequently used measures are self-report measures that ask people about their personal values (Singelis 1994; Singelis et al. 1995; Triandis and Gelfand 1998; Triandis et al. 1985). For example, the Self-Conceptualization Scale (Singelis 1994) asks participants to rate their level of agreement with interdependent values (e.g., “I feel good when I cooperate with others”) and independent values (e.g., “I do my own thing, regardless of what others think”). IC can also be measured using more implicit measures. For example, the sociogram test (Kitayama et al. 2009) asks participants to draw visual diagrams of their social networks using circles to represent people and lines to represent connections between them. Implicit individualism (vs. collectivism) on this instrument is measured by comparing the size of the circle participants draw to represent the self with those used to represent friends. IC has also been assessed using an Implicit Association Test (IAT), which measures positive and negative associations with words related to individualism and collectivism based on reaction time (Park et al. 2016). Neural measures have also been used as a way to measure IC. For example, Zhu et al. (2007) had participants make judgments of the relevance of trait adjectives for the self, one’s mother, and a

stranger while their brains were being scanned using fMRI. In this study, the extent to which there was overlap (vs. stronger activation for the self vs. one's mother) in activation of the medial prefrontal cortex (a region of the brain that is involved in self-representation and processing of self-relevance) provided an index of collectivism (vs. individualism). In fact, IC has been linked to differences in self-other overlap in a variety of neural regions and processes including those underpinning vicarious reward, empathy for financial loss, and mirroring (for a review see Varnum and Hampton *in press*). IC has also been measured at the cultural level using archival data on cultural practices (e.g., frequency of children receiving relatively unique vs. common names, divorce rates) and products (e.g., frequency of words reflecting individualism vs. collectivism in published books, themes in advertisements).

Cultural Group Differences in Individualism-Collectivism

An important feature of IC is that cultural groups differ in whether they are more individualistic or collectivistic. Societies in North America and Western Europe tend to be more individualistically oriented, whereas societies in East Asia, Africa, the Middle East, and Eastern Europe tend to be more collectivistically oriented (Gelfand et al. 2011; Hofstede 1980; Hofstede et al. 2010; Oyserman et al. 2002). Further, some regions of Latin America tend to be more collectivist (e.g., Peru and Argentina), while others are more individualist (e.g., Mexico and Venezuela; Oyserman et al. 2002). There are also differences among Western societies in individualism-collectivism, namely, Americans tend to be more individualistic than West Europeans (Hofstede et al. 2010; Kitayama et al. 2009), and cultural practices in the USA, Canada, Australia, and New Zealand are more individualist than those in European countries (Varnum and Kitayama 2011).

Levels of IC vary not only across countries but also regionally within countries. For example, using an index of IC based on archival indicators, Vandello and Cohen (1999) found that

collectivism is highest in southeastern states of the USA and lowest in mountain and plains states. Patterns of regional variation in IC have also been shown in Japan, where residents of Hokkaido, Japan's northern island and a recent frontier, are higher in individualism than those living on the main islands (Kitayama et al. 2006). Further the US states and Canadian provinces that were more recently frontiers are higher in individualism than regions of those countries with a longer history of European settlement. Levels of IC have also been shown across regions of China (Talhelm et al. 2014).

It is worth noting though that there are forms of culture aside from national and regional groupings and that IC has also been found to vary across these other types of cultural groups as well (Cohen and Varnum 2016; Varnum et al. 2010). For example, working-class people in the USA and Russia are more collectivist than those from upper and middle-class backgrounds (Grossmann and Varnum 2011). In a similar vein, American Catholics (vs. Protestants) show patterns of social inference that are linked to collectivism (Li et al. 2012), and those from rural areas in Japan are more collectivist than those from urban areas (Yamagishi et al. 2012). Further, people who live in more cosmopolitan cities in Germany (i.e., Hamburg) are more independent than residents of less cosmopolitan cities (i.e., Braunschweig; Sevincer et al. 2015).

Origins of Cultural Differences in Individualism-Collectivism

Where do these cultural variations in IC come from? One influential account holds that such differences have their roots in historical differences in social organization and philosophical traditions (Nisbett et al. 2001; Nisbett 2003). Nisbett's analysis of East-West differences in IC traces such differences to ancient China and ancient Greece. Historically, China had a centralized government with strict and intricate social hierarchies that lead to the development of communal systems of law grounded in mutual agreements among individuals and the community. It

was also a society with spiritual practices such as Fêng Shui, which emphasizes the complexity of objects in space, and a language that was highly contextual. The Greeks, on the other hand, lived in autonomous city-states in which philosophical debate allowed individuals to transcend social class. They had highly codified systems of law, developed religious practices that attempted to clearly define relations between man and the gods, and spoke a language that was grammatically modular (capable of being broken down into individual component parts). Nisbett (2003) and Nisbett et al. (2001) argue that these systems and practices maintain cultural values in relative homeostasis, perpetuating through cognitive processes of directing attention which lead to changes in metaphysical understandings of causality and nature, and eventually to epistemological ideologies about what type of information is relevant. These ideologies then reinforce the development of systems and practices in a recursive loop.

Nisbett (2003) speculates that the root causes of historical East-West differences that led to contemporary differences in how people view the self may lie in differences in modes of economic subsistence. The Chinese lived in an economy dominated by agriculture, a long-term cooperation based form of subsistence, whereas the Greeks lived in an international crossroads with access to independent mercantilism, fishing, and the development of individual skillsets (Nisbett 2003). Recent work testing the subsistence hypothesis is consistent with this idea. For example, (Uskul and colleagues 2008a, b) found that herders in Turkey, who rely more on individual decision-making, have more analytic perceptual tendencies (a characteristic associated with individualism). In contrast, farmers and fishermen, who rely more on cooperation with others, display more holistic perceptual tendencies (a characteristic associated with collectivism). Similarly, Talhelm et al. (2014) found differences in modern China between regions that historically subsisted primarily on rice or wheat (and currently devote more land to the cultivation of each respectively). Rice cultivation typically involves irrigation which entails large scale infrastructure as well as coordination of water use between farmers.

Further a great deal of manpower is required to plant and harvest rice, necessitating cooperation among farmers. Wheat farming, on the other hand, does not typically involve irrigation and relies instead on rainfall, thus its cultivation requires less manpower which in turn allows farmers to tend to their own crop without depending on their neighbors' assistance. And indeed people who were born in provinces with more cultivated land devoted to rice paddies were found to be more collectivist on a variety of measures than those from wheat growing regions of China.

Another line of reasoning for why cultural groups vary in IC focuses on basic features of the ecology that characterize the places these groups inhabit. Broadly speaking such accounts often (but not always) draw on theory from behavioral ecology, a field of study that seeks to explain systematic variation in animal behavior as the result of evoked responses to a number of ecological pressures such as pathogen loads, resource scarcity, population density, and sex ratio (Agnew et al. 2000; Collins and Cheek 1983; Davies et al. 2012; Forsgren et al. 2004). Many of these dimensions have also been linked to systematic variations in IC. To the extent that collectivism promotes smaller in-groups and limits contact with outsiders (who may carry germs which one does not possess immunity to), one might expect that in geographic regions where pathogens are more prevalent that one would also see higher levels of collectivism, and this appears to be the case (Fincher and Thornhill 2012; Fincher et al. 2008; Thornhill and Fincher 2014). There is also evidence that climatic stress (the extent to which average temperatures deviate from that optimal for humans) in interaction with levels of available resources is linked to cross-cultural variations in levels of IC, such that greater climatic stress leads to more individualism when resources are abundant but more collectivism when resources are scarce (Van de Vliert et al. 2013; Van de Vliert 2013). One might also think about wealth itself as an ecological dimension to the extent that it is a measure of resource abundance/scarcity in an ecology. From this perspective work linking higher GDP or higher average

levels of occupational status with greater individualism (i.e., Grossmann and Varnum 2015; Inglehart and Baker 2000) may also be seen as consistent with an ecological framework. That is, as resource levels are greater, people may feel less need to maintain close relationship or rely on others in order to ensure their survival and reproductive success. Further, greater population density also appears to be linked to a more individualistic orientation (Greenfield 2013; Yamagishi et al. 2012). In addition to these dimensions, societies also vary in the extent to which people move in and out of them, and higher levels of mobility have also been linked to higher levels of individualism (Oishi 2010). In communities where residential mobility is high, people likely have fewer obligations to others and also more transient relationships; hence individualism may be adaptive in such conditions. In summary then, cultural groups may vary in individualism-collectivism not only as a function of their historical traditions and modes of subsistence but also because of the features of the ecologies that they inhabit.

Dynamic Nature of Individualism-Collectivism

Cultures may also shift in levels of IC. A number of recent studies have documented increasing individualism over time. This effect has been found in the USA (Greenfield 2013; Grossmann and Varnum 2015; Twenge et al. 2010), the UK (Greenfield 2013), Japan (Hamamura 2012), and China (Hamamura and Xu 2015). In fact, this phenomenon may be global in nature (Santos et al. *in press*). Thus although cultures differ in their levels of IC, these levels have been shown to fluctuate.

Individualism or collectivism may also be made temporarily salient for individuals. A fairly large body of research has shown that these different views of the self may indeed be primed (Oyserman and Lee 2007, 2008). Common methods include having participants read stories with first person singular pronouns to prime an individualistic mindset or first person plural

pronouns to prime a collectivistic mindset and having participants list ways in which they are different from or similar to others (Oyserman and Lee 2008). Participants who are bicultural as a function of having both Western and East Asian cultural identities or significant exposure to both types of culture may also be primed to think individualistically or collectivistically through the use of cultural icons (Hong et al. 2000) or by using instruments written in the languages associated with Western vs. East Asian cultures (i.e., English vs. Chinese; Lee et al. 2010).

Individualism-Collectivism and Personality

Individualism-collectivism is also related to individual differences in personality. A recent study (Dunkel 2013) found that openness, conscientiousness, extraversion, and agreeableness are all positively correlated with independent self-construal and that neuroticism is negatively correlated with independent self-construal in both the USA and Japan. However, this study also found somewhat different patterns of correlations between interdependent self-construal in the two countries, such that openness was negatively correlated with interdependence in the USA but positively correlated with interdependence in Japan and that on one measure of self-construal interdependence was positively correlated with neuroticism in the USA but negatively correlated with neuroticism in Japan. In another study, Kwan et al. (1997) found that independent self-construal was positively related to openness, conscientiousness, and extraversion, and negatively related to neuroticism in the USA, whereas interdependent self-construal was positively related to agreeableness and neuroticism. Similar relationships were observed in Hong Kong, with the exception that interdependence was not related to neuroticism in that sample (Kwan et al. 1997). IC may also affect the extent to which personality is consistent across situations, for example, English and Chen (2007) found that Asian-Americans (who tend to be more collectivist) have less stable self-descriptions of their personality across different relationship

contexts compared to European-Americans (who tend to be more individualist). Thus it may be the case that personality traits are less stable across situational contexts for those who are more collectivistically oriented. And indeed a recent study of eight societies by Church and colleagues (2012) did find evidence of variations in stability of personality traits across situations with traits being generally more consistent across situations in more individualistically oriented countries (i.e., the USA, Australia) than in more collectivistically oriented countries (i.e., Japan, the Philippines). However, they did not observe mediation of these differences by IC. Thus the links between IC and cross-situational personality consistency remain unclear.

Given that measures of IC are linked to individual differences in dimensions of personality, one might be tempted to assume that IC itself is an individual difference variable. Although some research using multiple self-report measures of IC has found significant correlations among measures of IC (i.e., Dunkel 2013; Kam et al. 2012), other studies using batteries of primarily implicit IC measures have found little relationship among such measures (i.e., Kitayama et al. 2009; Na et al. 2010). Further, although some studies focusing on self-report scales of IC find a negative relationship between measures of individualism and collectivism (Lam et al. 2002; Singelis et al. 1995), whereas other studies find that the two are positively correlated (Bresnahan et al. 2005), or orthogonal (Oyserman et al. 2002; Singelis 1994; Singelis et al. 1995). A recent meta-analysis has found that the direction and degree to which individualism and collectivism correlate vary depending on the measure used, the characteristics of the sample, and the level of analysis employed (for a review, see Taras et al. 2013). In addition, there is scant work demonstrating test-retest reliability of measures of IC or the stability of IC over the life course. Thus it remains unclear to what extent IC may be thought of as a coherent individual difference variable, whether IC can be thought of as a bipolar variable or as a set of orthogonal variables and whether IC is a stable dimension of individual difference.

Conclusion

In summary, individualism-collectivism has been measured using a variety of instruments ranging from self-report to implicit and neural measures. IC varies across cultures, both at the level of societies and on finer-grained scales (i.e., region, religion, social class, cities). The origins of these variations has been linked to historical factors, modes of subsistence, and dimensions of ecology. Cultures can change in terms of their levels of IC, and growing evidence suggests individualism is on the rise across the globe. IC can be primed, and there are a number of ways in which an individualist or collectivist mindset may be made temporarily salient. IC is linked to the Big Five, although the links vary somewhat as a function of culture. The status of IC as a personality trait is still unclear, and a number of issues in this regard remain unresolved.

Cross-References

- ▶ Behavioral Ecology
- ▶ Big-Five Model
- ▶ Collectivistic Cultures
- ▶ Cultural Dimensions Theory
- ▶ Culture
- ▶ Implicit Association Test
- ▶ Individualistic Cultures
- ▶ Interdependent and Independent Self-Construal
- ▶ Pathogen-Stress Theory
- ▶ Self
- ▶ Sex Differences in Personality Traits
- ▶ Thornhill, Randy

References

- Agnew, P., Koella, J. C., & Michalakis, Y. (2000). Host life history responses to parasitism. *Microbes and Infection*, 2(8), 891–896. [https://doi.org/10.1016/S1286-4579\(00\)00389-0](https://doi.org/10.1016/S1286-4579(00)00389-0).
- Bresnahan, M. J., Levine, T. R., Shearman, S. M., Lee, S. Y., Park, C. Y., & Kiyomiya, T. (2005). A multimethod multitrait validity assessment of self-construal in Japan, Korea, and the United States. *Human Communication Research*, 31(1), 33–59. <https://doi.org/10.1093/hcr/31.1.33>.

- Church, A. T., Alvarez, J. M., Katigbak, M. S., Mastor, K. A., Cabrera, H. F., Tanaka-Matsumi, J., . . . Buchanan, A. L. (2012). Self-concept consistency and short-term stability in eight cultures. *Journal of Research in Personality, 46*(5), 556–570. <https://doi.org/10.1016/j.jrp.2012.06.003>.
- Cohen, A. B., & Varnum, M. E. W. (2016). Beyond East vs. West: Social class, region, and religion as forms of culture. *Current Opinion in Psychology, 8*, 5–9.
- Collins, J. P., & Cheek, J. E. (1983). Effect of food and density on development of typical and cannibalistic salamander larvae in *Ambystoma tigrinum nebulosum*. *American Zoologist, 23*(1), 77–84. <https://doi.org/10.1093/icb/23.1.77>.
- Davies, N. B., Krebs, J. R., & West, S. A. (2012). *An introduction to behavioral ecology* (4th ed.). Oxford: Wiley-Blackwell.
- Dunkel, C. S. (2013). Evidence for the role of the general factor of personality (GFP) in enculturation: The GFP and self-construal in Japanese and American samples. *Personality and Individual Differences, 55*(4), 417–421. <https://doi.org/10.1016/j.paid.2013.04.002>.
- English, T., & Chen, S. (2007). Culture and self-concept stability: Consistency across and within contexts among Asian Americans and European Americans. *Journal of Personality and Social Psychology, 93*(3), 478–490. <https://doi.org/10.1037/0022-3514.93.3.478>.
- Fincher, C. L., & Thornhill, R. (2012). Parasite-stress promotes in-group assortative sociality: The cases of strong family ties and heightened religiosity. *Behavioral and Brain Sciences, 35*(2), 61–79. <https://doi.org/10.1017/S0140525X11000021>.
- Fincher, C. L., Thornhill, R., Murray, D. R., & Schaller, M. (2008). Pathogen prevalence predicts human cross-cultural variability in individualism/collectivism. *Proceedings of the Royal Society: Biological Sciences, 275*(1640), 1279–1285. <https://doi.org/10.1098/rspb.2008.0094>.
- Forsgren, E., Amundsen, T., Borg, A. A., & Bjelvenmark, J. (2004). Unusually dynamic sex roles in a fish. *Nature, 429*(6991), 551–554. <https://doi.org/10.1038/nature02562>.
- Gelfand, M. J., Raver, J. L., Nishii, L., Leslie, L. M., Lun, J., Lim, B. C., . . . Yamaguchi, S. (2011). Differences between tight and loose cultures: A 33-nation study. *Science, 332*(6033), 1100–1104. <https://doi.org/10.1126/science.1197754>.
- Greenfield, P. M. (2013). The changing psychology of culture from 1800 through 2000. *Psychological Science, 24*(9), 1722–1731. <https://doi.org/10.1177/0956797613479387>.
- Grossmann, I., & Varnum, M. E. W. (2011). Social class, culture, and cognition. *Social Psychological and Personality Science, 2*(1), 81–89. <https://doi.org/10.1177/1948550610377119>.
- Grossmann, I., & Varnum, M. E. W. (2015). Social structures, infectious diseases, disasters, secularism and cultural change in America. *Psychological Science, 26*(3), 311–324. <https://doi.org/10.1177/0956797614563765>.
- Hamamura, T. (2012). Are cultures becoming individualistic? A cross-temporal comparison of individualism-collectivism in the United States and Japan. *Personality and Social Psychology Review, 16*(1), 3–24. <https://doi.org/10.1177/1088868311411587>.
- Hamamura, T., & Xu, Y. (2015). Changes in Chinese culture as examined through changes in personal pronoun usage. *Journal of Cross-Cultural Psychology, 46*(7), 930–941. <https://doi.org/10.1177/0022022115592968>.
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills: Sage Publications.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind* (3rd ed.). McGraw-Hill USA.
- Hong, Y., Morris, M. W., Chiu, C., & Benet-Martínez, V. (2000). Multicultural minds: A dynamic constructivist approach to culture and cognition. *American Psychologist, 55*(7), 709–720. <https://doi.org/10.1037/0003-066X.55.7.709>.
- Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review, 65*(1), 19. <https://doi.org/10.2307/2657288>.
- Kam, C., Zhou, X., Zhang, X., & Ho, M. Y. (2012). Examining the dimensionality of self-construals and individualistic-collectivistic values with random intercept item factor analysis. *Personality and Individual Differences, 53*(6), 727–733. <https://doi.org/10.1016/j.paid.2012.05.023>.
- Kitayama, S., Ishii, K., Imada, T., Takemura, K., & Ramaswamy, J. (2006). Voluntary settlement and the spirit of independence: Evidence from Japan's "northern frontier". *Journal of Personality and Social Psychology, 91*(3), 369–384. <https://doi.org/10.1037/0022-3514.91.3.369>.
- Kitayama, S., Park, H., Sevincer, A. T., Karasawa, M., & Uskul, A. K. (2009). A cultural task analysis of implicit independence: Comparing North America, Western Europe, and East Asia. *Journal of Personality and Social Psychology, 97*(2), 236–255. <https://doi.org/10.1037/a0015999>.
- Kwan, V., Bond, M., & Singelis, T. (1997). Pancultural explanations for life satisfaction: Adding relationship harmony to self-esteem. *Journal of Personality and Social Psychology, 73*(5), 1038–1051.
- Lam, S. S. K., Chen, X., & Schaubroeck, J. (2002). Participative decision making and employee performance in different cultures: The moderating effects of allocentrism/idiocentrism and efficacy. *Academy of Management Journal, 45*(5), 905–914.
- Lee, S. W. S., Oyserman, D., & Bond, M. H. (2010). Am I doing better than you? That depends on whether you ask me in English or Chinese: Self-enhancement effects of language as a cultural mindset prime. *Journal of Experimental Social Psychology, 46*(5), 785–791. <https://doi.org/10.1016/j.jesp.2010.04.005>.
- Li, Y. J., Johnson, K. A., Cohen, A. B., Williams, M. J., Knowles, E. D., & Chen, Z. (2012). Fundamental(ist) attribution error: Protestants are dispositionally focused. *Journal of Personality and Social Psychology, 102*(2), 281–290. <https://doi.org/10.1037/a0026294>.

- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224–253. doi:10.1037/0033-295X.98.2.224.
- Na, J., Grossmann, I., Varnum, M. E. W., Kitayama, S., Gonzalez, R., & Nisbett, R. E. (2010). Cultural differences are not always reducible to individual differences. *Proceedings of the National Academy of Sciences of the United States of America*, 107(14), 6192–6197. <http://doi.org/10.1073/pnas.1001911107>.
- Nisbett, R. E. (2003). *The geography of thought: How Asians and westerners think differently...And why*. New York, NY: Free Press.
- Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review*, 108(2), 291–310. <https://doi.org/10.1037/0033-295X.108.2.291>.
- Oishi, S. (2010). The psychology of residential mobility: Implications for the self, social relationships, and well-being. *Perspectives on Psychological Science*, 5(1), 5–21. <https://doi.org/10.1177/1745691609356781>.
- Oyserman, D., & Lee, S. W. S. (2007). Priming “culture”: Culture as situated cognition. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 255–279). New York: Guilford Press.
- Oyserman, D., & Lee, S. W. S. (2008). Does culture influence what and how we think? Effects of priming individualism and collectivism. *Psychological Bulletin*, 134(2), 311–342. <https://doi.org/10.1037/0033-2909.134.2.311>.
- Oyserman, D., Coon, H. M., & Klemmmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin*, 128(1), 3–72. <https://doi.org/10.1037/0033-2909.128.1.3>.
- Park, J., Uchida, Y., & Kitayama, S. (2016). Cultural variation in implicit independence: An extension of Kitayama et al. (2009). *International Journal of Psychology*, 51(4), 269–278. <https://doi.org/10.1002/ijop.12157>.
- Santos, H. C., Varnum, M. E. W., & Grossmann, I. (in press). Culture, cognition, and cultural change in social class. In W. H. Berkhaus & G. Ignatow (Eds.), *The oxford handbook of cognitive sociology*. Oxford: Oxford University Press. Forthcoming.
- Sevincer, A. T., Kitayama, S., & Varnum, M. E. W. (2015). Cosmopolitan cities: The frontier in the twenty-first century? *Frontiers in Psychology*, 6, 1–13. <https://doi.org/10.3389/fpsyg.2015.01459>.
- Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin*. <https://doi.org/10.1177/0146167294205014>.
- Singelis, T. M., Triandis, H. C., Bhawuk, D. P. S., & Gelfand, M. J. (1995). Horizontal and vertical dimensions of individualism and collectivism: A theoretical and measurement refinement. *Cross-Cultural Research*, 29(3), 240–275. <https://doi.org/10.1177/106939719502900302>.
- Talhelm, T., Zhang, X., Oishi, S., Shimini, C., Duan, D., Lan, X., & Kitayama, S. (2014). Large-scale psychological differences within China explained by rice versus wheat agriculture. *Science*, 344, 603–608.
- Taras, V., Sarala, R., Muchinsky, P., Klemmmeier, M., Singelis, T. M., Avsec, A., . . . Sinclair, H. C. (2013). Opposite ends of the same stick? Multi-method test of the dimensionality of individualism and collectivism. *Journal of Cross-Cultural Psychology*, 45(2), 213–245. <https://doi.org/10.1177/0022022113509132>.
- Thornhill, R., & Fincher, C. L. (2014). *The parasite-stress theory of values and sociality: Infectious disease, history and human values worldwide*. Cham: Springer International Publishing.
- Triandis, H. (1995). *Individualism & Collectivism*. Boulder: Westview Press.
- Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of Personality and Social Psychology*, 74(1), 118–128. <https://doi.org/10.1037/0022-3514.74.1.118>.
- Triandis, H. C., Leung, K., Villareal, M. J., & Clack, F. I. (1985). Allocentric versus idiocentric tendencies: Convergent and discriminant validation. *Journal of Research in Personality*, 19(4), 395–415. [https://doi.org/10.1016/0092-6566\(85\)90008-X](https://doi.org/10.1016/0092-6566(85)90008-X).
- Twenge, J. M., Abebe, E. M., & Campbell, W. K. (2010). Fitting in or standing out: Trends in American parents' choices for children's names, 1880–2007. *Social Psychological and Personality Science*, 1(1), 19–25. <https://doi.org/10.1177/1948550609349515>.
- Uskul, A. K., Kitayama, S., & Nisbett, R. E. (2008a). Ecocultural basis of cognition: Farmers and fishermen are more holistic than herders. *Proceedings of the National Academy of Sciences of the United States of America*, 105(25), 8552–8556. <https://doi.org/10.1073/pnas.0803874105>.
- Uskul, A. K., Nisbett, R. E., & Kitayama, S. (2008b). Ecoculture, social interdependence and holistic cognition: Evidence from farming, fishing and herding communities in Turkey. *Communicative & Integrative Biology*, 1(1), 40–41. <https://doi.org/10.4161/cib.1.1.6649>.
- Van de Vliert, E. (2013). Climato-economic habitats support patterns of human needs, stresses, and freedoms. *Behavioral and Brain Sciences*, 36(5), 465–480. <https://doi.org/10.1017/S0140525X12002828>.
- Van de Vliert, E., Yang, H. D., Wang, Y. L., & Ren, X. P. (2013). Climato-economic imprints on Chinese collectivism. *Journal of Cross-Cultural Psychology*, 44(4), 589–605. <https://doi.org/10.1177/0022022112463605>.
- Vandello, J. A., & Cohen, D. (1999). Patterns of individualism and collectivism across the United States. *Journal of Personality and Social Psychology*, 77(2), 279–292. <https://doi.org/10.1037/0022-3514.77.2.279>.
- Varnum, M. E. W., & Hampton, R. S. (in press). Culture and self-other overlap in neural circuits. In N. Gonzales, E. Telzer, & J. M. Causadias (Eds.), *Handbook of culture and biology*. New York: Wiley.
- Varnum, M. E. W., & Kitayama, S. (2011). What's in a name? Popular names are less common on frontiers. *Psychological Science*, 22(2), 176–183. <https://doi.org/10.1177/0956797610395396>.

- Varnum, M. E. W., Grossmann, I., Kitayama, S., & Nisbett, R. E. (2010). The origin of cultural differences in cognition: The social orientation hypothesis. *Current Directions in Psychological Science*, *19*, 9–13. <https://doi.org/10.1177/0963721409359301>.
- Yamagishi, T., Hashimoto, H., Li, Y., & Schug, J. (2012). Stadtluft Macht Frei (City air brings freedom). *Journal of Cross-Cultural Psychology*, *43*(1), 38–45. <https://doi.org/10.1177/0022022111415407>.
- Zhu, Y., Zhang, L., Fan, J., & Han, S. (2007). Neural basis of cultural influence on self-representation. *NeuroImage*, *34*(3), 1310–1316. <https://doi.org/10.1016/j.neuroimage.2006.08.047>.

Individualistic Cultures

Igor Grossmann and Henri Carlo Santos
Department of Psychology, University of
Waterloo, Waterloo, ON, Canada

Synonyms

[Civic society vs. community](#); [Contractual vs. communal cultures](#); [Ideocentrism vs. allocentrism](#); [Independence vs. interdependence](#); [Individualism vs. collectivism](#); [Gesellschaft vs. Gemeinschaft](#)

Definition

In most fundamental terms, individualism refers to a tendency to preferentially focus on the individual. In cross-cultural research, the notion of individualism is often contrasted with collectivism – i.e., the orientation toward one’s social community. Other terms to describe the cross-cultural dimension of individualism vs. collectivism are independence vs. interdependence (Markus and Kitayama 1991), *Gesellschaft* vs. *Gemeinschaft* (i.e., civic society vs. community; Greenfield 2009; Tönnies 1887), contractual vs. communal cultures (Schwartz 1990), and idiocentrism vs. allocentrism (Triandis et al. 1985). When describing cultural differences, the terms individualism and collectivism are often viewed as diametrically opposite ends of the same dimension (Grossmann and Na 2014; Triandis

1989). Individualist cultures emphasize self-direction, autonomy, and self-expression, along with self-fulfillment, personal achievement, and personal rights and liberties. Collectivist cultures emphasize harmony, relatedness, and connection, along with in-group goals, social responsibilities, relationships, and conformity (Morling and Lamoreaux 2008; Triandis 1989).

Introduction

The notion of individualism plays a central role for various domains of economics and moral and political philosophy, including liberalism, existentialism, and anarchism, among others. Individualism has also been the center of different lines of research in social sciences, including the exploration of dimensions defining cultural differences as well as the study of cohort effects (e.g., the individualistic focus of “hipsters,” “millennials,” or “baby boomers”). The present overview discusses how individualism informs individual psychology, along with the social, cognitive, and emotional processes impacting personal attitudes, values, and behavior. We also touch on how individualism has been changing over time and the macro-social factors contributing toward such changes.

Differences Between Individualist and Collectivist Cultures

Differences in value structures between individualist and collectivist cultures have implications for the conceptualization of the self. People in individualist cultures view the person as bounded and separate from others, whereas people in collectivist cultures view the person as interconnected and as encompassing meaningful relationships (e.g., Markus and Kitayama 1991; Triandis 1989). Different conceptions of the self in these cultures also impact choices people make and justification of these choices. For instance, individuals in individualist cultures tend to justify their personal choices by reporting liking the chosen option more, even though they don’t

show such tendency when choosing for others. In contrast, individuals in collectivist cultures tend to justify choices made for others, but not necessarily own choices (Hoshino-Browne et al. 2005; Kimel et al. 2012).

Individualism-collectivism also has consequences for cognitive style (Varnum et al. 2010). It appears that individualist cultures are more likely to endorse analytic patterns of cognition, which include a narrow attention field, focus on salient objects with the intention to manipulate them, dispositional attributions, and analytical thinking. Conversely, collectivist cultures are more likely to endorse holistic patterns of cognition, which include a broad attention field, focus on the relationship of elements and the context, situational-contextual attributions, and dialectical thinking. People in individualist cultures also tend to report different phenomenology of memory recall compared to individuals in collectivist cultures. Specifically, individualist cultures are more likely to encourage a first-person perspective in memory recall of social situations, reflecting on the experience from the “inside-out” field vantage point). In contrast, collectivist cultures are more likely to encourage a third-person perspective in recall of similar social situations, reflecting on the experience from the “outside-in” observer vantage point) (Cohen et al. 2007; Grossmann and Kross 2010).

Finally, there are consequences for emotions. Whereas people in individualist cultures report greater happiness in socially disengaging contexts (i.e., when feeling pride), individuals in collectivist cultures report greater happiness in socially engaging contexts (i.e., when feeling a sense of closeness to others) (Kitayama et al. 2006). As a consequence, the pursuit of (socially disengaging) happiness comes at a greater cost in individualist societies, as compared to the pursuit of (socially engaging) happiness in collectivist societies (Ford et al. 2015). Moreover, people in individualist cultures tend to report emotions in a more compartmentalized, good or bad or “black or white” fashion, whereas individuals in collectivist cultures tend to report emotions in a more nuanced way, allowing for various shades of gray (Grossmann et al. 2016).

Cultural Variation Across Different Levels of Analysis

Individualism appears to be more common among people from Western countries such as Germany, the UK, the USA, or Canada. In contrast, collectivism seems to be more common among people from many Asian countries, Eastern Europe, and other parts of the world in Africa, Central and South America. It is important to note, however, that individualist vs. collectivist cultures also play a role for understanding value systems, along with social, cognitive, and emotional processes among different groups from the same country. In particular, in North America, in Eastern Europe, and in East Asia, individualism appears more prevalent among groups representing the higher ends of the socioeconomic standing, e.g., a highly educated (upper-) middle class with white-collar jobs. In contrast, collectivism appears more prevalent among groups representing the lower ends of the socioeconomic standing – i.e., less education working class with blue-collar jobs (Grossmann and Varnum 2011; Kraus et al. 2012; Stephens et al. 2012).

Although there is cultural variation across different regions and classes, individualism is not static. Researchers have observed that individualism-related psychological variables are increasing in countries such as the USA, China, Japan, and Mexico (e.g., Greenfield 2013; Grossmann and Varnum 2015; Hamamura 2012; Twenge et al. 2010). One of the major factors contributing to this change is socioeconomic development. More prosperous societies make it possible for individuals to rely less on a close community and instead pursue personal goals (Inglehart and Baker 2000; Kagitçibasi 2007). A related argument focuses on the rise of urban communities, which are better suited for individualistic living (Tönnies 1887; Yamagishi et al. 2012). Building on these ideas, researchers have found that increases in socioeconomic development (e.g., from blue-collar to white-collar occupations) preceded increases in individualistic values and practices over time, suggesting that socioeconomic changes contributed toward the rise of individualism (Grossmann and Varnum 2015).

Notably, cultural-level differences in individualism-collectivism may not necessarily correspond to comparable constructs operating on the individual level of analysis (Na et al. 2010). According to Triandis and colleagues (1985), idiocentrism is the expression of individualist values and norms on an individual level, defined through an individual-level preference for personal goals, self-reliance, competitive orientation, and individual achievement. It stands in contrast to the notion of allocentrism, which roughly corresponds to the idea of cultural-level collectivism. On the cultural level, individualism and collectivism often represent opposite poles of the same dimension (Hofstede and Bond 1984; Hofstede et al. 2010). However, corresponding individual-level concepts appear to be distinct – i.e., the same person can value allocentrism and idiocentrism at the same time, and either tendency can be activated based on certain situational contingencies (Oyserman and Lee 2008).

Conclusion

Individualism is a cultural-level construct concerning greater attention to the individual (vis-à-vis social community), self-direction, autonomy, and self-expression. Typically, scholars consider individualism to be more prevalent in the English-speaking North America, Australia, New Zealand, and Western Europe compared to the other parts of the world. However, individualism is dynamic; many countries around the globe have experienced a substantial rise in individualism over the course of the twentieth century. Given this dynamic nature of individualism, exact mapping of cultural differences in this cultural-level construct is by definition subject to change.

Cross-References

- ▶ [Collectivistic Cultures](#)
- ▶ [Cultural Dimensions Theory](#)
- ▶ [Culture](#)
- ▶ [Individualism-Collectivism](#)
- ▶ [Social Class Differences](#)
- ▶ [Working Models of Self and Other](#)

References

- Cohen, D., Hoshino-Browne, E., & Leung, A. K. y. (2007). Culture and the structure of personal experience: Insider and outsider phenomenologies of the self and social world. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 39, pp. 1–67). San Diego: Academic. [https://doi.org/10.1016/S0065-2601\(06\)39001-6](https://doi.org/10.1016/S0065-2601(06)39001-6).
- Ford, B.Q., Dmitrieva, J.O., Heller, D., Chentsova-Dutton, Y., Grossmann, I., Tamir, M., . . . , & Mauss, I.B. (2015). Culture shapes whether the pursuit of happiness predicts higher or lower well-being. *Journal of Experimental Psychology: General*, 144(6), 1053–1062. <https://doi.org/10.1037/xge0000108>.
- Greenfield, P. M. (2009). Linking social change and developmental change: Shifting pathways of human development. *Developmental Psychology*, 45(2), 401–418. <https://doi.org/10.1037/a0014726>.
- Greenfield, P. M. (2013). The changing psychology of culture from 1800 through 2000. *Psychological Science*, 24(9), 1722–1731. <https://doi.org/10.1177/0956797613479387>.
- Grossmann, I., & Kross, E. (2010). The impact of culture on adaptive versus maladaptive self-reflection. *Psychological Science*, 21(8), 1150–1157. <https://doi.org/10.1177/0956797610376655>.
- Grossmann, I., & Na, J. (2014). Research in culture and psychology: Past lessons and future challenges. *Wiley Interdisciplinary Reviews: Cognitive Science*, 5(1), 1–14. <https://doi.org/10.1002/wcs.1267>.
- Grossmann, I., & Varnum, M. E. W. (2011). Social class, culture, and cognition. *Social Psychological and Personality Science*, 2(1), 81–89. <https://doi.org/10.1177/1948550610377119>.
- Grossmann, I., & Varnum, M. E. W. (2015). Social structure, infectious diseases, disasters, secularism, and cultural change in America. *Psychological Science*, 26(3), 311–324. <https://doi.org/10.1177/0956797614563765>.
- Grossmann, I., Huynh, A.C., & Ellsworth, P.C. (2016). Emotional complexity: Clarifying definitions and cultural correlates. *Journal of Personal and Social Psychology* 111(6), 895–916. <https://doi.org/10.1037/pspp0000084>.
- Hamamura, T. (2012). Are cultures becoming individualistic? A cross-temporal comparison of individualism-collectivism in the United States and Japan. *Personality and Social Psychology Review*, 16(1), 3–24. <https://doi.org/10.1177/1088868311411587>.
- Hofstede, G., & Bond, M. H. (1984). Hofstede’s culture dimensions an independent validation using Rokeach’s value survey. *Journal of Cross-Cultural Psychology*, 15(4), 417–433.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind: Intercultural cooperation and its importance for survival* (3rd ed.). New York: McGraw-Hill.
- Hoshino-Browne, E., Zanna, A. S., Spencer, S. J., Zanna, M. P., Kitayama, S., & Lackenbauer, S. (2005). On the

cultural guises of cognitive dissonance: The case of Easterners and Westerners. *Journal of Personality and Social Psychology*, 89(3), 294–310.

Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review*, 65(1), 19–51.

Kagitçibasi, Ç. (2007). *Family, self, and human development across cultures*. Mahwah: Erlbaum.

Kimel, S. Y., Grossmann, I., & Kitayama, S. (2012). When gift-giving produces dissonance: Effects of subliminal affiliation priming on choices for one's self versus close others. *Journal of Experimental Social Psychology*, 48(5), 1221–1224. <https://doi.org/10.1016/j.jesp.2012.05.012>.

Kitayama, S., Mesquita, B., & Karasawa, M. (2006). Cultural affordances and emotional experience: Socially engaging and disengaging emotions in Japan and the United States. *Journal of Personality and Social Psychology*, 91(5), 890–903.

Kraus, M. W., Piff, P. K., Mendoza-Denton, R., Rheinschmidt, M. L., & Keltner, D. (2012). Social class, solipsism, and contextualism: How the rich are different from the poor. *Psychological Review*, 119(3), 546.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224–253.

Morling, B., & Lamoreaux, M. (2008). Measuring culture outside the head: A meta-analysis of individualism-collectivism in cultural products. *Personality and Social Psychology Review*, 12(3), 199–221. <https://doi.org/10.1177/1088868308318260>.

Na, J., Grossmann, I., Varnum, M. E. W., Kitayama, S., Gonzalez, R., & Nisbett, R. E. (2010). Cultural differences are not always reducible to individual differences. *Proceedings of the National Academy of Sciences of the United States of America*, 107(14), 6192–6197. <https://doi.org/10.1073/pnas.1001911107>.

Oyserman, D., & Lee, S. W. S. (2008). Does culture influence what and how we think? Effects of priming individualism and collectivism. *Psychological Bulletin*, 134(2), 311–342. <http://doi.org/10.1037/0033-2909.134.2.311.supp>, (Supplemental).

Schwartz, S. H. (1990). Individualism-collectivism: Critique and proposed refinements. *Journal of Cross-Cultural Psychology*, 21(2), 139–157. <https://doi.org/10.1177/0022022190212001>.

Stephens, N. M., Rose Markus, H., & Fryberg, S. A. (2012). Social class disparities in health and education: Reducing inequality by applying a sociocultural self model of behavior. *Psychological Review*, 119(4), 723.

Tönnies, F. (1887). *Community and society*. New Brunswick: Transaction Books.

Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, 96(3), 269–289.

Triandis, H. C., Leung, K., Villareal, M. J., & Clack, F. I. (1985). Allocentric versus idiocentric tendencies: Convergent and discriminant validation. *Journal of Research in Personality*, 19(4), 395–415. [https://doi.org/10.1016/0092-6566\(85\)90008-X](https://doi.org/10.1016/0092-6566(85)90008-X).

Twenge, J. M., Abebe, E. M., & Campbell, W. K. (2010). Fitting in or standing out: Trends in American parents' choices for children's names, 1880–2007. *Social Psychological and Personality Science*, 1(1), 19–25.

Varnum, M. E. W., Grossmann, I., Kitayama, S., & Nisbett, R. E. (2010). The origin of cultural differences in cognition: Evidence for the social orientation hypothesis. *Current Directions in Psychological Science*, 19(1), 9–13. <https://doi.org/10.1177/0963721409359301>.

Yamagishi, T., Hashimoto, H., Li, Y., & Schug, J. (2012). Stadtluft Macht Frei (City air brings freedom). *Journal of Cross-Cultural Psychology*, 43, 38–45. <https://doi.org/10.1177/0022022111415407>.

Individuality

- ▶ [Developmental Changes in Personality Traits](#)
- ▶ [Self](#)

Individuation

Susan Watt
 University of New England, Armidale,
 NSW, Australia

Synonyms

[Differentiation](#); [Separation](#)

Definition

Within psychology, the term “individuation” is used in several different ways. In person perception, it refers to perceiving a person as a unique constellation of features rather than as a category representative. In psychoanalytic and developmental psychology, it refers to one's sense of identity as an individual, autonomous, and separate person, and in family systems psychology, it concerns the degree to which a person maintains age-appropriate separateness and connectedness with their family. Finally, in perception and cognition, the individuation of objects refers to the ability to discern coherent objects from their surrounds, such that they can be counted.

Introduction

The definition above reveals that “individuation” has different meanings in different domains of psychology. This article provides a brief overview of individuation in person perception, psychoanalytic and developmental psychology, and family systems psychology.

Individuation in Person Perception

We commonly encounter new people: perhaps a passing stranger in the street or a new face in the classroom. The degree to which we process information about each new person depends on capacity and motivation. That is, do we have the time or cognitive resources to commit to processing information about this person, and do we want to go to the effort to process information regarding even the briefest encounter, a face that is there and gone again? Fortunately, we can efficiently form impressions through the use of stored representations of categories. The exemplar at hand can be compared against category representations, and by applying that categorical information, an impression is formed. Imagine you see a person walking along the street dressed in a police uniform. You make the categorization “police officer” and apply to that person the information you already have in memory about police officers. In this way, the stereotype of police is applied, allowing you to “go beyond the information given,” efficiently understanding and navigating the social world around you.

While categorization offers efficiency, the usual assumption is that this comes at the price of accuracy. When Walter Lippman (1922) coined the term “stereotype” in its modern sense, he wrote, “There is no shortcut through, and no substitute for, an individualized understanding” (p. 59). The assumption that detailed, individualized attention is the gold standard in person perception pervades the literature. However, it is unclear as to exactly what this involves. The continuum model of impression formation (Fiske and Neuberg 1990) proposed that people allocate attention following an initial categorization,

depending on the motivation to allocate attention to the target. With sufficient interest, the perceiver moves through a continuum from category-based to “piecemeal” processing. In piecemeal processing, the impression is constructed from many individual traits rather than from stereotyping or categorization. The dual-process model of impression formation (Brewer 1988) proposed a similar process, the main point of difference being that categorization and individuation were described as separate processes rather than opposing ends of a continuum. In this model, individuation involves more effortful “bottom-up” processing of the individual’s unique combination of attributes.

While both models propose an efficient stereotyping process and an effortful individuating process, individuation still appears to involve categorical thinking. If we are to perceive each person as a collection of traits, each trait is in itself a category (Spears and Haslam 1997). If a person is perceived as “friendly,” we apply the category of friendly people; if they play the guitar, we apply the category of “guitar player.” Hence, in individuation, the difference appears to be in the number of categories applied, rather than in not applying categories. Consistent with this, Prati et al. (2016) found that multiple categorizations increased the individuation of outgroup members and also reduced their dehumanization. In summary, while individuation is held up as the gold standard in person perception, it is fundamentally a categorical process that involves the application of multiple categories to the target at hand.

Individuation in Psychoanalytic and Developmental Psychology

Each person starts life physically connected to their mother, becoming an increasingly autonomous human being as we develop. Psychologically, the realization that we are a separate and unique person has been identified as a primary developmental task, and age-appropriate individuation is necessary for healthy psychological growth. Two particularly prominent periods of individuation can be discerned. The first is in

early childhood, when the child needs to establish themselves as a separate identity from their mother. The second is in adolescence and extends into early adulthood, during which separateness from the family and an autonomous sense of identity are established.

In early theorizing about individuation, psychoanalytic theorist Anna Freud (1958) focused on sexual impulses toward parents during puberty as providing an impetus for separation from them. Erikson's (1959) psychosocial theory of individual development proposed eight developmental stages that occur throughout life. Each offers a development crisis that must be resolved for the individual to function well later in life. His fifth stage, the crisis of identity, requires that adolescents establish their own identity by defining their goals and ideals in life, which may involve psychologically and ideologically distancing themselves from their parents.

Mahler et al. (1975) focused on the first 3 years of life, during which, through a process of separation-individuation, babies change from being one with their mother to a psychologically autonomous being with a sense of self as separate from the other. Mahler believed that disruptions to the separation-individuation phase could damage a person's sense of individual identity in adulthood.

Blos (1979) focused on adolescence, during which the child transforms from being embedded within their family to a member of the broader community, finding relationships outside the family. This is a step along the path to autonomy. During this period, children will swing between longing for independence and desire for the support of their parents. Their growing autonomy can be frightening to them, and adolescents sometimes long to be a small child again. Individuation continues in emerging adulthood, moving from close connectedness with and dependence on parents during adolescence to a balance between connectedness with parents (mutual reciprocity, trust, and dependency) and agency (self-governance) in adulthood.

Individuation and the development of a unique self is a lifelong task that does not end in early adulthood. Furthermore, values regarding family

and interrelatedness vary between cultures. Most research on this topic originates in Western cultures that value independence and autonomy and hence require that adolescents and young adults distance themselves from their parents. This dynamic may be less necessary in other, non-Western cultures.

Individuation in Family Systems Psychology

In the section above, individuation is an *intrapsychic* process, in which people learn to separate the "I" from the "we" (Anderson and Sabatelli 1990). In contrast, family systems psychology considers individuation as an *interpersonal* process within families (Bowen 1978). It focuses on the level of individuation (or "differentiation") within family systems. Differentiation refers to the amount of fusion in the family, the degree to which it is "stuck together" (Anderson and Sabatelli 1990). In more differentiated family systems, family members are permitted to be separate and different; there is less need to seek love, approval, and affection from other family members. Well-differentiated families have an age-appropriate balance of separateness and connectedness for their members, while poorly differentiated families are highly regulated and allow little individuality among their members.

Conclusion

The concept of individuation is explored in different theoretic domains in psychology, some of which are briefly presented here. It has also been considered in other areas of inquiry, such as sociology and philosophy. One issue that arises from the numerous theories concerning individuation is a confusion of terms. A common theme through the definitions above is that individuation concerns differentiation of an individual from other exemplars. In person perception, the individual is differentiated from the group; in psychoanalytic and developmental psychology, the individual is differentiated from others to

represent a separate person; and in family systems, it refers to how much possibility there is in families for individuals to be separate from other family members.

Cross-References

- ▶ [Identity](#)
- ▶ [Identity Crisis](#)
- ▶ [Personal Growth](#)
- ▶ [Personality and Familial Relationships](#)
- ▶ [Personality Development in Adolescence](#)
- ▶ [Self \(Jungian Archetype\)](#)
- ▶ [Separation](#)
- ▶ [Separation Insecurity](#)
- ▶ [Stereotypes](#)

References

- Anderson, S. A., & Sabatelli, R. M. (1990). Differentiating differentiation and individuation: Conceptual and operation challenges. *American Journal of Family Therapy, 18*(1), 32–50.
- Blos, P. (1979). *Adolescent passage*. New York: International Universities Press.
- Bowen, M. (1978). *Family therapy in clinical practice*. New York: Jason Aronson.
- Brewer, M. B. (1988). A dual-process model of impression formation. In T. K. Srull & R. S. Wyer Jr. (Eds.), *Advances in social cognition* (Vol. 1, pp. 1–36). Hillsdale: Lawrence Erlbaum Associates, Publishers.
- Erikson, E. (1959). *Identity and the life cycle*. New York: International Universities Press.
- Fiske, S., & Neuberg, S. (1990). A continuum of impression formation, from category-based to individuating processes: Influences of information and motivation on attention and interpretation. *Advances in Experimental Social Psychology, 23*, 1–74.
- Freud, A. (1958). Adolescence. *The Psychoanalytic Study of the Child, 13*(1), 255–278.
- Lippmann, W. (1922). *Public opinion*. New York: Harcourt, Brace, Jovanovitch.
- Mahler, M., Pine, F., & Bergman, A. (1975). *The psychological birth of the infant: Symbiosis and individuation* (p. 263). New York: Basic.
- Prati, F., Crisp, R. J., Meleady, R., & Rubini, M. (2016). Humanizing outgroups through multiple categorization: The roles of individuation and threat. *Personality and Social Psychology Bulletin, 42*(4), 526–539.
- Spears, R., & Haslam, S. A. (1997). *Stereotyping and the burden of cognitive load*. Oxford: Blackwell.

Indolence

- ▶ [Laziness](#)

Industry Versus Inferiority

Safaa Issawi and V. Barry Dauphin
Department of Psychology, University of Detroit Mercy, Detroit, MI, USA

Synonyms

[Achievement \(need for\)](#); [Erickson's fourth stage productivity](#); [Latency stage of development](#); [Self-esteem levels](#)

Definition

Industry vs. Inferiority is the stage in which children enter into the greater society beyond the family for the first time. If they succeed in navigating this stage, then they are able to develop a meaningful social role to give back to society. They will become industrious, namely, productive and contributing members to society as a whole. If they do not succeed at this stage, they may develop low self-esteem, culminating in a sense of inferiority, namely, viewing themselves as unproductive and possibly not fully useful members of society.

Introduction

Erik Erikson's (1950) stages of development consist of several stages individuals need to traverse in order to successfully move on to the next stage and to progress to higher levels of healthy development. The fourth stage is *Industry vs. Inferiority*. This stage marks a child's entrance into society and an opportunity for them to find a satisfying and meaningful role in the world. If successful, they will develop a sense of industry and become

successful producers of what is valued by the wider society. If they fail to develop industry, however, they will instead fall into a sense of inferiority and have doubts about their value to society and experience impediments to viewing themselves as contributing meaningfully.

Overview

Erik Erikson's (1950) fourth stage of development is the developmental challenge of *Industry vs. Inferiority*. If this stage is not mastered, an individual will experience conflicts and deficits in development, such as a deficit in their ability to engage in productive activity in society and a sense of not measuring up to what others can do, that potentially results in a fear of failure and inhibited effort.

The first few stages of development prepare an individual for "entrance into life" (Erikson 1950, p. 258). During these stages, the person is concerned with their hopes, wishes, and desires. They are most concerned with their own needs and securing their place in the family. At approximately the age of five, the child must put some of their earlier hopes and wishes aside and begin to think more extensively about the world around him or her. It is during this time that the child enters school for the first time. Children are being exposed to the world around them and begin to more fully appreciate that there are people other than family and close friends in the world. Erikson's fourth stage signals an individual's larger, more prominent entrance into society. The aim of this stage is for the child to become a functioning member of society, who will make contributions that benefit and are valued by not only his family but by the society as a whole (Erikson 1950). During this time, children learn that they must win recognition from others by becoming a competent producer of things and activities valued by the society. As such, the person must acquire the skills to become a worker and provider to society as a whole. When the child is exposed to new individuals, especially through schooling, the child must begin to realize there are others in the world with various talents and

abilities, with whom they will be compared. Children learn that are being measured and evaluated, which is a relatively new experience.

During this time, the child begins to consider this new evaluative dimension. They might worry about how they are coping and doing and compare themselves to others. If the child is able to come to terms with and understand that they do not have to be the best at everything in order to be competent, they will develop a sense of industry. However, if they begin to compare themselves to their peers and continue to believe they are not doing well enough, they will develop a sense of inferiority. If an individual develops a sense of inferiority, it is hard to master the feedback they will be receiving throughout life for continued growth.

They begin to explore their creativity and innate abilities in the hopes of building their self-esteem and confidence. An individual will also develop the fundamental skills of utilizing technology, which will help them in handling the tools and utensils adults use in everyday life. This can specifically be seen in the school setting, which serves as a proving ground for future entry into the workforce. They begin to realize that they need to produce and give something in return to society, because their involvement in school increases their awareness that a well-functioning society depends upon contributions from all its members. Examples of this can be seen in a classroom setting, such as a student having the task of wiping the board or feeding the class pet. This goes beyond simply the basics of learning school subjects. Erikson (1950) viewed children as eager to participate and take charge of a wide variety of tasks that require instruction and experimentation for mastery.

Industry can be seen forming through the child's development of self-esteem and confidence. They realize, via practice in using their abilities and strengths, that they can successfully provide the society with added value. Looking back at the example of children taking charge of tasks at school, the child may learn not only that they can successfully participate and produce but may also begin to learn how to appreciate their work, noticing the difference between doing a job and doing it well. Although external validation is

important to the child's development of self-confidence, Erikson (1950) also emphasized the child's internal appreciation of their work as crucial to mastering this stage. When a child is seen to be developing a confidence in their self and their work, as well as understanding the importance of finding their own role in society, the child is demonstrating industry. Confidence enables them to take on larger and more ambiguous challenges over time. This bears similarity to the concept of intrinsic motivation (Deci and Ryan 2002).

On the other side of the spectrum, feelings of inferiority in an individual may begin to emerge and possibly harden. This can occur when the child is not able to develop self-esteem and self-confidence in their abilities, their skills, and their contribution to society. This can be due to many reasons including improper preparation by the family or inadequate teaching from the school, as well as through negative self-appraisals. If an individual develops a sense of inadequacy and inferiority, they risk failing to acquire the skills and knowledge necessary for meaningful contributions. If the individual feels inferior in terms of skill development, or of their status among other individuals, they may become discouraged from identifying with and associating with a section of the "tool world" (Erikson 1950, p. 259). This in turn may result in the individual becoming more isolated from the educational and social experiences necessary for mastery, which in turn hinders development. Such an individual feels hopeless and lacks confidence in their ability to produce anything of value for society. They begin to believe they are mediocre and inadequate. This can affect the individual's effort, resulting in not trying or working half-heartedly.

Family, as well as society, can either help or hinder an individual's development during this stage. An example of this is a child that has a learning disability. This disability can interfere with mastery of the tasks assigned in school and may result in a greater risk of loss of self-esteem. The school and family could fail the child if they do not identify and provide remediation for the learning disability. For example, Bussing et al. (2000) found that children with ADHD and internalizing symptoms had significantly lower

self-esteem than children with ADHD alone. If psychological steps needed for industry are not attended to properly, and help is not provided to assist the child in achieving success, then a sense of inferiority can permeate the child's self-image and cause long-lasting damage. Since becoming confident in these areas is necessary for gaining overall confidence and projecting oneself into the future of being a productive worker, a learning disability has the risk of leading to a sense of inferiority if a child is not provided with alternative means of skill acquisition and attention to these psychological risks associated with a lack of confidence.

During the stage of *Industry vs. Inferiority*, the child's potential for achievement is activated. Society provides opportunities for the child to progress beyond simple competency and to engage in a more enduring effort to achieve difficult things and to overcome adversity. For example, Murray (1938) developed the construct of achievement motivation. He noted that achievement motivation can be enhanced by a parent's encouragement of high standards and admiration of the child's spirit to seek out challenges and persevere in the face of adversity. It is during *Industry vs. Inferiority* that a sense of achievement can be cultivated by rewards for success and the association of success with pleasure.

During *Industry vs. Inferiority*, children further develop relatedness and self-definition. During this stage, an individual learns their role in the world, which helps them learn to develop "mature, intimate, mutually satisfying, reciprocal, interpersonal relationships" (Blatt 2006, p. 496). During this stage, the individual also continues to develop a realistic, unique sense of self and identity (Blatt 2006).

Looking at *industry vs. inferiority* from a different perspective may also be helpful in understanding this stage. Erikson's fourth developmental stage corresponds well with Freud's (1953) latency stage. *Industry vs. inferiority* develops from the conflicts that arise during the Oedipal stage of the child's development, in which competitive fantasies were centered within the nuclear family. In healthy development, the child will learn to become independent and take

on a role in society. Although psychoanalytic orthodoxy posited that latency was a period of little developmental significance, Erickson's fourth stage is actually quite consequential. The child not only prepares to find a meaningful role in the economy but also develops the virtues of friendship (Bemporad 1984).

Conclusion

In Conclusion, this entry reviewed Erik Erikson's fourth stage of psychosocial development, the influences that may help or hinder development in this stage, and the relatedness of *Industry vs. Inferiority* to Freud's latency stage.

Erik Erikson's fourth stage of development *Industry vs. Inferiority* marks a child's entrance into society and an opportunity for them to become successful producers, and therefore finding a meaningful role in the world. If successful, they will develop self-esteem and self-worth, which further helps them develop a sense of industry and become effective producers in society. If they fail to develop industry, they will instead develop a sense of inferiority. This will cause the individual to question their abilities and their value in society.

Cross-References

- ▶ Identity Versus Role Confusion
- ▶ Initiative Versus Guilt

References

Bemporad, J. R. (1984). From attachment to affiliation. *American Journal of Psychoanalysis. The American Journal of Psychoanalysis*, 44(1), 79–92. <https://doi.org/10.1007/bf01255422>.

Blatt, S. J. (2006). A fundamental polarity in psychoanalysis: Implications for personality development, psychopathology, and the therapeutic process. *Psychoanalytic Inquiry*, 26(4), 494–520. <https://doi.org/10.1080/07351690701310581>.

Bussing, R., Zima, B. T., & Perwien, A. R. (2000). Self-esteem in special education children with ADHD: Relationship to disorder characteristics and medication use.

Journal of the American Academy of Child & Adolescent Psychiatry, 39(10), 1260–1269. Retrieved from <http://search.proquest.com/docview/619453105?accountid=28018>.

Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester: University of Rochester Press.

Erikson, E. H. (1950). *Childhood and society*. New York: W.W. Norton & Company.

Freud, S. (1953). Three Essays on the Theory of Sexuality. In Strachey, J. (Ed. and Trans.), *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, 7, 125–243. (Original work published 1905).

Murray, H. A. (1938). *Explorations in personality*. New York: Oxford University Press.

Infants' Salivary Cortisol Levels

Evalotte Mörelius
 Department of Social and Welfare Studies,
 Division of Nursing Science, Linköping
 University, Norrköping, Sweden

Definitions

Cortisol reactivity	The difference between the cortisol peak and the baseline/pretest level
Infant	A human baby from birth to the end of the first year of life
Preterm infant	A human baby born alive before 37 weeks of pregnancy
Stress	A state of physical, mental, or emotional strain or tension
Stressor	A real or potential stimuli that disrupt homeostasis
Stress reaction	Behavioral responses occurring to respond to a stressor, for example, fight, flight, or freeze
Stress response	Physiological responses occurring to remain or restore homeostasis

Introduction

Stress occurs for infants when extra-, inter-, or intrapersonal demands on the infant are higher than the infant's ability to handle them. The

demands may be interpreted differently in different contexts. For instance, infants who are hungry during a painful immunization have a higher cortisol reactivity compared to infants who have recently been fed (Mörelus et al. 2009). How a child interprets a stressor may also affect other persons in the immediate environment. For instance, the longer the infant cries during an immunization, the higher the parent's salivary cortisol reactivity (Mörelus et al. 2009).

It is natural that infants react with increased cortisol levels (cortisol reactivity) in new, unfamiliar situations that they cannot predict and during painful procedures (Mörelus et al. 2016). Children react differently to stressors depending on their developmental stage. However, if the child lives in an environment of violence or deprivation, the child's stress system is constantly activated, irrespective of the child's developmental stage, which increases the risk of long-term stress and high levels of cortisol that subsequently causes stress-related health consequences.

Cortisol

The stress hormone cortisol is synthesized from cholesterol through several enzymatic steps under the regulation of the hypothalamic–pituitary–adrenal (HPA) axis. During basal conditions, cortisol concentrations show a diurnal variation, with a cortisol peak level in the morning and a decrease throughout the day, resulting in the lowest values around bedtime. A diurnal variation of cortisol is established at 1 month in healthy full-term infants and is related to gestational age rather than postnatal age (Ivars et al. 2015). Cortisol is secreted in response to a stressor in order to maintain homeostasis. However, food intake, car rides, or physical activity may cause transient cortisol elevations to diverge from the basal diurnal rhythm. Cortisol may be measured in serum, plasma, urine, hair, and saliva. Salivary cortisol reflects the free non-protein-bound fraction and correlates strongly with cortisol in blood. Cortisol levels in saliva reach a peak 20–30 min after exposure to a stressor and decline to basal levels after determination of the stressor (Gunnar 1989). However, there are individual

differences in basal cortisol levels, co-regulation, and cortisol reactivity depending on the environment the infant is exposed to (Mörelus et al. 2006, 2012, 2015).

The HPA Axis Develops in Relation to the Environment

The stress system starts to develop in utero; a functional HPA axis has been detected from the beginning of the second trimester (Gitau et al. 2004). Environmental factors affecting the fetus such as malnutrition, maternal smoking, alcohol and drug use as well as maternal stress may therefore have an impact on the development of the HPA axis. The stress system continues to develop and mature after birth, in response to the environment. For instance, preterm infants in neonatal intensive care have higher basal cortisol levels compared to healthy full-term infants (Mörelus et al. 2006), and the more painful procedures the preterm infant has been exposed to during the neonatal intensive care, the higher the cortisol levels (Grunau et al. 2004). Environmental factors such as loss of proximity and security due to separation after birth, deprivation, or abuse may lead to a higher sensitivity to stressors, while maternal contact and sensitivity toward the infant's signals have the ability to buffer a stress response (Mörelus et al. 2007, 2015).

Sharing the Same Environment Facilitates a Cortisol Co-Regulation in the Mother–Infant Dyad

The younger the child, the more dependent the child is on an adult in order to survive. A newborn infant relies on the older, wiser parent to guide him/her through life. Separation from the parent after birth is therefore a strong stressor for infants. A secure relationship between the infant and the parent is characterized by a good interaction. If a preterm infant is separated from the parents due to neonatal intensive care and the parent is not given the opportunity to stay by the infant's bedside, the parents are deprived of the opportunity to provide proximity and to respond and interact with the infant. On the other hand, if the mother is

given the possibility to stay with the infant in the neonatal intensive care unit around the clock, it facilitates a co-regulation between mothers' and preterm infants' salivary cortisol levels at discharge from the hospital. Such a co-regulation is not present in dyads where the mother and infant are separated because the mother has to sleep at home (Mörelus et al. 2012). Moreover, if the mothers are given the opportunity to care for their preterm infant skin to skin in an upright position on their chest (i.e., kangaroo care) around the clock, it facilitates a co-regulation between mothers' and preterm infants' salivary cortisol levels at 4 months corrected age. Such a co-regulation is not present in dyads where the preterm infant has spent more time in a cot instead of in kangaroo care during the stay in the neonatal intensive care unit (Mörelus et al. 2015). There is also a co-regulation in salivary cortisol levels between preterm twins if they share the same neonatal intensive care environment (Mörelus et al. 2012). These results indicate that when a dyad is given the opportunity to spend time together in the same environment, it increases the chance for the dyad to follow one another's rhythm. And the closer together the better.

A Sense of Security Reduces the Infants' Cortisol Reactivity to a Mild Stressor

A secure relationship with a sensitive adult is a good start to preventing and alleviating stress in infants. For instance, in a 6-week day-care program with the purpose of increasing mother–infant interaction and subsequently a secure attachment, it was found that significantly more infants had an increased cortisol reactivity in response to a diaper change (considered to be a mild stressor) performed by the mother during the first week of the program compared to the last week of the program. At the same time, mothers' sensitivity toward the infants' signals increased significantly, indicating a more secure attachment (Mörelus et al. 2007). Preterm infants cared for skin to skin in a kangaroo care position around the clock during the entire stay at the neonatal intensive care unit also showed a lower cortisol reactivity to a diaper change at 1 month corrected age, compared to infants who were not given the opportunity to

stay close to their parents (Mörelus et al. 2015). These results indicate that insecurely attached children are more likely to have increased cortisol reactivity in response to mild stressors as compared to securely attached children.

Conclusion

The stress system develops during infancy and matures in relation to the environment. Therefore, the environment the infant is exposed to during this period is important. If the infant is exposed to neonatal intensive care, deprivation, insecurity, or abuse, the infant's stress system will be constantly activated, which increases the risk of long-term stress and developmental changes in the HPA axis. The infant will probably be more sensitive to stressors compared to an infant that grows up in an environment characterized by a secure relationship with a predictable and loving adult.

Cross-References

- ▶ [Circadian Rhythms](#)
- ▶ [Fight-Flight-Freeze System](#)
- ▶ [General Adaptation Syndrome](#)
- ▶ [Hormone Assays](#)
- ▶ [Hypothalamic–Pituitary–Adrenal Axis](#)

References

- Gitau, R., Fisk, N. M., & Glover, V. (2004). Human fetal and maternal corticotrophin releasing hormone responses to acute stress. *Archives of Disease in Childhood Fetal and Neonatal Edition*, 89(1), F29–F32.
- Grunau, R. E., Weinberg, J., & Whitfield, M. F. (2004). Neonatal procedural pain and preterm infant cortisol response to novelty at 8 months. *Pediatrics*, 114(1), e77–e84.
- Gunnar, M. R. (1989). Studies of the human infant's adrenocortical response to potentially stressful events. *New Directions for Child Development*, 45, 3–18.
- Ivars, K., Nelson, N., Theodorsson, A., Theodorsson, E., Strom, J. O., & Mörelus, E. (2015). Development of salivary cortisol circadian rhythm and reference intervals in full-term infants. *PloS One*, 10(6), e0129502. <https://doi.org/10.1371/journal.pone.0129502>.
- Mörelus, E., Brostrom, E. B., Westrup, B., Sarman, I., & Ortenstrand, A. (2012). The stockholm neonatal

- family-centered care study: effects on salivary cortisol in infants and their mothers. *Early Human Development*, 88(7), 575–581. <https://doi.org/10.1016/j.earlhumdev.2011.12.033>.
- Mörelus, E., He, H. G., & Shorey, S. (2016). Salivary cortisol reactivity in preterm infants in neonatal intensive care: an integrative review. *International Journal of Environmental Research and Public Health*, 13(3). <https://doi.org/10.3390/ijerph13030337>.
- Mörelus, E., Hellstrom-Westas, L., Carlen, C., Norman, E., & Nelson, N. (2006). Is a nappy change stressful to neonates? *Early Human Development*, 82(10), 669–676. <https://doi.org/10.1016/j.earlhumdev.2005.12.013>.
- Mörelus, E., Nelson, N., & Gustafsson, P. A. (2007). Salivary cortisol response in mother-infant dyads at high psychosocial risk. *Child Care, Health and Development*, 33(2), 128–136. <https://doi.org/10.1111/j.1365-2214.2006.00637.x>.
- Mörelus, E., Ortenstrand, A., Theodorsson, E., & Frostell, A. (2015). A randomised trial of continuous skin-to-skin contact after preterm birth and the effects on salivary cortisol, parental stress, depression, and breastfeeding. *Early Human Development*, 91(1), 63–70. <https://doi.org/10.1016/j.earlhumdev.2014.12.005>.
- Mörelus, E., Theodorsson, E., & Nelson, N. (2009). Stress at three-month immunization: parents' and infants' salivary cortisol response in relation to the use of pacifier and oral glucose. [Epub 2008 May 16]. *European Journal of Pain*, 13(2), 202–208.

Inferences

- ▶ Cold Cognition

Inferiority Complex

- ▶ Striving for Superiority

Inferiority/Superiority Complex

Susan Belangee
Canton Counseling, Canton, GA, USA

Inferiority Complex

Alfred Adler (1870–1937) proposed in his theory, called individual psychology or Adlerian psychology, that the fundamental need for all human beings

is to belong, and when we belong and find our place to fit in, our desire to contribute to the welfare of others increases. Adler's term for this was *Gemeinschaftsgefühl*, which translates to social interest and community feeling or having an interest in the interests of others. When we act on this desire, we feel a sense of mastery or significance. When we do not find our unique place to connect and contribute, we get discouraged and our desire to contribute diminishes. This sense of discouragement may remind us of our inferiority feelings with which Adler concluded all human beings are born.

Humans enter the world in an inferior state, requiring constant care and assistance from others to meet basic needs for the first few years of life. In Ansbacher and Ansbacher (1956), Adler stated “to be human means to feel inferior (p. 115)” and “this is the driving force, the point from which originate and develop all the child's efforts to posit a goal for himself” (p. 116), to move from this inferior state to one of achievement. How much the child feels insecure or inferior depends on the child's interpretation of the situation (Ansbacher and Ansbacher 1956). These feelings are not inherently abnormal; in fact, they motivate humans to strive to improve their circumstances and situations. Adler stated, “Indeed it seems that all our human culture is based upon feelings of inferiority” (Ansbacher and Ansbacher 1956, p. 117). Thus, inferiority feelings “are those universal human feelings of incompleteness, smallness, weakness, ignorance, and dependency included in our first experiences of ourselves in infancy and early childhood,” and humans continue to experience them to some degree throughout life (Griffith and Powers 2007, p. 60). The conclusion one draws about these inferiority feelings thus sets the stage for whether these inferiority feelings are overcome in a socially interested way (e.g. “I know I'm not the smartest one here, but I still will do my best to contribute to the group and the outcome of this project”) or in a socially disinterested or self-focused way (e.g. “I know I'm not the smartest one here, but I must make sure my voice is heard or else I'm a failure”).

While universally felt, inferiority feelings are not typically shared openly by humans; rather, we strive to overcome them or cover them up. The behavior that follows the conclusion of “I can handle this situation” vs. “I can't handle this situation”

demonstrates whether we have overcome these feelings productively (with social interest) or unproductively (lacking social interest). Behavior based on the conclusion that even realistic efforts won't improve the situation would be seen as evidence of an inferiority complex (Ansbacher and Ansbacher 1956, p. 257). Therefore, "the inferiority complex is the presentation of the person to himself and others that he is not strong enough to solve a given problem in a socially useful way. . . it becomes a pathological condition only when the sense of inadequacy overwhelms the individual and, far from stimulating him to useful activity, makes him depressed and incapable of development" (Ansbacher and Ansbacher 1956, p. 258). In essence, the inferiority complex prevents people from pursuing or engaging in reflective processes and behaviors that would allow an alternative solution to be found and utilized.

Superiority Complex

When humans develop inferiority complexes, they struggle to successfully (and by successfully Adler would say "with social interest") find solutions for handling the daily tasks of life (Adler 1933). The inferiority complex, resulting from self-evaluations of not being good enough, smart enough, capable enough, etc., influences behavior, and according to Adler,

The superiority complex is one of the ways which a person with an inferiority complex may use as a method of escape from his difficulties. He assumes that he is superior when he is not, and this false success compensates him for the state of inferiority which he cannot bear. The normal person does not have a superiority complex, he does not even have a sense of superiority. He has the striving to be superior in the sense that we all have ambition to be successful; but so long as this striving is expressed in work [useful behaviors] it does not lead to false valuations, which are at the root of mental disease. (Ansbacher and Ansbacher 1956, p. 260)

In other words, the superiority complex is an outward display to hide an exaggerated inward conclusion that one lacks the skills or abilities to handle life's problems. Examples of a superiority complex include: a tendency to depreciate others or things that others' value, emphasis on one's own

idiosyncrasies, intimidating others in order to get one's way, not listening when others are talking, or talking over others in order to control the conversation. The purpose of these behaviors is to deflect attention away from the inferiority complex with the hope that others won't discover the inferiority. This false sense of superiority exacerbates the problem because others will most likely respond with opposing behaviors which further upsets the development and process of a shared community feeling.

The antidote for both inferiority and superiority complexes is to help the individual *recognize* the faulty thinking that (1) increased the inferiority feelings to the point of an inferiority complex and (2) the maladaptive coping skills (superiority complex) being used to manage those extreme feelings (Adler 1933). Then the individual can learn how to change the self-perception/conclusions from a socially disinterested perspective to a socially interested one. Adlerian therapists and counselors are trained to assist individuals with this process so they can better function in and with their communities.

References

- Adler, A. (1933). *Superiority and social interest*. Evanston: Northwestern University Press.
- Ansbacher, H., & Ansbacher, R. (1956). *The individual psychology of Alfred Adler: A systematic presentation in selections from his writings*. New York: Harper & Row.
- Griffith, J., & Powers, R. (2007). *The lexicon of Adlerian psychology: 106 terms associated with the individual psychology of Alfred Adler* (2nd ed.). Port Townsend: Adlerian Psychology Associates, Ltd..

Infidelity

Gayle Brewer
School of Psychology, University of Central
Lancashire, Preston, Lancashire, UK

Synonyms

[Adultery](#); [Affair](#); [Cheating](#); [Extra-dyadic behavior](#); [Unfaithful](#)

Definition

Infidelity refers to the incidence of sexual (e.g. kissing) or emotional (e.g. forming a close personal bond) activity with a person other than the primary romantic partner.

Introduction

Those in romantic relationships expect emotional and sexual exclusivity, and a range of behaviors (e.g., kissing, sharing personal feelings) are categorized as infidelity when performed with a person other than the primary partner. These are commonly distinguished as emotional (i.e., forming a close personal bond) and sexual (i.e., engaging in sexual activity) infidelity. Infidelity may lead to a range of negative consequences including feelings of betrayal or distress, anger or violence, and relationship dissolution. Despite the manner in which infidelity may threaten a relationship, research has consistently shown that a substantial number of partnered men and women engage in infidelity (e.g., Shackelford et al. 2000).

Infidelity is most likely to occur when primary partners do not fulfill important needs such as intimacy, companionship, sex, and emotional involvement (Lewandowski and Ackerman 2003). Personality may also influence the likelihood that a person (or their partner) will engage in infidelity. For example, in a large-scale survey across 52 nations from 10 world regions, Schmitt (2002) reported that infidelity is almost universally associated with disagreeableness and universally associated with low conscientiousness. Those engaging in infidelity also report their partner to be higher on each of the Big Five traits (openness, extraversion, conscientiousness, agreeableness, and neuroticism) than those that do not (Orzek and Lung 2005).

Jealousy

Jealousy is a complex emotion experienced in response to a real or imagined threat to a valued relationship. Though often conceptualized as a “dark” emotion, it serves an important adaptive function. Specifically, jealousy may prompt men

and women to employ mate retention behaviors intended to reduce the threat of infidelity and hence enhance reproductive success. Specifically, these may strengthen the existing relationship, encourage the partner to remain faithful, or deter rivals. Previous research indicates that a range of factors influence reactions to perceived infidelity and the mate retention behaviors employed; these include both physical traits and personality (Brewer and Riley 2009). For example, emotional stability and agreeableness predict men’s violence directed at a partner when there is a low perceived risk of infidelity, and conscientiousness predicts men’s violence when there is a high perceived risk of infidelity (Kaighobadi et al. 2009).

Sex Differences

Men and women each react jealously to sexual (i.e., sexual activity with another person) and emotional (i.e., sharing personal thoughts and feelings) infidelity. Furthermore, the frequency and intensity of jealousy experienced by men and women do not differ. Research has consistently demonstrated however that men and women are more distressed by sexual and emotional infidelity, respectively (e.g., Buss et al. 1992). These differences reflect the reproductive challenges experienced by each sex. Female infidelity places partners at risk of unknowingly raising another man’s child (i.e., cuckoldry), resulting in a loss of valuable time and resources. Though women do not experience the threat of cuckoldry, the dissolution of a romantic relationship and diversion of resources to another woman reduce or remove entirely the investment and protection provided by her partner. Hence sex-specific jealousy mechanisms lead men and women to focus on signs of sexual and emotional infidelity, respectively.

Research investigating sex differences in response to sexual and emotional infidelity has been criticized on both theoretical and methodological grounds (e.g., Harris 2002). In particular, studies often employ hypothetical forced choice scenarios requiring participants to imagine that their partner has been sexually (but not emotionally) unfaithful or emotionally (but not sexually) unfaithful and report the scenario that is most

distressing. Critics argue that men may not believe that a woman would engage in sexual infidelity without emotional investment. Similarly, women may assume that men engaging in emotional infidelity would not do so without sexual intimacy. Therefore, it has been suggested that men and women believe sexual and emotional infidelity to be the most distressing because they assume that their partner must be engaged in both sexual and emotional infidelity.

Sex differences are not however restricted to forced choice self-report tests. For example, Sagarin et al. (2003) demonstrate greater respective male and female distress to sexual and emotional infidelity using both forced choice responses and continuous measures of jealousy. These sex differences are also apparent among those with high levels of chronic or morbid jealousy. Furthermore, these sex differences are evident in responses to actual infidelity. Men are more likely to focus on sexual aspects of a relationship when interrogating unfaithful partners and are more likely to deny an emotional attachment when questioned about their own infidelity. Women are more likely to interrogate a partner about emotional aspects of infidelity, and when unfaithful they are more likely to deny sexual activity (Kuhle et al. 2009).

Conclusion

Though men and women expect sexual and emotional exclusivity within committed romantic relationships, infidelity is a frequent occurrence. Reflecting sex-specific reproductive pressures, men report greater distress in response to a partner's sexual infidelity, whereas women are more distressed by a partner's emotional infidelity. Furthermore, research demonstrates that personality influences the likelihood that a person will engage in infidelity, susceptibility to a partner's infidelity, and responses to infidelity.

Cross-References

- ▶ [Jealousy](#)
- ▶ [Personality and Sexual Addiction](#)

References

- Brewer, G., & Riley, C. (2009). Height, relationship satisfaction, jealousy, and mate retention. *Evolutionary Psychology*, *7*, 477–489.
- Buss, D. M., Larsen, R. J., Westen, D., & Semmelroth, J. (1992). Sex differences in jealousy: Evolution, physiology and psychology. *Psychological Science*, *3*, 251–255.
- Harris, C. R. (2002). Sexual and romantic jealousy in heterosexual and homosexual adults. *Psychological Science*, *13*, 7–12.
- Kaighobadi, F., Shackelford, T. K., Popp, D., Moyer, R. M., Bates, V. M., & Liddle, J. R. (2009). Perceived risk of female infidelity moderates the relationship between men's personality and partner-directed violence. *Journal of Research in Personality*, *43*, 1033–1039.
- Kuhle, B. X., Smedley, K. D., & Schmitt, D. P. (2009). Sex differences in the motivation and mitigation of jealousy-induced interrogations. *Personality and Individual Differences*, *46*, 499–502.
- Lewandowski, G. W., & Ackerman, R. A. (2003). Something's missing: Need fulfilment and self-expansion as predictors of susceptibility to infidelity. *The Journal of Social Psychology*, *146*, 389–403.
- Orzek, T., & Lung, E. (2005). Big-five personality differences of cheaters and non-cheaters. *Current Psychology*, *24*, 274–286.
- Sagarin, B. J., Becker, D. V., Guadagno, R. E., Nicastle, L. D., & Millevoi, A. (2003). Sex differences (and similarities) in jealousy: The moderating influence of infidelity experience and sexual orientation of the infidelity. *Evolution and Human Behavior*, *24*, 17–23.
- Schmitt, D. P. (2002). Are sexual promiscuity and relationship infidelity linked to different personality traits across cultures? Findings from the International Sexuality Description Project. *Online Readings in Psychology and Culture*, *4*, 1–22.
- Shackelford, T. K., LeBlanc, G. J., & Drass, E. (2000). Emotional reactions to infidelity. *Cognition & Emotion*, *14*, 643–659.

Influence

- ▶ [Personality and Leadership](#)
- ▶ [Power](#)

Information Processing Theory of Emotion

- ▶ [Appraisal Theory of Emotion](#)

Infrequency Scale

► [F Scale](#)

Infrequent Responses

► [F Scale](#)

Ingenuity

► [Creativity](#)

Inhibited and Uninhibited Children

Katharine Ann Buck
Department of Human Development and Family
Studies, University of Saint Joseph, West
Hartford, CT, USA

Synonyms

[Inhibition](#); [Social withdrawal](#); [Social avoidance motivation](#); [Fearfulness](#); [Overcontrolled](#); [Reticence](#); [Uninhibited](#); [Social approach motivation](#); [Fearlessness](#); [Undercontrolled](#)

Definition

Inhibition is a temperamental trait that is manifested as social withdrawal, wariness, or avoidance in response to novel people, objects, or events. Uninhibited temperament can be characterized by approach motivation and fearlessness in response to novel people, objects, or events.

Introduction

Inhibition can be characterized as a temperamental trait (Coplan et al. 2009) that is manifested as

social withdrawal, wariness, or avoidance in response to novel people, objects, or events (Kagan et al. 1984). Starting in preschool and continuing into elementary school, inhibited children demonstrate reticent and anxious behavior with peers (Coplan et al. 2009; Rimm-Kaufman & Kagan 2005). They withdraw from new situations, spend time on the margins of social interaction, and play alone (Rimm-Kaufman & Kagan 2005). Uninhibited children, on the other hand, rapidly and fearlessly approach unfamiliar situations and peers (Rimm-Kaufman & Kagan 2005). They may dominate activities and behave more spontaneously than their inhibited counterparts (Rimm-Kaufman & Kagan 2005). This article will review research on inhibited and uninhibited children in its discussion of the temperaments developmental course; genetic, biological, and environmental influences on this trait; psychosocial outcomes for inhibited and uninhibited children; and implications for future research on these issues.

Rates and Developmental Course of Inhibited and Uninhibited Temperaments

Approximately 15–25% of children are inhibited, whereas 25–30% are uninhibited (Robinson et al. 1992). Individual differences in inhibition emerge early in life (Calkins et al. 1996). At 4 months, infants who are highly reactive (e.g., crying, high motor activity) to stimulation tend to be inhibited in early childhood (Calkins et al. 1996). These traits are fairly stable across time (e.g., Rubin et al. 2002; Calkins et al. 1996). One longitudinal study spanning 23 years demonstrated that inhibited children, who were shy and fearful, were overcontrolled and nonassertive as adults; uninhibited children, who were impulsive and irritable, went on to display negative emotionality at age 26 (Caspi et al. 2003). Other research, however, has demonstrated that only a small percentage of extremely inhibited (26%) and uninhibited toddlers (17%) continue to exhibit these traits at age 7 (Pfeifer et al. 2002). Thus, it is plausible that stability across

development in inhibited and uninhibited temperament may hold true only for individuals who fall on the extremes of this dimension of temperament (Kagan et al. 1989). Moreover, inhibited and uninhibited temperaments may be modified over time as genetic, biological, and environmental factors (e.g., parenting styles) exert their influence on children's growth and development.

Genetic, Biological, and Environmental Influences on Inhibition

Children's temperaments carry distinct genetic and biological underpinnings. Twin studies have demonstrated high heritability in inhibited children (e.g., Robinson et al. 1992). Biological influences are evident in uninhibited temperaments; the fearlessness that characterizes uninhibited children is detected on physiological measures, revealing low reactivity to threatening stimuli (Cornell and Frick 2007). Biological markers are also present in inhibited temperaments; inhibited children have higher right frontal lobe electroencephalogram (EEG) activation (Calkins et al. 1996), greater muscle tension, higher salivary cortisol (i.e., stress hormone; see Robinson et al. 1992), and higher heart rate in response to unfamiliar stimuli (Garcia Coll et al. 1984).

As with virtually all facets of human development, genetic and biological influences are impacted by environmental factors in shaping the developmental course of temperament across time. The biological correlates of inhibition may be exacerbated in response to distinct parenting behaviors. Overprotective and intrusive parenting (e.g., unsolicited assistance with novelty) contribute to strong, prolonged cortisol stress responses for inhibited children (Fox et al. 2005). Such parenting has been shown to maintain or increase behavioral inhibition across time (Rubin et al. 2002). Uninhibited temperament is also related to parenting; children's fearlessness is associated with low responsiveness to parents' punishment and socialization attempts (Cornell and Frick 2007) and high attunement to reward (Hawes and Dadds 2005).

Inhibited and Uninhibited Children's Psychosocial Outcomes

Inhibited and uninhibited children may become introverted and extroverted adults, respectively (Caspi et al. 2003). These personality traits are not reflective of maladjustment, but children who exhibit *extreme* inhibition however may experience long-term maladjustment; inhibited preschoolers are at risk for subsequent anxiety disorders (Rubin et al. 2009), social phobias (Rimm-Kaufman and Kagan 2005), and depressive symptoms (Buck and Dix 2012). The parent-child relationship may account in part for the link between early inhibition and later psychopathology. Well-intentioned parents may exert intrusive control in an effort to protect their inhibited child from what they deem to be emotionally arousing situations (Rubin et al. 2002). Unfortunately, this parenting is associated with social anxiety in adolescence (Rubin et al. 2002). Inhibited children are thought to come to depend on parents' intrusiveness and overprotection and in turn believe that they lack the necessary skills to cope with anxiety-provoking experiences without parent's assistance (Chronis-Tuscano et al. 2015). Peer rejection also may account for inhibition's relation to maladjustment; one study's findings, for example, suggest that behaviorally inhibited children are at increased risk for depression in adolescence in part because they experience peer rejection (Buck and Dix 2012). Future investigations are needed to examine the exact nature of these factors that seem to increase inhibited children's risk for psychopathology.

Children who are extremely uninhibited are also at risk for maladjustment; low behavioral inhibition, when coupled with inconsistent parenting, is related to low conscience development and callous-unemotional traits (i.e., lacking guilt, empathy, and remorse) during early childhood (Cornell and Frick 2007). Callous-unemotional traits place children at risk for antisocial behavior and general disregard for the well-being of others. Fortunately, when parents use firm and consistent discipline, children show increased guilt and empathy in early childhood, which are fundamental emotions for conscience development and

prosocial behavior (Cornell and Frick 2007). Sensitive parenting and a secure attachment to parents also appear to protect uninhibited children from displaying callous-unemotional behaviors in adolescence (Buck 2015). Independent of parenting's influence, uninhibited temperament is associated with proactive (i.e., unprovoked) aggression in preschoolers (Kimonis et al. 2006). Such aggression may occur in part due to children's impaired ability to read other's distress cues (Kimonis et al. 2006). It remains unclear whether parenting that is sensitive, firm, and consistent enables uninhibited children to eventually learn to recognize distress cues and subsequently reduce proactive aggression. Future research is needed to examine the mechanisms that reduce the likelihood of maladjustment in uninhibited children.

Implications for Inhibited and Uninhibited Children

Given the potential for deleterious outcomes associated with inhibited and uninhibited behaviors, it is critical to identify effective methods of intervention for those who exhibit extreme inhibited and uninhibited traits. Because overinvolved and intrusive parenting are thought to increase inhibited children's anxiety (e.g., Rubin et al. 2009), interventions designed to modify parenting skills may be warranted. Recent intervention research has demonstrated that behavioral inhibition and associated social anxiety can be reduced (Chronis-Tuscano et al. 2015). One randomized control trial implemented "The Turtle Program" intervention, which involved working with both parents and inhibited children (42–60 months old; Chronis-Tuscano et al. 2015). In this program, parents are coached to "stay a step behind" and praise the child for independence while also removing attention to avoidant and clingy child behaviors. Using a developmentally appropriate puppet teaching format, preschoolers are taught and praised for using social problem-solving strategies. Not only did this treatment reduce behavioral inhibition and social anxiety, but it also increased maternal warmth and sensitivity. This research offers hope for families with

behaviorally inhibited children. Unfortunately, intervention research has yet to be conducted with behaviorally uninhibited children.

Conclusion

Promising intervention research has demonstrated that extreme inhibited traits can be modified. This research would be strengthened by examining whether these outcomes are sustained over a long-term follow-up period (e.g., 1 or more years). Future research also may benefit by investigating possible moderators of intervention effectiveness, such as culture, severity of anxiety, and physiological reactivity (Chronis-Tuscano et al. 2015). Although intervention research with uninhibited children is lacking, evidence suggests that treatments may be particularly effective by training parents to enact a rule-oriented approach and demand for obedience (Cornell and Frick 2007). Rule-oriented structures are known to promote poor outcomes for many children, but for uninhibited children, an emphasis on rule adherence may be necessary to increase children's arousal and internalization of parents' socialization messages (Cornell and Frick 2007). Given uninhibited children's high reward drive and fearlessness, other recommendations include a reward-based focus in parent training (e.g., praise, token reinforcement; Hawes and Dadds 2005). As with most facets of human development, the relation between psychopathology and temperament is probabilistic, not deterministic. It is critical for families and professionals working with inhibited and uninhibited children to recognize the complex role that both genetics and environment play in influencing the developmental course of these temperamental traits.

References

- Buck, K. A. (2015). Understanding adolescent psychopathic traits from early risk and protective factors: Relations among inhibitory control, maternal sensitivity, and attachment representation. *Journal of Adolescence*, 44, 97–105. <https://doi.org/10.1016/j.adolescence.2015.07.009>.

- Buck, K. A., & Dix, T. (2012). Can developmental changes in inhibition and peer relations explain why depressive symptoms increase in early adolescence? *Journal of Youth and Adolescence*, *41*, 403–413. <https://doi.org/10.1007/s10964-011-9651-9>.
- Calkins, S. D., Fox, N. A., & Marshall, T. R. (1996). Behavioral and physiological antecedents of inhibited and uninhibited behavior. *Child Development*, *67*, 523–540.
- Caspi, A., Harrington, H., Milne, B., Amell, J. W., Theodore, R. F., & Moffitt, T. E. (2003). Children's behavioral styles at age 3 are linked to their adult personality traits at age 26. *Journal of Personality*, *71*, 495–513.
- Chronis-Tuscano, A., Rubin, K. H., O'Brien, K. A., Coplan, R. J., Thomas, S. R., Dougherty, L. R., Cheah, C. S. L., Watts, K., Heverly-Fitt, S., Huggins, S. L., Menzer, M., Begle, A. S., & Wimsatt, M. (2015). Preliminary evaluation of a multimodal early intervention program for behaviorally inhibited preschoolers. *Journal of Consulting and Clinical Psychology*, *83*, 534–540. <https://doi.org/10.1037/a0039043>.
- Coplan, R. J., DeBow, A., Schneider, B. H., & Graham, A. A. (2009). The social behaviours of inhibited children in and out of preschool. *British Journal of Developmental Psychology*, *27*, 891–905. <https://doi.org/10.1348/026151008X396153>.
- Cornell, A. H., & Frick, P. J. (2007). The moderating effects of parenting styles in the association between behavioral inhibition and parent-reported guilt and empathy in preschool children. *Journal of Clinical Child and Adolescent Psychology*, *36*, 305–318.
- Fox, N. A., Henderson, H. A., Marshall, P. J., Nichols, K. E., & Ghera, M. M. (2005). Behavioral inhibition: Linking biology and behavior within a developmental framework. *Annual Review of Psychology*, *56*, 235–262.
- Garcia Coll, C., Kagan, J., & Reznick, J. S. (1984). Behavioral inhibition in young children. *Child Development*, *55*, 1005–1019.
- Hawes, D. J., & Dadds, M. R. (2005). The treatment of conduct problems in children with callous-unemotional traits. *Journal of Consulting and Clinical Psychology*, *73*, 737–741. <https://doi.org/10.1037/0022-006X.73.4.737>.
- Kagan, J., Reznick, J. S., Clarke, C., Snidman, N., & Garcia-Coll, C. (1984). Behavioral inhibition to the unfamiliar. *Child Development*, *55*, 2212–2225. <https://doi.org/10.2307/1129793>.
- Kagan, H., Reznick, S., & Gibbons, J. (1989). Inhibited and uninhibited types of children. *Child Development*, *60*, 838–845.
- Kimonis, E. R., Frick, P. J., Boris, N. W., Smyke, A. T., Cornell, A. H., Farrell, J. M., & Zeanah, C. H. (2006). Callous-unemotional features, behavioral inhibition, and parenting: Independent predictors of aggression in a high-risk preschool sample. *Journal of Child and Family Studies*, *15*, 745–756. <https://doi.org/10.1007/s10826-006-9047-8>.
- Pfeifer, M., Goldsmith, H. H., Davidson, R. J., & Rickman, M. (2002). Continuity and change in inhibited and uninhibited children. *Child Development*, *73*, 1474–1485.
- Rimm-Kaufman, S. E., & Kagan, J. (2005). Infant predictors of kindergarten behavior: The contribution of inhibited and uninhibited temperament types. *Behavioral Disorders*, *30*, 331–347.
- Robinson, J. L., Kagan, J., Reznick, J. S., & Corley, R. (1992). The heritability of inhibited and uninhibited behavior: A twin study. *Developmental Psychology*, *28*, 1030–1037.
- Rubin, K. H., Burgess, K. B., & Hastings, P. D. (2002). Stability and social-behavioral consequences of toddler's inhibited temperament and parenting behaviors. *Child Development*, *73*, 483–495.
- Rubin, K. H., Coplan, R. J., & Bowker, J. C. (2009). Social withdrawal in childhood. *Annual Review of Psychology*, *60*, 11.11–11.31.

Inhibition

- ▶ [Inhibited and Uninhibited Children](#)

Inhibitory Neurotransmitter

- ▶ [GABA](#)

Initiative Versus Guilt

- Kristen Hurrell¹ and Margaret Stack²
¹University of Detroit – Mercy, Detroit, MI, USA
²Clinical Psychology, University of Detroit Mercy, Detroit, MI, USA

Synonyms

[Ambulatory stage](#); [“Being on the make”](#); [Erikson's third stage](#); [Preschool psychosocial development](#)

Definition

Erik Erikson's third psychosocial stage, initiative versus guilt, typically occurs with preschool aged-children and emphasizes the child practicing independence and assertion.

Introduction

It is arguable that Erik Erickson's (1950, 1968) fundamental accomplishment during his career as a psychoanalyst involved his theory of phased development, a conditional and progressive course represented by a fixed sequence of eight successive stages occurring throughout the lifespan (Erikson 1968 as cited by Meeus 1996, p. 85). Cognitive and biological milestones mark each developmental stage. The Eriksonian developmental stage of *initiative versus guilt* occurs in early childhood from the ages of three to six, where children are faced with a psychosocial conflict involving their ability to express themselves in a unique and purposeful manner (Lambert and Kelly 2011). The "initiative" term in this stage deals with the child acting on his or her own behalf, not guided by a parental figure or otherwise. As the child explores, s/he is expected to become more self-assured and confident with their ability to gain a sense of purpose or direction. Successful resolution of this stage will result in a child who is ambitious and eager to immerse themselves in new experiences without fear of punitive critique from authority figures. Blatt and Blass (1996) maintain that some parents respond to initiatives in a positive manner; some are discouraging or non-supporting; and some are harshly rejecting (p. 323). The appropriate balance of approving the child's initiative while setting some healthy boundaries and limits results in the development of self-assurance and esteem of the child. When children are unable to explore their curiosity, or when initiative is frequently met with harsh, punitive critique and judgment from the parent, they may develop a sense of guilt. This "guilt" refers to a sense of fear in the child that what they want to do is always wrong. This inhibits a child's ability to develop a positive internalized representation of self and, thus, the child's self-regard will suffer. Successful resolution of this stage involves the ability for children to play and explore novel experiences without harsh criticism from the parent (Lambert and Kelly 2011).

Contemporary Perspective on Initiative Versus Guilt

More recently, there has been research dedicated to the importance of parenting style and Erikson's third stage regarding initiative. Pittman et al. (2011) emphasize the primary caregiver's responsiveness to the needs of their young child. The caregiver's encouragement of healthy exploration and engagement with others and new activities such as "helping" around the house with chores is beneficial in the child's attempts to individuate and become more confident in trying new things. Robins (2010) review of "interbeing," the phenomenon of relationships, was discussed in accordance with Erikson's psychosocial development. As soon as children are able, they start to make choices regarding their autonomy with such tasks as what they would like to wear or eat. If a parent regards this with punitive criticism or ignores the child's efforts, they may feel a sense of guilt, or question circumstances that are out of their control. Despite this reaction, Robins (2010) maintains that most healthy adults are able to recover their deficits in initiative by reprogramming the subconscious foundation of guilt the child learned during childhood.

Batra (2013) emphasizes the fundamental importance early educational programs have in developing a child's sense of initiative and purpose during this developmental stage. State educational programs should emphasize curricular spaces in order to facilitate exploration and experimentation (p. 263). The virtues of hope and will are developed in the school setting with experiences of fantasy play and locomotor experimentation, leading to a sense of maturity and purpose. Play allows for the construction of a sense of purpose to develop, and is important to facilitate in the school setting rather than traditional text-oriented and skill learning. De Civita (2006) utilized the first four Erikson phases in her educational program utilizing a strength-based educational approach intervention program for the recovery of psychological harm in school-aged children. She emphasizes the importance of initiative with regards to nurturing a sense of

purpose in the child when teaching. Moreover, it is recommended that teachers enable a child's involvement in role-play activities and navigation of troubling situations.

Conclusion

Erikson's third psychosocial stage of initiative versus guilt pertains to the importance of a child asserting their own independence from their caregiver while also being able to act responsibly. A caregiver's reaction in this stage is integral to the child's secure development in that caregivers should confirm the child's initiative rather than be overly critical or corrective. If a child is frequently punished for their attempts at initiative, he or she may develop guilt and believe all of their efforts are wrong. Children who are successful at this stage learn how to integrate their imagination and actions cohesively rather than with a sense of guilt. Healthier psychosocial development during this period is evident when young children are able to link their positive caregiver-child relationship with other people and experiences.

References

- Batra, S. (2013). The psychosocial development of children: Implications for education and society- Erik Erikson in context. *Contemporary Education Dialogue, 10*, 249–278.
- Blatt, S. J., & Blass, R. B. (1996). Relatedness and self definition: A dialectic model of personality development. In G. G. Noam & K. W. Fischer (Eds.), *Development and vulnerabilities in close relationships* (pp. 309–338). Hillsdale: Erlbaum.
- De Civita, M. (2006). Strength-based efforts for promoting recovery from psychological harm. *Reclaiming Children and Youth, 14*, 241–244.
- Erikson, E. H. (1950). *Childhood and society*. New York: Norton.
- Erikson, E. H. (1968). *Identity, youth and crisis*. New York: W.W. Norton and Company.
- Lambert, M. C., & Kelley, H. M. (2011). Initiative versus guilt. In *Encyclopedia of child behavior and development* (pp. 816–817). New York: Springer.
- Meeus, W. (1996). Toward a psychosocial analysis of adolescent identity. In K. Hurrelmann & S. F. Hamilton (Eds.), *Social problems and social contexts in*

adolescence: Perspectives across boundaries. New York: Aldine de Gruyter.

Pittman, J. F., Keiley, M. K., Kerpelman, J. L., & Vaughn, B. E. (2011). Attachment, identity, and intimacy: Parallels between Bowlby's and Erikson's paradigms. *Journal of Family Theory and Review, 3*, 32–46.

Robins, S. P. (2010). Awakening to the concept of "interbeing". *Interbeing, 4*(2), 39–42.

Innate Behavior

- ▶ [Instincts \(Biological\)](#)

Inner Dialogue

- ▶ [Self-Dialogue](#)

Inner Directed (Introversion)

- ▶ [Extraversion-Introversion \(Jung's Theory\)](#)

Inner Ethical Guide

- ▶ [Conscience](#)

Inner Speech

- ▶ [Internal Monologue](#)

Inner Voice

- ▶ [Internal Monologue](#)
- ▶ [Self-Transcendence](#)

Insanity Defense

- ▶ [M'Naghten Rule](#)

Insanity Plea

- ▶ M’Naghten Rule

Insatiability

- ▶ Glory (Horney)
- ▶ Greed

Insecure

- ▶ Avoidant Attachment Style

Insecure Attachment

Nor Ba’yah Abdul Kadir
Psychology and Human Well-being Research
Centre, Faculty of Social Sciences and
Humanities, Universiti Kebangsaan Malaysia,
Bandar Baru Bangi, Malaysia

Definitions

Insecure attachment An individual relationship can be insecure when it contains elements of mistrust together with anxious or avoidant elements and lacks a secure base. It is considered a dysfunctional relationship.

Insecure attachment style This is an interpersonal style with anxious (e.g., fearful or anxious ambivalent) or avoidant (e.g., dismissive) characteristics related to problematic experience in childhood and difficulties with careers and adult relationships. Such styles affect around 30% or more of the

Anxious attachment style

population, depending on which measures used.

Enmeshed/Preoccupied is a dependent style with high need for proximity and under-developed autonomy. It involves clinging behavior which can involve anger when needs are not met. Fearful style involves fear of rejection or criticism and this is often accompanied by behavioral avoidance.

Dismissive/Avoidant styles include those withdrawn who have over-developed self-reliance and keep distance from others, and angry-dismissive who have high mistrust together with high self-reliance and exhibit anger in attachment relationships.

Disorganized Attachment

This mixed pattern of insecure styles, or alternately “unresolved loss” category is sometimes differentiated from the other types of insecurity. It has more than one definition but thought to involve some dissociative elements.

Introduction

Attachment theory was developed by psychiatrist and psychoanalyst John Bowlby in the UK in the 1940s. In this he was aided by Mary Ainsworth, an American-Canadian developmental psychologist who worked with Bowlby in the Tavistock clinic in London. Together they developed a model of human behavior (“Attachment”) which emphasized emotional bonds between mother and child, and dictated subsequent inter-personal functioning across the lifespan. This in turn related to risk of psychopathology. The theory has benefited from extensive empirical investigation which has increased scientific understanding of human behavior, risk for psychopathology, and clinical

insight. It has progressed by the study of infants, children, adolescents, adults, and even those in older age. One element of this theory is the concept of insecure attachment, usually denoted as insecure attachment style. This is in contrast to the more normative secure attachment or attachment style in childhood and beyond.

Classification of Attachment Styles

Classification of attachment patterns or styles were first developed by Ainsworth et al. (1978) in terms of three patterns of attachment: secure, anxious-resistant/ambivalent, or avoidant. These were observed in babies and infants, not only in United Kingdom settings but also from Ainsworth's pioneering work in Uganda. Stemming from Bowlby and Ainsworth's theoretical and research work, similar concepts of attachment have been developed for adults. For example, questionnaire studies by Hazan and Shaver (1987) followed the three-category classifications of attachment (e.g., secure, anxious/ambivalent, and avoidant) with the elaboration of a further fearful style by Bartholomew and Horowitz (1991). Main and her colleagues using an interview-based approach (Adult Attachment Interview) built on the three style format secure/autonomous, enmeshed/preoccupied, dismissing, but added a new category of "unresolved" as well as recognizing some individuals were not classifiable. The unresolved classification pattern is also sometimes called disorganized/disoriented and has led to more recent investigation. A further interview development (Attachment Style Interview) by Bifulco and her colleagues further subdivided the avoidant category into angry-dismissive and withdrawn which together with secure, enmeshed, and fearful resulted in five styles with four insecure. These four insecure styles are angry-dismissive, withdrawn, enmeshed, and fearful (Bifulco 2014). Disorganized was identified in the Attachment Style Interview (ASI) as a combination of insecure styles usually anxious and avoidant occurring together. As yet there has been no definitive comparison of

the interview approaches nor sustained comparison with various self-report measures.

The insecure and disorganized attachment styles are identified as providing psychological and social risk factors for psychopathology. They are also linked to biological underpinnings. Insecure style has substantial impacts on dealing with stress involving poor emotion regulation and lack of close support. So in times of threat or challenge posed by negative life events, those with an insecure style are more at risk of emotional disorder. For example, they are unable to seek or access support from attachment figures. Those with anxious styles (e.g., enmeshed or fearful) have found their prior efforts for proximity having been discouraged, rejected, or inconsistently responded to. Those who are avoidant (e.g., angry-dismissive or withdrawn) have high self-reliance and do not approach others for support. Insecure attachment style has negative impacts on the partner relationship, presence of close confidants, and parenting capacity (Volling et al. 1998). It also impacts on self-esteem (Abdul Kadir and Bifulco 2013).

Measurement of Insecure Attachment Style

Measurement of adult attachment has been conducted in various ways and for different age groups. Mary Ainsworth developed the laboratory-based the Strange Situation Procedure (SSP) for infants. Following Ainsworth's studies were Q-sort descriptions of a child attachment behavior, doll play, and interviews for primary school-aged children. The self-report measures for adults were created in the 1980s, using both questionnaires and interviews. The focus here will be on measures of insecure attachment styles among adults and how these are measured.

Attachment Style Questionnaires

The self-report measures take two forms – those in Likert scale (e.g., ECR, VASQ) and those vignette

based and categorical (e.g., RQ; Bartholomew and Horowitz 1991). The dimensional approaches typically include two continuous dimensions labeled anxious attachment and avoidant attachment. The Reciprocal and Avoidant Attachment Questionnaire for adults (West and Sheldon-Keller 1992) was created to measure the quality of an individual's most significant adult attachment relationship and provides two categories of separation: anxiety and reciprocity. In Collins and Read 1990, Collins and Read developed the Adult Attachment Scale (AAS) using the descriptions and adding items regarding availability of attachment figures and response to separation. This was scored in terms of discomfort with dependency, discomfort with closeness, and anxiety. The Vulnerable Attachment Style Questionnaire (VASQ) was created as a brief self-report measure to assess adult attachment style in relation to depressive symptoms (Bifulco et al. 2003). Items for the VASQ reflected behaviors, emotions, and attitudes relating to attachment relationship style. The VASQ consisted of two dimensions: labeled insecurity and proximity-seeking.

Hazan and Shaver's categorical vignette approach (Hazan and Shaver 1987) adopted Ainsworth's three categories defined in terms of distinct profiles which the respondent has to describe as like or unlike the self. Bartholomew and Horowitz (1991) further added the fearful profile vignette and then an additional mistrustful style was later added (Holmes and Lyons-Ruth 2006). Pottharst and Kessler (1990) created an Attachment History Questionnaire (AHQ) to assess adult's memories of attachment-related experiences in childhood with parents and other attachment figures.

Main et al. (1985) created the first interview – the Adult Attachment Interview (AAI). The AAI was developed to assess the current state of mind with respect to attachment by asking about childhood relationships and experience and then scoring aspects of the reporting in terms of coherence, idealization, denigration, etc. This proved an intensive method which required expert rating to achieve reliability. An alternative approach was created by the ASI (Bifulco et al. 2002a), which was a support-based assessment enquiring about

the quality of ongoing relationships rather than those in childhood. It involved assessing the quality of relationships with partner and close support figures. In addition, a series of questions of attachment attitudes denoting distance in a relationship (e.g., attitudinal constraints on closeness, fear of rejection) or dependency (e.g., low self-reliance and lack of tolerance of separation). Measures of attachment style have been used to assess risk for clinical disorders.

Insecure Attachment and Psychopathology

Studies have found that insecure attachment is significantly associated with a range of forms of psychopathology such as depression, borderline personality disorder, interpersonal trauma, and psychotic disorders. Insecure styles also relate to eating disorders (Tasca and Balfour 2014) and posttraumatic stress disorder (Mikulincer et al. 1993). The findings regarding the relationships between insecure attachment and psychotic disorders have been somewhat inconsistent, with some studies finding attachment anxiety associated with both psychotic and affective symptoms of psychosis and attachment avoidance associated with specific positive symptoms of paranoia and hallucinations, but some findings suggested attachment avoidance did not predict negative symptoms (Ringer et al. 2014). Similar findings were also found that preoccupied attachment significantly associated with positive schizotypy, dismissing attachment with negative schizotypy, and fearful attachment with both schizotypy dimensions (Sheinbaum et al. 2013). A systematic review of insecure attachment and psychosis also found small to moderate associations between insecure attachment and higher positive and negative symptoms as well as high levels of depression (Gumley et al. 2014). In these most recent studies, almost all of dismissing attachment were significantly associated with psychosis. Sitko et al. (2016) examined whether in the flow of daily life attachment insecurity fluctuates, whether elevated stress precedes the occurrence of attachment insecurity, and whether elevated

attachment insecurity precedes the occurrence of paranoia among 20 clinical patients with a psychosis and 20 patients as a control group. Using the experience sampling method (ESM; Sitko et al. 2016), the findings revealed that fluctuations in attachment insecurity were significantly higher in the clinical group, that elevated stress predicted a subsequent increase in attachment insecurity, and that elevated attachment insecurity predicted a subsequent increase in paranoia. Findings also revealed that low self-esteem precedes the occurrence of paranoia, attachment insecurity continued to predict paranoia even when self-esteem was controlled (Sitko et al. 2016).

There is also evidence that insecure attachment is associated with other illness, for example, patients with coronary artery (Kidd et al. 2016) and patients with hepatitis C (Sockalingam et al. 2013). Although some of these studies are limited, having used cross-sectional research design and utilized self-report measures, they collectively shed further light on the link between insecure attachment and ill-health. Links between particular styles and type of disorder are less consistent. For example, anxious styles appear more linked to emotional disorders (Bifulco et al. 2002a, b), there are some indicating a link with avoidance (Abdul Kadir and Bifulco 2013). Other studies found that disorganized attachment was significantly associated with both anxious and avoidant attachment (Paetzold et al. 2015), and this combination predicts higher rates of psychopathology in adults.

Childhood Loss and Trauma

Insecure attachment style is highly associated with childhood experiences of neglect and abuse (Bifulco et al. 2006). There has been a particular focus on disorganized attachment style as related to unresolved loss or trauma. This can be both childhood or adult based, for example, partner violence and other adult experiences of loss and trauma. Disorganized attachment styles were associated with personality disorder severity, work and social functioning, and identity and mentalization (Beeney et al. 2016). Researchers suggested that disorganized-oscillating attachment appeared to be

a disorganized version of preoccupied attachment: highly affective with difficulty tracking self and others, more angry and violent, and high on borderline personality disorder (Beeney et al. 2016). A variant called disorganized-impooverished had characteristics of dismissive attachment: low affect and impoverished identity, with poor mentalization, more avoidant personality disorder symptoms, and a significant elevation for schizoid personality disorder symptoms (Beeney et al. 2016). These results suggested that disorganized attachment was related to greater psychopathology. But the precise operational indicators remain obscure.

Insecure Attachment and Biological Factors

Given that any comprehensive model of adult attachment needs to include biological factors, further developments of adult attachment models have examined a “third” factor to the social and psychological factors. Based on research evidence showing the role of a polymorphism in the serotonin receptor gene (HTR2A rs6313), which modestly predicted higher attachment anxiety and which revealed a gene and environment interaction predicted attachment-related avoidance (Fraley et al. 2013). The prospective and longitudinal design to investigate genetic contributions to continuity and changes in attachment security from infancy to young adulthood in a higher risk sample selected. Infant attachment security was assessed using the SSP at 12 and 18 months (Lee Raby et al. 2013). Adult attachment styles were assessed using the Adult Attachment Interview at ages 19 and 26. Romantic attachment was assessed using the Current Relationship Interview (CRI; Crowell and Owens 1998) at ages 20–21 and ages 26–28. Individuals were genotyped for variants within the oxytocin receptor (OXTR), dopamine D4 receptor (DRD4), and serotonin transporter linked polymorphic region (5-HTTLPR). Results suggest that attachment styles from infancy into young adulthood were consistently moderated by OXTR genetic variation. Infant attachment predicted the adults’

general and romantic attachment styles only for individuals with the OXTR G/G genotype. This interaction was significant when predicting adult attachment styles at ages 19 and 26 and the CRI at ages 26–28 (Lee Raby et al. 2013). In contrast, Fearon et al. (2014) suggest that the contribution of genetics to the twin concordance plus the high base rate of “insecure” has no role for shared environmental influence. They studied 582 same-sex twin pairs with an average age of 15. That study only examined same-sex twins to avoid potential inflation of genetic estimates when opposite-sex DZ twins were included with same-sex DZ twins. Twin zygosity was diagnosed on the basis of physical similarity and questionable cases were verified with analysis of DNA markers. Attachment styles were assessed using a Child Attachment Interview. This interview consisted of 19 questions reflecting current attachment relationships with primary caregivers. This interview was scored in terms of four classifications: secure, dismissing, preoccupied, and disorganized. Results showed the association between twins’ attachment security was highly significant among MZ twins while no significant was found among DZ twins. Standard twin probandwise concordances for twin pairs in which at least one member of the twin pair was classified as “insecure” were 44% for MZ twins and 34% for DZ twins. The difference in the MZ and DZ concordances also suggests genetic influence.

Insecure Attachment and Culture

The precise relationship between culture and attachment style is debated. It is argued that definitions of attachment are insensitive to culture-specific influences (van IJzendoorn and Sagi-Schwartz 1999). Although Bowlby argued that attachment is a universal characteristic of human beings, differences can emerge in terms of cultural patterns for instance in child rearing practice. There have been a range of cross-cultural comparisons suggesting different prevalences (van IJzendoorn and Bakermans-Kranenburg 2010). However, reports showing that preoccupied attachment was most prevalent among East

Asian cultures (Schmitt et al. 2004) are somewhat inconsistent. Wang and Mallinckrodt (2006) conducted a comparison study of Taiwanese and Americans using self-report measures (Experiences in Close Relationships, ECR). They showed that Taiwanese females and males endorsed more avoidance in beliefs about adult attachment than their American counterparts, and Taiwanese males endorsed more anxiety than American males. This finding may be related to early development of insecure attachment in relation to child-rearing goals and values. In Eastern cultures such as India, China, Indonesia, Malaysia, Thailand, and so forth, obedience is considered a key virtue in childhood. Also in traditional child-rearing, mothers are expected to focus solely or primarily on responding to and nurturing their children, so the mothers are responsible in shaping their children’s behavior and attitudes toward family and society. There is, however, evidence of child-rearing patterns being under change due to economy demands. In Malaysia, for instance, most mothers are employed to support their family economy. Therefore, many children are raised by multiple caregivers. Perhaps, this may develop a sense of insecure attachment if primary caregiver is not available in time of distress.

Studies on insecure attachment and culture showed mixed findings in terms of different attachment style prevalence (Archer et al. 2015). These findings suggested that a majority of the samples to be securely attached and this is consistent with global norms. The authors also found that insecure-resistant attachments were greater than insecure-avoidant attachments, and disorganized attachments are comparable to Western norms. Results also showed that household structure and child-rearing practice were not associated with attachment classifications, suggesting cultural differences in family structure were not key in insecure attachment. Maltreatment, however, shows more consistent patterns cross-culturally (Baer and Martinez 2006).

A study of married and single mothers in Malaysian Muslims found risks for depression to mirror those determined in United Kingdom studies (Abdul Kadir and Bifulco 2013). Using

self-report measures (VASQ), insecurity styles were found to be related to depression. Other associated factors were life events, low education, marital status, and age. Interviews among a subsample showed high rates of insecure styles, included those disorganized or dual styles. These indicated high rates of partner conflict, violence, and isolation (Abdul Kadir and Bifulco *in press*).

The SSP was used to validate the attachment classifications among Koreans and to explore if attachment whether universal or culture-specific (Jin et al. 2012). The distributions of attachment classifications in the Korean sample were compared with a cross-national sample. Results showed that the Korean infants two-way attachment classifications mirrored the global distribution (secure vs. insecure). Following the separation episodes in the Strange Situation, Korean mothers were more likely than mothers in Ainsworth's Baltimore sample to approach their babies immediately and sit beside them throughout the reunion episodes. Results also revealed that Korean babies were less approached their mothers during reunions than did infants in the Baltimore sample (Jin et al. 2012). The findings support the idea that the basic secure base function of attachment is universal and the SSP is a valid measure of secure attachment; however, cultural differences in caregiving should be emphasized with some difference in which types predominate in different cultures.

Conclusion

Attachment studies substantiate Bowlby and Ainsworth's theoretical contribution emphasizing the important role of the main caregiver in childhood as an attachment figure providing a secure base and hence to secure style which is high functioning and resistant to clinical disorder. Studies agree that insecure attachment style increases risk. However, the extent to which these may show cultural variation, the specificity of childhood experience to attachment style, and the extent of mediating factors with disorder still need further investigation.

Cross-References

- ▶ [Ambivalent Attachment](#)
- ▶ [Anxious-Ambivalent Attachment Styles](#)
- ▶ [Attachment Theory](#)
- ▶ [Avoidant Attachment Style](#)
- ▶ [Disoriented Attachment](#)
- ▶ [Working Models of Self and Other](#)

References

- Abdul Kadir, N. B., & Bifulco, A. (in press). Exploring disorganized attachment style among Malay mothers in Malaysia: A study using the Attachment Style Interview. *Social Work in Mental Health*. <https://doi.org/10.1080/15332985.2016.1224796>.
- Abdul Kadir, N. B., & Bifulco, A. (2013). Insecure attachment style as a vulnerability factor for depression: Recent findings in a community-based study of Malay single and married mothers. *Psychiatry Research*, 210(3), 919–924.
- Ainsworth, M. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Oxford, England: Lawrence Erlbaum.
- Archer, M., Steele, M., Lan, J., Jin, X., Herreros, F., & Steele, H. (2015). Attachment between infants and mothers in China Strange situation procedure findings to date and a new sample. *International Journal of Behavioral Development*, 39(6), 485–491.
- Baer, J. C., & Martinez, C. D. (2006). Child maltreatment and insecure attachment: a meta-analysis. *Journal of Reproductive and Infant Psychology*, 24(3), 187–197.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: a test of a four-category model. *Journal of Personality and Social Psychology*, 61(2), 226–244.
- Beeney, J. E., Wright, A. G., Stepp, S. D., Hallquist, M. N., Lazarus, S. A., Beeney, J. R., . . . & Pilkonis, P. A. (2016). Insecure attachment disorganized attachment and personality functioning in adults: A latent class analysis. *Personality Disorders: Theory, Research, and Treatment*. <https://doi.org/10.1037/per0000184>.
- Bifulco, A. (2014). The attachment style interview (ASI). In S. Farnfield & P. Holmes (Eds.), *The Routledge handbook of attachment: Assessment* (pp. 178–191). London/New York: Routledge.
- Bifulco, A., Moran, P. M., Ball, C., & Bernazzani, O. (2002a). Adult attachment style I: Its relationship to clinical depression. *Social Psychiatry and Psychiatric Epidemiology*, 37, 50–59.
- Bifulco, A., Moran, P. M., Ball, C., & Lillie, A. (2002b). Adult attachment style II: Its relationship to psychosocial depressive-vulnerability. *Social Psychiatry and Psychiatric Epidemiology*, 37, 60–67.
- Bifulco, A., Mahon, J., Kwon, J. H., Moran, P. M., & Jacobs, C. (2003). The Vulnerable Attachment Style

- Questionnaire (VASQ): An interview-based measure of attachment styles that predict depressive disorder. *Psychological Medicine*, 33, 1099–1110.
- Bifulco, A., Kwon, J., Jacobs, C., Moran, P. M., Bunn, A., & Beer, N. (2006). Adult attachment style as mediator between childhood neglect/abuse and adult depression and anxiety. *Social Psychiatry and Psychiatric Epidemiology*, 41(10), 796–805.
- Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology*, 58(4), 644–663.
- Crowell, J., & Owens, G. (1998). Manual for the current relationship interview and scoring system. Version 4. Retrieved (14 December 2016) from http://www.psychology.sunysb.edu/attachment/measures/content/cr_i_manual.pdf.
- Fearon, P., Shmueli-Goetz, Y., Viding, E., Fonagy, P., & Plomin, R. (2014). Genetic and environmental influences on adolescent attachment. *Journal of Child Psychology and Psychiatry*, 55(9), 1033–1041.
- Fraley, R. C., Roisman, G. I., Booth-LaForce, C., Owen, M. T., & Holland, A. S. (2013). Interpersonal and genetic origins of adult attachment styles: A longitudinal study from infancy to early adulthood. *Journal of Personality and Social Psychology*, 104(5), 817–838.
- Gumley, A. I., Taylor, H. E. F., Schwannauer, M., & MacBeth, A. (2014). A systematic review of attachment and psychosis: measurement, construct validity and outcomes. *Acta Psychiatrica Scandinavica*, 129(4), 257–274.
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52(3), 511–524.
- Holmes, B. M., & Lyons-Ruth, K. (2006). The relationship questionnaire-clinical version (RQ-CV): Introducing a profoundly-distrustful attachment style. *Infant Mental Health Journal*, 27(3), 310–325.
- van IJzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2010). Invariance of adult attachment across gender, age, culture, and socioeconomic status? *Journal of Social and Personal Relationships*, 27(2), 200–208.
- van IJzendoorn, M. H., & Sagi-Schwartz, A. (1999). Cross-cultural patterns of attachment: Universal and contextual dimensions. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 713–734). New York: The Guilford Press.
- Jin, M. K., Jacobvitz, D., Hazen, N., & Jung, S. H. (2012). Maternal sensitivity and infant attachment security in Korea: Cross-cultural validation of the Strange Situation. *Attachment & Human Development*, 14(1), 33–44.
- Kidd, T., Poole, L., Ronaldson, A., Leigh, E., Jahangiri, M., & Steptoe, A. (2016). Attachment anxiety predicts depression and anxiety symptoms following coronary artery bypass graft surgery. *British Journal of Health Psychology*. <https://doi.org/10.1111/bjhp.12191>.
- Lee Raby, K., Cicchetti, D., Carlson, E. A., Egeland, B., & Collins, W. A. (2013). Genetic contributions to continuity and change in attachment security: A prospective, longitudinal investigation from infancy to young adulthood. *Journal of Child Psychology and Psychiatry*, 54(11), 1223–1230.
- Main, M., George, C., & Kaplan, N. (1985). Adult attachment interview. *Growing points of attachment theory. Monographs of the Society for Research in Child Development*.
- Mikulincer, M., Florian, V., & Weller, A. (1993). Attachment styles, coping strategies, and posttraumatic psychological distress: The impact of the Gulf War in Israel. *Journal of Personality and Social Psychology*, 64(5), 817–826.
- Paetzold, R. L., Rholes, W. S., & Kohn, J. L. (2015). Disorganized attachment in adulthood: Theory, measurement, and implications for romantic relationships. *Review of General Psychology*, 19(2), 146–156.
- Pottharst, K., & Kessler, R. (1990). The search for methods and measures. In K. Pottharst (Ed.), *Research explorations in Adult Attachment* (pp. 9–37). New York: Peter Lang.
- Ringer, J. M., Buchanan, E. E., Olessek, K., & Lysaker, P. H. (2014). Anxious and avoidant attachment styles and indicators of recovery in schizophrenia: Associations with self-esteem and hope. *Psychology and Psychotherapy: Theory, Research and Practice*, 87(2), 209–221.
- Schmitt, D. P., Alcalay, L., Allensworth, M., Allik, J., Ault, L., Austers, I., et al. (2004). Patterns and universals of adult romantic attachment across 62 cultural regions are models of self and of other pancultural constructs? *Journal of Cross-Cultural Psychology*, 35(4), 367–402.
- Sheinbaum, T., Bedoya, E., Ros-Morente, A., Kwapil, T. R., & Barrantes-Vidal, N. (2013). Association between attachment prototypes and schizotypy dimensions in two independent non-clinical samples of Spanish and American young adults. *Psychiatry Research*, 210(2), 408–413.
- Sitko, K., Varese, F., Sellwood, W., Hammond, A., & Bentall, R. (2016). The dynamics of attachment insecurity and paranoid thoughts: An experience sampling study. *Psychiatry Research*, 246, 32–38.
- Sockalingam, S., Blank, D., Al Jarad, A., Alosaimi, F., Hirschfield, G., & Abbey, S. E. (2013). The role of attachment style and depression in patients with hepatitis C. *Journal of Clinical Psychology in Medical Settings*, 20(2), 227–233.
- Tasca, G. A., & Balfour, L. (2014). Attachment and eating disorders: A review of current research. *International Journal of Eating Disorders*, 47(7), 710–717.
- Volling, B. L., Notaro, P. C., & Larsen, J. J. (1998). Adult attachment styles: Relations with emotional well-being, marriage, and parenting. *Family Relations*, 355–367.
- Wang, C. C. D., & Mallinckrodt, B. S. (2006). Differences between Taiwanese and US cultural beliefs about ideal adult attachment. *Journal of Counseling Psychology*, 53(2), 192–204.
- West, M., & Sheldon-Keller, A. (1992). The assessment of dimensions relevant to adult reciprocal attachment. *The Canadian Journal of Psychiatry*, 37(9), 600–606.

Insecure-Resistant Attachment

► Anxious-Ambivalent Attachment Styles

Insight

Ellen Day and Margaret Stack
Clinical Psychology, University of Detroit Mercy,
Detroit, MI, USA

Synonyms

Awareness; Self-knowledge; Understanding

Definition

Insight refers to the knowledge or awareness accompanied by an emotional response that occurs when an individual obtains conscious access to his or her unconscious emotional or cognitive wishes, desires, or conflicts. Insight includes the attainment of both cognitive and emotional understanding of one's pathological symptoms and results in the reduction of these symptoms through a change in thought and behavior.

Introduction

The term insight originated from the field of psychiatry and was later extended into psychoanalytic theory by analysts such as S. Freud (Sandler et al. 1992). As a psychiatrist, S. Freud's initial perception of insight was consistent with the medical interpretation of the term, in that it related to a patient being "cured" of his or her aversive symptoms (Freud 1895). Through his findings in *Studies on Hysteria* (1895), S. Freud observed that part of this "cure" and decrease in the patient's hysterical symptoms derived from the patient pulling an unconscious memory into his or her consciousness. This new awareness

stimulated the patient's emotions and the ability to verbally describe their affective state (Sandler et al. 1992). After these observations, S. Freud (1913) implemented this "knowing but not knowing" construct into psychoanalytic theory. Individuals who encountered "knowing but not knowing" recognized the experience of conscious thought but had difficulty communicating or connecting it to the outside world (Freud 1913). S. Freud (1913) proposed that in therapy settings, the analyst's ultimate goal for the therapeutic process is to help the patient communicate their "knowing but not knowing," and thus provide the patient with insight. S. Freud believed that patients often lacked insight in relation to their repressed ideas or conflicts (Freud 1913). Ego defenses such as denial or repression contributed to this lack of self-knowledge by obscuring threatening psychic content (Freud 1936). According to A. Freud (1936), deficits in ego strength contributed to a lack of insight. Developing insight was understood as a complex process requiring extensive time and effort from both the therapist and patient.

Insight in Traditional Psychoanalytic Psychotherapy

Although traditional psychoanalysts acknowledged the influence that emotions have on hindering insight, more importance was placed on achieving insight as an intellectual process (Hatcher 1973). According to these traditional approaches, the patient's intellectual awareness would be accompanied by some form of emotional content (Sandler et al. 1992). Repressed or dissociated thoughts or memories were actively unconscious, or continually kept in unconsciousness, because of their unacceptable or threatening nature, and thus contributed to the individual's lack of awareness (Mitchell and Black 1995). Therefore, the analyst's professional cognitive insight into the patient's unconscious instinctual drives took precedence during psychoanalysis, in which the analyst would communicate the interpretation through scholarly clarifications and interpretations (Sandler et al. 1992). To assist the

patient in gaining insight, traditional psychoanalytic therapists additionally practiced the methods of hypnosis, free association, and dream analysis (Mitchell and Black 1995). The patient's ability to gain insight was seen as necessary for permanent alleviation of symptoms of psychopathology.

S. Freud (1913) later revised his initial interpretation of insight, which emphasized the cognitive rather than emotional aspects of self-awareness into a perception that acknowledged affective qualities may be present during these phenomena. Analysts thus recognized that the patient's transference played a critical role in psychoanalysis (Sandler et al. 1992). The gap between emotional and cognitive insight began to close as contemporary analysts provided their interpretations of this concept.

Insight in Contemporary Psychoanalytic Psychotherapy

Immediately following the writings of Freud, contemporary psychoanalysts began to focus on cognitive and emotional insight as separate entities rather than two parts of one concept (Sandler et al. 1992). Theorists struggled to define the separate notions of cognitive insight and emotional insight (Sandler et al. 1992). Reid and Finesinger (1952) attempted to appease this issue by introducing the notions of neutral, emotional, and dynamic insight. Neutral insight relates closely to intellectual insight, in that the patient's knowledge of unconscious desires is increased, but this cognitive self-awareness does not lead to change in behavior or increase in emotional response (Reid and Finesinger 1952). When a patient obtains emotional insight, he or she may gain an understanding that his or her emotions play a role in producing their aversive symptoms (Reid and Finesinger 1952). When neutral and emotional insights interact, dynamic insight occurs. That is, the patient gains conscious awareness of a cognitive fact that "releases an emotional response" to this new information (Reid and Finesinger 1952).

Contemporary psychoanalysts have explored the complimentary role that both emotional and intellectual aspects of insight play in the therapeutic

process (McWilliams 2004). Hatcher (1973) examined the relationship between insight, emotions, and intellectualization and suggested that salient unconscious emotions may disguise the intellectual understanding of the patient's conflict. Understanding one's own affect is the precondition for insight in that it activates self-reflection and helps the patient organize his or her own thoughts (Hatcher 1973; McWilliams 2004). Therefore, it is essential that the patient increases awareness into the connection between his or her unconscious thoughts and emotions. The techniques used in the assistance of promoting insight vary according to specific schools of thought. In general, contemporary analysts may have a greater inclination to collaborate with patients and use interpretations with the goal of fostering emotional and mental self-awareness in comparison to traditional psychoanalysts (McWilliams 2004). If, and when, the insight has been reached, it is essential that the patient follow up with a change in their behavior (McWilliams 2004). In other words, merely discussing the acquired insight or revelation of self-awareness is not sufficient. The patient needs to demonstrate this change in order to decrease their pathological symptoms as well as to grow and develop.

Conclusion

The concept of insight has played an integral role in the practice of psychoanalytic psychotherapy since its introduction with the work of S. Freud (1913). Traditional approaches to this concept suggest that insight is gathered primarily through intellectual awareness, whereas contemporary approaches place equal emphasis on the influences of intellect and emotions, sometimes distinguishing between the two as separate entities (McWilliams 2004). Whether taking a traditional or contemporary approach to conceptualizing the term insight, there is consensus within the psychoanalytic orientation that it is a complex phenomenon. The acquisition of insight, or psychological self-awareness of one's thoughts and emotions, and later appeasing symptoms through change in behavior, has consistently remained the ultimate goal for the patient in the psychoanalytic psychotherapy process.

Cross-References

- ▶ [Intuition](#)

References

- Freud, S. (1895). *Studies on hysteria. Standard Edition, 2*. London: Hogarth Press.
- Freud, S. (1913/1958). On beginning the treatment: Further recommendations on the technique of psychoanalysis I. In *Standard Edition, 12* (pp. 147–156). London: Hogarth Press.
- Freud, A. (1936). *The ego and the mechanisms of defense*. New York: International Universities Press.
- Hatcher, R. (1973). Insight and self-observation. *Journal of the American Psychoanalytic Association, 21*, 377–398.
- McWilliams, N. (2004). *Psychoanalytic psychotherapy: A practitioner's guide*. New York: The Guilford Press.
- Mitchell, S. A., & Black, M. J. (1995). *Freud and beyond: A history of modern psychoanalytic thought*. New York: Basic Books.
- Reid, J. R., & Finesinger, J. E. (1952). The role of insight in psychotherapy. *American Journal of Psychiatry, 108*, 726–734.
- Sandler, J., Dare, C., & Holder, A. (1992). Insight. In J. Sandler, C. Dare, & A. Holder (Eds.), *The patient and the analyst: The basis of the psychoanalytic process* (2nd ed., pp. 165–174). Madison: International Universities Press, Inc.

Inspiration

- ▶ [Creativity](#)

Instagram

- ▶ [Jealousy](#)

Instinct

- ▶ [Drive Theory](#)
- ▶ [Human Nature and Human Universals](#)
- ▶ [Intuition](#)

Instincts

- ▶ [Functional Autonomy](#)

Instincts (Biological)

Erica A. Giammarco
Department of Psychology, University of Western Ontario, London, ON, Canada

Synonyms

[Drives](#); [Impulses](#); [Innate behavior](#)

Definition

Instincts are broadly defined as innate behaviors that are performed independent of prior experience. That is to say, instincts are not learned behaviors. Instead, they are considered to be heritable, unconscious responses to some external stimuli (Herrnstein 1972).

Introduction

Although some argue that all members of a species possess the same set of instincts, De Raad and Doddema-Winsemius (1999) note that varying environmental conditions “...may produce predictable individual differences in instinctive behavior” (p. 294). Instincts differ from *reflexes* in that the former can be modified if one becomes consciously aware of his/her actions and wishes to change them. In contrast, reflexes are automatic responses that cannot be changed (i.e., pupil dilation to light).

History

The concept of *instincts* was first introduced to the psychological domain by William Wundt in the

1870s. Wundt described an instinct as any repetitive action that was inherent to an organism (Herrnstein 1972). This discussion of *instincts* was expanded upon and popularized by William McDougall (1919) in his textbook *An Introduction to Social Psychology* which was first published in 1908. Among McDougall's theories was the notion that instinctual behavior was goal oriented and that the behavior would persist until the instinctual drive was satisfied. This was a departure from Wundt's "purist" view of instincts as mechanical actions. Both Wundt and McDougall noted the heritable nature of instincts, a concept that brought many critiques, especially as the school of behaviorism gained popularity in the 1920s.

In an article entitled *Are There Any Instincts?*, Knight Dunlap (1919) criticized the teleological nature of instincts as defined by McDougall. That is, Dunlap argued that although instincts may in fact reflect innate behavior responses, it is incorrect to assume the underlying purpose for the behavior. Following the behaviorist tradition, Dunlap called for empirical investigations of McDougall's claims. Dunlap, along with other prominent behaviorist researchers such as Watson and Bernard, sought to identify the specific stimulus-response links between environmental influences and instinctual responses (Herrnstein 1972). As this research progressed and Skinner's research on reinforcement theory of learning (Skinner 1938) demonstrated that apparent "reflexive" behavior could be learned from real-life experiences, the nature versus nurture debate began to dominate the literature that was until researchers such as Gould (2002) sought to integrate the two camps into nature *and* nurture.

Current Usage

The traditionalist conceptualization of instincts as inherent behavioral patterns that emerge in response to environmental conditions is relatively rare in today's psychological literature. Instead, instincts are often described in terms of driving forces that may predispose individuals to act in a certain way under certain conditions. For

example, Maslow (1954) reconceptualized instincts as driving forces that motivate individuals to fulfill various needs (i.e., safety, belonging, self-actualization). As such, the notion of instincts has largely been replaced by the study of reinforcement and motivation.

Conclusion

It is important to note that although references to instincts usually focus on theories of learning or motivation, the notion of predispositions to behave in certain ways can be extended to other areas. For example, the theory of moral instincts states that individuals may be differentially predisposed to moral behaviors (Hauser 2006). Like motivational drives, moral instincts are thought to interact with individuals' experiences to influence behavioral outcomes.

Cross-References

- ▶ [Drive Theory](#)
- ▶ [Incidental Learning](#)
- ▶ [Intrinsic and Extrinsic Motivation](#)

References

- De Raad, B., & Doddema-Winsemius, M. (1999). Instincts and personality. *Personality and Individual Differences*, 27, 293–305.
- Dunlap, K. (1919). Are there instincts? *Psychological Review*, 26, 197–203.
- Gould, J. L. (2002). Learning instincts. In H. Pashler & R. Gallistel (Eds.), *Stevens' handbook of experimental psychology. Vol. 3: Learning, motivation, and emotion* (pp. 239–257). New York: Wiley.
- Hauser, M. (2006). *Moral minds: How nature designed our universal sense of right and wrong*. New York: Harper Collins.
- Herrnstein, R. J. (1972). Nature as nurture: Behaviorism and the instinct doctrine. *Behaviorism*, 1, 23–52.
- Maslow, A. H. (1954). The instinctoid nature of basic needs. *Journal of Personality*, 22, 326–348.
- McDougall, W. (1919). *An introduction to social psychology* (14th ed.). London: Methuen & Co. Ltd.
- Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis*. Oxford: Appleton-Century.

Instincts and Tension Reduction

Bernard Brown
Department of Psychology, Macquarie
University, Sydney, Australia

Synonyms

[Drive](#); [Motivation](#)

Definitions

Instinct and Tension Reduction is a theory of causation, or motivation, of behavior – causation from a behaviorist perspective, motivation from a mentalist perspective. The idea is that when an inherent *instinct*, such as a need for food, exceeds a threshold value we act to *reduce* the *tension* so caused. In other words, when our bodies need food we are motivated to act to reduce the feeling of the tension of hunger by obtaining food and ingesting it. This idea goes back at least as far as Sigmund Freud’s theory of drive that, sans tension, went on to underpin the behaviorist theories of *Drive Reduction* in the 1940s.

Introduction: Freud and Drive

Freud the histologist developed psychoanalysis, at least in his mind, as a *scientific* project in the light of his education in a mechanistic enlightenment deterministic paradigm set against a background of German romanticism – the so-called *dark enlightenment*. Therapy aside, Freud’s aim was to explain the mental in terms of natural laws. In 1895 he commenced a project to explain all mental phenomena through the behavior of neurons subject only to the laws of motion (Freud 1950 [1895]). Although he quickly abandoned this project and afterwards only explained mental phenomena in psychological terms, he never abandoned the claim that psychoanalysis was a scientific project.

In the wake of Goethe, Schiller, and others he assumed drive (*Trieb* – translated problematically as “instinct”) was a necessary unobservable natural entity needed to explain psychological motivation. Nevertheless he vacillated over its nature. It was either a somatic process represented in the mind by a mental force or a mental representation of a somatic process as a force. At the end of his life he came down in favor of the latter. This idea has persisted through to the twenty-first century – “*Drive*: A motivational force activating emotions, cognitions and behaviours, arising from the physiological needs of the body” (Solms and Zellner 2012, p. 50).

A Freudian drive is thus a mental representation of an ongoing endogenous somatic need, say a need for food, and a feeling of the tension-of-hunger is also a mental representation of the need. However, although a need for food is always ongoing we do not always feel the tension-of-hunger. Following Freud, when we do feel the tension-of-hunger it is due to a buildup of the products of the somatic process of the need for food that causes an *impulse* of the ongoing endogenous somatic need. It is endogenous in that, it will occur without exogenous stimulation – I will eventually feel the tension-of-hunger whether I smell the aroma of a hot apple pie or not. Once I do feel the tension it will increase until action is taken that reduces, or, in Freud’s term, satisfies the impulse of the somatic need. The feeling of tension has two effects – one is that in the normal course of events, action, including mental action, is taken to reduce (satisfy) the mental representation of the impulse of the need for food. This is because the mental representation qua *active* mental representation, conscious or not, is unpleasurable and following Freud’s natural law-like *pleasure principle* we act to obtain pleasure. The other effect is that a reduction in the feeling of tension indicates that the action when taken is successful in satisfying the need, whereas an increase in feeling indicates a lack of success. Whichever way things turn out, a change in the feeling of tension acts as feedback to either continue with the current action or not, and if not come up with a new choice of action and put it into effect.

The pleasure principle functions in concert with the law-like *principle of constancy* whereby the mental system (Freud's psychological apparatus) has a natural *tendency* to return itself to rest, and does so, principally, through action (Freud 1950 [1895]). An active mental representation of an impulse of a need for food is a disturbance of the mental system from rest, or, in other words, an excitation of the psychological apparatus. The excitation of the apparatus is discharged, as well as it can be, through the action in the world of obtaining food and ingesting it. Once such discharge is completed, a small but constant excitation remains.

Insofar as an impulse of a need forces action to meet the need, a drive is a mental representation of that force. A drive forces – motivates – mental work with the intention of coming up with and choosing an action salient to reducing the excitation of the psychological apparatus to a small constant level of excitation. This done it forces the choice into action in the world. Freud's theory of drive is thus theory of behavior (thought, speech, and action) in that drives motivate the mental behavior of thought, and cause somatic behavior – of action in the world. Such behavior includes acts of speech, in response to stimulation by impulses of endogenous needs. The feeling of reduction in tension indicates that actions underway, and the antecedent causal choice, are *salient* to satisfying an impulse of need. Behavior is salient, for Freud, putting the emphasis on tension, just because it has been *learned* through experience that it brings about a *reduction* in the feeling of *tension*. Such behavior may be said to be a successful habit.

The explication above necessarily glosses over the complexity of Freud's theory. For simplicity, the account addressed the behavior associated with a single drive and thereby ignores the complexity and ramifications of concomitant competing drives played out against an individual's genetic inheritance and idiosyncratic lived experience, which delivers according to Freud, repression, sublimation, projection, displacement, and so on, all of which distort behavior from running an ideal course.

Hull and Drive Reduction

It is often said in popular literature that Clark Hull claimed that a drive is "... the state of tension or arousal caused by biological or physiological needs" (Akdeniz and Stark 2014, p. 430), but this is more of a psychoanalytic projection onto Hull, made in the light of post-Hullian theories rather than the reality.

Hull's life work was the development of a science of behavior expressed in strict mathematical terms, brought together in *Principles of Behavior* (Hull 1943). In that work he claims that behavior can be mathematically expressed through the use of 39 equations, entailing 113 variables. His behaviorist approach was constructed around the problem of animal learning and explicitly excludes the mental (and hence no reference to "tension"). The perceived benefit of this approach is that it avoids the inherent subjectivity of the mental just because it would compromise the objectivity demanded of science. The data of Hull's science were mainly observations of the behavior of Pavlov's dogs salivating, Skinner's rats pushing bars, and his own white rats negotiating mazes, under experimental conditions, in a somatic state of needing food. He believed that a scientific model explaining their behavior would lead to a valid explanation of human behavior. The theoretical paradigm of his scientific explanation was one of reaction to stimuli.

When a rat needs food and has been previously conditioned by that stimulus to evoke a behavior reinforced by the reward of food, the rat is said to have developed a habitual behavior as a response to the need for food. Habitual behavior is a response to a somatic need, but not until, in Hull's theory, need moves outside of an optimal range. A rat within the optimal need for food range exhibits neither the behavior of a satiated rat nor a hungry rat. When the need is outside of the optimal range "... the need is often said to motivate or drive the associated activity [habitual behavior]. Because of this motivational characteristic of needs they are regarded as producing primary animal *drives*" (*Principles*, p. 57, original emphasis). A primary drive causes an

animal to evoke habitual actions that have the effect of returning its need-state to the optimal range – or, in other words, leading to *drive reduction*.

Three variables of interest to us here – E , H , and D – are brought together in a mathematical equation. The equation amounts to an expression of a common-sense intuition – the amount of action we will take to get, say, food (E) depends on *both* how much we need food (D) and our learned ability to get food (H) in the environment we find ourselves in when we need food. Further, both E and H are responses (R) to stimuli (S). In this light, the need for food evokes action of strength ${}_sE_R$ (which may be zero), due to a combination of the strength of the need for food at any time, D (the drive for food), and the strength of an acquired habit ${}_sH_R$ to acquire food (and consume it) in the environment the organism finds itself in when needing food. A moderately food-deprived rat, in a maze it has previously learnt to navigate with food as a reward (low need, strong habit), is more likely to take actions to satisfy the need than the same rat under the same condition of need in a maze it has not previously encountered (low need, no habit), and so on.

Mathematically, this is represented as ${}_sE_R = {}_sH_R \times D$.

André Kukla and Joel Walmsley claim that this “...famous equation ... plays the same central role in Hull’s theory as the pleasure principle does in Freud’s” (Kukla and Walmsley 2006, p. 94). However, it is not clear why they make this claim, since Freud’s pleasure principle – up to the time before he moved beyond the pleasure principle (Freud 1920) – was the underlying law-like causal regulator of *all* behavior – whereby we naturalistically seek pleasure rather than unpleasure. Hull’s equation on the other hand is a law-like claim delimited to primary drives. That said, Hull’s drive plays the same conceptual role as Freud’s – it causally joins stimulus to the reaction of evoking habitual behavior, albeit that the latter entails habitual mental behavior whereas the former is mentally agnostic. Thus, for both Freud and Hull, drive is a necessary theoretical concept to causally join need to behavior. Without drive a

need is no more than a need. In this light, Hull claims that drive, although unobservable, is a theoretical necessity by inference to the best explanation of securing the causation of observed action by antecedent need. The apparent connection between Freud and Hull ought to come as no surprise once it is known that Hull knew of Freud’s work on drives and was not antagonistic to it. Hull even claims that parts of his work may give a behaviorist account of parts of Freud’s work (p. 241, 252), no matter that his own account explicitly excludes the mental.

Be that as it may, if Hull’s R is valid for any S , then any mental phenomena injected between S and R will have no other outcome than R . To put this another way, if somatic- S stimulates mental- S and the output is mental- R and this stimulates somatic- R then the content of mental- R amounts to somatic- R . For any valid R of an $S R$ matching entailing mental processes, Hull’s thesis without explaining mental processes states the outcome of the mental processes. The mental response to the feeling of tension-of-hunger – a plan to get food and eat it – complies with the somatic R – the evocation of habitual behavior to get food and eat it – both motivated by the drive for food. Freud’s mentalistic explanation of behavior under drives would be a candidate to fill the mental gap between Hull’s somatic S and R . It may be complained that this is forcing the mental onto Hull who has explicitly excluded it, but it is not that straightforward since he speculates that the stimulation of the internal receptors (proprioceptors) by muscular and skeletal joints play an indispensable role in the etiology (becoming aware of internal states) of symbolic behavior – that is to say, *thought*, and thought is a quintessential mental process. And this brings us to the nervous system.

Hull pairs ${}_sE_R$ with ${}_sE_r$ and ${}_sH_R$ with ${}_sH_r$, the latter of each pair being the neuronal explanatory equivalents of the former observable phenomena – the latter explanation being, in Hull’s language, more *molar* than the former, a more reduced level of explanatory phenomena. He further claims that hormones and other chemicals in the bloodstream play a causal role in cerebral processes where the

brain is no more than an automatic switchboard (either innate or learnt habitual neuronal processes) joining incoming afferent signals from sensory apparatus to efferent signals ending in muscles and glands resulting in the evocation of habitual behavior. In this light it would seem that Freud's mentalist explanation will not fill the mental gap except that Freud, in 1895, worked on a project to explain all mental phenomena in terms of no more than neurons functioning under Newtonian laws of motion (Freud 1950 [1895]), cashed out in the movement of energy through neurons. One implication is that Freud's neurological explanation is equally as neurological as Hull's. That said, although Freud abandoned the project and forcefully resisted its publication when it turned up some 20 years later, there is general agreement that the concepts worked out in this project underpin many of Freud's explanations of behavior given in the psychological terms of psychoanalysis. However, his commitment to mental determinism is usually overlooked. Freud writes:

You nourish the illusion of there being such a thing as psychological freedom, and you will not give it up. I am sorry to say I disagree with you categorically over this. (Freud 1916–1917 [1915–1916], p. 49)

Freud's mentalistic explanation of behavior is just as deterministic as Hull's. As strange as it may seem, Freud and Hull's theories on drive are not incompatible.

Problems with Drive Reduction

A challenge to drive reduction theory and by extension Freud's theory is this: If behavior is subject to the principle of constancy or drive reduction, then why do rats move about in environments they know well, when it is known (under experimental conditions) that they have no active primary needs? No matter that both Hull and Freud have supplied an answer – the former through the principle of constancy being no more than a tendency to rest and the latter through action in the optimal drive range of

behavior – it was historically a charge that behaviorists responded to.

In the early 1960s, Daniel Berlyne, while acknowledging the importance of Hull's work writes that drive reduction theory, on the one hand "...has been severely battered by the growing body of knowledge about exploration" (Berlyne 1960, p. 164) – animals explore their environments in the absence of so-called organic drives: hunger, thirst, sexual appetite, pain, and so on. On the other hand, the idea that "...behaviour is ultimately a collection of devices for keeping stimulation down to a minimum" (p. 164), such as Freud's and Hull's, is plainly false given that "[e]ven without formal experiments, anybody who has had to spend half an hour with an unamused child must have had his faith in the proposition that animal life has torpor as its principal goal rudely shaken" (p. 164). One solution to this dilemma, that Berlyne considers and rejects, is the positing of a drive for exploration. However, he writes concerning boredom:

There is evidently one kind of drive that is reduced through divertive exploration and aroused when external stimuli are excessively scarce or excessively monotonous. ... The drive in question is what we usually call *boredom*.

Boredom is particularly likely when stimuli lack short-term novelty, i.e., when a stimulus is repeated many times in immediate succession. But it may also be brought on by a shortage of long-term novelty, e.g., by having the same menu for dinner day after day, or of surprisingness, e.g., when life is varied but highly predictable. (p. 187, original emphasis)

As true as this is, Berlyne's drive of boredom is dissimilar to a drive for food for two reasons. The first reason is that the latter is a *need* for food, whereas the former is a need for *an absence of something* – it is a need for a *lack* of boredom (The *lack* of boredom formulation has intuitive appeal for Freudian drive theory since it is an obvious truth that boredom is accompanied by a feeling of tension.). More importantly, even if we correct Berlyne's descriptor to "lack of boredom," the second reason is that the latter, following Berlyne, is a *paucity* of external stimuli or novel external stimuli whereas the former is an *excess* of internal stimuli. That said, Berlyne goes on to argue that in

environments with either few stimuli or only those that lead to habitual behavior, animals like us respond to stimuli we would not usually respond to. He introduces the concept of arousal to account for this phenomenon.

Be that as it may, for Berlyne, and we can now include Hull, an instinct is no more than an innate (internal) factor in a causal response to *external* stimuli. To bolster this claim Berlyne turns to Freud and makes the claim Freud's notion of instinct is "inexact" just because Strachey translated both *Trieb* and *Instinkt* as instinct. What Berlyne fails to understand is that *Trieb* entails *Instinkt* rather than the two terms signifying drive. When we eat to satisfy a drive (*Trieb*) for food the processes of ingestion and digestion are the necessary *Instinkt* reflex actions entailed in satisfying the drive. Nevertheless, Freud would agree with Berlyne and Hull to the extent that external sources can stimulate drives. If I smell the aroma of a hot apple pie I may feel hungry and be motivated to rid myself of the tension-of-hunger. In this sense the smelling of the aroma of food is a component drive of the drive for food, and there is no reason to believe that Hull, if not Berlyne, would not agree with this idea, provided that rats outside the optimal range of the drive for food have habitual food-seeking behavior evoked by the aroma of rat food. This may also be the reason that Hull refers to *primary* drives as in the "primary drive for food." In this light, the smelling of the aroma of food would be a *secondary* drive and would equate to Freud's component drive.

Without going further into Berlyne's thesis on drives, or attempting to resolve the apparent paradox of the drive of boredom (or more correctly, "not boredom") where lack of stimulus rather than presence of stimulus motivates or evokes behavior, theses such as Berlyne's did not succeed in sustaining the behaviorist program. For further detail refer to Kukla and Walmsley (Kukla and Walmsley 2006, pp. 95–108).

Conclusion

Freud's theory of drive amounts to a theory of instinct and tension reduction. This idea, minus

the mental phenomena (of tension), was taken up by the behaviorists in the first half of the twentieth century, which we examined in the work of Hull. Here we speculated that Freud's mental concept of tension reduction could fill Hull's symbolic habitual behavior in his theory of drive reduction, no matter that Hull intentionally excludes the mental from his theory. In examining Berlyne's theory of the drive for boredom, we observed that Berlyne's and Hull's theories treated drives as being actuated by *exogenous* stimuli, not Freud's definitional *endogenous* drives. Nevertheless, Hull's if not Berlyne's may qualify as Freud's component drives. Finally we noted that the behaviorist program could not sustain itself against an accumulating critique.

Within recent psychoanalytic literature, drive theory – instinct and tension reduction theory – has been treated ambivalently. In recent times Tamas Pataki rightly comments that drive theory faces contemporary challenges (Pataki 2014, p. 75, note 4). This is exemplified in comments such as "... the term instinct (or drive) should be expunged from any psychoanalyst's lexicon" (Frank 2003, p. 691). It has been claimed that Melanie Klein (1882–1960) may have been the last significant psychoanalytic theorist to adhere to it (Skelton et al. 2009, p. 127). Nevertheless, the psychoanalyst-philosopher in *Philosophy, Psychoanalysis, and the A-Rational Mind* (Brakel 2009) devotes a chapter to "Drive Theory and Primary Process." Simon Boag in his recent *Metapsychology and the Foundations of Psychoanalysis* devotes a supportive chapter to drive (Boag 2017). Cordelia Schmidt-Hellerau (Schmidt-Hellerau 2001, 2002, 2012) supports drive as an ongoing project. To return to Solms and Zellner who are part of the new wave of neuroscientific explanation of drives (Solms and Zellner 2012; Solms 2012, 2015; Panksepp 1998; Panksepp and Biven 2012) who provided our initial definition of drive, they write:

When you study things like the person (the self, agency), the concept of drive is the foundation for explaining why we do what we do. (Solms and Zellner 2012, p. 51)

Cross-References

- ▶ [Defense Mechanisms](#)
- ▶ [Drive Theory](#)
- ▶ [Pleasure Principle](#)
- ▶ [Psychoanalysis](#)
- ▶ [Psychodynamic Perspective](#)

References

- Akdeniz, C., & Stark, J. (2014). *The leadership academy: The only leadership book you must read*. businesshacker.co, Germany.
- Berlyne, D. E. (1960). *Conflict, arousal, and curiosity*. New York: McGraw-Hill.
- Boag, S. (2017). *Metapsychology and the foundations of psychoanalysis. Attachment, neuropsychoanalysis and integration*. New York: Routledge.
- Brakel, L. A. W. (2009). *Philosophy, Psychoanalysis, and the a-rational mind*, Oxford/New York: Oxford University Press.
- Frank, G. (2003). Triebe and their vicissitudes: Freud's theory of motivation reconsidered. *Psychoanalytic Psychology*, 20, 691–697.
- Freud, S. (1916–1917) [1915–1916]. *Introductory lectures on psycho-analysis* (Standard Ed., Vols. 15 and 16). London: Hogarth.
- Freud, S. (1920). *Beyond the pleasure principle* (Standard Ed., Vol. 18). London: Hogarth.
- Freud, S. (1950) [1895]. *Project for a scientific psychology* (Standard Ed., Vol. 1). London: Hogarth.
- Hull, C. L. (1943). *Principles of behavior: An introduction to behavior theory*. New York; London: D. Appleton-Century Company, Incorporated.
- Kukla, A., & Walmsley, J. (2006). *Mind: A historical and philosophical introduction to the major theories*. Indianapolis: Hackett Pub.
- Panksepp, J. (1998). *The foundations of human and animal emotions*. Oxford/New York: Oxford University Press.
- Panksepp, J., & Biven, L. (2012). A meditation on the affective neuroscientific view of human and animalian MindBrains. In A. Fotopoulou, D. W. Pfaff, & M. A. Conway (Eds.), *From the couch to the lab: Trends in psychodynamic neuroscience*. Oxford/New York: Oxford University Press.
- Pataki, T. (2014). *Wish-fulfilment in philosophy and psychoanalysis: The tyranny of desire*. Sussex: Routledge.
- Schmidt-Hellerau, C. (2001). *Life drive & death drive, libido & lethe: A formalized consistent model of psychoanalytic drive and structure theory*. New York: Other Press.
- Schmidt-Hellerau, C. (2002). Why aggression? *The International Journal of Psychoanalysis*, 83, 1269–1289.
- Schmidt-Hellerau, C. (2012). Drive and structure: Reconsidering drive theory within a formalized conception of mental processes. In A. Fotopoulou, D. W.

- Pfaff, & M. A. Conway (Eds.), *From the couch to the lab: Trends in psychodynamic neuroscience*. Oxford: Oxford University Press.
- Skelton, R. M., Burgoyne, B., Aron, L., & Aguayo, J. (2009). *The Edinburgh international Encyclopaedia of psychoanalysis*. Edinburgh: Edinburgh University Press.
- Solms, M. (2012). Are Freud's "erogenous zones" sources or objects of libidinal drive? *Neuropsychoanalysis*, 14, 53–56.
- Solms, M. 2015. The feeling brain: Selected papers on Neuropsychoanalysis.
- Solms, M., & Zellner, M. R. (2012). Freudian drive theory today. In A. Fotopoulou, D. W. Pfaff, & M. A. Conway (Eds.), *From the couch to the lab: Trends in Psychodynamic Neuroscience*. Oxford: Oxford University Press.

Instrumental Conditioning

- ▶ [Operant Conditioning](#)

Insularism

- ▶ [Dogmatism](#)

Insulin Resistance

- ▶ [Personality and Dispositional Factors in Relation to Chronic Disease Management and Adherence to Treatment](#)

Integrate

- ▶ [Automaton Conformity](#)

Integrated/Dissimilarity

- ▶ [Congruence/Incongruence \(Rogers\)](#)

Integration

Laura Wood¹ and Zachary C. LaBrot^{1,2}

¹Munroe-Meyer Institute, University of Nebraska Medical Center, Omaha, NE, USA

²University of Southern Mississippi, Hattiesburg, MS, USA

Synonyms

[Desegregation](#); [Inclusion](#)

Definition

Although the specific definition varies widely depending on perspective and context, integration broadly refers to the inclusion of diverse individuals across all facets of life. Racial integration in education refers to the legal and political desegregation of schools as well as the fair and equitable treatment of students within schools (Ayscue and Frankenberg 2016).

Introduction

Research has consistently supported the detrimental effects of segregation and the benefits of racial and socioeconomic integration in the field of education (Bohmstedt et al. 2015; Borman and Dowling 2010; Rumberger and Palardy 2005). When controlling for student-level variables (e.g., race, socioeconomic status [SES]) and other school-level factors (e.g., size, public vs. private), the racial and socioeconomic diversity of a school is significantly correlated with a student's academic achievement and likelihood of high school and college graduation (Bohmstedt et al. 2015; Borman and Dowling 2010; Rumberger and Palardy 2005). The differences in academic achievement can be in part explained by the finding that schools with higher concentration of Black, Latino, and low-income students are more likely to have less experienced and qualified teachers, lower

funding, fewer challenging courses, and worse facilities compared to schools with higher proportions of White students (Wagner 2017).

In addition to academic benefits, racial integration in schools is also associated with social-emotional benefits, including increasing cross-relational trust, acceptance, tolerance, and relationships while reducing prejudice and fear of others (Braddock and Gonzalez 2010; Mickelson and Nkomo 2012). The benefits of integration continue to be observed into adulthood. Students who attend diverse schools are more likely to have lower rates of involvement with the criminal justice system, live in a more diverse neighborhood, and have more cross-racial friendships as adults (Mickelson and Nkomo 2012). With the increasingly diverse and globally connected society, these skills are crucial.

History of Racial Integration in Education

In the 1896 landmark case of *Plessy v. Ferguson*, the US Supreme Court ruled that “separate but equal” segregation of public facilities was constitutionally lawful. The doctrine upheld the Jim Crow laws being enforced in the Southern United States and provided legal justification for racial segregation of education, among other public domains. These principles were maintained by the US Supreme Court for more than half of a century. However, in 1954 the Supreme Court unanimously voted to overturn the educational components of *Plessy v. Ferguson*, arguing that “...in the field of public education, the doctrine of ‘separate but equal’ has no place. Separate educational facilities are inherently unequal” (*Brown v. Board of Education* 1954). The justices highlighted the detrimental effects of segregation, including garnering a systematic sense of inferiority, interfering with the motivation to learn, and impeding the mental and educational development of non-White students.

Following the original hearing, the *Brown v. Board of Education II* (1955) US Supreme Court ruling determined that desegregation should occur “with all deliberate speed” and in

“good faith” to the principle that racial discrimination in public education is unconstitutional. Due to the diversity of local conditions, the Supreme Court justices delegated the implementation of desegregation to local school districts and the monitoring of these efforts to local courts. As such, the interpretation and implementation varied widely across districts. One district in Virginia went as far as refusing to fund education resulting in the closing of the districts’ public schools from 1959–1964 (Brookover 1993). In essence, the district determined it would be better to have no public schools than to have a desegregated educational system. Other districts stalled the desegregation of schools or did so only minimally. By 1963, 99% of Black students were still being educated in completely segregated schools (Orfield et al. 2014).

It was not until the Civil Rights Act of 1964 that the majority of districts began attempting to address segregation (Cascio et al. 2007; Orfield et al. 2014). Specifically, Titles IV and VI incentivized schools to improve racial desegregation by authorizing the use of federal lawsuits and removal of funding for schools that remained segregated (Civil Rights Act 1964). The 1968 Supreme Court case of *Green v. County School Board of New Kent County* further delineated the specific requirements of desegregation by identifying five facets of school operations to be addressed: faculty, staff, transportation, extracurricular activities, and facilities. The ruling indicated that desegregation efforts must be implemented immediately and that the Court would impose court-ordered desegregation plans to ensure compliance. The result of case laws and federal legislations in the 1960s and 1970s led to a gradual increase in the desegregation of schools. In the 1970s, schools in the South had become the most integrated schools in the country (Cascio et al. 2007; Orfield et al. 2014).

This pattern of integration peaked in the mid 1980s (Orfield et al. 2014; Wagner 2017). However, several significant court rulings began limiting the purview of desegregation efforts by returning the control of integration in schools back to local districts. In the case of *Oklahoma*

City Board of Education v. Dowell (1991), the Supreme Court ruled that a school district can be removed from court oversight if they were compliant with desegregation measures and unlikely to return to their “former ways.” After this ruling, many districts that were granted independence from court oversight returned to segregated neighborhood schooling leading to a steady decline in racial integration across the country (Orfield and Frankenberg 2014; Reardon et al. 2012).

Current Status and Considerations

There is debate on the current status of racial integration in education, mostly based on how integration is defined and measured (Orfield et al. 2014; Logan 2004; Reardon and Owens 2004; Wagner 2017). Some current reports indicate that the US education system is becoming increasingly segregated (e.g., Orfield et al. 2014), while others attribute this apparent trend to increases in the overall diversity of students (e.g., Logan 2004). Regardless of whether or not segregation is on the rise, most researchers agree that progress towards integration has at least slowed down in the last 25 years and students attending schools that are predominantly Latino and/or Black continue to experience vast disparities compared to schools with higher ratios of White students (Mickelson and Nkomo 2012). In other words, the original ruling in *Brown v. Board of Education* (1954) prevails to this day: separate continues to be inherently unequal.

Above and beyond the racial composition of a school, it is also essential to address the integration of students within a particular school. Research suggests that there continues to be high levels of segregation within schools (Bhargava et al. 2008; Moody 2001). In fact, within school segregation tends to be the highest for schools with moderate levels of racial heterogeneity (Moody 2001). The policies, practices, and organization of schools can have significant impacts on the level of within school segregation. For example, policies such as tracking are associated with higher levels of within-school

segregation (Bhargava et al. 2008), while student involvement in integrated extracurricular activities helps to mitigate such segregation (Moody 2001). Another important factor to consider in within-school segregation is the impact of disability on segregation. Students at the intersection of race and disability are at an increased risk of exclusionary practices. In addition to being disproportionately represented in the special education system, Black and Latino students who are in special education spend less time in inclusive classrooms compared to their White peers (Dudley-Marling and Burns 2014). With an increasingly diverse student population, it will be important for schools to make a concerted effort to address within school integration.

Conclusion

Racial integration in education is the intentional inclusion and equitable treatment of the nation's diverse student population. The immense long-term benefits of racial integration make it a crucial goal for the education system. Efforts at improving racial integration were historically led by legislative and political actions to desegregate the educational system. However, much of the responsibility has now been delegated to local schools and their districts. As the United States population continues to become more diverse, it will be essential for stakeholders to collaborate at the local and national level to improve racial integration between and within schools.

Cross-References

- ▶ [Conformity](#)
- ▶ [Evaluative Organization](#)
- ▶ [Prejudice](#)

References

- Ayscue, J., & Frankenberg, E. (2016). Desegregation and integration. Oxford Bibliographies. <https://doi.org/10.1093/OBO/9780199756810-0139>.
- Bhargava, A., Frankenberg, E., & Le, C. Q. (2008). *Still looking to the future: Voluntary K-12 school integration*. New York: NAACP Legal Defense and Educational Fund/The Civil Rights Project.
- Bohrnstedt, G., Kitmitto, S., Ogut, B., Sherman, D., Chan, D., National Center for Education Statistics (ED), & American Institutes for Research. (2015). *School composition and the black-white achievement gap* (NCES 2015-018). Washington, DC: National Center for Education Statistics.
- Borman, G., & Dowling, M. (2010). Schools and inequality: A multilevel analysis of Coleman's equality of educational opportunity data. *Teachers College Record, 112*(5), 1201–1246.
- Braddock, J. H., II, & Gonzalez, A. D. C. (2010). Social isolation and social cohesion: The effects of k-12 neighborhood and school segregation on intergroup orientations. *Teachers College Record, 112*, 1631–1653.
- Brookover, W. B. (1993). Education in Prince Edward County, Virginia, 1953–1993. *Journal of Negro Education, 62*, 149–161.
- Brown v. Board of Education of Topeka, 347 U.S. 483 (1954). Retrieved from <https://supreme.justia.com/cases/federal/us/347/483/>.
- Brown v. Board of Education of Topeka II, 349 U.S. 294 (1955). Retrieved from <https://supreme.justia.com/cases/federal/us/349/294/>.
- Cascio, E., Gordon, N., Lewis, E., & Reber, S. (2007). From Brown to busing. University of Kentucky Center for Poverty Research Discussion Paper Series, DP2007-05. Retrieved from <http://www.ukcpr.org/Publications/DP2007-05/pdf>.
- Civil Rights Act of 1964, Pub.L. 88-352, 78 Stat. 241 (1964).
- Dudley-Marling, C., & Burns, M. B. (2014). Two perspectives on inclusion in the United States. *Global Education Review, 1*, 14–31.
- Green v. County School Board of New Kent County, 391 U.S. 430 (1968). Retrieved from <https://supreme.justia.com/cases/federal/us/391/430/>.
- Logan, J. (2004). Resegregation in American public schools? Not in the 1990s. Albany: State University of New York. Retrieved from http://www.s4.brown.edu/cen2000/noresegregation/noresegregation_report.pdf.
- Mickelson, R. A., & Nkomo, M. (2012). Integrated schooling, life course outcomes, and social cohesion in multiethnic democratic societies. *Review of Research in Education, 36*, 197–238.
- Moody, J. (2001). Race, school integration, and friendship segregation in America. *American Journal of Sociology, 107*, 679. <https://doi.org/10.1086/338954>.
- Oklahoma City Board of Education v. Dowell, 498 U.S. 237 (1991).
- Orfield, G., Frankenberg, E., Ee, J., & Kuscera, J. (2014). Brown at 60: Great progress, a long retreat and uncertain future. The Civil Rights Project/Proyecto Derechos Civiles. Retrieved from <https://civilrightsproject.ucla.edu/research/k-12-education/integration-and-diversity/brown-at-60-great-progress-a-long-retreat-and-an-uncertain-future/Brown-at-60-051814.pdf>.

- Orfield, G., & Frankenberg, E. (2014). Increasingly segregated and unequal schools as courts reverse policy. *Educational Administration Quarterly*, *50*, 718–734.
- Plessy v. Ferguson, 163 U.S. 537 (1896). Retrieved from <http://supreme.justia.com/cases/federal/us/163/537>.
- Reardon, S. F., Grewal, E., Kalogrides, D., & Greenberg, E. (2012). “Brown” fades: The end of court-ordered school desegregation and the resegregation of American public schools. *Journal of Policy Analysis and Management*, *31*, 876–904. <https://doi.org/10.1002/pam.21649>.
- Reardon, S. F., & Owens, A. (2004). 60 years after Brown: Trends and consequences of school segregation. *Annual Review of Sociology*, *40*, 199–218. <https://doi.org/10.1146/annurev-soc-071913-043152>.
- Rumberger, R., & Palardy, G. (2005). Does segregation still matter? The impact of student composition on academic achievement in high school. *Teachers College Record*, *107*, 1999–2045.
- Wagner, C. (2017). School segregation then and now: How to move toward a more perfect union. Center for Public Education. Retrieved from http://www.centerforpubliceducation.org/system/files/School%20Segregation%20Full%20Report_0.pdf.

Integrative Complexity

Vera Békés^{1,2} and Peter Suedfeld³

¹Ferkauf Graduate School of Psychology, Yeshiva University, Bronx, NY, USA

²School of Psychology, Laval University, Montreal, QC, Canada

³Department of Psychology, University of British Columbia, Vancouver, BC, Canada

Synonyms

Cognitive complexity; Cognitive structure; Cognitive style; Conceptual complexity; Conceptual systems; Flexibility; Interactive complexity; Metacognition; Meta-complexity; Wisdom

Definition

Integrative complexity (IC) refers to the structure of information processing, independently of its content. It entails two aspects: differentiation and integration, where differentiation refers to the

extent of perceiving a variety of dimensions and perspectives when considering an issue, whereas integration is a capacity to create conceptual connections among these different dimensions and perspectives.

Introduction

IC is unique among cognitive complexity formulations in that it does not only consider the amount of different information, perspectives, or dimensions noticed and processed regarding one issue (differentiation) but also incorporates perceiving the connections among these divergent dimensions (integration). These recognized connections may be interactions, trade-offs, synthesis, or belonging under a unifying schema. IC thus only refers to the structure of thinking and not its content; it considers *how* people think about an issue, independently of *what* they think about it. Consequently, any idea can be expressed at any level of IC (Suedfeld 2010).

In general, low IC is characterized by rigid, black-and-white thinking, intolerance for ambiguity and uncertainty, a desire for rapid closure, and not recognizing the validity of other viewpoints. Conversely, high IC is marked by flexible, broad thinking that recognizes multiple aspects and possible interpretations of an issue and sees connections and dynamic tensions between perspectives (Suedfeld 1985).

IC, Intellect, and Personality

Despite the required cognitive capacity to perform interactively complex thinking, the association between IC and intelligence has been found to be weak. Instead of an aspect of intelligence, IC is better conceptualized as a thinking style that involves high levels of information search, flexibility, and tolerance for ambiguity, for uncertainty, and for lack of closure (Suedfeld 2010). IC has been found to be associated with divergent thinking (Suedfeld and Coren 1992) and to certain personality characteristics, such as openness, creativity, and relative lack of compliance and

conscientiousness (Tetlock et al. 1993). Individuals with high IC have been found to be more extraverted, gregarious, and socially adept, motivated to seek power (Coren and Suedfeld 1995), and less authoritarian and dogmatic (Schroder et al. 1967).

The perception of those with high IC varies. Generally they are seen as moderate, independent, and flexible with good social, decision-making, and information processing skills, high in initiative and self-objectivity (Tetlock et al. 1993). However, they might also appear as procrastinators, overly anxious (Coren and Suedfeld 1995), antagonistic, and even narcissistic (Tetlock et al. 1993).

IC and Political Views

There is strong evidence for an association between political preferences and interactively complex thinking style. Moderate political views, especially left-of-center on the political spectrum, are generally linked to more cognitive flexibility when compared to those on the right or (the further) left. One plausible explanation is that those who believe in multiple competing political values employ a more complex approach and thus demonstrate higher IC than those emphasizing one value above the others. In addition, those with less complex thinking styles may feel threatened by the prospect of living in a more open, changing, and potentially chaotic society and thus be inclined toward more conservative or extreme ideologies (Tetlock 1986).

IC and Age

Despite of suppositions about individuals becoming more sophisticated in their reasoning over the lifespan, IC and age has not been shown to be consistently associated. On the contrary, there is some evidence for a decrease in IC in older individuals (Pratt et al. 1990). A phenomenon of “terminal drop” in IC during the last few years of an individual’s life, independently of the cause of death (i.e., protracted illness or sudden death), has also been demonstrated (Suedfeld 1985; Suedfeld and Piedrahita 1984).

IC and Situational Factors

The general cognitive capacity for complex thinking has been found to be a relatively stable individual characteristic, whereas IC greatly depends on the actual situation and circumstances. Besides personal characteristics, the actual level of IC is affected by other internal factors (e.g., motivation, fatigue) as well as by external circumstances such as time pressure and perceived danger.

The level of IC demonstrated in each situation can be described based on the cognitive manager model (Suedfeld 2010). Independently of individual differences in cognitive capabilities, complex information processing requires certain psychological and material resources, such as cognitive effort, time, collecting information, and so on, and individuals have limited capacity to maintain a high level of cognitive functioning. A good cognitive manager would devote only as much complexity to a given situation as it minimally requires. Situations that are considered more important or complex will call for more cognitive investment, whereas less important or simpler situations would be solved by less cognitive effort. Accordingly, IC increases when the person tries to find a solution to a problem deemed significant, and it decreases and returns to baseline once the strategy is successful (or the problem gets otherwise resolved or becomes unimportant). However, if the problem remains unresolved, maintaining an elevated level of investment is necessary, which might eventually lead to exhaustion and the depletion in the individual’s cognitive resources and consequently to a reduction in IC. In this case, the person may become overly frustrated, tired, or stressed to continue processing the information on a high level of complexity and might perceive the situation as unsolvable, look for a simplifying strategy, or get distracted by other problems.

IC and Performance

Higher IC does not always lead to better outcomes. In fact, the optimal level of IC seems to be determined by the nature of the task. Complex

activities, intellectual tasks, and collaborative efforts, when there is no urgency, do require inter-actively complex thinking for an optimal result (Gruenfeld and Hollingshead 1993). On the other hand, some tasks can be more effectively solved by a more simplistic approach. These may be simple, insignificant, familiar, or unresolvable tasks, problems outside the control of the individual, or situations that require rapid decisions; investing cognitive resources in these cases may be unnecessary or even counterproductive (e.g., Tetlock and Boettger 1989).

IC and Life Events

Research shows inconsistent associations between various life events and levels of IC: during negative life events, IC was found to either increase or decrease, whereas positive life events were associated with higher IC or with no change in IC (De Vries et al. 1995; Suedfeld and Bluck 1993; Suedfeld and Pennebaker 1997; Suedfeld et al. 1998; Suedfeld and Granatstein 1995). The mixed results support the theory that various factors determine the level of actual cognitive investment. IC might increase during life events that appear to be controllable if one invests enough cognitive resources (such as professional challenges) and decrease when they seem to be out of the person's control and thus deemed to not be worth the personal investment (e.g., a tense political situation) and/or are prolonged and thus eventually exhaust the person's inner resources (for instance, organized persecution during the Holocaust).

IC and Political Violence

The concept of IC is most often examined and discussed in the context of political psychology. The most robust finding is that IC in speeches tends to drop when political tension grows and there is a threat of impending domestic or international violence (Suedfeld and Rank 1976; Suedfeld and Tetlock 1977). This "war crisis effect" has been consistently found to occur

during the escalation of political tension before the outbreak of wars. On the other hand, when international confrontations are resolved through peaceful negotiations, increased or at least maintained levels of IC have been demonstrated; and, interestingly, the IC level of the negotiators gets mirrored, i.e., change in one party evokes similar change in the other (Tetlock 1985).

Assessment

IC can be measured on any type of verbal text. Given the interest in political psychology among IC researchers, archival data of policy statements, speeches, diplomatic documents, and personal letters have most frequently been analyzed. The scoring system has been established by Baker-Brown et al. (1990). First the text is divided to thematic units (i.e., segments of text related to one idea, usually a paragraph in length). Several trained judges then independently rate the level of IC from 1 to 7 as it occurs in the text based on the rating manual. Although the scoring system has been found to be reliable, its application is somewhat time-consuming and labor-intensive. Applications of computerized scoring systems has been proposed (Conway et al. 2014; Young and Hermann 2014); however, despite their relatively reliable complexity scores, they are unable to assess the integration component (Suedfeld 2010).

Conclusion

The concept of IC is most often examined and discussed in the context of political psychology, but it has also been applied fruitfully to various other areas; the study of IC has increased our understanding of a wide variety of issues in political, social, and personality psychology. Research continues to focus on factors affecting differences in IC in various settings, possible procedures to facilitate changes in IC, and the implications of such changes both on the individual and group levels.

Cross-References

- ▶ [Cognitive Complexity](#)
- ▶ [Dogmatism](#)
- ▶ [Explanatory Style](#)
- ▶ [Flexibility](#)
- ▶ [Need for Closure](#)
- ▶ [Need for Cognition](#)
- ▶ [Personal Construct Theory](#)
- ▶ [Uncertainty](#)

References

- Baker-Brown, G., Ballard, E. J., Bluck, S., De Vries, B., Suedfeld, P., & Tetlock, P. E. (1990). *Coding manual for conceptual/integrative complexity*. Berkeley: University of British Columbia and University of California.
- Conway, L. G., III, Conway, K. R., Gornick, L. J., & Houck, S. C. (2014). Automated integrative complexity. *Political Psychology, 35*, 603–624.
- Coren, S., & Suedfeld, P. (1995). Personality correlates of conceptual complexity. *Journal of Social Behavior and Personality, 10*, 229–242.
- De Vries, B., Blando, J., & Walker, L. J. (1995). The review of life's events: Analyses of content and structure. In B. Haight & J. Webster (Eds.), *The art and science of reminiscing: Theory, research, methods, and applications* (pp. 123–137). Washington, DC: Taylor & Francis.
- Gruenfeld, D. H., & Hollingshead, A. B. (1993). Socio-cognition in work groups: The evolution of group integrative complexity and its relation to task performance. *Small Group Research, 24*, 383–405.
- Pratt, M. W., Pancer, M., Hunsberger, B., & Manchester, J. (1990). Reasoning about the self and relationships in maturity: An integrative complexity analysis of individual differences. *Journal of Personality and Social Psychology, 59*, 575–581.
- Schroder, H. M., Driver, M. J., & Streufert, S. (1967). *Human information processing: Individuals and groups functioning in complex social situations*. Holt: Rinehart and Winston.
- Suedfeld, P. (1985). APA presidential addresses: The relation of integrative complexity to historical, professional, and personal factors. *Journal of Personality and Social Psychology, 49*(6), 1643.
- Suedfeld, P. (2010). The cognitive processing of politics and politicians: Archival studies of conceptual and integrative complexity. *Journal of Personality, 78*(6), 1669–1702.
- Suedfeld, P., & Bluck, S. (1993). Changes in integrative complexity accompanying significant life events: Historical evidence. *Journal of Personality and Social Psychology, 64*(1), 124.
- Suedfeld, P., & Coren, S. (1992). Cognitive correlates of conceptual complexity. *Personality and Individual Differences, 13*, 1193–1199.
- Suedfeld, P., & Granatstein, J. L. (1995). Leader complexity in personal and professional crises: Concurrent and retrospective information processing. *Political Psychology, 16*, 509–522.
- Suedfeld, P., & Pennebaker, J. W. (1997). Health outcomes and cognitive aspects of recalled negative life events. *Psychosomatic Medicine, 59*, 172–177.
- Suedfeld, P., & Piedrahita, L. E. (1984). Intimations of mortality: Integrative simplification as a precursor of death. *Journal of Personality and Social Psychology, 47*(4), 848.
- Suedfeld, P., & Rank, A. D. (1976). Revolutionary leaders: Long-term success as a function of changes in conceptual complexity. *Journal of Personality and Social Psychology, 34*, 169–178.
- Suedfeld, P., & Tetlock, P. E. (1977). Integrative complexity of communications in international crises. *Journal of Conflict Resolution, 21*, 427–441.
- Suedfeld, P., Fell, C., & Krell, R. (1998). Structural aspects of survivor's thinking about the holocaust. *Journal of Traumatic Stress, 11*(2), 323–336.
- Tetlock, P. E. (1985). Accountability: A social check on the fundamental attribution error. *Social Psychology Quarterly, 48*, 227–236.
- Tetlock, P. E. (1986). A value pluralism model of ideological reasoning. *Journal of Personality and Social Psychology, 50*, 819–827.
- Tetlock, P. E., & Boettger, R. (1989). Accountability: A social magnifier of the dilution effect. *Journal of Personality and Social Psychology, 57*, 388–398.
- Tetlock, P. E., Peterson, R. S., & Berry, J. M. (1993). Flattering and unflattering personality portraits of integratively simple and complex managers. *Journal of Personality and Social Psychology, 64*, 500–511.
- Young, M. D., & Hermann, M. G. (2014). Increased complexity has its benefits. *Political Psychology, 35*(5), 635–645.

Integrative Hierarchical Model Psychopathology

Randolph C. Arnau
The University of Southern Mississippi,
Hattiesburg, MS, USA

Definition

The integrative hierarchical model of psychopathology (IHM; Mineka et al. 1998) posits a general higher-order factor (general distress) that is

common to both depressive and anxiety disorders and more specific lower-order factors that are considered to be specific and unique to specific disorders.

Introduction

The integrative hierarchical model of psychopathology (IHM; Mineka et al. 1998) is a model depicting the structure of symptoms of anxiety and depression. The model posits a general higher-order factor (general distress) that is common to both depressive and anxiety disorders, and more specific lower-order factors that are considered to be specific and unique to specific disorders and thus serve to differentiate depressive from anxiety disorders, as well as differentiate different anxiety disorders from each other. The IHM represents the current empirical consensus on the hierarchical structure of depressive and anxiety disorders. To completely appreciate the IHM, it is useful to understand the previous models of anxiety and depression symptoms from which it has been derived, including the two-factor model of affect (Watson et al. 1988), the tripartite model of anxiety and depression (Clark and Watson 1991), and the hierarchical model of anxiety disorders (Zinbarg and Barlow 1996).

Two-Factor Model of Affect

The earliest empirical research ultimately leading to the development of the Integrative Hierarchical Model was stimulated from the observed correlations between self-report measures of anxiety and depression. Thus, there was an interest in relations between anxiety and depression due to difficulty in empirically differentiating the two constructs (Watson et al. 1995). Strong correlations were found between self-report measures of anxiety and depression in clinical and nonclinical samples, and such relationships were also noted in the strong comorbidity between diagnoses of anxiety and mood disorders (Watson et al. 1995). The earliest model attempting to explain such relationships, and the structure of anxiety and depression

symptoms, was the two-factor model of affect (Watson et al. 1988). As explained by Watson (2005), the two-factor model of affect posited that negative affectivity was responsible for the robust correlations between measures of anxiety and depression and that low levels of positive affectivity (or anhedonia) was a specific feature of depression that distinguished depressive disorders from anxiety disorders. Thus, the model posited both nonspecific symptoms common to both anxiety and depression and a specific type of symptom unique to depression.

Tripartite Model of Anxiety and Depression

As research progressed on the relationships between anxiety and depression and the general symptomatology common to both constructs, the question arose as to whether there was evidence for the “existence of one or more mixed [anxiety/depression] mood disorders for inclusion in the DSM-IV” (Clark and Watson 1991, p. 316). Research addressing this question ultimately led to the development of the tripartite model. The tripartite model has earlier roots in the two-factor model of affect discussed above. A review of the literature by Clark and Watson (1991) to the initial proposal of the tripartite model in order to explain the observed strong relationships between anxiety and depression. As explained by Watson et al. (1995), the tripartite model proposed three broad groupings or factors of anxiety and depression symptoms. The first factor was termed General Distress (or Negative Affect) and contained many symptoms of both anxiety and depression which, empirically, are not specific to either depression or anxiety. For example, this factor included both anxious and depressed affect as well as symptoms such as sleeping problems, irritability, and concentration difficulties. It is this factor, within the tripartite model, which accounts for the strong correlations between measures of anxiety and depression. The second factor was Anhedonia (or lack of positive emotional experiences). Examples of symptoms that are indicators of this factor include disinterest, no

enjoyment from activities, and low energy. The Anhedonia factor was proposed to include symptoms that are unique, specific symptoms of unipolar depressive disorders. The third factor, termed Somatic Tension and Arousal, was proposed to include symptoms that are unique, specific symptoms of anxiety disorders, and included symptoms such as rapid heart rate, cold or sweaty palms, dizziness, dry mouth, and shortness of breath (Watson et al. 1995). As such, the tripartite model represented an extension of the two-factor model of affect, with the addition of the factor specific to anxiety.

Watson et al. (1995) outlined several lines of evidence that originally led to the proposal of the tripartite model. First, they reviewed evidence that the anxiety scales that had been found to have the best discriminant validity have been the ones that have items assessing somatic symptoms of anxiety rather than anxious mood. Likewise, depression scales that had been found to have the best discriminant validity were those focusing on loss of interest and pleasure, as opposed to other symptoms related to depressed mood. Second, based upon their review of studies comparing individuals with anxiety disorders to individuals with depressive disorders, they concluded that “only a small subset of symptoms reliably differentiated the patient groups” (Watson et al. 1995, p. 16). That small subset of symptoms were melancholic symptoms (e.g., loss of pleasure, early morning awakenings) and physiological manifestations of panic. Third, based upon a review of the factor analytic studies of anxiety and depression symptoms, the following three main symptom groups, which essentially are the three factors of the tripartite model, emerged: (a) general neurotic factor (identified by symptoms of anxious and depressed affect, feelings of inferiority, and oversensitivity to criticism), (b) specific depression factor (identified by symptoms of loss of interest/pleasure, crying, and suicidal ideation), and (c) specific anxiety factor (indicated by symptoms of muscle tension, shakiness, and symptoms of panic). The identification of these three factors consistent with the tripartite model, in part, led to the development of the Mood and Anxiety Questionnaire (MASQ, Watson and Clark 1991),

which was designed to directly assess these three factors, and through which use in future studies led to further accumulated evidence consistent with the tripartite model. (Watson et al. 1995).

Hierarchical Model of Anxiety Disorders

According to Barlow’s (1991) hierarchical model of anxiety disorders, despite the heterogeneity of symptoms of anxiety disorders, they all share variance with a higher-order factor that Barlow referred to as “anxious apprehension,” but that specific anxiety disorders also had a unique component that could distinguish among the different anxiety disorders. Strong empirical support for this model comes from a series of factor analyses of a battery of self-report measures that covered the broad range of features of DSM anxiety disorders as well as depressive affect. The factor analyses yielded a hierarchical solution, with 23 subscales at the lowest level of the hierarchy, six higher-order factors (generalized dysphoria, fear of fear, agoraphobia, simple fears, obsession-compulsions), and a single higher-order anxious apprehension or general distress factor (Zinbarg and Barlow 1996). Furthermore, a statistical procedure was applied to the factor solution, which shows how much variance still remained in the six lower-order factors after the variance accounted for by the general distress factor had been removed. This procedure yielded clear evidence that there was noteworthy variance accounted for at both the higher-order general factor level and the lower-order factors. Such results are consistent with the existence of both general and unique factors of anxiety symptoms. Importantly, the fit statistics indicated that this higher-order factor model was superior to a model with just six correlated factors.

Shortcomings of the Previous Models

An obvious limitation of the hierarchical model of anxiety disorders was that it modeled similarities and differences between anxiety disorders only and did not address the comorbidity between

anxiety and depressive disorders. However, it is worth noting that the higher-order “Anxious Apprehension” factor was later found to be empirically indistinguishable to the negative affectivity component of the tripartite model.

Despite extensive evidence in support of the tripartite model, there were two notable shortcomings of the model (Watson 2005). As described by Watson, one shortcoming was that it failed to account for the heterogeneity within the anxiety disorders. More specifically, the anxious arousal component of the model had proven to not be characteristic of the anxiety disorders in general, but instead had been found to represent the specific, unique component of panic disorder and posttraumatic stress disorder. The second notable shortcoming was that several studies had found that low positive affect was not only characteristic of depressive disorders, but was also associated with Social Phobia (Watson 2005).

Integrated Hierarchical Model

The Integrated Hierarchical Model represents integration of elements of the tripartite model with Zinbarg and Barlow’s (1996) hierarchical model of anxiety disorders. The following are the two major tenets of the IHM, as described by Watson (2005): (a) Each individual syndrome has both a common and a unique component, with distress or negative affectivity still posited as the common component as described by the tripartite model and (b) specific components are unique to features that distinguish the syndrome from all other syndromes. In other words, in contrast to the tripartite model where the specific component was unique to a given *class* of disorders (such as anxiety disorders or mood disorders), the IHM posits that specific components are unique to one or just a few specific disorders (such as panic disorder, major depressive disorder, or PTSD). In addition to these primary components of the IHM, Watson (2005) describes several other noteworthy points about the model. First, the size of the general and specific components differs to a noteworthy degree across specific disorders. In other words, the amount of variance in the specific

disorder symptomatology capture by the general and specific factors varies across the disorders. For example, Watson pointed out that major depression and generalized anxiety disorder both contain a significant amount of the general distress variance (and thus can be referred to as “distress-based disorders”), whereas other anxiety disorders such as social phobia and specific phobia capture relatively less of the general distress variance (Watson 2005, p. 528). Another important point of the model is that the general negative affect factor is not restricted to just mood disorders and anxiety disorders, but rather characterizes many other psychological disorders as well. Finally, another important point is that the *specificity* of the specific factors unique to particular disorders is based on more relative terms. As Mineka et al. (1998) put it, it is “... highly unlikely that any group of symptoms will be found to be unique to a single disorder across the entire DSM” (p. 398).

Further Supporting Evidence for the Integrated Hierarchical Model of Psychopathology

There are a number of accumulated sources of empirical evidence for the IHM. A series of confirmatory factor analyses of the DSM-III-R diagnoses from the National Comorbidity Survey (NCS) yielded evidence for a 3-factor model as the best fit to the data (Krueger 1999). The three factors were externalizing (including alcohol dependence, drug dependence, and antisocial personality disorder), anxious-misery (including major depressive disorder, dysthymia, and GAD), and fear (including panic disorder, agoraphobia, social phobia, and simple phobia). The Anxious-Misery and Fear factors were strongly correlated and thus yielded a higher-order “Internalizing” factor. It is noteworthy that GAD factored with depression and not the other anxiety disorders, which is consistent with the IHM as GAD as seen a “distress-based” disorder from the IHM, given the relatively large amount of variance shared with the general negative affect factor. In addition, this three-factor model was reported to fit the data better than a model based

upon the DSM classifications. It is also notable that a study of the structure of genetic risk for psychological disorders (Kendler et al. 2003) yielded a remarkably similar structure as that reported by Krueger (1999), thus providing evidence for the utility of the IHM for both phenotypic and genotypic representations of psychopathology. Another study utilizing the NCS data further evaluated the role of negative affectivity as a factor common to depression and anxiety in a nonclinical sample. Participants were classified as having pure depression, pure anxiety, or comorbid anxiety and depression. Consistent with predictions from the IHM, levels of negative affectivity in the “pure depressive and pure-anxiety groups did not significantly differ from one another,” but both were higher than a control group with no psychological disorders (Weinstock and Whisman 2006, p. 71). Importantly, the group with the comorbid anxiety and depressive disorders had significantly higher levels of negative affectivity than the depression-only and anxiety-only groups. An evaluation of the IHM has also been conducted using adolescents. A series of factor analyses of a broad battery of measures of anxiety and depressive symptoms in adolescents yielded evidence for a clear 3-level hierarchical structure (Prenoveau et al. 2010). The model included a general distress factor at the broadest level of the hierarchy, two intermediate breadth factors (Fears and Anxious-Misery) at the middle level, and five specific factors (depression, social fears, fears of specific stimuli, Interoceptive/agoraphobic fears, and anxious arousal/somatic tension) at the lowest level (Prenoveau et al. 2010). Importantly, this factor model was found to be stable over a 1-year period and was also found to be equivalent across men and women.

Conclusions

The Integrative Hierarchical Model of Psychopathology addresses shortcomings of previous models, proposing a general distress, or negative affectivity higher order factor common to anxiety and depressive disorders, as well as unique, or specific components that distinguish the various mood and anxiety disorders from one another.

Empirical evidence supports the validity of the Integrative Hierarchical Model of Psychopathology, including factor analytic studies using the large NCS dataset.

References

- Barlow, D. H. (1991). The nature of anxiety: Anxiety, depression, and emotional disorders. In R. M. Rapee & D. H. Barlow (Eds.), *Chronic anxiety: Generalized anxiety disorder and mixed anxiety-depression* (pp. 1–28). New York: Guilford Press.
- Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology, 100*, 316–336.
- Kendler, K. S., Prescott, C. A., Myers, J., & Neale, M. C. (2003). The structure of genetic and environmental risk factors for common psychiatric and substance use disorders in men and women. *Archives of General Psychiatry, 60*, 929–937.
- Krueger, R. F. (1999). The structure of common mental disorders. *Archives of General Psychiatry, 56*, 921–926.
- Mineka, S., Watson, D., & Clark, L. A. (1998). Comorbidity of anxiety and unipolar mood disorders. *Annual Review of Psychology, 49*, 377–412.
- Prenoveau, J. M., Zinbarg, R. E., Craske, M. G., Mineka, S., Griffith, J. W., & Epstein, A. M. (2010). Testing a hierarchical model of anxiety and depression in adolescents: A tri-level model. *Journal of Anxiety Disorders, 24*, 334–344.
- Watson, D. (2005). Rethinking the mood and anxiety disorders: A quantitative hierarchical model for *DSM-V*. *Journal of Abnormal Psychology, 114*, 522–536.
- Watson, D., & Clark, L. A. (1991). *The mood and anxiety symptom questionnaire*. Unpublished manuscript. Iowa City: University of Iowa.
- Watson, D., Clark, L. A., & Carey, G. (1988). Positive and negative affectivity and their relation to anxiety and depressive disorders. *Journal of Abnormal Psychology, 97*, 346–353.
- Watson, D., Clark, L. A., Weber, K., Assenheimer, J. S., Strauss, M. E., & McCormick, R. A. (1995). Testing a tripartite model: II. Exploring the symptom structure of anxiety and depression in student, adult, and patient samples. *Journal of Abnormal Psychology, 104*, 15–25.
- Weinstock, L. M., & Whisman, M. A. (2006). Neuroticism as a common feature of the depressive and anxiety disorders: A test of the revised integrative hierarchical model in a national sample. *Journal of Abnormal Psychology, 115*, 68–74.
- Zinbarg, R. E., & Barlow, D. H. (1996). Structure of anxiety and the anxiety disorders: A hierarchical model. *Journal of Abnormal Psychology, 105*, 181–193.

Integrative Processes

- ▶ [Coherence of Personality](#)

Intellect

- ▶ [Intelligence](#)

Intellectual Involvement

- ▶ [Typical Intellectual Engagement \(TIE\)](#)

Intellectual Talent

- ▶ [Intelligence](#)

Intellectualization (Defense Mechanism)

Laura Cariola
University of Edinburgh, Edinburgh, UK

Synonyms

[Rationalization](#)

Definition

Intellectualization as a psychodynamic defense mechanism refers to an emphasized focus on facts, logic, and abstract reasoning to assert control over and reduce unpleasant emotions associated with internal or external events.

Introduction

The notion of intellectualization was originally introduced by Anna Freud (1936) in *The ego*

and the mechanisms of defence. Here, Freud conceptualized intellectualization, alongside asceticism and object love, as a defense against fear of the developing sexuality during puberty. The adolescent may have an increase interest in abstract subjects and discussion, such as religious and philosophical topics that avoid bodily sensations and conflicting emotions. Such intellectual processes in adolescents represent their experiences of instinctual conflicts, and the aim is to balance freedom and restraint in order to appropriately express bodily and sexual impulses.

According to Freud (1900, 2001a), the intellectual focus on rational thought draws on the primary-secondary process dichotomy. The primary process refers to the infantile and irrational “id” state that acts upon the pleasure principle as a means of increasing feelings of satisfaction and discharging unpleasant free-floating energies and tensions of the unconscious through the employment of wish fulfillment, whereas the secondary process is characterized by formal logic and adaption to social conventions (Rycroft 1995). In intellectualization, the excessive use of the secondary process is used as a defense mechanism to selectively repress uncomfortable emotions from conscious awareness.

The primary process is particularly active in dream states, where unconscious material and imagery floats freely. Upon awakening, the dream content is selectively distorted and blocked from recall due to the logic of the secondary process in conjunction with operating defense mechanisms that restrains the conscious mind from acknowledging the chaotic parts of unconscious knowledge (Freud 1923, 2001b). In *Negation*, Freud (1925, 2001c) discusses the use of intellectualization in psychoanalytic dream work. Freud demonstrates that the awareness of unconscious material is only conditionally accepted as a repressed part, through the use of negation in which the intellectual function is separated from its affective process components. For example, ““you ask who this person in the dream can be. It’s *not* my mother. We amend this to: “So it *is* his mother”” (Freud 1925, see 2001c, p. 235). In psychoanalytic interpretation, the negation of the relevance of the identified object is disregarded in favor of the subject matter as an association. Then,

the patient's utterance is equivalent to "It's true that my mother came into my mind as I thought of this person, but I don't feel inclined to let the association count'" (Freud 1925, see 2001c, p. 235). In this sense, intellectualization makes use of isolation, where experiences are deprived of emotions and related associations (Quinodoz 2004, p. 221).

Intellectualization in the Hierarchy of Defenses

Vaillant (1992) established a hierarchy of defenses in which intellectualization is classified as a neurotic defense mechanism. Here, intellectualization is described as a systematic and excessive use of abstract thought, generalizations, and logical explanations as both protection against experiencing threatening emotions and to prevent the expression of unacceptable impulses. Emotions and feelings tend to be analyzed and experienced logically and philosophically as abstract ideas, rather than experiencing them. Vaillant (1992) also differentiates between intellectualization and rationalization, of which the former assumes justifications of irrational behavior through the use of clichés and simplified explanations. Intellectualization is associated with a cluster of sub-defenses, including isolation, ritual, undoing, restitution, magical thinking, and busywork (Vaillant 1992, p. 247). Intellectualization also includes an increased focus on inanimate objects to avoid interpersonal intimacy, attention on external reality to avoid awareness of internal feelings, and a focus on irrelevant details to avoid perception of the whole (p. 247). Although intellectualization is commonly used to enrich knowledge and insight without leading to difficulties or problems, dysfunctional use of intellectualization can lead to obsessive-compulsive and paranoid symptoms.

Intellectualization and Alexithymia

Similar to intellectualization, the inability to show or verbalize emotions has been also identified as a

defining symptom of alexithymia. Alexithymia literally means "no words for emotion" and represents a disorder which involves difficulties in expressing emotions (Sifneos 1972). Although Taylor et al. (1997) identified strong to weak positive correlations between alexithymia and immature defenses, neurotic defenses, and mature defenses, alexithymia represents a complex construct, and further research needs to be conducted to identify to what extent alexithymia can be conceptualized as a defense mechanism akin to intellectualization.

Conclusion

Although intellectualization can represent an adaptive function to accumulate knowledge and enrich intelligence in everyday life, from a psychodynamic perspective, intellectualization can also be used as a defense mechanism by isolating uncomfortable emotions and impulses from conscious awareness.

Cross-References

- ▶ [Conscious, Preconscious, and Unconscious](#)
- ▶ [Defense Mechanisms](#)
- ▶ [Psychoanalysis](#)
- ▶ [Psychodynamic Perspective](#)
- ▶ [Rationalization \(Defense Mechanism\)](#)
- ▶ [Undoing \(Defense Mechanism\)](#)

References

- Freud, A. (1936). *The ego and the mechanisms of defence*. London: Hogarth Press and the Institute of Psychoanalysis.
- Freud, S. (2001a). *The interpretation of dreams*, S. E. 4. London: Hogarth Press. (Original work published 1900).
- Freud, S. (2001b). *Remarks on the theory and practice of dream-interpretation*, S. E. 19 (pp. 109–121). London: Hogarth Press. (Original work published 1923).
- Freud, S. (2001c). Negation. In: *The ego and id and other works*, S.E. 19 (pp. 235–239). London: Hogarth Press. (Original work published 1925).
- Quinodoz, J.-M. (2004). *Reading Freud. A chronological exploration of Freud's writings*. London: Association with Institute of Psychoanalysis.

- Rycroft, C. (1995). *A critical dictionary of psychoanalysis*. London: Penguin Books.
- Sifneos, P. E. (1972). *Short-term psychotherapy and emotional crisis*. Cambridge, MA: Harvard University Press.
- Taylor, G., Bagby, R., & Parker, J. (1997). *Disorders of affect regulation*. Cambridge, UK: Cambridge University Press.
- Vaillant, G. (1992). *Ego mechanisms of defense: A guide for clinicians and researchers*. Washington, DC: American Psychiatric Press.

Intelligence

Charlie L. Lucian Reeve
Health Psychology, University of North Carolina-Charlotte, Charlotte, NC, USA

Synonyms

Cognitive ability; Cognitive aptitude; General cognitive ability, g; Intellect; Intellectual talent; Mental ability

Definition

“Intelligence” is a generic term encompassing a tightly knit network of constructs including cognitive abilities, cognitive skills, acculturated knowledge, etc. Within this network, there are two major components of “intelligence” that are distinguishable and amenable to precise operational or empirical descriptions: (a) the *ability to learn* new things and solve novel problems (i.e., abilities; fluid intelligence) and (b) the *outcomes of learning*, namely, the achievement of acquired knowledge and skills that are dependent on prior experience within a specific cultural context (i.e., developed intellect; crystallized intelligence). General cognitive ability, or g which is the core of intelligence, is formally defined as the “education of relations and correlates” (Jensen 1998; Reeve and Bonaccio 2011; Spearman 1927), that is, the ability to infer or deduce meaningful principles and concepts from abstractness and novel situations.

Introduction

The scientific study of intelligence can be traced back to Galton’s theorizing about individual differences in intellectual achievements in the late 1800s. In the intervening 130 years, the science of mental abilities (that is, the study of intelligence) has been exceedingly successful as a scientific effort, amassing a wealth of empirical data concerning a number of exciting and interesting issues surrounding the nature and development of intelligence, the source of individual and group differences, and the broad and lasting impact of such differences on personal, educational, occupational, and social outcomes. Further, it was the attempt to measure and understand the structure of human intelligence that spurred much of the early work in measurement theory and psychometrics. Indeed, it has been said that these quantitative methods have made the largest contribution to the advancement of psychology as a scientific enterprise, a belief well summarized by Guilford (1954) who stated that “No other contribution of psychology has had the social impact equal to that created by the psychological test. No other technique and no other body of theory in psychology has been so fully rationalized from the mathematical point of view” (p. 341).

Defining “Intelligence” as a Nomological Network

Despite common usage of the term “intelligence,” the attempt to ascribe a universally agreed-upon verbal definition has been futile. Hundreds of specific verbal definitions exist. While a few observers have taken this to mean that intelligence is not well understood, Gottfredson (2009) elegantly pointed out that the debate about a verbal definition of intelligence is a distraction from our empirical understanding of it. Indeed, the term “intelligence” is best thought of as referring to a domain of related constructs (e.g., cognitive abilities, cognitive skills, knowledge) rather than referring to any specific construct within this nexus (Jensen 1998; Reeve and Bonaccio 2011). From this perspective, one can see that it is

somewhat silly to obsess over a universally agreed-upon verbal definition of such a broad domain. It would be equivalent to the attempt to find a universally agreed-upon definition of “stress” or “leadership.” Rather, it is more useful to study and define the specific constructs within this network as they are amenable to precise operational and empirical definitions, and thusly amenable to scientific study.

So what is this domain of “intelligence?” First, it is widely agreed that there are two major components of “intelligence”: (a) the *ability to learn* new things and solve novel problems (i.e., mental abilities, fluid intelligence) and (b) the *outcomes of learning*, namely, the achievement of acquired knowledge and skills that are dependent on prior experience within a specific cultural context (i.e., knowledge, developed intellect, crystallized intelligence). This core distinction is seen in all scientific models of intelligence.

Mental Abilities

Carroll (1993) defines the concept of an “ability” as the underlying source of variance (i.e., a latent trait) in performance on a coherent class of tasks. Jensen (1998) adds that to infer the existence of an ability from observed performance, the performance must (a) exhibit some specified degree of temporal stability (i.e., be repeatable or show consistency over some time interval), (b) the performance can be objectively evaluated in some manner of proficiency (e.g., running a given distance in 10 s is faster than 15 s; the question “ $2 + 2 = ?$ ” has a single correct answer), and (c) has some degree of generality (the performance can be repeated across similar but different situations).

Mental abilities (aka, cognitive abilities) are thus reflected in performance on tasks that require one to mentally process, comprehend, and manipulate information. Examples might include such things as the ability to reason deductively or inductively, grasp general principles from observing behavior of objects, mentally rotate objects in one’s mind, quickly and accurately comprehend what one is reading, and deal effectively with mathematical concepts. Additionally, a cognitive capacity can be said to be an ability (rather than a

skill or knowledge) to the extent that it is relatively stable over time and predicts the acquisition of new skills or knowledge but is itself relatively resistant to training or explicit education. Further, abilities, like virtually all scientific concepts, are posited to be latent constructs. The observed performance on mental tasks is simply the manifestation of a given ability. This is why performance across different types of mental tasks are correlated; although the surface level features of the task may change, they are largely denoting the same abilities. For example, consider that individual differences in performance on tasks such as verbal analogies, vocabulary, reading comprehension, and sentence completion are consistently and strongly correlated. If one were to posit that each task reflects a separate and specific skill that is entirely learned, it would be difficult to explain what evolutionary or societal mechanism would lead to consistent rank-ordering in the development of each skill across populations, cultures, and time. On the other hand, it is theoretically more parsimonious to posit a verbal reasoning ability that is the underlying explanation for correlated performances.

Although it is not uncommon to hear critics and the popular press question the utility of general mental abilities as scientific constructs, a broad array of psychometric (e.g., Carroll 1993), biological and neurological (e.g., Haier 2009), and evolutionary (e.g., Kanazawa 2004), research has given rise to a broad consensus among experts (see Gottfredson (1997) and Reeve and Charles (2008) for reviews) that mental abilities are not just statistical artifacts and that they have a significant and meaningful influence on important real-world outcomes. Further, attempts to increase IQ scores or the *g*-factor itself have largely been unsuccessful, with any increase in observed scores quickly fading out (Protzko 2015), confirming that the constructs we have labeled as abilities follow the criteria set forth.

Knowledge and Skills

The Merriam-Webster dictionary defines knowledge as (a) the fact or condition of knowing something with familiarity gained through experience or association, (b) the range of one’s information

or understanding, and (c) the circumstance or condition of apprehending truth or fact through reasoning. Similarly, as a psychological construct, knowledge reflects those specific facts, concepts, and ideas that a person has learned through personal experience (e.g., via study, investigation, observation) within a specific cultural context. Thus, whereas abilities refer to general capacities for learning and solving novel problems, knowledge refers to the acquired and retained information that can be stored in memory and recalled later for use in domain-specific situations. Similarly, “skills” are reflected by proficiency in executing the sequence of responses required by a specific task. Like knowledge, mental skills are those capacities involved in the comprehension or apprehension of information that are acquired and improved by instruction, practice, or manipulation.

Admittedly, the distinctions between abilities, skills, and knowledge are somewhat a matter of degree and often denote contrasting points of emphasis rather than indicating qualitatively distinctions. The key features emphasized to make the demarcation are (a) the degree of generality and (b) sensitivity to training. Abilities are typically denoted by their domain generality, whereas skills and knowledge are denoted by their domain specificity. To the extent that a behavioral capacity generalizes across domains and, in particular, to novel content, we can consider it as reflecting an underlying ability. The more a behavioral capacity seems to be limited to a specific type of task or context, and is dependent on practice or training, we can think of it as reflecting an acquired skill or knowledge.

Approaches to the Study of “Intelligence”

Historically, there are two general approaches to the study of intelligence that correspond somewhat (but not entirely) to the distinction between basic abilities on the one hand and the development of acquired skills and knowledge in context on the other hand. The first approach, commonly referred to as the *psychometric tradition*, focuses

on the number and nature of basic cognitive abilities. This approach has largely relied on the use of quantitative methods such as factor analysis and multidimensional scaling to identify the abilities that account for the pattern of correlated performances across various mental tasks. In contrast, others have taken a more developmental or holistic perspective, often focusing on the nature of acquired intellect.

Although some scholars continue to see these approaches as competing, others have noted the natural synergy and have made important advances in the development of theories that better integrate the various pieces of the network of intelligence (e.g., Ackerman 1996; Cattell 1943). For example, Horn (1968) advanced the Cattellian *Gf/Gc* theory based on the premise that it provides a meaningful framework to integrate the psychometric models with developmental and process theories. More recently, Ackerman’s (1996) PPIK theory stands as a prime example of the potential natural synergy between these approaches that gives rise to a more complete understanding of “intelligence” and its connections to other individual difference domains. Nonetheless, because these two schools of thought have tended to focus on different constructs (abilities vs. developed knowledge and skills), and have tended toward independent histories, they are discussed separately below.

“Intelligence” as Cognitive Abilities: Psychometric Models

The debate over the psychometric structure of cognitive abilities is perhaps one of the most storied in differential psychology. At the risk of oversimplifying this voluminous history, the debate largely centered on the question of whether there is just a single, general cognitive ability or many independent specific abilities. Although there is not a universally accepted model of abilities, most experts today accept some form of a hierarchical model of abilities with a single general cognitive ability factor at the apex, referred to as *g* or “general mental ability,” in large part due to the exhaustive work of John Carroll (1993).

Below this general factor, there are a small number of specific abilities (also referred to as

“group factors”); each of these abilities in turn subsumes a large number of task-specific skills reflecting the effects of experience and learning (Carroll 1993). Different models arrange the number and nature of the lower strata in different ways. Some define the second level with eight to ten abilities, whereas others appear to define an intermediate strata with three broad ability types typically reflecting verbal, quantitative (or perceptual), and visual-spatial ability (e.g., Johnson and Bouchard 2005). Perhaps the most well-integrated model is McGrew’s (1997) conceptual synthesis known as the Carroll-Horn-Cattell (CHC) model.

The *g* Factor

Although there are several specific abilities (e.g., quantitative reasoning; visual-spatial perception; cognitive speed), no other psychometric question has been scrutinized and empirically tested more than the existence of *g*. And the evidence is unequivocal: There is a *g* factor that underlies all human mental functioning and accounts for the majority of between person performance differences on cognitive tasks. Some choose to pictorially show this as a higher-order, treelike structure, whereas others prefer to show it as a bi-factor model with *g* directly influencing the specific behaviors (the difference is semantics; these models are mathematical transformations of each other).

Formally, *g* is defined as the “education of relations and correlates” (Spearman 1927; Jensen 1998), that is, the ability to infer or deduce meaningful principles and concepts from abstractness and novel situations. As Gottfredson (2009) eloquently interpreted, this means “the generalized capacity to learn, reason and solve problems in essentially any context.” Operationally, this means the *g* factor reflects the general ability to learn and use information to make appropriate decisions (i.e., solve problems in context).

Empirically, the *g* factor is reflected by the pervasive positive manifold among any set of tests or tasks that require any form of cognitive manipulation or processing of information. That is, all cognitive performances of any kind are positively correlated with each other. This

positive manifold comes about from a unique property of *g* formally known the “indifference of the indicator.” That is, unlike other psychological constructs, the surface level content or features of the item or task are irrelevant; rather, it is the degree to which the task or item requires educative reasoning (i.e., inductive and/or deductive reasoning) that determines how well it measures *g*. In addition, measurements of the *g* factor have been shown to be remarkably invariant across different test batteries, the method of factor extraction, and across racial, cultural, and ethnic groups.

Intelligence as Developed Intellect and Other Models

The alternative approach to the study of the structure of “intelligence” has typically focused on developed adult intellect. A full coverage of all of these approaches is beyond the scope of this entry; below are the approaches that are arguably the most well known and have received the most attention (either in the scientific literature or in the popular press). A key feature of many of these theories is their potential for generating useful ideas regarding how abilities and personality (or other noncognitive factors) interact within a specific cultural context to produce knowledge and skills.

One of the more popular lay theories of intelligence is Sternberg’s (1985) triarchic theory. In this model, it is claimed there are three separate, unrelated forms of intelligence: “practical intelligence,” “analytic/academic intelligence,” and “creative intelligence.” In this model, cognitive abilities appear to be largely contained within the analytic/academic category, whereas knowledge and skills are primarily contained within the other two categories. Sternberg’s description of his model clearly shows that he places more importance on the latter two categories than the former. Despite the populist appeal of this theory and claims that it discredits *g*-theory, there is little evidence to support Sternberg’s claims of three separate forms of intelligence, and nothing in the theory actually contradicts the basic conceptualization or psychometric structure of abilities as presented above. Rather, it seems to be a renaming

of existing constructs. For example, creative intelligence purportedly involves the individual's ability to respond to, and cope with, novel situations and tasks. Central to creative functioning is a concept Sternberg calls "synthetic ability," which is the capacity to generate novel ideas that are of high quality and relevant to the task. This requires three related processes: selective encoding (attending to relevant but not irrelevant information), selective combination (combining information in innovative ways), and selective comparison (combining new and old information in innovative ways). Based on this description, creative intelligence appears to capture the idea of a trait constellation, namely, the application of reasoning abilities and acquired domain-specific knowledge to task-specific demands. Consistent with this is the finding that creative thinking is moderately related to measures of reasoning ability.

Finally, Sternberg postulates a third category he calls "practical intelligence" which is defined as the ability to adapt to, and shape, one's environment. Practical intelligence is often referred to as "street smarts" or "common sense" and requires what Sternberg refers to as "tacit knowledge," meaning knowledge acquired through unstructured personal experiences with limited help from others. In addition, tacit knowledge is said to be largely procedural knowledge in that it guides context-specific performance and it is related to individuals' goals.

From a purely conceptual standpoint, Sternberg's theory appears to be consistent with the long tradition of distinguishing between abilities and knowledge and the concept that adult intellectual behavior draws heavily upon acquired knowledge and skills. However, Gottfredson (2003) noted that, as scientific concept, practical intelligence suffers from a lack of proper empirical testing and, as a theory, it ignores a century of scientific evidence regarding the nature, existence, and importance of *g*. In particular, there is a lack of empirical evidence supporting the construct validity of practical intelligence, and key claims of the theory (such as practical intelligence having larger validities than established abilities, independence of the "intelligences," etc.) have been empirically refuted.

Though not all aspects of the triarchic theory have fared well from an empirical standpoint, Jensen points out that it does draw attention to the consideration of higher-order metacognitive process such as the deployment and coordination of basic cognitive process and declarative knowledge for problem-solving within specific contexts (Jensen 1998, p. 132). Similarly, it could yet prove to be useful as a framework for understanding how different individuals invest *g* in their personal activities as affected by their particular opportunities, interests, personality traits, and motivations. Unfortunately, as Gottfredson (2003) notes, some of this potential has likely been tempered by continuing efforts to "spin illusions of a wholly new intelligence that defies the laws of evidence" (p. 392).

A contextualist view of intelligence that has received significant attention by the popular press is Gardner's theory of multiple intelligences. Gardner defines "an intelligence" as "the ability to solve problems or fashion products that are of consequence in a particular cultural setting or community" (Gardner 2006, p. 6). As such, Gardner posits the existence of eight independent intelligences corresponding to particular activities or situations, namely, linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalistic (the latter being the latest addition to the theory). Importantly, Gardner denies the existence of any positive manifold (i.e., positive correlations) in intellectual behavior.

Briefly, linguistic intelligence implies verbal fluency and its attendant issue (semantics, syntax, phonology, etc.). Logical-mathematical intelligence refers to one's reasoning ability, logic, and numerical fluency. Musical intelligence refers to musical ability and sensitivity to pitch, rhythm, and timbre. Bodily-kinesthetic intelligence refers to the ability to use one's body in expressive ways as well as the capacity to work with external entities. Spatial intelligence comprises ability to perceive objects, mentally manipulate, and reproduce them. Interpersonal intelligence is the ability to make sense of others, particularly emotions and feelings, while intrapersonal intelligence is the capacity to understand oneself, being introspective. Finally, naturalistic intelligence refers to

having empathy for, and an understanding of, nature. In more recent iterations of the theory, the two personal intelligences have been combined into one, and other possible intelligences have been advanced but not formally added to the list (e.g., existential intelligence).

Gardner's theory of multiple intelligences has been criticized on several fronts. First, many of the multiple intelligences identified by Gardner have significant intercorrelations with one another and with traditional measures of ability. Thus, the relative independence of these abilities, as originally articulated by Gardner, has been refuted. In addition, Jensen (1998) argues that many of the intelligences Gardner articulates correspond closely to the group factors (i.e., specific abilities) outlined in the previous section and many are highly *g* loaded, in particular logical-mathematical, linguistic, and spatial intelligence. Finally, it has been noted that the empirical evidence supporting the theory of multiple intelligences has been scarce at best and nonexistent at worse (e.g., Waterhouse 2006). This is, in part, due to a lack of construct clarity and nonexistent measurement devices for many of the multiple intelligences. Thus, when held to the lens of science, Gardner's theory has not fared well. Nonetheless, its populist appeal likely stems from its "holistic" perspective. Indeed, though not actual constructs in any scientific sense, many of Gardner's "intelligences" seem to correspond to lay notions of important skills or competencies (or in some cases, admirable personality traits). To the extent theories such as Gardner's encourage thinking about the development of trait constellations, they may yet prove to be of some scientific value.

Perhaps the best-known recent extension of the nomological network of intelligence is the concept of emotional intelligence (EI). Though there are various conceptualizations of EI, current thinking suggests EI involves the ability to accurately perceive and understand emotions, the ability to manage one's own emotional reactions, the ability to appraise emotions in situations and identify them in others, and the ability to use emotions for reasoning (Mayer et al. 2008). Thus, within our conceptualization of intelligence as a

nomological network, EI can likely be conceptualized as acquired or developed skills involving emotional perception and emotional understanding. In this respect, it is thought to fall at the interface of emotions and intelligence.

In terms of its scientific and practical significance, EI appears to be an important predictor of positive interpersonal relationships in both childhood and adulthood. For example, it has been reported that children and adults with higher emotional intelligence tend to feel more competent in interpersonal relationships and also tend to be perceived more positively by others. Additionally, the competencies captured by EI appear to have some practical value as revealed by correlates with work-related behaviors such as supervisory rating of performance and organizational citizenship behaviors. However, it should be noted that even proponents of EI caution that in many cases, these correlates are modest to begin with and tend to shrink even further when one controls for general mental ability and personality traits. Indeed, while EI appears to be related to teachers' *perceptions* of their students' academic ability, it is not related to actual academic achievement after controlling for differences in general mental ability and personality. Thus, while EI may have scientific significance in the sense that it captures some important aspects of socially adaptive behavior not fully represented in existing models of personality or intelligence, its practical value as an important and independent predictor of academic and occupational outcomes remains to be seen.

Like other theories that use the term "intelligence" as a distinct construct, a number of conceptual and psychometric concerns about EI have been identified. First, as noted above, EI does not appear to be intellectual ability *per se* (in the traditional sense of a cognitive ability); rather, EI is better conceptualized as an acquired competence or achievement. As such, EI likely reflects an achievement that is best thought of as the confluence of basic cognitive abilities, motivations, and personality traits. Indeed, a number of contemporary definitions (though perhaps not the most favored, c.f. Mayer et al. 2008) do in fact highlight the social competence aspect of EI. Consistent with these definitions, it has been shown that

variance on EI measures are typically well accounted for by established personality traits and verbal abilities. As such, others have conceptualized EI as a compound personality trait (e.g., Petrides et al. 2007). These latter perspectives would seem to place EI in the domain of personality rather than intelligence.

Second, from a psychometric perspective, EI has been problematic (see Conte 2005 for a detailed review). For example, if EI is to be conceptualized within the intelligence domain (i.e., as an ability or skill), then it should be amenable to assessment via *power* tests (i.e., tests containing questions that have a specified correct answer) rather than self-report forms akin to personality inventories. To date, only Mayer and colleagues have successfully developed an EI measure that appears to meet traditional psychometric standards. Perhaps most damaging, despite claims by EI proponents, EI does not seem to enhance our ability to predict important outcomes such as work and academic performance above and beyond established constructs such as a *g*, personality traits, and technical knowledge.

Drawing on earlier theories of intelligence, as well a variety of evidence regarding the central role of knowledge in adult intellectual functioning, Ackerman (1996) has proposed an investment theory of intelligence which orchestrates the concomitant influence of abilities, personality, and interests in the acquisition of knowledge and skills. In particular, Ackerman theorizes that abilities and interests develop in tandem, such that ability level determines the probability of success in a particular task domain, and personality and interests determine the motivation for attempting the task. Subsequent to successful attempts at task performance, interests in the task domain increases along with task and domain-specific knowledge. Conversely, unsuccessful attempts result in a decrement in interest for that domain and likely limit or hinder any further increase in domain-specific knowledge. Thus, individual differences in *g* and other domain-relevant broad abilities will impact the rate, depth, and sophistication of acquired knowledge, while affective (i.e., personality) and conative (i.e., interests) factors guide the allocation of those cognitive

resources toward various opportunities for particular knowledge acquisition.

The theory is called PPIK, which reflects the four central components of the theory, namely, intelligence-as-process (reflecting basic cognitive abilities), personality, interests, and intelligence-as-knowledge. In contrast to other recent theories that have struggled with conceptual problems, PPIK conceives of personality and interests as distinct from intelligence (as abilities or knowledge), yet these components function interactively to yield changes in intellect. Because of its conceptual clarity and strong empirical basis, the tenets of PPIK have been well supported by subsequent research, and it appears to coalesce with other theoretical works in the development of expertise and talent (e.g., Lubinski and Benbow 2000; Simonton 1999). For example, PPIK is consistent with research on the development of expertise, which shows that domain-specific deliberate practice to be essential (Ericsson et al. 1993). PPIK suggests that differences in domain-relevant abilities, interests, and affective tendencies are likely to create differences in the extent to which experiences within a domain afford positive reinforcement. In a complex domain, initial efforts to learn by high *g* individuals are more likely to be successful and thus evaluated as positive, interesting, and pleasurable experiences. This will bolster interest and motivation to continue to seek out and persist in opportunities for further skill acquisition within that domain, that is, to engage in and sustain deliberate practice. Thus, differences in knowledge, skill, interest, and personality associated with differences in general abilities ultimately give rise to differences in the propensity to engage in deliberate practice, which in turn give rise to differences adult intellect over the life span.

In addition to highlighting the importance of intelligence-as-knowledge as a determinant of adult intellectual performance, PPIK places heavy emphasis on understanding the coordination of cognitive, motivational, and social processes that give rise to differentiated knowledge structures. That is, theories such as PPIK provide a useful framework for understanding how a common, universal core of basic psychological characteristics function cross-culturally to give rise to culturally differentiated and personally unique adult intellects.

The Scientific Significance of g

The scientific study of the significance of intelligence, particularly concerning g , can be thought of as progressing along two dimensions; a vertical dimension exploring its biological and evolutionary origins, and a horizontal dimension exploring the breadth of its influence on human behavior. Today, this is commonly referred to as the study of the “ g -nexus.”

Evolutionary and Biological Origins: The Vertical Dimension

Research on the biological and neurological basis for g confirms that the g -factor reflects something “real” (in a physical sense) about the brain (e.g., Haier 2009). For example, g -scores have been shown to correlate with brain size and volume, complexity of average evoked potentials, nerve conduction velocity, local amount of gray matter, the integrity of white matter, metabolic rate of neurons, amount of glucose uptake, and the strength of brain activation during cognitive demands in circumscribed regions of the brain. More recently, research has shown that higher IQ scores (a highly g -loaded measure) was associated with a brain network organization that renders information processing within the brain more efficient (e.g., Hilger et al. 2017). Similarly, consistent with early predictions from Galton, Spearman, and others, modern research has confirmed that measures of g are systematically related to visual and auditory reaction time; the higher one is on g , the faster one’s reaction time. Further, the same dysgenic trend seen in IQ scores over the last century is seen in measures of reaction time as well (Woodley et al. 2013), confirming that measures of g are in fact measuring something real about intellectual functioning.

Having recognized that g reflects something physical about the integrity and efficiency of the brain and/or central nervous system, the next step was to discover its origins. Why would a species evolve a general problem-solving capacity when all adaptations are tailored to specific environmental pressures? Kanazawa (2004, 2010) has marshalled significant evidence to show that g likely evolved as a domain-specific adaptation

(like all adaptations) to solve domain-specific problems. Specifically, g likely evolved as a domain-specific mechanism to solve evolutionary novel, nonrecurrent problems and was therefore not general at all in its evolutionary origin. Its importance in modern human behavior arose simply because many elements in the natural (physical) environment are evolutionarily novel, even though much of the social (interpersonal) environment has remained the same. That is, the speed of cultural and technological innovation far exceeds the slow laborious pace of biological evolution. In fact, most evolutionary psychologists and biologists agree that humans have not undergone significant biological evolutionary changes in the last 10,000 years. Thusly, we effectively have the same biology as our ancestors who migrated out of the African savanna but live in a largely evolutionarily novel environment. Kanazawa coined the term “Savanna Principle” (also called the Savanna-IQ Interaction Hypothesis) to refer to the concept that individual differences in g should be related to evolutionarily novel behavior, but not to evolutionarily familiar behavior. For example, it has been found that differences in g are associated (negatively) with reproduction in the modern world but not with copulation. The act of copulation is clearly an evolutionarily familiar behavior (for all sexually reproducing species). However, human civilization has disconnected reproduction from copulation by the introduction of artificial means of birth control. Thusly, those of low intelligence would be predicted to have negative attitudes toward the concept of birth control and be less effective as using birth control compared to highly intelligent people. These predictions have been empirically confirmed around the world dating back to the early twentieth century.

Practical Validity of g : The Horizontal Dimension

Although there are occasional critics who attempt to question the scientific significance of g , typically arguing that g does not account for meaningful amounts of variation in important outcomes, these arguments have been shown to be vacuous and predicated on a highly selective

and biased review of the empirical literature (Kuncel and Sackett 2007). Rather, just as Spearman (1904) postulated over a century ago, empirical research has shown that this “fundamental factor” manifests itself in virtually all life functions for which intellectual activity is required. Many large-scale studies and meta-analyses from around the world have demonstrated that individual differences in g are a strong determinant, often stronger than any other single psychological trait, of an array of outcomes such as job performance and academic achievement (Kuncel et al. 2004; Salgado et al. 2003), health and mortality (Deary 2009; Gottfredson 2004), and religious beliefs (Nyborg 2009; Reeve 2009). The importance of g was perhaps best summed up by Brand (1987) who stated “ g is to psychology as carbon is to chemistry” (p. 257).

Theoretically, the predictive validity of g stems from the Savanna-IQ Interaction Hypothesis note above (Kanazawa 2010). As explained above, although g evolved as domain-specific, modular adaptation to the brain, g has become almost universally important for modern human behavior precisely because our modern civilization is largely “novel” compared to our early ancestral environment. That is, the environment in which *Homo sapiens* currently live is radically different from our “natural” environment for which we are biologically adapted. As such, g should be a strong predictor of behavior or attitudes in situations that are evolutionarily novel, that is, for behaviors for which there is not an evolved mechanism.

Academic and Occupational Outcomes

A natural place to start the empirical investigation of the real-world importance of g was with respect to academic and occupational outcomes. Indeed, the emergence of modern testing of intelligence was largely a product of educational and business needs that arose with the industrial revolution and migration of humans from a predominantly agrarian lifestyle to that of urban centers. Since that time, a wealth of data has confirmed that g is predictive (at levels of both theoretical and practical significance) of individual differences in a wide range of academic and occupational

outcomes (Kuncel et al. 2004). In these domains, g has been shown to be the best single predictor of job training performance and technical job performance. Indeed, there appears to be no job in the modern economy for which g is not at least a moderately strong predictor of technical performance. For example, meta-analytic estimates place the average predictive validity of g for technical job performance (and job training) across all jobs in the US economy to be around 0.50–0.60. This finding has been replicated in the European Union and Asian economies. The exact value does vary depending on the cognitive complexity of the job in question. More complex jobs are better predicted by g than less complex jobs. For example, the correlation between g and technical performance for managerial and many information-dependent white-collar jobs is typically in the range of 0.50–0.61. By contrast, the correlation for manual labor jobs is typically around 0.25. While this is smaller by contrast, it is still at or above the maximum level of prediction seen by many other traits (e.g., personality).

In addition, g maintains its predictive validity across experience levels. In fact, some studies show that the predictive validity of g increases as experience increases. At first, this may seem counterintuitive; after all, people with more experience have had the opportunity to learn more and hence acquire greater levels of job-specific knowledge and skills (i.e., crystallized intelligence). All things being equal, an employee with greater experience will perform better than an inexperienced employee. However, all things are not equal. It is the ability to profit from experience that is of importance; and g essentially reflects the ability to learn from experience. As such, we see that those with higher “ g ” learn faster; thus as experience increases, differences in knowledge and skills, due to g , become increasing exaggerated.

Finally, g has also been shown to be associated with occupational mobility and career success. Referred to as “gravitational effects,” research shows that people migrate up and down the occupational complexity ladder as a function of g . Those with higher g tend to move up to more and more complex occupations over time (which typically are also more lucrative occupations),

whereas those with lower g tend to move downward until they settle in at a level where the cognitive complexity of the job matches their ability to handle that complexity.

Health Outcomes

The recent emergence of cognitive epidemiology as an independent subfield of study has made salient the important influence of intelligence on health for individuals and communities. To date, it has been well established that cognitive ability is associated with mortality and morbidity. Evidence shows that individual differences in g are associated with lower depression scores, better general health, and significantly lower odds for stroke, congestive heart failure, chronic lung disease, heart problems, and hypertension later in life (Deary 2009). Although the specific ways by which ability might influence mortality and morbidity are still being elucidated, a promising pathway is the effect on day-to-day health decisions. For example, it has been shown that measures of g predict health behaviors such as amount of physical activity, eating fruits and vegetables, taking vitamins, and smoking. In addition, research has shown that g is associated with the odds of engaging in preventative health services (e.g., prostate exam, mammogram). It has been posited that these relations are evidence that individuals with higher levels of g have increased capacity for reasoning, learning, and problem-solving, thus enabling them to better comprehend and translate information about health into positive health behaviors (e.g., Gottfredson 2004).

Importantly, cognitive ability is not only important for individuals but for communities as well. At the aggregate level, cross-sectional studies have shown that average levels of IQ of communities (e.g., city, state, region, country) are positively associated with rates of the receipt of preventive health services such as immunizations, mammograms, colonoscopies, and annual dental care (e.g., Reeve and Basalik 2010). Similarly, Reeve (2009) found that, independent of national wealth and rates of religiosity, IQ has a positive influence on national health as indicated by fertility rate, infant mortality rate, maternal mortality rate, deaths due to HIV/AIDS, and life expectancy.

The reason for these aggregate-level associations are not yet fully understood, but there are two leading explanations. First, part of the effect may be a simple aggregation effect. That is, if g is an important determinant of individual behavior, it follows that groups with a higher central tendency on g will also display better average outcomes than groups with lower central tendencies. But another reason may be the importance of g among community leaders and policy makers. Gottfredson notes that these relations may extend to the national level because national IQ may correlate with the effectiveness of government based on decisions made by elected individuals, a prediction that appears to have been confirmed by the recent results regarding IQ associations with government effectiveness, economic freedoms, democratic institutions, rule of law, and political freedoms. Known as “Smart Fractions Theory” (Rindermann et al. 2009), this perspective places importance not on the average intelligence of a community but the intelligence level of the top fraction (e.g., top 5%, top 1%,) should be mainly responsible for the progress of a society in technological, economic, political, and cultural development. According to this perspective, societies with smarter top fractions will likely have leaders who make better public policy decisions.

Other Correlates

Other research has begun to confirm a prediction from the Savanna-IQ Interaction Hypothesis, which is that g should predict adherence to evolutionarily novel attitudes and beliefs as well as behavior. Chief among these has been the study of religiosity. Though rarely publicized in US literature or media, there is a long history of research documenting a negative correlation between intelligence and religiosity, as measured via a variety of indices (e.g., atheism, fundamentalism, literal acceptance of scriptures, etc.). This negative relationship between intelligence and religiosity has been documented at both the individual and group level.

Though there are a number of complexities and important distinctions, it has been posited that religion may provide a “comprehensive meaning

system” through which individuals interpret, evaluate, and respond to the world. Nyborg (2009) suggests that this cognitive stratification occurs because people gravitate toward belief systems that provide a match with their level of cognitive complexity (i.e., the same gravitational effects seen in occupational mobility). Similarly, it has been hypothesized that lower-ability individuals are less likely to have the capacity for critical and abstract thought and thus subscribe to religious orthodoxy as a means to find “uncontested and uncontested answers.” Consistent with this, evidence shows that religious affiliations are stratified by IQ and this stratification corresponds to the degree of religious orthodoxy and dogmatism (Nyborg 2009). Likewise, ability was negatively associated with literal acceptance of religious scriptures and sectarianism and positively related to religious questioning. At the aggregate level, populations with higher average intelligence are likely to gravitate away from religious social conventions and toward more rational or liberal sociopolitical systems. In contrast, populations with deficient cognitive capital are likely to adhere to social systems that provide scripted and easily comprehended belief systems that act as a substitute for a rational, scientific (and often cognitively complex) meaning system.

In addition to religiosity, a recent resurgence of research examining a dysgenic trend has emerged. As was noted above, it has long been known there is a negative correlation between g and the number of offspring produced. Although the effect seems to be stronger among women than men (likely due to the differential resource load during gestation), the effect has been confirmed in populations from around the world. Further, it has been shown that the effect is essentially linear across the entire IQ gradient. The resultant effect of this is that the human population is in a dysgenic trend; the worldwide IQ is trending downward from one generation to the next because larger numbers of lower-IQ people reproduce and do so earlier and more often, than higher-IQ people. In addition to the reasons noted above (evolutionary novelty of birth control), it is also thought that the acceptance of more liberal or progressive attitudes by higher-IQ individuals

may play a role. That is, the “value” placed on a large family is an evolutionary holdover; large numbers of offspring are no longer required to secure resources and ensure survival of one’s genetic information. In the modern world, larger numbers of offspring convey an economic disadvantage rather than advantage, and the delay in reproduction until later in life provides the individual with more opportunity to gain an education and establish a career.

Predictive Validity of Narrow Abilities

Unlike g , the predictive validity of narrow abilities or other aspects of intelligence is tied more closely to the nature of the criterion or criteria that one seeks to predict. Thus, it is more difficult to speak of generalized findings regarding the predictive validity of narrow abilities. In addition, given the robustness of g ’s predictive validity, the value of narrow abilities has typically been gauged by their incremental validity. That is, to merit attention as practically significant, it has been argued that the incremental contribution of narrow abilities, above and beyond g , should be substantial, reliable (i.e., repeatable and generalizable), and related to meaningful outcomes. However, even the most optimistic interpretation of the existing empirical literature on narrow abilities would likely fall short of meeting this standard for practical significance. That is, narrow abilities typically do not add significant amounts of incremental predictive validity above and beyond g in the prediction of academic or technical job performance. For example, after accounting for the variance due to g , the inclusion of the set of narrow abilities typically increases the correlation with technical job performance by less than .05. Thus, the narrow abilities, despite their psychological significance, may only have practical significance in situations where the range of general ability has been restricted (e.g., among a group of doctoral graduate students, where pre-screening produces significant range restriction in g), or there is a single, domain-specific criterion to be predicted (i.e., development of reading skills).

On the other hand, there are times when one is less interested in predicting between-person differences in performance and more interested in

matching an individual person's profile of narrow abilities (i.e., their relative strengths and weakness) with the narrow ability demands of the work or educational environment. This corresponds to the dominant perspective within the vocational counseling literature. Indeed, it is well known that g is an insufficient as a "sole" resource for job performance (you need more than just g); occupations display distinct patterns demands that relate to narrow abilities and other aspects of intelligence as well as personality. As such, the assessment of within-person differences in narrow abilities may be especially useful in personnel classification, academic, and career counseling. As an important example, the work of Lubinski and colleagues has shown that "ability-tilt" (the intraindividual difference between quantitative and verbal abilities) is an important and significant predictor of academic and career outcomes even among the top 1% (in terms of g). Thus, the importance of narrow abilities is likely to be seen in their influence on academic and career choices more so than in distinguishing overall level of success. Similarly, it has been shown that while g well-predicts interindividual differences in total knowledge acquisition, it is the profile of narrow abilities that best predicts the specific type of knowledge that one acquires (Reeve 2004).

Conclusion

More than a century's worth of psychometric investigation appears to have converged on a consensus regarding the basic nature and structure of intelligence. Though some continuing refinements to the overall model may occur, the most profitable lines of future research are likely to be the attempts to further develop the vertical and horizontal aspects of the g -nexus. The vertical line of inquiry refers to the effort to uncover more fundamental (i.e., biological, neurological) basis for g and to develop more ultimate (i.e., evolutionary) explanations for its origins. A recent special issue of *intelligence* (Deary 2009) highlighted the exciting progress of this area of work. The horizontal aspect refers to efforts to better understand the practical

significance of g via the breadth of its associations with an array of bio-, psycho-, and social outcomes. The potential value and importance of this line of investigation has recently been realized with the emergence of the field of cognitive epidemiology, demonstrating that some portion of differences of health outcomes is attributable to differences in g .

In addition, the development of "meta-theories" that account for the interplay between the three broad domains of individual differences (intelligence, personality, and conative factors) and environmental affordances and demands will be of particular importance (e.g., Ackerman 1996). These more comprehensive models are likely to provide not only a more complete understanding of the nature and development of human "intelligence" but are also likely to help reintegrate the various domains of differential psychology.

Cross-References

- ▶ [Ability Traits](#)
- ▶ [Evolutionary Perspective](#)
- ▶ [Intelligence in the Workplace](#)
- ▶ [Intelligence-Personality Associations](#)
- ▶ [Mathematical Abilities](#)
- ▶ [Openness](#)
- ▶ [Personality and Cognitive Abilities](#)
- ▶ [Rationality](#)

References

- Ackerman, P. L. (1996). A theory of adult intellectual development: Process, personality, interests, and knowledge. *Intelligence*, *22*, 227–257.
- Brand, C. (1987). The importance of general intelligence. In S. Modgil & C. Modgil (Eds.), *Arthur Jensen: Consensus and controversy* (pp. 251–265). New York: Falmer Press.
- Carroll, J. B. (1993). *Human cognitive abilities: A survey of factor-analytic studies*. New York: Cambridge University Press.
- Cattell, R. B. (1943). The measurement of adult intelligence. *Psychological Bulletin*, *40*, 153–193.
- Conte, J. M. (2005). A review and critique of emotional intelligence measures. *Journal of Organizational Behavior*, *26*, 433–440.

- Deary, I. (Ed.). (2009) Intelligence, health and death: The emerging field of cognitive epidemiology [special issue]. *Intelligence*, 37(6), 517–634.
- Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, 100, 309–324.
- Gardner, H. (2006). *Multiple intelligences: New horizons*. New York: Basic Books.
- Gottfredson, L. (1997). Editorial: Mainstream science on intelligence: An editorial with 52 signatories, history, and bibliography. *Intelligence*, 24, 13–23.
- Gottfredson, L. (2003). Dissecting practical intelligence theory: Its claims and evidence. *Intelligence*, 31, 343–397.
- Gottfredson, L. (2004). Intelligence: Is it the epidemiologists' elusive "fundamental cause" of social class inequalities in health? *Journal of Personality and Social Psychology*, 86, 174–199.
- Gottfredson, L. (2009). Logical fallacies used to dismiss the evidence on intelligence testing. In R. Phelps (Ed.), *Correcting fallacies about educational and psychological testing* (pp. 11–65). Washington, DC: American Psychological Association.
- Guilford, J. P. (1954). *Psychometric methods* (2nd ed.). New York: McGraw-Hill.
- Haier, R. J. (2009). Neuro-intelligence, neuro-metrics and the next phase of brain imaging studies. *Intelligence*, 37, 121–123.
- Hilger, K., Ekman, M., Fiebach, C. J., & Basten, U. (2017). Efficient hubs in the intelligent brain: Nodal efficiency of hub regions in the salience network is associated with general intelligence. *Intelligence*, 60, 10–25.
- Horn, J. L. (1968). Organization of abilities and the development of intelligence. *Psychological Review*, 75, 242–259.
- Jensen, A. R. (1998). *The g factor: The science of mental ability*. Westport: Praeger.
- Johnson, W., & Bouchard, T. J. (2005). The structure of human intelligence: It is verbal, perceptual and image rotation, not fluid and crystallized. *Intelligence*, 33, 393–416.
- Kanazawa, S. (2004). General intelligence as a domain-specific adaptation. *Psychological Review*, 111(2), 512–523.
- Kanazawa, S. (2010). Evolutionary psychology and intelligence research. *American Psychologist*, 65(4), 279–289.
- Kuncel, N. R., & Sackett, P. R. (2007). Selective citation mars conclusions about test validity and predictive bias. *American Psychologist*, 62, 145–146.
- Kuncel, N. R., Hezlett, S. A., & Ones, D. S. (2004). Academic performance, career potential, creativity, and job performance: Can one construct predict them all? *Journal of Personality and Social Psychology*, 86, 148–161.
- Lubinski, D., & Benbow, C. P. (2000). States of excellence. *American Psychologist*, 55, 137–150.
- Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology*, 59, 507–536.
- McGrew, K. S. (1997). Analysis of the major intelligence batteries according to a proposed comprehensive Gf-Gc framework. In D. P. Flanagan, J. L. Genshaft, & P. Harrison's (Eds.), *Contemporary intelligence assessment: Theories, tests, and issues* (pp. 151–179). New York: Guilford Press.
- Nyborg, H. (2009). The intelligence-religiosity nexus: A representative study of white adolescent Americans. *Intelligence*, 37, 81–93.
- Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology*, 98, 273–289.
- Protzko, J. (2015). The environment in raising early intelligence: A meta-analysis of the fadeout effect. *Intelligence*, 53, 202–210.
- Reeve, C. L. (2004). Differential ability antecedents of general and specific dimensions of declarative knowledge: More than g. *Intelligence*, 32, 621–652.
- Reeve, C. L. (2009). Expanding the g-nexus: Further evidence regarding the relations among national IQ, religiosity and national health outcomes. *Intelligence*, 37, 495–505.
- Reeve, C. L., & Basalik, D. (2010). Average state IQ, state wealth and racial composition as predictors of state health statistics: Partial support for 'g' as a fundamental cause of health disparities. *Intelligence*, 38, 282–289.
- Reeve, C. L., & Bonaccio, S. (2011). The nature and structure of "intelligence". In T. Chamorro-Premuzic, A. Furnham, & S. von Stumm (Eds.), *Handbook of individual differences* (pp. 187–216). Oxford: Wiley-Blackwell.
- Reeve, C. L., & Charles, J. E. (2008). Survey of opinions on the primacy of g and social consequences of ability testing: A comparison of expert and non-expert views. *Intelligence*, 36, 681–688.
- Rindermann, H., Sailer, M., & Thompson, J. (2009). The impact of smart fractions, cognitive ability of politicians and average competence of peoples on social development. *Talent Development & Excellence*, 1, 3–25.
- Salgado, J. F., Anderson, N., Moscoso, S., Bertua, C., & De Fruyt, F. (2003). International validity generalization of GMA and cognitive abilities: A European community meta-analysis. *Personnel Psychology*, 56, 573–605.
- Simonton, D. K. (1999). Talent and its development: An emergenic and epigenetic model. *Psychological Review*, 106, 435–457.
- Spearman, C. (1904). "General intelligence," objectively determined and measured. *American Journal of Psychology*, 15, 201–292.
- Spearman, C. (1927). *The abilities of man: Their nature and measurement*. New York: MacMillan.
- Sternberg, R. J. (1985). *Beyond IQ: A triarchic theory of human intelligence*. New York: Cambridge University Press.
- Waterhouse, L. (2006). Multiple intelligences, the Mozart effect, and emotional intelligence: A critical review. *Educational Psychologist*, 41, 207–225.
- Woodley, M. A., Te Nijenhuis, J., & Murphy, R. (2013). Were the Victorians cleverer than us? The decline in general intelligence estimated from a meta-analysis of the slowing of simple reaction time. *Intelligence*, 41, 843–850.

Intelligence in the Workplace

Richard Goffin

Department of Psychology, The University of
Western Ontario, London, ON, Canada

Synonyms

[Cognitive ability](#); [General mental ability](#)

Definition

A definition of intelligence that has been accepted by experts who specialize in the study of intelligence in the workplace was provided in a unique *Wall Street Journal* article (Arvey et al. 1994, p. A18):

Intelligence is a very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience. It is not merely book learning, a narrow academic skill, or test-taking smarts. Rather, it reflects a deeper capability for comprehending our surroundings – “catching on,” “making sense” of things, or “figuring out what to do.”

Introduction

Employee job performance is often regarded as the most important criterion in the workplace (Bennett et al. 2006). Accordingly, it is not surprising that the search, over the years, for the most important predictors of job performance has been exhaustive, relentless, and prolific. Based on this vast wealth of accumulated research, if a single employee characteristic had to be named as the most important predictor of job performance, it would clearly be intelligence (Schmidt and Hunter 1998). Within the domain of industrial-organizational psychology and human resource management, various names have been used for this profoundly important attribute. “General mental ability” (GMA) and “cognitive ability” are typically preferred over “intelligence” in this sphere, possibly because of the heavier baggage

attached to the latter term. Regardless, as described next, the conceptualizations used in workplace studies of intelligence draw from the traditional intelligence literature.

Conceptual Foundations of Intelligence in the Workplace

Consistent with the above definition of a singular construct, workplace applications of intelligence have generally endorsed Carroll’s (1993) conceptualization of a general factor of intelligence, *g*, which resides at the top of a three-stratum hierarchy, with broad cognitive abilities such as fluid intelligence and crystallized intelligence at the second stratum and narrower abilities such as verbal ability and reading comprehension at the first stratum (Chernyshenko et al. 2011; Ones et al. 2010; Scherbaum et al. 2012). Although considerable research has examined the capacity of first- and second-stratum abilities to increment the prediction of job performance beyond *g*, extensive reviews of this literature ultimately conclude that *g* is equivalent or superior to lower-level factors in the prediction of performance for most, or possibly all, jobs, and its prediction of job performance cannot be meaningfully incremented by narrower facets of intelligence (e.g., Ones et al. 2010; Schmidt and Hunter 1998; Schmitt 2014). In the following section, I provide more details regarding the strength of the relationship between intelligence, or GMA, and job performance.

Correlations of General Mental Ability with Job Performance

Empirical research on the relations of GMA measures with performance in a broad range of jobs has been accumulating for approximately 100 years (Ones et al. 2012). In this research, performance has typically been measured via supervisory ratings, as is customary in most jobs, whereas GMA has been measured with a variety of tests, many of which have commercial, government, or military origins. Although a myriad of relevant primary studies have been published, the use of meta-analysis has been particularly persuasive in illustrating the strength and pervasiveness

Intelligence in the Workplace, Table 1 Meta-analysis of correlations between general intelligence and job performance

Job category	Correlation ^a with job performance
Professional-managerial	0.58
High level, complex, technical	0.56
Medium complexity	0.51
Semiskilled jobs	0.40
Completely unskilled jobs	0.23

Source: Schmidt and Hunter (1998)

^aCorrected for range restriction criterion unreliability

of GMA's capacity for predicting job performance. Comparable estimates of relations have been obtained across numerous meta-analyses conducted across the globe with an immense variety of jobs (Ones et al. 2005). The results shown in Table 1 summarize a particularly informative meta-analysis conducted by the US Department of Labor (Schmidt and Hunter 1998). The primary studies included in this meta-analysis subsumed 515 jobs and more than 32,000 employees. Further details on this meta-analysis can be found in Schmidt and Hunter (1998).

As shown in Table 1, as the level of complexity of jobs increases, so too does the strength of the GMA-job performance correlation. Moreover, even in completely unskilled jobs, GMA still predicts job performance. The capacity for GMA to predict performance in any and all jobs, and the strength of the relations between intelligence and job performance, has given measures of GMA special status within the preemployment testing arena.

General Mental Ability and Preemployment Testing

Numerous authors have helped to underline the special status of GMA assessment as a preemployment testing tool (e.g., Cascio and Aguinis 2011; Schmidt and Hunter 1998; Ones et al. 2012). Within the realm of preemployment testing, the "gold standard" for evaluating a test's value is predictive validity or the demonstrated ability of the test to predict job applicants' job performance level. Predictive validity is typically expressed as the correlation between applicants'

test scores and future job performance, corrected for range restriction and criterion unreliability (Cascio and Aguinis 2011). Based on the voluminous accumulated research that was meta-analyzed by Schmidt and Hunter (1998), Fig. 1 illustrates how the predictive validity of tests of GMA compares to the predictive validity of other popular preemployment testing methods.

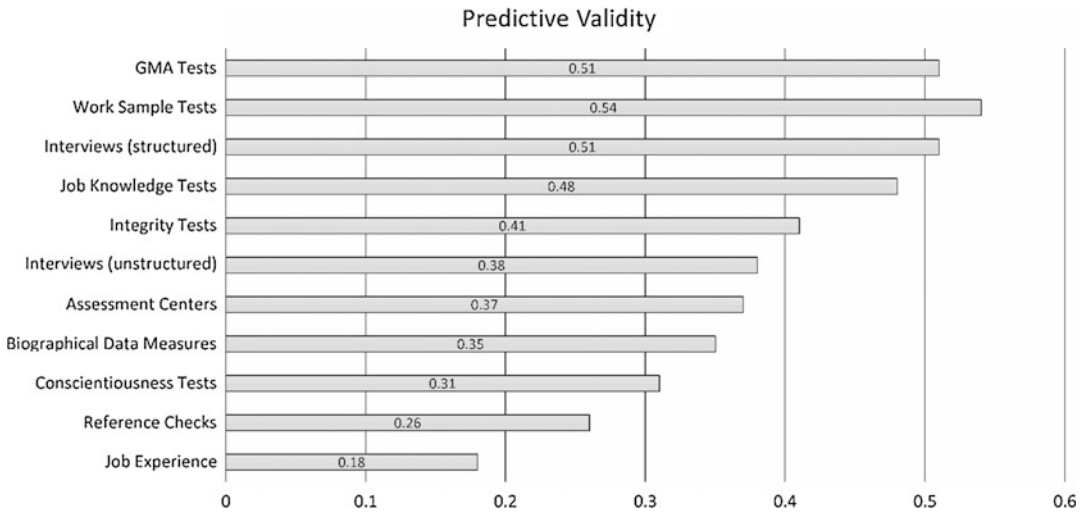
As shown in Fig. 1, tests of GMA are among the most valid of all preemployment testing methods. The only testing methods that have levels of validity in the same general range as GMA tests are work sample tests, structured job interviews, and job knowledge tests. Whereas GMA tests that have been developed for use in preemployment testing are relatively inexpensive and can be used "off the shelf" for a wide range of jobs, a given work sample test, structured job interview, or job knowledge test often requires costly tailored development and will be applicable only to a specific job or relatively narrow range of jobs (Highhouse et al. 2016). Considering the many advantages of GMA tests, it is not surprising that they are among the most frequently used personnel selection tools in many countries (Ryan et al. 1999). Arguably, the greatest barrier to GMA tests becoming the single most frequently used personnel selection method is the tendency for some minority groups to obtain lower scores than the majority group. This issue is discussed more thoroughly below.

The overwhelming empirical evidence of GMA tests' relationship with job performance has been a catalyst for research into *why* this relationship exists, a topic that is discussed next.

The Conceptual Basis of *g*'s Relationship with Job Performance

Hunter (1986) developed and tested a seminal theoretical model of the linkages between intelligence and job performance. Figure 2 illustrates the essential parts of this model.

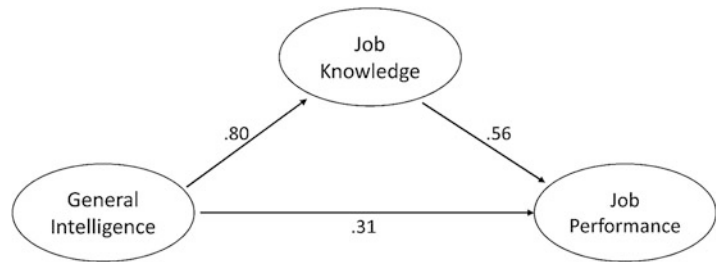
As shown, this model proposes that general intelligence impacts job performance directly, but also indirectly, via its effect on job knowledge. Hunter was able to estimate the strengths of the paths in this model using meta-analytic methodology. Based on Hunter's estimates for non-military jobs, for which the total sample size was



Intelligence in the Workplace, Fig. 1 Predictive validity of general mental ability (GMA, i.e., general intelligence) tests and other popular preemployment testing

methods. Predictive validity estimates were taken from Schmidt and Hunter (1998)

Intelligence in the Workplace, Fig. 2 Theoretical model of the linkages between intelligence and job performance. Based on Hunter (1986)



1,790, Fig. 1 shows that the direct effect of intelligence on job performance is moderate (0.31); however, the indirect effect, mediated by job knowledge, is substantial (0.56) and close to twice as strong. Thus, although intelligence does directly affect job performance, its more potent effect is a mediated one – it has a strong effect on employees’ acquisition of job knowledge, and their level of job knowledge strongly affects their job performance. This propensity for intelligence to exert its most powerful effect on job performance through the mediational influence of job knowledge has been supported in a number of additional studies (Borman et al. 1991, 1993; Schmidt and Hunter 1992) and reviews (Ones et al. 2005, 2010) suggesting that it is, indeed, the key theoretical link between g and job performance.

As described so far, the study and application of intelligence in the workplace are based on a well-established model of intelligence, are bolstered by decades of empirical research substantiating the relationship between GMA tests and job performance, and have a persuasive theoretical basis. Nonetheless, as explained below, intelligence testing in employment contexts has not been without controversy.

Intelligence in the Workplace: Controversies and Future Directions

The Challenge of Group Differences in Intelligence Test Scores and in Validity

Group differences in intelligence test scores have been the subject of intensive research for more

than 90 years (Outtz and Newman 2010). Racial or ethnic group differences have been the predominant focus of this work. Within the context of the workplace, the most extensive data analyses have been in regard to differences in GMA scores between African-Americans and Caucasians, where the difference has been meta-analytically estimated at one standard deviation, and between Hispanics and Caucasians, where the difference was meta-analytically found to be 0.83 of a standard deviation (Roth et al. 2001). In both cases the differences have favored Caucasians. Unsurprisingly, when GMA test scores have contributed to hiring decisions that draw from diverse applicant pools, these differences in scores have resulted in majority-group candidates being hired at a greater rate than minority group members in many jurisdictions (Goldstein et al. 2010). In response, some governments have enacted policies that seek to address the impact that lower GMA test scores can have on the employment opportunities of non-majority group members (for reviews, see Catano et al. 2016; Highhouse et al. 2016).

However, for the past 20 years or more, after numerous empirical investigations into the possibility of differential validity, the accepted wisdom among industrial-organizational and management researchers has been that GMA tests predict job performance equally well for majority and minority group members, with the caveat that there may be small intercept differences across minority- and majority-group samples (e.g., Schmitt 2014; Sackett and Wilk 1994). The intercept differences are such that minority group job performance levels would be slightly *overestimated* if one used the same equation to predict the job performance of minority- and majority-group members (e.g., Schmitt 2014; Sackett and Wilk 1994). Another integral aspect of this accepted wisdom was that majority-minority differences in GMA test scores were presumed to be reflective of valid group differences and not test bias (Schmidt 1988). Furthermore, policies that sought to address the majority-minority differential hiring rate that could occur as a result of GMA testing were, by and large, seen by the industrial-organizational

and management research community as conducive to achieving societal goals but not utilitarian ones (Gottfredson 1988).

It is an exciting time to be writing about intelligence in the workplace because in recent years, a noticeable shift in perspective may be afoot. Ones et al. (2010) have pointed out that the datedness and overreliance on US samples of many of the studies upon which the above conclusions were based cast some doubt on their veracity in today's workplace. Using a series of Monte Carlo simulations, Aguinis et al. (2010) have suggested that earlier conclusions of GMA tests predicting job performance equally well for majority and minority group members were drawn from analyses that lacked sufficient power to detect differences in regression-line slopes and were biased in favor of finding that intercept differences resulted in overestimation of minority group job performance levels. As these authors point out, it seems ironic that the analyses upon which conclusions of "no bias" have been based may, themselves, have been biased. Aguinis et al. ultimately called for a revival of research on possible bias in GMA testing that is more cognizant of relevant methodological issues.

Taking Aguinis et al.'s findings into account, Berry et al. (2011) meta-analyzed majority-minority group differences in the criterion-related validity of GMA tests using numerous archival samples and found evidence of some potentially consequential differences in validities. But, to the contrary, when Mattern and Patterson (2013) responded to Aguinis et al.'s call by analyzing data from more than 475,000 students within the context of college admissions testing, they found only minimal evidence of majority-minority differences in validity. Thus, it is too early to say whether a sea change will occur in the widely held view that the validity of GMA tests in the prediction of job performance does not differ for majority and minority group members. The next decade will no doubt be an interesting one as new studies continue to address this fundamentally important issue with increasing levels of sophistication. An additional aspect of the current practice of workplace GMA testing that is earning much attention from practitioners and researchers alike is discussed next.

Web-Based Assessment of Cognitive Ability in the Workplace

For workplace purposes, administering tests online has much to recommend it. It can allow round-the-clock and global administration of tests; provide immediate access to test results for both the job applicant and the hiring manager; allow instantaneous updating of administration instructions, item pools, score reports, and scoring protocols; and eliminate printing as well as proctoring costs (Rothstein and Goffin 2006). Another benefit of web-based administration of tests over paper-and-pencil administration is the incorporation of computer adaptive tests (CATs). CATs monitor test takers' responses to items so that subsequent items can be administered based on their potential for helping to more precisely locate respondents' true ability level (Meijer and Nering 1999). Because an algorithm shrewdly picks the most diagnostic items to administer to each respondent instead of administering all items, testing time is often 50% less than with paper-and-pencil tests, while reliability may actually be higher (Meijer and Nering 1999).

Predictably, the considerable benefits of web-based GMA assessment have led to rapid growth of this practice (Tippins 2009). One serious, recurring, source of concern, however, is the *unproctored* administration of web-based GMA tests (Arthur et al. 2010). Job applicants responding to a web-based GMA test as part of a preemployment testing program are in a high-stakes situation in that their future career and livelihood may be on the line. As a result, if the testing is unproctored, they may be more motivated to cheat by using forbidden aids such as their computers or by the use of more able test takers who covertly take the test on their behalf or assist them during the test (Bartram 2009). Also of great concern is the potential for test items to be surreptitiously copied in an effort to ultimately figure out and disseminate the scoring key (Pearlman 2009).

Published research that evaluates the extent of the above problems and the effectiveness of countermeasures is sparse but growing. One commonly proposed countermeasure for cheating in web-based GMA testing is the use of a proctored

verification test subsequent to the unproctored test (Bartram 2009; Guo and Drasgow 2010). Candidates who make the shortlist for hiring as a result of their promising score on the unproctored web-based GMA test are required to take a proctored verification test where cheating can be more tightly controlled (Bartram 2009; Guo and Drasgow 2010). Cost savings over proctored testing of all candidates are still considerable because only a fraction of the initial applicant pool would receive the proctored test. Although additional research on this issue is still needed, several extant studies point to the encouraging findings that cheating on unproctored web-based tests is actually rarer than one might expect and that it can be largely circumvented through the use of a verification test (Arthur et al. 2010; Guo and Drasgow 2010; Kantrowitz and Dainis 2014; Wright et al. 2014).

Less has been published on another interesting tactic for reducing cheating in online GMA assessments, that is, the use of *remotely* proctored testing rather than unproctored testing. Remote proctoring of online GMA assessments could take many forms. One promising approach involves remote webcam monitoring of respondents' test sessions to discourage the use of surrogate test takers and prohibited testing aids. Karim et al. (2014) conducted an experiment to assess the effectiveness of webcam monitoring over a simple honor pledge recommended by Lievens and Burke (2011). Although Karim et al. found that webcam monitoring reduced cheating, it gave rise to more negative test-taker reactions, which may be a source of distress for organizations that are concerned about their reputation (McCarthy et al. 2013).

Remote webcam monitoring may also have the potential to limit test takers' avenues for copying and then disseminating test items. The use of CATs in web-based GMA assessment is also useful for limiting the potential damage caused by unauthorized dissemination of test items because only a fraction of the entire pool of items is likely to be administered to each job applicant and the CATs' "tailored" approach to choosing which items to administer means that different respondents will tend to see different sets of items.

Further evaluation of web-based GMA assessment and approaches for increasing its veracity and utility will no doubt be an integral part of the agenda for future researchers.

Conclusions

General intelligence, commonly referred to in workplace studies as GMA, is the single most important predictor of job performance. GMA predicts performance in all jobs, and its predictiveness is not meaningfully incremented by narrower facets of intelligence. Prediction of job performance by GMA is strongest for complex jobs and weakest for completely unskilled jobs. The most potent impact of general intelligence on job performance is via the mediational influence of job knowledge. In the workplace, GMA testing is among the most valued of all preemployment testing methods because its predictive validity is high, while its cost is low, and it can be used for all jobs. Challenges to workplace GMA testing come from the persistent group differences in GMA scores and the possibility that GMA tests may not be equally predictive of job performance for majority and minority group members. Web-based GMA assessment has become popular in the workplace, but it has elicited concerns and possible remedies regarding cheating and test security.

References

- Aguinis, H., Culpepper, S. A., & Pierce, C. A. (2010). Revival of test bias research in preemployment testing. *Journal of Applied Psychology, 95*, 648–680.
- Arthur, W., Jr., Glaze, R. M., Villado, A. J., & Taylor, J. E. (2010). The magnitude and extent of cheating and response distortion effects on unproctored internet-based tests of cognitive ability and personality. *International Journal of Selection and Assessment, 18*, 1–16.
- Arvey, R.D., Bouchard, T.J., Carroll, J.B., Cattell, R.B., Cohen, D.B., Dawis, R.V., . . . , Willerman, L. (1994). Mainstream science on intelligence. *Wall Street Journal*, December 13, A18.
- Bartram, D. (2009). The international test commission guidelines on computer-based and internet-delivered testing. *Industrial and Organizational Psychology: Perspectives on Science and Practice, 2*, 11–13.
- Bennett, W., Jr., Lance, C. E., & Woehr, D. J. (2006). *Performance measurement: Current perspectives and future challenges*. Mahwah: Lawrence Erlbaum Associates.
- Berry, C. M., Clark, M. A., & McClure, T. K. (2011). Racial/ethnic differences in the criterion-related validity of cognitive ability tests. *Journal of Applied Psychology, 96*, 881–906.
- Borman, W. C., White, L. A., Pulakos, E. D., & Oppler, S. H. (1991). Models of supervisory job performance ratings. *Journal of Applied Psychology, 76*(6), 863–872.
- Borman, W. C., Hanson, M. A., Oppler, S. H., Pulakos, E. D., & White, L. A. (1993). Role of early supervisory experience in supervisor performance. *Journal of Applied Psychology, 78*, 443–449.
- Carroll, J. D. (1993). *Human cognitive abilities: A survey of factor-analytic studies*. New York: Cambridge University Press.
- Cascio, W. F., & Aguinis, H. (2011). *Applied psychology in human resource management* (7th ed.). Upper Saddle River: Prentice-Hall.
- Catano, V. M., Wiesner, W. H., & Hackett, R. D. (2016). *Recruitment and selection in Canada* (6th ed.). Toronto: Nelson.
- Chernyshenko, O. S., Stark, S., & Drasgow, F. (2011). Individual differences: Their measurement and validity. In *APA handbook of industrial and organizational psychology, vol 2: Selecting and developing members for the organization* (pp. 117–151). Washington, DC: American Psychological Association.
- Goldstein, H. W., Scherbaum, C. A., & Yusko, K. P. (2010). Revisiting g: Intelligence, adverse impact, and personnel selection. In *Adverse impact: Implications for organizational staffing and high stakes selection* (pp. 95–134). New York: Routledge/Taylor & Francis Group.
- Gottfredson, L. S. (1988). Reconsidering fairness: A matter of social and ethical priorities. *Journal of Vocational Behavior, 33*, 293–319.
- Guo, J., & Drasgow, F. (2010). Identifying cheating on unproctored internet tests: The Z-test and the likelihood ratio test. *International Journal of Selection and Assessment, 18*, 351–364.
- Highhouse, S., Doverspike, D., & Guion, R. M. (2016). *Essentials of personnel assessment and selection* (2nd ed.). New York: Routledge.
- Hunter, J. E. (1986). Cognitive ability, cognitive aptitude, job knowledge, and job performance. *Journal of Vocational Behavior, 29*, 340–362.
- Kantrowitz, T. M., & Dainis, A. M. (2014). How secure are unproctored pre-employment tests? Analysis of inconsistent test scores. *Journal of Business and Psychology, 29*, 605–616.
- Karim, M. N., Kaminsky, S. E., & Behrend, T. S. (2014). Cheating, reactions, and performance in remotely proctored testing: An exploratory experimental study. *Journal of Business and Psychology, 29*, 555–572.
- Lievens, F., & Burke, E. (2011). Dealing with the threats inherent in unproctored internet testing of cognitive ability: Results from a large-scale operational test

- program. *Journal of Occupational and Organizational Psychology*, 84, 817–824.
- Mattern, K. D., & Patterson, B. F. (2013). Test of slope and intercept bias in college admissions: A response to aguinis, culpepper, and pierce (2010). *Journal of Applied Psychology*, 98, 134–147.
- McCarthy, J. M., Van Iddekinge, C. H., Lievens, F., Kung, M., Sinar, E. F., & Campion, M. A. (2013). Do candidate reactions relate to job performance or affect criterion-related validity? A multistudy investigation of relations among reactions, selection test scores, and job performance. *Journal of Applied Psychology*, 98, 701–719.
- Meijer, R. R., & Nering, M. L. (1999). Computerized adaptive testing: Overview and introduction. *Applied Psychological Measurement*, 23, 187–194.
- Ones, D. S., Viswesvaran, C., & Dilchert, S. (2005). Cognitive ability in selection decisions. In *Handbook of understanding and measuring intelligence* (pp. 431–468). Thousand Oaks: Sage.
- Ones, D. S., Dilchert, S., Viswesvaran, C., & Salgado, J. F. (2010). Cognitive abilities. In *Handbook of employee selection* (pp. 255–275). New York: Routledge/Taylor & Francis Group.
- Ones, D. S., Dilchert, S., & Viswesvaran, C. (2012). Cognitive abilities. In *The oxford handbook of personnel assessment and selection* (pp. 179–224). New York: Oxford University Press.
- Outtz, J. L., & Newman, D. A. (2010). A theory of adverse impact. In J. L. Outtz (Ed.), *Adverse impact: Implications for organizational staffing and high stakes selection*. New York: Taylor & Francis.
- Pearlman, K. (2009). Unproctored internet testing: Practical, legal, and ethical concerns. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 2, 14–19.
- Roth, P., Bevier, C., Bobko, P., Switzer, F., & Tyler, P. (2001). Ethnic group differences in cognitive ability in employment and educational settings: A meta-analysis. *Personnel Psychology*, 54, 297–330.
- Rothstein, M. G., & Goffin, R. D. (2006). The use of personality measures in personnel selection: What does current research support? *Human Resource Management Review*, 16, 155–180.
- Ryan, A. M., McFarland, L., Baron, H., & Page, R. (1999). An international look at selection practices: Nation and culture as explanations for variability in practice. *Personnel Psychology*, 52, 359–391.
- Sackett, P. R., & Wilk, S. L. (1994). Within-group norming and other forms of score adjustment in preemployment testing. *American Psychologist*, 49, 929–954.
- Scherbaum, C. A., Goldstein, H. W., Yusko, K. P., Ryan, R., & Hanges, P. J. (2012). Intelligence 2.0: Reestablishing a research program on g in I-O psychology. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 5(2), 128–148.
- Schmidt, F. L. (1988). The problem of group differences in ability test scores in employment selection. *Journal of Vocational Behavior*, 33(3), 272–292.
- Schmidt, F. L., & Hunter, J. E. (1992). Development of a causal model of processes determining job performance. *Current Directions in Psychological Science*, 1, 89–92.
- Schmidt, F. L., & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin*, 124, 262–274.
- Schmitt, N. (2014). Personality and cognitive ability as predictors of effective performance at work. *Annual Review of Organizational Psychology and Organizational Behavior*, 1, 45–64.
- Tippins, N. T. (2009). Internet alternatives to traditional proctored testing: Where are we now? *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 2, 2–10.
- Wright, N. A., Meade, A. W., & Gutierrez, S. L. (2014). Using invariance to examine cheating in unproctored ability tests. *International Journal of Selection and Assessment*, 22, 12–22.

Intelligence-Personality Associations

Sophie von Stumm
 Department of Psychology, Goldsmiths,
 University of London, London, UK

Synonyms

IPA

Definition

Intelligence-personality associations refer to theoretical and empirical relationships that exist between intelligence, which is the ability to learn and adapt, and personality traits which describe characteristic patterns to feel, think, and behave.

Introduction

Intelligence and personality are the two psychological characteristics or construct dimensions that account for the majority of differences that occur between people in behavior, development, and life outcomes. Intelligence, defined as the ability to learn and adapt, describes individual differences in

maximum performance or what a person *can do*. Accordingly when measuring intelligence, test takers are instructed to do their best to identify the correct response to a question or the right solution for a task. By contrast, personality refers to the variance in those behavioral tendencies that predict what a person *will typically do*. Thus, personality tests ask for candid and truthful responses about typical behaviors and negate the idea of correct or “best” answers. Both intelligence and personality – markers of maximum and typical performance, respectively – predict a wide range of life outcomes, including educational and professional achievement, well-being, health, and longevity. To elucidate the antithesis of sharing the power to predict and explain behavior while differing in their conceptual frameworks, three perspectives have emerged on intelligence-personality associations. The first and oldest perspective views intelligence and personality as independent domains. The second proposes an association at the level of observation, whereby personality is thought to affect how a person performs in an intelligence test and vice versa. The third perspective assumes a conceptual relationship between intelligence and personality, whereby one domain informs the development and nature of the other. Each perspective has uniquely influenced the study of individual differences and the psychological literature at large.

Perspective of Independence

At the beginning of the twentieth century, the earliest individual differences researchers considered intelligence and personality to be independent domains. Accordingly, intelligence and personality were treated as separate entities that shared no meaningful relationship, although it was recognized that both added to one another in the prediction and explanation of individual differences in behavior (Spearman 1904; Webb 1915). The notion of independence emerged initially from the fact that intelligence and personality define different performance elements (i.e., *maximum* versus *typical* performance; see above). In addition, it was believed that both domains were relevant for different life

outcomes; that is, intelligence and personality were thought to diverge in their predictive validity. Specifically, intelligence scores were predominantly applied to forecast a person’s achievement potential in terms of school performance and professional attainment. By contrast, personality was mainly thought of in the context of intraindividual outcomes, such as subjective well-being or life satisfaction, and interpersonal factors, including the quality and quantity of all kinds of social relationships (Vernon 1933).

Factor analytic studies further substantiated the theoretical division between intelligence and personality, because they extracted orthogonal factors that differentiated ability-related variances from nonability variances (Webb 1915). With that, the theoretical independence of intelligence and personality became an empirical reality. The enforced orthogonality of intelligence and personality dictated the outcome of all subsequent studies on intelligence-personality associations, because infinitesimal correlations between intelligence and personality scale scores are the inevitable consequence of statistically separating ability from nonability variance (e.g., Major et al. 2014).

Throughout the twentieth century, the perspective that intelligence and personality were independent entities governed psychology and individual differences research. It caused a permanent rift, with individual differences researchers identifying either as personality or as intelligence researchers and both “camps” publishing their findings in different journals, attending different scientific meetings, and pursuing different research agendas. However, today the similarities between intelligence and personality have been widely recognized to outweigh their alleged differences. Both can be reliably quantified through standardized psychometric tests, both are genetically influenced, both show considerable temporal stability across the lifespan, and both predict all relevant life outcomes, ranging from occupational performance to longevity. Accordingly, recent years have witnessed an increase in *crossover* research that brings together intelligence and personality in new ways, finally abandoning the perspective of independence. As a result, we are now at the beginning of a unified research paradigm for

individual differences research that recognizes the importance of studying intelligence-personality associations.

Associations at the Measurement Level

An alternative to treating intelligence and personality as independent domains is the perspective that one construct dimension might affect the assessment of the other and vice versa. Thus, people's differences in intelligence may inform how they complete a personality questionnaire, and conversely, a person's personality traits are thought to influence how they perform in an intelligence test. This perspective implies an association of intelligence and personality at the level of observation rather than a substantive relationship between both constructs.

Intelligence → Personality Assessment

Higher intelligence is thought to enable a better understanding of personality test items, and thus, it should result in more "accurate" or truthful responses. Accordingly, the personality scores of more intelligent people are hypothesized to be more dispersed than the scores of less intelligent individuals, who have a poorer comprehension of the specificity of a given personality test item and thus, provide comparatively undifferentiated response. In this context, it has been suggested that the link between intelligence and personality differentiation may also constitute a developmental phenomenon, rather than merely existing at the measurement level (Austin et al. 2000). The developmental viewpoint proposes that higher intelligence enables individuals to access over time a greater variety of situations and make more diverse experiences, which in turn create more differentiated personality profiles than those of people with lesser mental ability.

The empirical evidence for differentiation of personality by intelligence is limited and has yet to produce conclusive results (von Stumm et al. 2009). In other words, it has not been reliably demonstrated that higher intelligence is indeed associated with a significant advantage in comprehending personality test items and that

then informs greater personality differentiation at the measurement level. Likewise, intelligence has not been shown to predict engaging in a greater range of activities or situations, whose experiences would then potentially lead to developing a differentiated personality. That said, intelligence has been consistently found to lead to better performance and achievement outcomes across situations, but this does not imply a positive relationship between intelligence and the scope or extent of activity engagement. Thus, intelligence-personality associations at the measurement level, where intelligence influences the assessment of personality, are currently not supported by empirical evidence.

Personality → Intelligence Test Performance

Although personality may influence how people complete intelligence tests in many different ways, the majority of studies on this phenomenon have focused on two traits in particular, namely, extraversion or neuroticism.

Extraversion, which manifests in outgoing, talkative, energetic behaviors ("► [Extraversion](#)"), spans impulsivity and boredom avoidance that inform test-taking styles in two ways. For one, extraversion may lead to a trade-off between speed and accuracy, so that people, who score high on extraversion, accept an increased error rate in favor of working quickly through a test, while those low on extraversion (i.e., introversion) display the opposite pattern and emphasize accuracy over time. Overall, however, different test-taking styles have a zero net effect on the total score of an intelligence test (Bates and Rock 2004). Accordingly, the theory that extraversion was systematically associated with a speed-accuracy trade-off in intelligence test performance has not been empirically substantiated (von Stumm et al. 2011a). For the other, extraversion interacts with the situational factors or conditions under which an intelligence test is administered. Several studies have shown that people who score high on extraversion perform better when the intelligence test is administered in a stimulating or even slightly stressful settings, for example, when the test is timed or background noise can be heard (Revelle et al. 1976; Bates and

Rock 2004). By comparison, people scoring high on introversion perform increasingly worse as the conditions of test administration increase in stress and stimulation, presumably because introverts prefer quiet environments to achieve optimum performance levels (Revelle et al. 1976). While several studies support that the interaction between extraversion/introversion and administration conditions affects intelligence test performance, their corresponding effect sizes range from small to moderate. To summarize, the effects of extraversion on intelligence test performance appear to mainly occur because of an interaction with test administration conditions but less so because of a relationship with test-taking styles. Regarding the magnitude of this association, the influence of extraversion on how people complete an intelligence test is overall modest.

The personality trait neuroticism is characterized by anxiety, worry, and negative affect (“► [Neuroticism](#)” entry). Across studies, including several large-scale meta-analyses, neuroticism and the related trait dimension of test anxiety have been shown to be negatively associated with intelligence test performance with effect sizes ranging from small to moderate (Hembree 1988; Wicherts and Scholten 2010). Furthermore, studies that employed clinical samples and mood induction paradigms, for example, using sad music or images to induce low mood, have shown that negative affect impairs short- and long-term cognitive performance, especially when negative mood states are either extreme or enduring or both (Joormann 2008).

Two alternative rationalizations exist that explain the negative relationship between neuroticism or more generally negative emotional experiences and intelligence test performance. The first proposes that anxiety-related traits lead to task-irrelevant information processing, which demands cognitive resources that are then no longer available for performing in the intelligence test (cf. dual-task processing; Ellis and Ashbrook 1988). The other rationalization posits that people who are highly anxious may be inherently less intelligent, and thus, the negative association between ability and anxiety may persist at the construct level. However, no plausible theory

has been proposed that justifies why anxiety and low ability should co-occur. With that said, to date, conclusive evidence is not available to support the idea of task-irrelevant processing above the one of an inherent relationship between intelligence and anxiety-related traits.

In summary, the empirical evidence for intelligence-personality associations at the measurement level is generally sparse, but two phenomena are thought to be relatively robust. For one, extraversion/introversion interacts with test administration conditions in the effect on intelligence test performance, with extraverts performing better under more stimulating or stressful testing conditions but introverts performing worse. For the other, intelligence test performance appears to be impaired by anxiety and negative emotionality, with people who score high on these and related trait dimensions doing less well in cognitive ability tests.

Associations at the Conceptual Level

An association between intelligence and personality at the conceptual level assumes a developmental relationship, whereby personality traits influence the development of intelligence across the lifespan. Thus, the developmental relationship is thought to be unidirectional (i.e., personality on intelligence) rather than reciprocal (i.e., personality on intelligence and vice versa).

Theories of adult intelligence (“► [Wechsler Adult Intelligence Scale](#)” entry) typically differentiate the *capacity for knowledge* or fluid intelligence or biological reasoning power from the *knowledge possessed* or crystallized intelligence or learned knowledge and experience (Ackerman 1996; Hemnon 1921). The capacity for knowledge refers to intelligence as the ability to learn and adapt, which is commonly assessed by maximum performance intelligence tests, whose scores are fairly independent of personality (cf. independence perspective above). The capacity for knowledge transforms into actual knowledge over time, as it becomes invested in learning opportunities and experiences. The investment of the capacity for knowledge is guided by so-called investment

personality traits that determine *when*, *where*, and *how* people invest and apply their intelligence to learn. In this model, the investment of intelligence is understood as *typical* behavior that leads to the accumulation of knowledge (Ackerman 1996). Thus, we might want to think of investment traits as the bridging construct that connects intelligence and personality within a developmental process.

Investment Personality Traits

Investment personality traits refer to the tendency to engage in and seek out cognitive activities that are novel, intellectually stimulating, and effortful, for example, reading a challenging book or attending an evening class to study an unfamiliar subject (von Stumm and Ackerman 2013). Given these examples, it is important to note that a specific set of precise “investment behaviors” has not been identified or proposed by previous research.

A recent review revealed that more than 30 investment personality trait scales exist in the psychological literature that were independently conceived by different researchers but refer unanimously to individual differences in the tendency to invest in learning and accumulate knowledge (von Stumm and Ackerman 2013). Two principal trait dimensions are differentiated within the investment trait construct space. On one hand, a cluster of trait variables refers to the “hunger for knowledge,” which is also known as epistemic or intellectual curiosity. This cluster is best characterized by the tendency to seek out traditional learning opportunities and to pursue effortful cognitive engagements; hence, it is predictive of formal learning achievements, for example, in school or university (von Stumm et al., 2011b). On the other hand, a cluster of open exploration tendencies has surfaced that is comparatively less intellectual but concentrates on producing novel sensory and perceptual experiences. This dimension of openness is less predictive of traditional learning achievements (Poropat 2009) but may be more conducive to learning that occurs in everyday life situations, outside formal education settings. Support for the division of the investment trait construct space into “intellectual” and “non-intellectual” dimensions came first from

psychometric studies that observed distinct personality factors of *intellect* and *openness*. Later brain imagining studies and behavioral genetic research designs further substantiated that investment is best thought of in terms of two distinct trait dimensions (e.g., DeYoung et al. 2009; Wainwright et al. 2008). While the duality of investment traits is widely acknowledged today, researchers have yet to agree on a unanimous terminology to refer to both dimensions.

Investment and Intelligence

Evidence for the effects of investment personality traits on intellectual development comes predominantly from cross-sectional studies, even though prospective research designs are better suited to study the investment theory. A recent meta-analysis of cross-sectional studies showed that various investment personality traits are positively and moderately correlated with makers of adult intelligence, for example, academic achievement and knowledge test scores (von Stumm and Ackerman 2013). Although this association tends to reduce after adjusting for intelligence (i.e., capacity for knowledge) and other personality traits that contribute to learning achievement (e.g., grit, conscientiousness), the association between investment traits and academic achievement remains significant in well-powered studies (von Stumm et al. 2011b).

Only one longitudinal study has been reported to date that tested the long-term effects of investment personality traits on intelligence in young adults. Data came from a sample of 239 Bavarian adolescents, who were assessed on investment and different kinds of intelligence at age 17 and 23 years (Ziegler et al. 2012). Investment personality traits at age 17 were found to be positively associated with gains in the capacity for knowledge (i.e., fluid intelligence) between the ages of 17 and 23 years. In turn, the gains in the capacity for knowledge were related to greater knowledge and growth in crystallized intelligence over the same time period. These findings provide partial support for the investment hypothesis, but they also highlight that the effect of investment personality traits on accumulating knowledge may be indirect and mediated by fluid intelligence. However, it is too early to draw firm conclusions here,

because the existing evidence base is limited and replication studies are not yet available.

Several other longitudinal studies sought to substantiate the investment theory, albeit in ageing samples that were on average very old (i.e., age 70 years and more). Because ageing populations differ categorically in their cognitive structure, development, and needs from children and adolescents, the investment theory was found to be badly suited to explain individual differences in cognitive decline (von Stumm and Deary 2012). This is neither a surprise nor a problem for the validity of investment traits, because the investment theory was conceived to explain why some people learn better and accumulate more knowledge than others, not why some preserve their cognitive function for longer than others across old age.

Conclusion

Intelligence and personality capture the majority of the psychological differences and similarities that occur between people. Intelligence indicates maximum performance, while personality marks typical performance. As a consequence of this antithetic conceptualization, the study of ability (i.e., intelligence) was traditionally separated from the study of nonability variance (i.e., personality). However, the recent psychological literature has overcome this disconnect and explored ways in which intelligence and personality are related to one another. The most promising avenue of research in this context suggests that personality traits influence the development of intelligence across the lifespan. Accordingly, robust associations have been reported between learning achievement and so-called investment traits that determine when, where, and how people invest their intelligence and thus, the domains in which they accumulate knowledge. However, the current empirical evidence for the investment theory is of limited validity, because most of it comes from cross-sectional studies. To truly advance our understanding of intelligence-personality associations, longitudinal studies are needed that assess both intelligence and investment, as well as other personality traits, repeatedly across assessment occasions. Such studies will be pivotal in

producing reliable knowledge about the role that intelligence-personality associations play for individual differences in development.

Cross-References

- ▶ [Developmental Changes in Personality Traits](#)
- ▶ [Drive Theory](#)
- ▶ [Intelligence](#)
- ▶ [Personality and Academic Performance](#)
- ▶ [Personality and Cognitive Abilities](#)

References

- Ackerman, P. L. (1996). A theory of adult intellectual development: Process, personality, interests, and knowledge. *Intelligence, 22*, 227–257.
- Austin, E. J., Hofer, S. M., Deary, I. J., & Eber, H. W. (2000). Interactions between intelligence and personality: Results from two large samples. *Personality and Individual Differences, 29*, 405–427.
- Bates, T., & Rock, A. (2004). Personality and information processing speed: Independent influences on intelligent performance. *Intelligence, 32*, 33–46.
- DeYoung, C. G., Shamosh, N. A., Green, A. E., Braver, T. S., & Gray, J. R. (2009). Intellect as distinct from openness: Differences revealed by fMRI of working memory. *Journal of Personality and Social Psychology, 97*, 883–892.
- Ellis, H. C., & Ashbrook, P. W. (1988). Resource allocation model of the effects of depressed mood states on memory. In K. Fiedler & J. Forgas (Eds.), *Affect, cognition, and social behavior* (pp. 35–42). Göttingen: Hogrefe.
- Hembree, R. (1988). Correlates, causes, and treatment of test anxiety. *Review of Educational Research, 58*, 47–77.
- Hemmon, V. A. C. (1921). Intelligence and its measurement. A symposium – VIII. *Journal of Educational Psychology, 12*, 195–198.
- Joormann, J. (2008). Cognitive aspects of depression. In I. H. Gotlib & C. Hammen (Eds.), *Handbook of depression* (pp. 298–321). New York: Guilford Press.
- Major, J. T., Johnson, W., & Deary, I. J. (2014). Linear and nonlinear associations between general intelligence and personality in Project TALENT. *Journal of Personality and Social Psychology, 106*, 638–654.
- Poropat, A. E. (2009). A meta-analysis of the five factor model of personality and academic performance. *Psychology Bulletin, 135*, 322–338.
- Revelle, W., Amaral, P., & Turrieff, S. (1976). Introversiion/extraversiion, time stress, and caffeine. *Science, 192*, 149–150.
- Spearman, C. E. (1904). “General intelligence” objectively determined and measured. *American Journal of Psychology, 15*, 201–293.

- Vernon, P. E. (1933). Some characteristics of the good judge of personality. *Journal of Social Psychology, 4*, 42–57.
- von Stumm, S., & Ackerman, P. L. (2013). Investment and intellect: A review and meta-analysis. *Psychological Bulletin, 139*, 841–869.
- von Stumm, S., & Deary, I. J. (2012). Typical intellectual engagement and cognition in the ninth decade of life: The Lothian birth cohort 1921. *Psychology and Aging, 27*, 761–767.
- von Stumm, S., Chamorro-Premuzic, T., & Ackerman, P. L. (2011a). Re-visiting intelligence-personality associations: Vindicating intellectual investment. In T. Chamorro-Premuzic, S. von Stumm, & A. Furnham (Eds.), *Handbook of individual differences*. Chichester: Wiley-Blackwell.
- von Stumm, S., Hell, B., & Chamorro-Premuzic, T. (2011b). The hungry mind: Intellectual curiosity as third pillar of academic performance. *Perspectives on Psychological Science, 5*(1), 12–31.
- von Stumm, S., Chamorro-Premuzic, T., Quiroga, M. A., & Colom, R. (2009). Separating narrow and general variance in intelligence-personality associations. *Personality and Individual Differences, 47*, 336–341.
- Wainwright, M. A., Wright, M. J., Luciano, M., Geffen, G. M., & Martin, N. G. (2008). Genetic covariation among facets of openness to experience and general cognitive ability. *Twin Research and Human Genetics, 11*, 275–286.
- Webb, E. (1915). *Character and intelligence*. Unpublished Doctoral Dissertation, University of London.
- Wicherts, J. M., & Scholten, A. Z. (2010). Test anxiety and the validity of cognitive tests: A confirmatory factor analysis perspective and some empirical findings. *Intelligence, 38*(1), 169–178.
- Ziegler, M., Danay, E., Heene, M., Asendorpf, J., & Bühner, M. (2012). Openness, fluid intelligence, and crystallized intelligence: Toward an integrative model. *Journal of Research in Personality, 46*, 173–183.

“Intelligences”

- ▶ Ability Traits

Intended Delay

- ▶ Procrastination

Intense Fear

- ▶ Phobia

Intentional Stance

- ▶ Social Cognition

Intentionality (May)

Juanita Ratner^{1,2} and Neal Chase³

¹Denver, CO, USA

²Consciousness, Spirituality, and Integrative Health Specialization, Saybrook University, Oakland, CA, USA

³Existential, Humanistic, and Transpersonal Specialization, Saybrook University, Oakland, CA, USA

Introduction

Various psychological, philosophical, and healing traditions focus on the development of will on the supposition that will is needed so people can make authentic choices and have self-determination in their lives or so that they can approach psychological healing and personal transformation. Cognitive-behavioral therapy focuses on identifying inaccurate, negative, or self-defeating patterns of thinking and practicing behavior changes (Beck and Beck 2011). Twelve-step programs to support recovery from addiction are based on an admission of an inability to control one's life and the surrender of the will to a higher power or God as the individual understands that (Alcoholics Anonymous 2002). In his analysis of will, Rollo May (1969) identified *intentionality* as something different and more fundamental than all these programs related to the development of will: a sub-conscious state fundamental to and giving rise to acts of will or the setting of intentions.

Intentionality has a long and variegated history in the intellectual development of philosophy and psychology. Different from the common term intentional (such as what one intends to do): *intentionality* reflects a deep modality of human experience that transcends the subject-object divide. In a high philosophical or metaphysical sense, *intentionality* points to a greater undifferentiated realm

where being is identical to essence and essence is identical to being.

On this level the experience of *intentionality* is akin to the notion of William James' (1904a, b) *pure experience* and consciousness beyond the margin (Taylor 1996; Taylor and Wozniak 1996); and Karl Jaspers' (1935) boundary experience and *existenze* (Mendelowitz 1982). Rollo May (1969) incorporates this high concept of intentionality into his various psychotherapeutic methods; thereby giving *intentionality* a pragmatic traction of real application on a human to human level.

Historical and Cultural Overview

In Western Scholarship St. Anselm (1077/1962) used the exact term intentionality in his writings. He extracted this meaning from Aristotle (see *On the Soul* II 12; cf. III 4 and 8 for the directedness of mental acts; Caston 1998) and applied it to one of his ontological proofs for the beatific vision of the divine, where the subject and object of adoration become merged and inseparable.

In the history and development of psychology of the late 1800s, Franz Brentano was the first to resurrect the scholastic term of intentionality in his *Psychology from an Empirical Standpoint* (1874/1995) and later *Descriptive Psychology* (1887/1995). Edmund Husserl, a student of Brentano through Stumpf, appropriated this term from Brentano to form his own various phenomenological usages. Heidegger, Merleau-Ponty, and Sartre all inherited the phenomenological notion of intentionality via Husserl (May et al. 1958; Spiegelberg 1982). It is here that one sees the introduction of the exact term intentionality into the context of the Cartesian dualism of continental philosophical traditions.

Intentionality as Overcoming the Duality of Subject and Object

The Cartesian duality posits the subject-object split. (Descartes' statement, "I think, therefore I am" generated a philosophical viewpoint that established rationality as the dominant

orientation. One's existence (Am-ness) is seen as distinguished from essence, *who* one is.) This in turn gave birth to a whole perspective differentiated into two philosophical orientations or forms. The first is where essence and being are different but inseparable and the second is where essence and being are both distinct and separated. The second form is the deeper Cartesian split of subject and object. Thus the second application of intentionality outside the realm of pure experience (in the Jamesean meaning of that) is articulated by Amedeo Giorgi (1993) as the necessary epistemological function in consciousness – from a phenomenological standpoint – to overcome the Cartesian subject-object gap:

Intentionality means that consciousness is always directed toward something, that it has an object. Moreover, this object or consciousness is *not* in consciousness, but *for* consciousness. In other words, consciousness is like a principle of openness to otherness; it is always in relation to something other than itself. The importance of *the intentional relation* is that it is *the principle* by which the *Cartesian split between a subject and a world is overcome*. (p. 5)

Intentionality in Existential Psychology

Rollo May (May et al. 1958; May 1969) integrated the existential notion of intentionality into the American humanistic school psychological thought for direct application in psychotherapy. Rogerian schools of counseling and therapy appropriated intentionality in their methods and practices.

A third level of meaning of intentionality is its application in day-to-day experience and real psychotherapeutic situations. Rollo May (1969) explored intentionality in relation to will.

Existential Psychotherapy: May's Perspective on Intentionality

Rollo May's (1969) work *Love and Will* offered an analysis of intentionality that articulated the existentialist understanding of its relation to effective psychotherapy and the generation of will. Whereas cognitive-behavioral psychology aims at changing

the habits and beliefs through setting intentions to carry out certain observable behavioral objectives, May's approach to intentionality strives to create a connection with the very being of the individual himself or herself. May (1969) wrote:

By intentionality, I mean the structure which gives meaning to experience. It is not to be identified with intentions, but is the dimension which underlies them; it is man's capacity to have intentions . . . Intentionality is what underlies both conscious and unconscious intentions. It refers to a state of being and involves, to a greater or lesser degree, the *totality* of the person's orientation to the world at that time . . . Intentionality . . . goes below levels of immediate awareness, and includes spontaneous, bodily elements and other dimensions which are usually called "unconscious." (pp. 223–224)

Framing intentionality above, May placed intentionality within the realm of metaphysics and philosophy as well as psychology.

Roots of May's Definition of Intentionality

Central to both psychotherapy and philosophy is the question of how people make authentic choices, heal psychological wounding that limits them, and work for personal transformation. Drawing on both Husserl (1900/2008) and Heidegger (1962) as well as the mythological archetypes of classic Greece and Rome, Rollo May (1969) proposed that three potentialities within the human being can work together to this end. May (1969) pointed to the Greek god *Eros* as a symbol of the human urge toward unity, whether through love or the transcendent blending of consciousness in union with the cosmos. He identified the *daimonic* urges as the natural forces within a person that well up and urge one to create, to assert oneself, or that arise as anger and even violence if not tamed and integrated. A third force, more subtle still, May (1969) distinguished as *intentionality*. Generated in the subconscious from the meanings one makes of one's actions and one's world, and gathering force from awareness, intentionality surfaces and empowers one to set intentions. The will to set such intentions and carry them out depends on a *knowing* that touches

the whole being: the intellect, feeling, and sensory processes must all be engaged.

Intentionality and Existential Psychotherapy

This model for intentionality and transformation is fundamental to the existential psychotherapy approach. Rather than focusing on behavioral changes as an end in themselves, existential psychotherapy and other depth therapies such as Gestalt strive to generate such moments of direct encounter with self, awareness of the meanings and intentions currently guiding one, *and the connection with being*. This orientation reflects the belief that *meaning-making* through "invoking the actual" (what may be present in the moment but unregarded) is the means to generate intentionality in the therapeutic process (Schneider and Krug 2010).

Care

Care implies relationship, concern, and conscience. In discussing the nature of being, of the human being, which Heidegger (1962) termed *dasein* (James 1889, p. 327), Heidegger concluded that one who is present, engaged, and authentic – such a person would also have an attitude of care toward the people and objects in his or her environment. Unlike Freud's construct of the superego, this type of conscience is an authentic, organic response from within the being of the individual. It is from this level of care, a human response to what is in the world within and around one, that intentionality arises. That is, it comes from consciousness/awareness that emerges from one's being, from *being in the world*, as Heidegger analyzed it. May (1969) posited that intentionality grows from this response of care.

Husserl's Construct of Intentionality

Husserl (1913/1983) states, "Intentionality . . . precisely expresses the fundamental property of consciousness; all phenomenological problems

... find a place within it" (p. 347). In his early work based on his studies with Brentano, Husserl linked intentionality to perception. When one is regarding an object or a view, the intention one has in mind frames the way the object is perceived (Husserl 1900/2008).

It was Husserl's (1931/2012) attempt to bracket these perceptions when trying to understand an object that led Husserl to articulate his philosophy and research approach of phenomenology. May's (1969) exploration of intentionality was in part informed by Husserl's work.

Conclusion

In *Love and Will*, May (1969) tried to synthesize the classical, phenomenological, and existential perspectives on intentionality. Analyzing the question of what the true nature of will is, the will that would allow one authentic choices leading to a life of authenticity, May (1969) concluded that it came from meanings and intentions within the unconscious depths of a person. When mind, body, and emotions align from response to the meanings and essential, direct perceptions of oneself and one's environment, intentionality can arise capable of motivating a person to change, to lead a life resonant with his or her being.

References

- Alcoholics Anonymous. (2002). *Alcoholics Anonymous, 4th Edition*. New York: A.A. World Services.
- Anonymous. (2002). *Alcoholics Anonymous: The big book* (4th ed.). New York: Alcoholics Anonymous World Services.
- Anselm of Canterbury. (1077/1962). *Proslogium* (trans: Deane, S. N.). In S. N. Deane (Ed.), *St. Anselm: Basic writings* (pp. 3–79). Chicago: Open Court.
- Beck, J. S., & Beck, A. T. (2011). *Cognitive behavioral therapy* (2nd ed.). New York: Guilford Press.
- Brentano, F. (1874/1995). *Psychology from an empirical standpoint*. London: Routledge.
- Brentano, F. (1887/1995). *Descriptive psychology*. London: Routledge.
- Caston, V. (1998). Aristotle and the problem of intentionality. *Philosophy and Phenomenological Research*, 58(2), 249–298.
- Giorgi, A. (1993). *Existential phenomenological philosophy as grounding for person-centered science*. (Occasional Paper, 93.3). Educational Research and Development Unit (ERADU) of Royal Melbourne Institute of Technology (RMIT). Melbourne, AU.
- Heidegger, M. (1962). *Being and time* (trans: Macquarrie, J., & Robinson, E.). New York: Harper & Row.
- Husserl, E. (1900/2008). *Logical investigations* (Vol. I, trans: Findlay, N.). New York: Routledge.
- Husserl, E. (1913/1983). *Ideas I: General introduction to a pure phenomenology* (trans: Kersten, F.). The Hague: Nijhoff.
- Husserl, E. (1931/2012). *Ideas I: General introduction to pure phenomenology* (trans: Gibson, W. R. B.). New York: Routledge Classics.
- James, W. (1889). The psychology of belief. *Mind*, 14(55), 321–352.
- James, W. (1904a). Does "consciousness" exist? *Journal of Philosophy, Psychology and Scientific Methods*, 1(18), 477–491.
- James, W. (1904b). A world of pure experience. *Journal of Philosophy, Psychology and Scientific Methods*, 1(20–21), 533–543; 561–570.
- Jaspers, K. (1935). *Reason and existenz [Vernunft und existenz]* (trans: Earle, W.). New York: Noonday Press, 1955.
- May, R. (1969). *Love and will*. New York: W. W. Norton & Co.
- May, R., Angel, E., & Ellenberger, H. F. (Eds.). (1958). *Existence*. New York: Rowman & Littlefield.
- Mendelowitz, E. M. (1982). *Conflict and change: The boundary experience in literature and existential psychotherapy*. Doctoral dissertation, California School of Professional Psychology, Berkeley/Alameda. ProQuest (8223521).
- Rao, K. R. (2002). *Consciousness studies: Cross-cultural perspectives*. Jefferson: McFarland & Company, Inc.
- Schneider, K. J., & Krug, O. T. (2010). *Existential-humanistic therapy* (3rd ed.). Washington, DC: American Psychological Association.
- Spiegelberg, H. (1982). *The phenomenological movement: A historical introduction* (2 volumes). The Hague: Nijhoff.
- Taylor, E. I. (1996). *William James on consciousness beyond the margin*. Princeton: Princeton University Press.
- Taylor, E. I., & Wozniak, R. H. (Eds.). (1996). *Pure experience: The response to William James*. Bristol: Thoemmes Press.

Intentionality Bias

- ▶ [Hypersensitive Agency Detection](#)

Intentions

- ▶ [Goals](#)
- ▶ [Social Goals](#)

Interaction

- ▶ [Dyadic Effects](#)
- ▶ [Moderation \(Statistical\)](#)

Interactional Psychology

- ▶ [Person-Environment Interaction Model](#)

Interactionism

- ▶ [Trait-Situation Interaction](#)

Interactive Complexity

- ▶ [Integrative Complexity](#)

Interactive Determinism

- ▶ [Symbolic Interactionism](#)

Interdependence

- ▶ [Social Exchange Theory](#)
- ▶ [Teamwork](#)

Interdependent and Independent Self-Construal

Miranda Giacomini¹ and Christian H. Jordan²

¹University of Toronto, Toronto, ON, Canada

²Wilfrid Laurier University, Waterloo, ON, Canada

Synonyms

[Collectivism](#); [Individualism](#)

Definition

Interdependent and independent self-construals refer to different cognitive representations of the self that people may hold. Those with an independent self-construal view internal attributes, such as traits, abilities, values, and attitudes as central to their sense of self. Those with an interdependent self-construal, in contrast, view their close relationships, social roles, and group memberships as central to their sense of self.

Introduction

Self-construal refers to how individuals view themselves at a fundamental level; whether they view themselves as primarily separate from or integrally connected to others (Markus and Kitayama 1991). Although multiple different self-construals are possible, Markus and Kitayama (1991) identified two primary types: interdependent and independent self-construal. These self-construals differ in the extent to which they represent the self as connected to (i.e., interdependent), or distinct from (i.e., independent), others (for a review, see Cross et al. 2011).

Interdependent self-construal is the extent to which people construe the self as being fundamentally connected to other people. Individuals high in interdependent self-construal focus strongly on their relationships with others and are concerned with the ways in which they can benefit their social group. They are likely to define their self-concept in terms of their close relationships, social roles, and group memberships. Independent self-construal, in contrast, is the extent to which people view the self as being separate and distinct from others and the social world. Those high in independent self-construal represent the self primarily in terms of internal attributes, traits, and attitudes that do not depend on their relationships with others, and help to highlight their uniqueness from others. Put simply, often what distinguishes people's dominant self-construal is their answer to the question: *Who am I?* Individuals with a more interdependent self-construal are more likely to describe their memberships in collective groups or their interpersonal relationships

(e.g., “I am a mother,” “I am on a soccer team”). Individuals with a more independent self-construal are more likely to respond by highlighting their unique abilities or individual traits (e.g., “I am creative,” “I am smart”).

Self-construal is an individual difference variable such that people have different levels of both independent and interdependent self-construal. Although these constructs are often described as representing a continuum from independent to interdependent, there is accumulating evidence that these self-construals represent two distinct dimensions (e.g., Gudykunst et al. 1996; Oyserman et al. 2002; Singelis 1994). That is, people can be high or low on both interdependent and independent self-construal simultaneously. Although these constructs are empirically orthogonal, most research primarily discusses them as continuous dimensions.

This chapter will discuss the ways in which interdependent and independent self-construal differ from one another. First, we examine the role of culture in the development and perception of self-construal. Next, we take a look at ways to measure and experimentally manipulate self-construal. We then focus on how people’s self-construal influences how they think about others, themselves, and the social context. Finally, we examine some recent advances in psychological research on self-construal.

The Role of Culture

While independent and interdependent self-construals are individual differences, individualism and collectivism are cultural syndromes used to explain differences observed between cultural groups. These terms, however, are often used interchangeably. Interdependent self-construal is more prominent in collectivist cultures (e.g., non-Western cultures) in which people tend to prioritize the group over the self. East Asian cultures (e.g., Japan) are considered the prototype for interdependent self-construal. Conversely, independent self-construal is more prominent in individualistic cultures such that Western cultures (e.g., United States) are considered the prototype for independent self-construal. This is because people in Western cultures tend to view

themselves, at a fundamental level, as separate and distinct from others.

The distinction between individualist and collectivist cultures is important because culture dramatically shapes peoples’ self-views. Though individualism and collectivism broadly describe cultural differences rather than individual differences, researchers often compare Western (e.g., United States) and Eastern cultures (e.g., Japan) in order to understand differences between independent and interdependent self-construal. In addition, researchers have argued that individuals possess both independent and interdependent self-construals but that the cultural context fosters the development of one’s dominant self-construal (e.g., Markus and Kitayama 1991; Triandis 1989; Singelis 1994). In other words, culture can help to determine and activate one’s dominant self-construal.

Notably, culture does not invariably result in the typical differences in self-construal (Matsumoto 1999). People within any culture vary in their levels of independent and interdependent self-construal. Gardner et al. (1999) found that priming an independent or interdependent self-construal within specific cultures affects the social orientations typical of people in those cultures. That is, American participants who were primed with interdependent self-construal adopted worldviews and values more consistent with collectivist cultures compared to when they were primed with independent self-construal (Gardner et al. 1999).

Culture is thus an important influence on whether someone develops a more interdependent or independent self-construal. Although much of the research on self-construal has been inferred through observing differences between people in Western and non-Western cultures, interdependent and independent self-construal can be assessed as individual differences, within cultures, or can be situationally primed in participants.

Measuring Self-Construal

Self-construal can be measured as a chronic or dispositional tendency such that individuals vary in the extent to which their self-construal is characteristically interdependent and independent. There are several self-report scales designed to measure

people's self-construals. Self-construal is most commonly measured using the Self-Construal Scale (SCS; Singelis 1994). The SCS asks respondents to indicate their agreement with 12-items designed to measure interdependent self-construal (e.g., "It is important for me to maintain harmony within my group"; "I will sacrifice my self-interest for the benefit of the group I am in"; "I will stay in a group if they need me, even when I'm not happy with the group") and 12-items designed to measure independent self-construal (e.g., "My personal identity independent of others is very important to me"; "I act the same way no matter who I am with"; "I prefer to be direct and forthright when dealing with people I've just met"). While the SCS is the most widely used measure, Gudykunst et al. (1996) created another self-construal scale using items from a variety of self-construal measures including the SCS. In this measure, 14-items measure interdependent self-construal (e.g., "My happiness depends on the happiness of those in my group"; "It is important to consult close friends and get their ideas before making decisions") and 14-items measure independent self-construal (e.g., "I don't support a group decision when I know it is wrong"; "I prefer to be self-reliant rather than dependent on others"). See Levine et al. (2003) for issues with self-report self-construal scales.

In addition to standard, closed-ended self-report measures, the Twenty Statements Test (TST; Kuhn and McPartland 1954) has also been used to measure self-construal. Respondents are asked to complete 20 open-ended sentence stems that begin with "I am..." Researchers can then code the statements made by participants as reflecting independent or interdependent self-construal. Respondents with more interdependent self-construal are more likely to mention group memberships (e.g., "I am on a football team"; "I am Japanese"). Those with more independent self-construal are more likely to mention individual characteristics or achievements (e.g., "I am smart"; "I am a winner"). The advantage of this test is that responses are self-generated and naturalistic but the disadvantage is that researchers need to code participants' responses to each item and some responses may be difficult to categorize.

In sum, these assessment tools provide researchers with valid and reliable ways of

assessing people's levels of interdependent and independent self-construal. These questionnaires have been widely used to study individual differences in self-construal and to investigate how people's dominant self-construal influences their judgements and behavior.

Manipulating Self-Construal

In addition to measuring independent and interdependent self-construal as chronic individual differences, they can also be situationally activated or primed. For the purposes of experimental research, researchers have been able to effectively manipulate or alter participants' dominant self-construal (for a recent meta-analysis on common self-construal manipulations, see Oyserman and Lee 2008). A commonly-used self-construal manipulation is *the similarities and differences with friends and family manipulation* (sometimes referred to as the similar/different prime technique; Tarfimow et al. 1991). During this task, participants reflect on and answer open-ended questions. To prime interdependence, participants are asked to reflect on what makes them similar to their friends and family. To prime independence, participants are instead asked how they are different from their friends and family. Oyserman and Lee (2008) found that the similar/different prime technique is the most effective manipulation of self-construal.

Another technique, the *I/We prime task*, has also been shown to effectively prime interdependent and independent self-construal by activating the concept of "I" (independence) or "we" (interdependence; Brewer and Gardner 1996; Gardner et al. 1999). Participants read a single paragraph (typically about a trip to the city) and are instructed to circle all of the pronouns in the paragraph. To prime interdependence, the pronouns are all plural (i.e., we, our) and to prime independence the pronouns are all singular (i.e., I, me, mine). A major benefit of this manipulation is that the research design can include an experimental control condition using impersonal pronouns (i.e., it, its). Research using both of these techniques has demonstrated that situational shifts in self-construal can influence people's cognitions, motivations, and social behavior.

Research on Independent and Interdependent Self-Construal

Using the tools described above to measure or experimentally prime self-construal, researchers have studied the influence of self-construal on people's thoughts, emotions, motivations, and behaviors for decades. An impressive body of research indicates that self-construal influences how people think about others, themselves, and the social context.

Interpersonal Relationships

Interpersonal relationships are an important feature of independent and interdependent self-construal, though for very different reasons (see Cross et al. 2011). Interdependent self-construal emphasizes the interconnections between the self and others and consequently highly interdependent individuals have a greater desire to please those in their social groups. In contrast, an independent self-construal reflects a separation and distinction between the self and others. Individuals with highly independent self-construal use their interpersonal relationships to reinforce their autonomy. For those high in independent self-construal, others are often used as a means to an end; that is, others are used for the purpose of social comparison to confirm one's own uniqueness. As such, interpersonal relationships are considered advantageous to the extent that they benefit the individual or provide the individual with support.

This contrast between interdependent and independent self-construal suggests that people with an interdependent self-construal focus to a greater extent on fostering their relationships and group memberships, which is often reflected in their social behavior. Because those with more interdependent self-construal strive for harmony among group members, they alter their behavior or regulate their emotional responses to maintain a sense of group cohesion. For example, those with more interdependent self-construal experience more other-focused emotions (e.g., shame) than ego-focused emotions (e.g., anger, pride; Tracy and Robins 2004).

In addition, those high in interdependent self-construal are more likely to take the perspective of

another person (Haberstroh et al. 2002) or listen to another person's point of view compared to those high in independent self-construal (Gardner and Seeley 2001). Those primed with interdependent self-construal are more likely to mimic an interaction partner (van Baaren et al. 2003) and be more cooperative during social dilemmas (Utz 2004). In one study, those primed with interdependent self-construal sat physically closer to an interaction partner than those primed with an independent self-construal (Holland et al. 2004). As previously described, culture can influence self-construal and subsequently interpersonal perceptions. For example, East Asians are more concerned with the thoughts and feelings of close others than are Westerners, which is mediated by interdependent self-construal (Ma-Kellams and Blascovich 2012). Self-construal thus influences the ways in which people approach interpersonal relationships and how they behave toward other people.

Self-Esteem

Along with influencing how people act toward others, self-construal also influences how people feel about themselves (also see entry on cultural differences in self-esteem). Plenty of research suggests that individuals from individualistic cultures, with more independent self-construal, have higher self-esteem than individuals from collectivist cultures, with more interdependent self-construals (for a review, see Heine et al. 1999). Indeed a meta-analysis of the relations between self-esteem and independent and interdependent self-construal found that independent self-construal is highly correlated with self-esteem, whereas interdependent self-construal is weakly related to self-esteem, among people from all cultures (e.g., European Canadians, Japanese; Heine and Lehman 1997). This is likely because North American culture fosters the development of self-esteem, whereas in Eastern cultures, like Japan, self-esteem is considerably less prominent in public discourse.

In addition, self-enhancement and self-serving biases, which allow people to build and maintain their positive self-views, are much more common among those with more independent self-construal

than those with more interdependent self-construal (also see the entry on the self-enhancement motive). There is clear evidence that highly independent individuals self-enhance; for instance, they rate themselves as better-than-average across a wide variety of positive attributes (and, by definition, a majority of individuals cannot be above average). In contrast, researchers disagree on whether individuals with interdependent self-construals self-enhance (e.g., Heine et al. 1999). Numerous studies have suggested that such individuals do not show typical self-enhancement biases. However, there is also evidence that individuals high in interdependent self-construal self-enhance on qualities that are important to them, including communal traits which connect them to their groups or social roles (Gaertner et al. 2012). In addition, individuals primed with independent self-construal experience more pride when thinking about their own achievements, whereas those primed with interdependent self-construal experience more pride when thinking about the achievements of others (Neumann et al. 2009). Thus, how people feel about themselves and the ways in which they may self-enhance depend on their self-construal.

Social Context

Self-construal also influences how people process information about the world around them. Self-construal affects the cognitive processing style people adopt, especially the degree to which they are context sensitive. Highly interdependent individuals define themselves in terms of others, and their self-representations are often embedded in their social context (Markus and Kitayama 1991). That is, individuals high in interdependent self-construal are likely to know more information about others and have more elaborate cognitive representations of others than are their less interdependent counterparts. At a basic level, those with higher interdependent self-construal often have a more context-dependent cognitive processing style and encode items in their environments in relation to their context. For example, individuals with predominantly interdependent self-construal perform better than those with more independent self-construal on

contextualized memory tasks (e.g., memory tasks require participants to recall the spatial organization of objects) because they encode the entire context of the task (Kühnen and Oyserman 2002). Individuals with predominantly interdependent self-construal view the world more holistically, whereas those with predominantly independent self-construal view it more analytically, in terms of its molecular components (Konrath et al. 2009). In addition, those high in interdependent self-construal attend more to context when making judgments, such that they pay attention to what another person may or may not know in a social context compared to those high in independent self-construal (Haberstroh et al. 2002).

Recent Advances in the Neuroscience of Interdependent Self-Construal

More recent advances in research on self-construal have investigated neurological and genetic distinctions between those high and low in interdependent self-construal. Indeed, how people view themselves in comparison to the world around them influences their neural processes (for a review, see Han and Humphreys 2016). Recent research has suggested that self-construal may have a heritable, genetic component (Kitayama and Park 2014). In addition, there are neurological differences between those with independent and interdependent self-construal. For example, priming an interdependent self-construal influences how people process actions they observe others perform. Interdependent self-construal was associated with increased motor resonance when observing another's actions, which is related to behavioral mimicry, or the tendency to copy others' behaviors (Hogeveen and Obhi 2011). Behavioral mimicry, in turn, facilitates social interactions.

Interdependent self-construal has also been linked to the neural correlates of self-centric motivation (measured through error-related negativity) such that specific cultures (e.g., East Asians) tend to display less self-centric motivation (Kitayama and Park 2014). Similarly, participants primed with independent self-construal demonstrated

greater neural activity in the right medial frontal cortex, a neural correlate of self-awareness, when they viewed their own faces relative to when they viewed other familiar faces. Researchers concluded that the neural correlates of self-awareness are moderated by self-construal (Sui and Han 2007). The examples here demonstrate the influence of construal on how people view the world around them as evidenced by changes in their low-level neurological processes.

Conclusion

Self-construal influences how people think about others, themselves, and how they perceive the world around them. Those with an interdependent self-construal focus on connecting with people, their social groups, and building strong social ties. Those with an independent self-construal focus on maintaining uniqueness and separateness from others. How we view ourselves in connection to others colors how we think, feel, and act toward others, and has important implications for our social relationships.

Cross-References

- ▶ Collectivism
- ▶ Cultural Differences in Self-Esteem
- ▶ Individualism
- ▶ Self-Enhancement Motives

References

- Brewer, M. B., & Gardner, W. (1996). Who is this “We”? Levels of collective identity and self-representations. *Journal of Personality and Social Psychology*, 71, 83–93. <https://doi.org/10.1037/0022-3514.71.1.83>.
- Cross, S. E., Hardin, E. E., & Gercek-Swing, B. (2011). The what, how, why, and where of self-construal. *Personality and Social Psychology Review*, 15, 142–179. <https://doi.org/10.1177/1088868310373752>.
- Gaertner, L., Sedikides, C., & Cai, H. (2012). Wanting to be great and better but not average: On the pancultural desire for self-enhancing and self-improving feedback. *Journal of Cross-Cultural Psychology*, 43, 521–526. <https://doi.org/10.1177/0022022112438399>.
- Gardner, W. L., & Seeley, E. A. (2001). Confucius, “Jen,” and the benevolent use of power: The interdependent self as a psychological contract preventing exploitation. In A. Y. Lee-Chai & J. A. Bargh (Eds.), *The use and abuse of power: Multiple perspectives on the causes of corruption* (pp. 263–280). New York: Psychology Press.
- Gardner, W. L., Gabriel, S., & Lee, A. Y. (1999). “I” value freedom, but “we” value relationships: Self-construal priming mirrors cultural differences in judgment. *Psychological Science*, 10, 321–326. <https://doi.org/10.1111/1467-9280.00162>.
- Gudykunst, W. B., Matsumoto, Y., Ting-Toomey, S. T. E. L. L. A., Nishida, T., Kim, K., & Heyman, S. (1996). The influence of cultural individualism-collectivism, self construals, and individual values on communication styles across cultures. *Human Communication Research*, 22, 510–543. <https://doi.org/10.1111/j.1468-2958.1996.tb00377.x>.
- Haberstroh, S., Oyserman, D., Schwarz, N., Kühnen, U., & Ji, L. J. (2002). Is the interdependent self more sensitive to question context than the independent self? Self-construal and the observation of conversational norms. *Journal of Experimental Social Psychology*, 38, 323–329. <https://doi.org/10.1006/jesp.2001.1513>.
- Han, S., & Humphreys, G. (2016). Self-construal: A cultural framework for brain function. *Current Opinion in Psychology*, 8, 10–14. <https://doi.org/10.1016/j.copsyc.2015.09.013>.
- Heine, S. J., & Lehman, D. R. (1997). The cultural construction of self-enhancement: An examination of group-serving biases. *Journal of Personality and Social Psychology*, 23, 389–400.
- Heine, S. J., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review*, 106(4), 766–794. <https://doi.org/10.1037/0033-295X.106.4.766>.
- Hogeveen, J., & Obhi, S. S. (2011). Altogether now: Activating interdependent self-construal induces hypermotor resonance. *Cognitive Neuroscience*, 2, 74–82. <https://doi.org/10.1080/17588928.2010.533164>.
- Holland, R. W., Roeder, U. R., Brandt, A. C., & Hannover, B. (2004). Don’t stand so close to me: The effects of self-construal on interpersonal closeness. *Psychological Science*, 15, 237–242. <https://doi.org/10.1111/j.0956-7976.2004.00658.x>.
- Kitayama, S., & Park, J. (2014). Error-related brain activity reveals self-centric motivation: Culture matters. *Journal of Experimental Psychology: General*, 143, 62–70. <https://doi.org/10.1037/a0031696>.
- Konrath, S., Bushman, B. J., & Grove, T. (2009). Seeing my world in a million little pieces: Narcissism, self-construal, and cognitive-perceptual style. *Journal of Personality*, 77, 1197–1228. <https://doi.org/10.1111/j.1467-6494.2009.00579.x>.
- Kuhn, M. H., & McPartland, T. S. (1954). An empirical investigation of self-attitudes. *American Sociological Review*, 19, 68–76.
- Kühnen, U., & Oyserman, D. (2002). Thinking about the self influences thinking in general: Cognitive consequences of salient self-concept. *Journal of Experimental Social Psychology*, 38, 492–499. [https://doi.org/10.1016/S0022-1031\(02\)00011-2](https://doi.org/10.1016/S0022-1031(02)00011-2).
- Levine, T. R., Bresnahan, M. J., Park, H. S., Lapinski, M. K., Wittenbaum, G. M., Shearman, S. M., . . .

- Ohashi, R. (2003). Self-construal scales lack validity. *Human Communication Research, 29*, 210–252. <https://doi.org/10.1111/j.1468-2958.2003.tb00837.x>.
- Ma-Kellams, C., & Blascovich, J. (2012). Inferring the emotions of friends versus strangers the role of culture and self-construal. *Personality and Social Psychology Bulletin, 38*, 933–945. <https://doi.org/10.1177/0146167212440291>.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion and motivation. *Psychological Review, 98*, 224–253. <https://doi.org/10.1037/0033-295X.98.2.224>.
- Matsumoto, D. (1999). Culture and self: An empirical assessment of Markus and Kitayama's theory of independent and interdependent self-construals. *Asian Journal of Social Psychology, 2*, 289–310. <https://doi.org/10.1111/1467-839X.00042>.
- Neumann, R., Steinhäuser, N., & Roeder, U. R. (2009). How self-construal shapes emotion: Cultural differences in the feeling of pride. *Social Cognition, 27*, 327–337. <https://doi.org/10.1521/soco.2009.27.2.327>.
- Oyserman, D., Coon, H. M., & Kimmelmeier, M. (2002). Rethinking individualism and collectivism: evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin, 128*, 3–72. <https://doi.org/10.1037/0033-2909.128.1.3>.
- Oyserman, D., & Lee, S. W. (2008). Does culture influence what and how we think? Effects of priming individualism and collectivism. *Psychological Bulletin, 134*, 311–342. <https://doi.org/10.1037/0033-2909.134.2.311>.
- Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin, 20*, 580–591. <https://doi.org/10.1177/0146167294205014>.
- Sui, J., & Han, S. (2007). Self-construal priming modulates neural substrates of self-awareness. *Psychological Science, 18*, 861–866. <https://doi.org/10.1111/j.1467-9280.2007.01992.x>.
- Tarimow, D., Triandis, H. C., & Goto, S. G. (1991). Some tests of the distinction between private self and collective self. *Journal of Personality and Social Psychology, 60*, 649–655. <https://doi.org/10.1037/0022-3514.60.5.649>.
- Tracy, J. L., & Robins, R. W. (2004). Putting the self into self-conscious emotions: A theoretical model. *Psychological Inquiry, 15*, 103–125. https://doi.org/10.1207/s15327965pli1502_01.
- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review, 96*, 506–520. <https://doi.org/10.1037/0033-295X.96.3.506>.
- Utz, S. (2004). Self-construal and cooperation: Is the interdependent self more cooperative than the independent self? *Self and Identity, 3*, 177–190. <https://doi.org/10.1080/13576500444000001>.
- van Baaren, R. B., Maddux, W. W., Chartrand, T. L., De Bouter, C., & van Knippenberg, A. (2003). It takes two to mimic: Behavioral consequences of self-construals. *Journal of Personality and Social Psychology, 84*, 1093–1102. <https://doi.org/10.1037/0022-3514.84.5.1093>.

Interest

Amanda M. Durik

College of Liberal Arts and Sciences, Department of Psychology, Northern Illinois University, DeKalb, IL, USA

Synonyms

Intrinsic interest; Intrinsic motivation

Definition

An approach response to stimuli encountered in the environment, accompanied by emotional engagement (often positive), heightened attention, and active cognitive processing.

Introduction

Interest is a particular emotional and cognitive experience that occurs in response to stimuli in the environment. In this sense, interest emerges at the intersection between individuals and available stimuli in the environment (Dewey 1913). In general, interest is the emotion that motivates individuals to approach stimuli in order to experience and think about the environment, for the purpose of having a fuller understanding of the world (Izard 1977). Interest can be thought of either as a current state (feeling interested at a particular moment) or as a trait (a general tendency to value and gravitate toward particular classes of stimuli or domains).

Forms of Interest: State and Trait

Interest as a State Experience

The state of interest is often associated with positive feelings as well as focused attention on the stimulus that is the object of interest. For example, one can imagine the excitement and focus of observers who are lucky enough to witness a giant sea turtle coming out of the ocean to lay

eggs. However, the state of interest also can be triggered by unpleasant stimuli, such as when individuals cannot pull their eyes away from a traffic accident or are drawn in by the sight of something disquieting (e.g., watching a boa constrictor consume prey). Often the state of interest is tied directly to features of the situation, such as when stimuli in the environment are complex, novel, incongruous, or surprising (Berlyne 1960). According to one model, individuals experience the state of interest when two conditions are met (Silvia 2006). First, the stimuli need to be sufficiently complex to warrant investigation. Second, the person needs to feel capable of coping with the level of complexity inherent in the stimuli. In this way, the experience of interest is supported by the situation and will be maintained only to the extent that the situation continues to offer interest-enhancing features, unless individuals have internal resources with which to support their own interest (Hidi and Renninger 2006).

Interest as a Trait: Individual Interest

Interest can also have features of a trait, such as when individuals are drawn to particular domains over time. For example, some individuals may be interested in birds, whereas others are interested in astronomy. This type of interest, individual interest, is more stable within a person. Individual interest develops over time and is a relatively enduring tendency for a person to repeatedly seek out and interact with stimuli from a particular content domain (Renninger 2000). The purpose of choosing to interact with stimuli from a domain of individual interest is for the value of experiencing the content and having knowledge of it (Hidi and Renninger 2006; Krapp 2002; Prenzel 1992; Renninger et al. 1992; Schiefele 1991). The value for the domain emerges out of both affective involvement and meaningfulness (Schiefele 1991). For example, a person who is interested in astronomy may associate the domain with many positive, affective features, such as wonder, joy, excitement, and fascination. In addition, the domain is seen as meaningful, for example, if astronomy is perceived as important for understanding basic questions about the universe in general and life on Earth in particular.

Whereas the state of interest is triggered by stimuli in the environment, individual interest can be supported by processes within the individual. In this sense, individuals gravitate toward and immerse themselves in their domains of interest because they personally identify with the domain and perceive it as a means by which they can expand who they are in a desired way (Hidi and Renninger 2006; Krapp 2002; Prenzel 1992; Renninger et al. 1992). To this end, those with an individual interest are comfortable manipulating ideas within their domains of interest and tend to generate their own new questions to ponder and to explore. These questions are spawned by curiosity that emerges when individuals are working with domain content (Renninger 2000). This curiosity, along with the stored value, motivates individuals to seek out and to take advantage of opportunities to interact with domain content. Not surprisingly, accumulated knowledge is an important part of individual interest because it provides background content with which individuals can work in order to develop curiosity questions and further their exploration of the domain (Hidi and Renninger 2006; Renninger 2000). In this process of asking questions and seeking answers, those with individual interest are fairly resilient to the experience of difficulty and can persist through activities that might otherwise be seen as costly in terms of frustration or invested resources (Hidi and Renninger 2006).

Cultivating Interest

Given the benefits of individual interest, attention has turned in recent years to ways to cultivate it. This question is especially important in the context of learning, with the hope of crafting educational environments to optimally motivate students to both learn material and find it interesting beyond the learning situation. This line of research has taken an experimental approach in order to determine how features of the situation might foster the experience of interest in the hope of leading to individual interest. For example, research participants may be exposed to learning material under one of two conditions (with interest-enhancing features or not) and then interest is measured after the learning opportunity. The research suggests that

the effects of situational factors on interest are quite complex such that the situational enhancements designed to trigger and maintain interest vary depending on individuals' orientations toward the content domain to begin with (see review by Durik et al. 2015). One approach focuses on enhancing learning materials with features that might target absorption and involvement. For example, learners who enter a learning situation with low interest in the domain reported experiencing more interest while learning when the content was presented with colorful pictures and varied fonts. However, for learners who entered the learning situation with existing individual interest, these same features of the content tended to decrease the experience of interest. These results suggest that learners with low interest in a domain may benefit from sensory experiences that help get them involved, but that these sensory experiences might disrupt or distract those with a developed individual interest. Other research has targeted the meaningfulness of tasks in order to cultivate interest, but again, the results are complex. For example, asking learners to generate ways in which content to be learned may be useful to them tends to help individuals who otherwise do not feel confident in their abilities in the domain. This may suggest that concerns about their own abilities in the domain can be overridden by coming to appreciate the value of the domain. These lines of research are promising but also suggest that much more needs to be learned about interest in order to know how to cultivate it in particular situations.

Conclusions

Overall, interest is a response that individuals have to stimuli that they encounter in their environments. The response is inherently related to the desire to approach a stimulus because experiences with and knowledge about the stimulus is desired and valued. Interest can occur at either the state level, as is the case when a person is currently interacting with stimuli, or reside more as a trait within the person, as is the case when a person has developed a desire to seek out and re-engage in a particular stimulus within a domain across time.

Cross-References

- ▶ [Absorption](#)
- ▶ [Achievement Goals](#)
- ▶ [Achievement Motives](#)
- ▶ [Enactive Mastery Experience](#)
- ▶ [Growth Needs](#)
- ▶ [Intrinsic and Extrinsic Motivation](#)
- ▶ [Mastery Goals](#)
- ▶ [Need for Autonomy, The](#)
- ▶ [Need for Competence, The](#)
- ▶ [Person-Situation Interactions](#)
- ▶ [Personal Agency](#)
- ▶ [Positive Affect](#)
- ▶ [Self-Determination Theory](#)
- ▶ [Self-Efficacy](#)
- ▶ [Sentiment \(Cattell\)](#)
- ▶ [Values](#)
- ▶ [Vocational Interests](#)
- ▶ [Wonder](#)

References

- Berlyne, D. E. (1960). *Conflict, arousal and curiosity*. New York: McGraw-Hill.
- Dewey, J. (1913). *Interest and effort in education*. Boston: Riverside Press.
- Durik, A. M., Hulleman, C. S., & Harackiewicz, J. M. (2015). One size fits some: Instructional enhancements to promote interest. In K. A. Renninger & M. Nieswandt (Eds.), *Interest, the self, and K-16 mathematics and science learning*. Washington, DC: American Educational Research Association.
- Hidi, S., & Renninger, K. A. (2006). The four-phase model of interest development. *Educational Psychologist, 41*, 111–127.
- Izard, C. E. (1977). Interest–excitement as fundamental motivation. In C. E. Izard & J. L. Singer (Eds.), *Emotions, personality, and psychotherapy: Vol. 1, human emotions* (pp. 211–238). New York: Plenum.
- Krapp, A. (2002). An educational–psychological theory of interest and its relation to SDT. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 405–427). Rochester: University of Rochester Press.
- Prenzel, M. (1992). The selective persistence of interest. In K.A. Renninger, S. Hidi, & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 71–98). Hillsdale, NJ: Erlbaum.
- Renninger, K. A. (2000). Individual interest and its implications for understanding intrinsic motivation. In C. Sansone & J. M. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 373–404). San Diego: Academic.

- Renninger, K. A., Hidi, S., & Krapp, A. (1992). *The role of interest in learning and development*. Hillsdale: Erlbaum.
- Schiefele, U. (1991). Interest, learning, and motivation. *Educational Psychologist*, 26, 299–323.
- Silvia, P. J. (2006). *Exploring the psychology of interest*. New York: Oxford University Press.

Interest Neurosis

- ▶ [Primary and Secondary Gain](#)

Interests

- ▶ [Investigative Occupational Types](#)
- ▶ [Social Occupational Types](#)

Interference

- ▶ [Frustration](#)

Intergroup Antiegalitarianism

- ▶ [Social Dominance Orientation and Social Dominance Theory](#)

Intergroup Bias

- ▶ [Prejudice](#)

Intergroup Differentiation

- ▶ [Optimal Distinctiveness Theory](#)

Intergroup Dominance

- ▶ [Social Dominance Orientation and Social Dominance Theory](#)

Intergroup Relations

- ▶ [Groups](#)

Intermarriage

- ▶ [Exogamy](#)

Intermediate Variable Analysis

- ▶ [Mediation \(Statistical\)](#)

Internal and External Attributions

Adam Gerace
Central Queensland University, Adelaide, SA,
Australia

Synonyms

[Attribution](#); [Attribution theory](#)

Definition

Explanations for behavior that stress something about the person (internal attribution) or something about their environment (external attribution).

Introduction

Attribution theory examines how people determine the causes of behavior. Many of the dominant conceptualizations within attribution theory focus on how an individual (the *social perceiver*) understands another person's (the *actor*) behavior (Jones and Davis 1965). However, attribution theory also

seeks to explain understanding of one's own behavior. Internal attributions are explanations that stress something about the person, such as their traits, abilities, and physical characteristics. External attributions are explanations that stress environmental or situational factors, such as task difficulty, social influences, and the physical characteristics of a particular environment (Ross 1977).

Fundamental to attribution theory is this "internal-external or disposition-situation dichotomy" (Ross 1977, p. 175). That is, it is suggested that the social perceiver looks to attribute behavior predominantly to either something about the person or something about the situation. Attributing behavior or outcomes to particular causes is conceptualized as a *process*, with the person collecting and considering information regarding reasonable causes and then utilizing this causal information to infer dispositions of the person or properties of the situation/environment (Kelley 1967; Ross 1977).

The term *attribution theory* is used in the literature to assemble general assumptions and principles regarding person perception (Kelley 1973). However, there are several individual theories and models that have been proposed regarding the process and information used to understand the causes of one's own or others' behavior. Dominant theories have either examined the ways in which internal attributions are made for another person's actions (Jones and Davis 1965) or the ways in which different principles or types of information are used to form dispositional versus situational explanations of others' and one's own behavior (Kelley 1967; Weiner 1985). There have also been examinations of the errors made when attempting to attribute causes to internal or external factors, such as tendencies to attribute behaviors to factors about the other person rather than their environment (Gilbert and Malone 1995).

Heider's Naïve Psychologist

Heider (1958) was interested in commonsense psychology; that is, the ways in everyday life that people understand others and interpret the causes of their behavior. Heider believed that social perceivers engage in a *naïve analysis of*

action (similar to principles used by a scientist) to understand the origins of effects (e.g., another person's behavior). Underlying his theoretical formulations was the idea that people look for dispositional properties, "the relatively unchanging structures and processes that characterize or underlie phenomena" (p. 80). Determining the underlying and stable causes of behavior or actions allows understanding, control, and prediction of one's environment, including predicting the future actions of other people.

At the heart of attributional theories is the idea proposed by Heider (1958) that causes are attributed to "factors within the person" or "factors within the environment" (p. 82). In an example of a person rowing a boat across a lake, Heider provides a range of statements that stress something about the rower (e.g., "he is *trying*," "has the *ability*," "*wants*" to row the boat) and those that stress environment factors (e.g., "it is *difficult*," "today there is a good *opportunity*," "it is sheer *luck* that he succeeded"). In such a case, an effect (the boat reaching the other side of the lake) is thought to be a function of characteristics of the person – specifically, the person's power (e.g., ability) and motivation (effort and exertion) – and characteristics of the environment (e.g., wind conditions).

Owing to the ways in which perceivers think about another person and their behavior (called a *causal unit*), Heider (1944; Heider and Simmel 1944) believed that there is a tendency to attribute effects to personal characteristics (internal attributions) while underestimating environmental factors (external attributions) or the interplay of multiple factors (e.g., person and environment) on a person's behavior. The person's explanations for a behavior are also influenced by their own concerns and motivations. These ideas and many of Heider's theoretical formulations are reflected in major attributional theories and work examining errors social perceivers make in understanding and explaining the causes of behavior.

Correspondent Inference Theory

The correspondent inference theory (Jones and Davis 1965) examines how a social perceiver

uses another person's actions to infer their underlying dispositions. The theory suggests that the actor's behavior can be linked to their stable characteristics (*a correspondent inference* made) when it is determined that their actions were intentional: that is, where they knew the consequences of behavior and had the ability to carry out the behavior.

According to the theory, to determine another person's intentions and, consequently, their dispositions, the perceiver considers *noncommon effects* and the *social desirability of effects*. Non-common effects are consequences of one behavior that are not present in an alternative behavior. For example, in their original formulation, Jones and Davis present an example of Dr. Smedley who receives job offers at both Harvard and Yale and who chooses the Harvard position. Effects of Dr. Smedley's choice that are common to both choices (e.g., accepting the Harvard or Yale offer means that Dr. Smedley will work at an Ivy League university; and, in both choices, he will live in New England) are not particularly useful to making a correspondent inference between the action and Dr. Smedley's underlying characteristics. Effects that are distinct, such as Harvard but not Yale having a greater emphasis on a specific learning approach, will likely tell the perceiver more about Dr. Smedley as a person. Similarly, it is suggested that less informative behaviors regarding a person's dispositions are actions that the average person or the group to which they belong would find socially desirable. In a later formulation of the theory, Jones and McGillis (1976) revised the concept of assumed desirability to include two types of information: category-based expectancies, which involve knowledge of groups or categories to which the actor belongs and target-based expectancies, which involve knowledge about the actor. Behavior that differs from such expectancies is seen to be particularly revealing regarding the actor's internal characteristics and dispositions (Howard 1985).

The correspondent inference theory also suggests that characteristics of the perceiver are likely to influence whether dispositional inferences are made about an actor. Specifically, in situations where the actor's actions are personally relevant

to the perceiver (called *hedonic relevance*) and where the actor has knowledge of the effects of their behavior for the perceiver (*personalism*), correspondent inferences are more likely to be made.

While this theory focused on the formation of internal attributions about an actor, behavior that conformed to environmental or external constraints (e.g., requirements of a role) was seen to be as less informative to inferring another person's individual characteristics.

Covariation Model

The covariation model (Kelley 1967) examines how the social perceiver attributes an actor's behavior (or their own) to person versus external causes. In formulating the model, Kelley considered situations where the perceiver has observed or interacted with the other person more than once, as well as when there is only one interaction or observation from which to make an attribution for behavior.

In the first situation, the perceiver applies the covariation principle, which states that behavior is attributed to "one of its possible causes with which, over time, it covaries" (Kelley 1973, p. 108). For example, as outlined by Kelley, if it is known that Bob acted cooperatively in a game on his first move, but then competitively after his partner's competitive move, Bob is less likely to be considered a competitive person; the reverse would be true if a competitive move was made in response to a cooperative one.

To make an attribution, the perceiver uses three types of information and characterizes these dimensions as either being high or low: *distinctiveness*, whether the actor's reaction to an entity or event is unique to that entity/event; *consensus*, whether others react in a similar way to the entity/event; and *consistency*, whether the actor's reaction is consistent (a) over time and (b) mode of interaction or presentation. Attributing the cause of behavior to the entity (an external attribution) is more likely when the perceiver judges that there is high distinctiveness, high consensus, and high consistency. It is more likely that an internal

attribution will be made when determinations are made of low distinctiveness, low consensus, and high consistency. An attribution that stresses *both* factors is more likely with high consensus and high consistency information (McArthur 1972).

In the case of a single observation, Kelley (1973) stated that the perceiver makes use of the *discounting principle* and the *augmenting principle*. Discounting a hypothesized cause is likely in the presence of other causes; for example, compliance with a request is seen to be less indicative of an actor's personality if they have lower status (less power) and, therefore, are likely to be more susceptible to external pressure. The augmenting principle suggests that internal attributions are likely when there are known constraints or costs to a behavior, such as a person succeeding on a difficult task.

In developing a model of how the social perceiver attributes cause to internal or external factors in the absence of multiple observations or available information on distinctiveness, consensus, and consistency, Kelley (1972) postulated the concept of causal schemata. Casual schemata are mental frameworks that people hold that conceptualize how causal factors interact to produce an outcome. Kelley outlined different types of causal schemata: multiple sufficient causes, where any one of many causes could be attributed to an effect; multiple necessary causes, where interaction of multiple causes is considered necessary to produce an effect; compensatory causes, where causes interact in a compensatory manner to produce an effect; and graded effects, where causes are cumulative in producing an effect.

Attributional Theory of Motivation and Emotion

Weiner (e.g., Weiner 1979, 1985) developed a theory that focused on how perceivers understand their own or others' achievement-related outcomes, such as success or failure. Weiner suggested that examining whether outcomes – for example, success or failure on a test – are attributed to internal (i.e., something within the person; for example, ability or aptitude) or

external factors (i.e., something outside the person, for example, a biased teacher) does not sufficiently address other important factors regarding the nature of these attributions. For example, failure as a result of lack of effort would involve an internal attribution (i.e., something about the test taker). However, effort is not a stable or unchanging factor nor a factor that cannot be controlled by the test taker in the future.

On the basis of this reasoning, the theory developed by Weiner (1979) includes three causal dimensions with which an attribution is made: *locus* (the internal-external dimension), *stability* (whether the cause fluctuates or is constant), and *controllability* (whether the cause is under the control of the actor). Using the theory, explaining bad performance on a test as due to lack of aptitude or ability is an attribution that is internal (something about the person), as well as stable and uncontrollable, given that natural aptitude or ability is not likely to fluctuate or be under the person's control (Weiner 2010).

The theory goes beyond only explaining the *types* of attributions made, examining the implications of particular attributions on actors' or perceivers' emotions and expectancies for the future. According to the full theory (Weiner 1985), an outcome produces particular affect (e.g., happiness for a positive outcome), and if the person needs to understand *why* an outcome occurred (e.g., because the outcome was unexpected or negative), they engage in attributional processing. Particular causal ascriptions such as effort, luck, or personality are used, which map onto the locus, stability, and controllability dimensions.

Affective consequences of attributional work depend on the types of attributions made – for example, an internal explanation for failure may lower self-esteem, or perceptions of controllability over the outcome could lead to guilt. There are also cognitive consequences. In particular, whether a cause is attributed to stable or unstable characteristics will lead to expectancies of the outcome being more likely to occur or reoccur (if stable) or that a different or unchanged outcome is possible (if unstable; Weiner 1985).

Particularly important in the educational context, to which Weiner was interested, the theory

proposes that affective reactions and expectancy judgments inform future behavior. For example, based on attributions, experienced affect, and expectancies, the student who fails may decide to either try harder next time or to drop out of a course/school (Weiner 2010). In the case attributions regarding others, the social perceiver may decide to help an actor whose predicament is seen to have been the result of uncontrollable rather than controllable factors (Weiner 1985).

Attributional Errors

Several errors or biases committed by social perceivers in attributing an actor's behavior to internal or external causes have been investigated. A focus on errors and distortions differs from the approach of attribution theories, which examine the logical or rational processing of information (Ross 1977); that is, they are normative models of how one ought to process information.

The *correspondence bias* is the tendency to believe that another person's behavior corresponds with, or is indicative of, their dispositions (internal attribution) rather than considering situational or environmental factors which, if adequately considered, may lead to external attributions for their behavior (Gilbert and Malone 1995). Ross (1977) referred to this phenomenon as the *fundamental attribution error*, specifically describing it as "the tendency for attributers to underestimate the impact of situational factors and to overestimate the role of dispositional factors in controlling behavior" (p. 183).

In a well-known study, Jones and Harris (1967) presented essays ostensibly written by a student that were either pro-Fidel Castro or anti-Castro. Participants were told that the writer either had freely chosen whether they wrote a defense or criticism (choice condition) or that the student advocated the position assigned to them (no-choice condition). Surprisingly, it was found that in the no-choice condition, participants believed that the student who wrote a pro-Castro essay had significantly higher impressions of Castro than the student who was required to write an anti-Castro essay. This is despite participants

knowing that a position advocated was not of the writer's choice. In this way, participants used the writer's behavior to make a correspondent inference about their underlying attitudes, attributing the essay's content to internal factors (i.e., held attitudes) about the writer.

Several reasons for the correspondence bias have been posited, including that errors may be driven by lack of awareness of situational constraints facing the actor, unrealistic expectations for and inaccurate perceptions of an actor's behavior based on knowledge of their situation, and failure to adequately adjust an initial internal attribution to take account of the situation (Gilbert and Malone 1995).

Another attributional bias is the *actor-observer effect*, which involves a difference between actors and perceivers in the attributions they make for their own and others' behavior, respectively. Jones and Nisbett (1971) specifically describe the effect as "a pervasive tendency for actors to attribute their actions to situational requirements, whereas observers tend to attribute the same actions to stable personal dispositions" (p. 2).

It was suggested by Jones and Nisbett (1971) that this effect may be driven by discrepancies between information available to actors and observers. Actors have direct access to information regarding their experienced emotions, intentions, past experiences, and context/situational information. Observers, on the other hand, must often use indirect cues to ascertain these things (e.g., facial expressions to infer underlying emotions) and base attributions often on only one observed behavior. The theorists also believed that while the attention of an actor is directed *outward* toward their environment (thus, highlighting situational attributions for behavior), the observer's attention is directed toward the actor (highlighting their behaviors and facilitating an internal causal analysis; cf. Gilbert and Malone 1995).

In one influential study, participants who were asked explicitly to consider the thoughts, feelings, and experiences of an actor showed a reversal of the actor-observer effect; compared with participants not given such instructions, these participants provided relatively more situational and less dispositional attributions for the actor's behavior (Regan and Totten 1975).

Regarding attributions about oneself, the *self-serving bias* involves a tendency to attribute success to one's own internal dispositions (e.g., ability) and failure to external (e.g., the situation) causes (Miller and Ross 1975). Different theoretical reasons have been proposed for the bias. In their review of studies, Miller and Ross contended that the self-serving bias is driven by people's general expectations that they will succeed and beliefs regarding the relationship between their intentions and behavior. Unexpected and unintentional outcomes such as failure are, then, attributed to situational or environmental reasons. In a later meta-analysis (aggregation of studies), Campbell and Sedikides (1999) found support for their hypothesis that the self-serving bias can be explained as an attempt to manage threats to one's self-concept.

Critiques of the Internal-External Attribution Concept

A criticism of models that seek to explain internal and external attributions, and one acknowledged by the authors of attribution theories themselves (e.g., Kelley 1972), is that they describe the ideal ways the social perceiver should examine information. Such theories may not take sufficient account of the perceiver's motivation, time, or need to engage in such a detailed analysis of another person's behavior.

Researchers have also questioned whether the internal-external differentiation is the underlying way in which social perceivers examine behavior. While unintentional behaviors may be accommodated by this dichotomy (Reeder 2009), it is suggested that with intentional behaviors other models are needed. Malle (e.g., Malle et al. 2007) has presented a folk-conceptual model, which suggests that in cases where an actor's behavior is *intentional*, the observer is more likely to focus on causal history explanations (e.g., personality) than reasons for action, inferred desires of the actors (as opposed to actor's beliefs), and perceived mental states. Similarly, Reeder (2009) outlines that in the case of intentional behaviors, trait inferences are guided by

consideration of both actor *motives* and the situational contexts impacting their behavior.

There have also been investigations regarding the utility of identified attribution errors to explain behavior. One focus has been to examine the extent to which the correspondence bias or the fundamental attribution error is determined by culture. In a series of studies, Morris and Peng (1994) found that American versus Chinese study participants were more likely to utilize internal attributions to explain others' behavior. These researchers believed that this difference in the use of the fundamental attribution error could be explained by different implicit theories individualist versus collectivist cultures hold regarding the causes of behavior. Studies by other researchers have supported these findings, although there are studies that have generated support for the idea that the fundamental attribution error can be found across both individualist and collectivist cultures (e.g., Krull et al. 1999).

In one meta-analysis of studies investigating the self-serving bias, Campbell and Sedikides (1999) reported that the bias was a "viable" (p. 37) explanation for behavior, with a small to moderate effect size reported. By contrast, in a meta-analysis, Malle (2006) investigated the actor-observer effect, concluding that "evidence for it is neither pervasive nor plentiful" (p. 907), although the effect was apparent in certain conditions, such as in situations involving negative effects (e.g., failure).

Conclusion

The concepts of internal and external attributions, and attribution theories in general, remain influential in psychology. Despite challenges to theories, investigations into how perceivers use their understandings of individual personality, ability, and intentions versus examining the environmental and situational impacts on behavior continue to this day. For example, across several studies by Carter and Murphy (2017), participants who were exposed to multiple individual reports of subtle racial bias (consensus and consistency information were high) were less likely to perceive a specific person who claimed such racial discrimination as a

“complainer” and more likely to agree that racial bias was a problem in the United States. This highlights the potential for attribution theory to help explain social perceivers’ responses to others. Similarly, a meta-analysis demonstrated the utility of using Weiner’s notion of *controllability*, with support found for the proposition that perceptions of a person being responsible/not responsible for their predicament influence sympathetic or angry responses and, on the basis of these responses, decisions to help or act aggressively (Rudolph et al. 2004).

Despite the long-standing utility of the internal-external attributional nexus, more recent models suggest that intent of behavior is particularly important to consider. It is also suggested that attributions stressing internal or external factors are more dynamically formed than initially suggested in attribution theories.

Cross-References

- ▶ [Attribution Theory](#)
- ▶ [Attributional Styles](#)

References

- Campbell, W. K., & Sedikides, C. (1999). Self-threat magnifies the self-serving bias: A meta-analytic integration. *Review of General Psychology, 3*, 23–43.
- Carter, E. R., & Murphy, M. C. (2017). Consensus and consistency: Exposure to multiple discrimination claims shapes Whites’ intergroup attitudes. *Journal of Experimental Social Psychology, 73*, 24–33.
- Gilbert, D. T., & Malone, P. S. (1995). The correspondence bias. *Psychological Bulletin, 117*, 21–38.
- Heider, F. (1944). Social perception and phenomenal causality. *Psychological Review, 51*, 358–374.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Heider, F., & Simmel, M. (1944). An experimental study of apparent behavior. *The American Journal of Psychology, 57*, 243–259.
- Howard, J. A. (1985). Further appraisal of correspondent inference theory. *Personality and Social Psychology Bulletin, 11*, 467–477.
- Jones, E. E., & Davis, K. E. (1965). From acts to dispositions: The attribution process in person perception. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 219–266). New York: Academic.
- Jones, E. E., & Harris, V. A. (1967). The attribution of attitudes. *Journal of Experimental Social Psychology, 3*, 1–24.
- Jones, E. E., & McGillis, D. (1976). Correspondent inferences and the attribution cube: A comparative reappraisal. In J. H. Harvey, W. J. Ickes, & R. F. Kidd (Eds.), *New directions in attribution research* (Vol. 1, pp. 389–420). Hillsdale: Lawrence Erlbaum Associates.
- Jones, E. E., & Nisbett, R. (1971). *The actor and the observer: Divergent perceptions of the causes of behavior*. Morristown: General Learning Press.
- Kelley, H. H. (1967). Attribution theory in social psychology. In D. Levine (Ed.), *Nebraska symposium on motivation* (Vol. 15, pp. 192–238). Lincoln: University of Nebraska Press.
- Kelley, H. H. (1972). *Causal schemata and the attribution process*. Morristown: General Learning Press.
- Kelley, H. H. (1973). The processes of causal attribution. *American Psychologist, 28*, 107–128.
- Krull, D. S., Loy, M. H.-M., Lin, J., Wang, C.-F., Chen, S., & Zhao, X. (1999). The fundamental attribution error: Correspondence bias in individualist and collectivist cultures. *Personality and Social Psychology Bulletin, 25*, 1208–1219.
- Malle, B. F. (2006). The actor-observer asymmetry in attribution: A (surprising) meta-analysis. *Psychological Bulletin, 132*, 895–919.
- Malle, B. F., Knobe, J. M., & Nelson, S. E. (2007). Actor-observer asymmetries in explanations of behavior: New answers to an old question. *Journal of Personality and Social Psychology, 93*, 491–514.
- McArthur, L. A. (1972). The how and what of why: Some determinants and consequences of causal attribution. *Journal of Personality and Social Psychology, 22*, 171–193.
- Miller, D. T., & Ross, M. (1975). Self-serving biases in the attribution of causality: Fact or fiction? *Psychological Bulletin, 82*, 213–225.
- Morris, M. W., & Peng, K. (1994). Culture and cause: American and Chinese attributions for social and physical events. *Journal of Personality and Social Psychology, 67*, 949–971.
- Regan, D. T., & Totten, J. (1975). Empathy and attribution: Turning observers into actors. *Journal of Personality and Social Psychology, 32*, 850–856.
- Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 10, pp. 173–220). New York: Academic.
- Rudolph, U., Roesch, S. C., Greitemeyer, T., & Weiner, B. (2004). A meta-analytic review of help giving and aggression from an attributional perspective: Contributions to a general theory of motivation. *Cognition and Emotion, 18*, 815–848.
- Weiner, B. (1979). A theory of motivation for some classroom experiences. *Journal of Educational Psychology, 71*, 3–25.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review, 92*, 548–573.
- Weiner, B. (2010). The development of an attribution-based theory of motivation: A history of ideas. *Educational Psychologist, 45*, 28–36.

Internal Dialogue

- ▶ [Internal Monologue](#)

Internal Locus of Control

- ▶ [Self-Directedness](#)

Internal Monologue

Jayanti Basu

Department of Applied Psychology, University of Calcutta, Kolkata, India

Synonyms

[Inner speech](#); [Inner voice](#); [Internal dialogue](#); [Self-talk](#); [Verbal thinking](#)

Definition

Internal monologue, also known as self-talk, inner voice, or internal speech, is an inner conscious stream of verbal monologue or thoughts in words.

Introduction

Internal monologue has been a known phenomenon to literary people, developmental psychologists, and educational psychologists for long. However, interest in systematic research into internal monologue as a general psychological phenomenon has flourished recently after advent of neurological investigative tools like MRI and fMRI. Related to cognition and evaluation of self, it has been recognized to have significant mental health implications.

Development and Universality of Internal Monologue

The language of the internal monologue is diverse, contains unique characteristics, is dependent on culture, and has a developmental trajectory. It is a quite widespread phenomenon, and there exists a controversy as to whether it precedes or follows social or other-directed speech (Woolfolk 2004). In 1920 Jean Piaget forwarded the concept of private speech which is egocentric in nature and refers to talking aloud to oneself. The exact order of development of private speech versus social speech or in other words self-directed versus other directed speech is, however, controversial. Piaget believed that private or egocentric speech is the first to develop in order, and social speech develops consequent to it. Once social speech is established, the private speech gradually dies out. In 1930 Lev Vygotsky in Russia proposed that, contrarily, social speech is the earliest form of speech. Gradually this social speech is internalized and instead of dying out, remains in the form of private or internal speech. What Piaget considered as private speech is really a kind of social corroboration with self, often associated with self-inspection and self-criticism. Vygotsky's view is more widely accepted among researchers than that of Piaget. Vygotsky further noted that there is a typical syntax and characteristic of internal monologue, often using abbreviations and omissions.

Researchers have different opinions about whether internal monologue happens to all and is a constantly occurring phenomenon. It has been suggested that not everyone has an internal monologue – especially children seem to report the absence more frequently. However, with adults some kind of internal monologue seems quite prevalent.

Content and Affect of Internal Monologue

Content of internal monologue may be diverse but is usually something referring to self, reflections, emotions, critical thoughts about something, planning, or ruminating on something.

Morin et al. (2018) examined 76 university students with self-reported content of self-generated internal speech and found that these related mostly to self-regulation (e.g., planning and problem solving), self-reflection (e.g., emotions, self-motivation, appearance, behavior/performance, and autobiography), critical thinking (e.g., evaluating, judging, and criticizing), people in general, education, and current events.

The affect associated with internal monologue may be positive, negative, or neutral. The positive internal monologue is often motivational, concerned with self-esteem enhancement, pleasant experiences, creativity, and self-expansion. Negative internal monologue is self-incriminating, ruminative of unpleasant experiences, and sometimes punitive and fearful and may be related to depression and schizophrenia. Thus internal monologue has a mental health perspective as well.

Internal monologue may be used in therapeutic endeavors. It may be used in cognitive behavioral therapy to stop the impact of some cognitive errors, especially those involving negative self-talk. For example, a person with depression may continuously tell oneself that she is worthless. Gradually this becomes a linguistic habit giving rise to negative self-depiction and consequent negative affect. While starting from management of affect may be difficult, intervention may be done at the thought or even linguistic level, allowing behavioral changes to take place.

Dialogical Self and Internal Monologue

Internal monologue is not necessarily experienced as a voice in first person. Indeed, internal monologue is one component of the total realm of inner speech or inner dialogue: the other two related components being internal dialogue and perspective taking. It needs to be clarified that these often occur simultaneously, and one cannot be experientially separated from the other two.

This brings one to the study of the dialogical self. The dialogical self-theory has been developed by Hermans et al. (1992). This is a

psychological concept that describes the mind's ability to imagine various positions or perspectives of the participants in an internal dialogue. Dialogical self-theory assumes that the self may adopt a multiplicity of I-positions which are relatively autonomous and dynamically related to each other. The self has the imaginative ability to perceive each position independently and bestow a voice in a dialogue to each. This connects the social self to the personal self, and through a communication between the external and internal constitutes a narrative self-experience. The internal monologue or dialogue in the form of an inner conversation among the different positions thus becomes an integral part of the dialogical self.

Neurological Studies of Internal Monologue

Neuroimaging studies have been conducted to comprehend the role of neural substratum. Often, within experimental situation, sample of internal monologue has been relatively simple, for example, restricted to repetition of statement in response to a cue, or evaluates phonological characteristics in a word or sentence. In such instances, the brain areas involved have been found to be similar to overt speech, for example, left inferior frontal gyrus, supplementary motor area, and the superior and middle temporal gyri. However, more often than not, internal monologue is not exactly a monologue but involves dialogue as well. The neuroscience of the dialogic inner speech is less investigated. However, there are indications that the right brain may be involved, and insertion of dialogic form of speech may involve a rather large portion of brain regions other than the Perisylvian language network; it may involve the right inferior frontal gyrus, right middle temporal gyrus, and the right superior temporal gyrus and superior temporal sulcus. It has further been suggested that such dialogic speech may be associated with social speech, thus confirming Vygotsky's notion, and has also been related to the Theory of Mind (ToM) (Alderson-Day et al. 2016).

Conclusion

Internal monologue as a phenomenon is long known and has been used in connection with developmental studies and literary efforts. However, in the last two decades, it is gradually emerging as a relatively new field of study in the psychology of self and subjectivity on the one hand and brain functions on the other. It seems to promise a connection between the internal and the external and the personal and the social in terms of both experiencing self and the neural substratum of such experiences.

References

- Alderson-Day, B., Weis, S., McCarthy-Jones, S., Moseley, P., Smailes, D., & Fernyhough, C. (2016). The brain's conversation with itself: Neural substrates of dialogic inner speech. *Social Cognitive and Affective Neuroscience*, *11*(1), 110–120. <https://doi.org/10.1093/scan/nsv094>.
- Hermans, H. J. M., Kempen, H. J. G., & Van Loon, R. J. P. (1992). The dialogical self: Beyond individualism and rationalism. *American Psychologist*, *47*, 23–33.
- Morin, A., Duhnych, C., & Racy, F. (2018). Self-reported inner speech use in university students. *Applied Cognitive Psychology*, *32*(3), 376–382. <https://doi.org/10.1002/acp.3404>.
- Woolfolk, A. (2004). *Educational psychology* (9th ed.). Boston: Allyn and Bacon.

Internal Validity

Christoph J. Kemper
University of Luxembourg, Esch-sur-Alzette,
Belval, Luxembourg

Definition

Internal validity refers to the degree to which a conclusion concerning the causal effect of one variable (independent or treatment variable) on another variable (dependent variable) based on an experimental study is warranted. Such warrant is constituted by ruling out possible alternative explanations of the observed causal effect that are due to systematic error involved in the study design.

Introduction

Establishing a cause-effect relationship among variables (causality) is a fundamental goal of scientific endeavors. Many scientific studies address the question of whether the variation observed in one variable (“the effect”) can be explained by another variable (“the cause”). For example, personality researchers study whether different response scales of items in personality questionnaires affect the responses of test takers and, thus, the measurement of individual differences (see e.g., Menold and Kemper 2015). Inferring causality from the observed effect of one variable on another variable is warranted, whenever alternative explanations for the effect can be ruled out. When extraneous variables introduce systematic error into the research design, the conclusion of a cause-effect relationship between two variables and, thus, internal validity of the study is weakened accordingly.

The Concept of Internal Validity

Internal validity is a necessary condition for the interpretation of effects observed in experimental studies. In these studies, researchers usually manipulate one variable (independent or treatment variable) to study the impact on another variable (dependent variable) with the aim of corroborating the conclusion that one is the cause and the other is the observed effect. In order to establish a cause-effect relationship, three conditions have to be met (Shadish et al. 2002):

1. *Covariation* of the cause and the effect: It needs to be shown that there is some kind of relationship between the assumed “cause” and the “effect.” The dependent variable should covary with the independent variable.
2. *Precedence* of the cause: It needs to be shown that the assumed “cause” precedes the “effect.” Variability in the dependent variable (i.e., the effect or outcome) is observed after the independent variable (i.e., the presumed cause) is experimentally manipulated or changes.

3. *Nonspuriousness*: Alternative explanations for the observed covariation between dependent and independent variable can be refuted.

Inferences concerning an observed effect are considered internally valid if the researcher can demonstrate a causal relationship between two variables [cf. (1) and (2)] while ruling out rival hypotheses [cf. (3)]. Alternative explanations are possible when additional sources of variance – extraneous variables – come into play in addition to the independent variable. The systematic error these sources introduce weakens the attribution of a cause-effect relationship between two variables and, thus, the internal validity of a scientific study.

Threats to Internal Validity

If extraneous variables remain uncontrolled, they confound the cause-effect relationship examined in an experimental study. Different extraneous variables are considered a threat to internal validity (cf. e.g., Campbell and Stanley 1963):

- **History**: When the study design involves two measurement occasions, events occurring between the measurements might impact the dependent variable. For example, a major terror attack that receives broad media coverage might change attitudes of participants in a study on political values.
- **Maturation**: Biological or intrapsychic processes which vary with the passage of time might introduce additional systematic variance into the measurement. For example, learning experiences that are independent of an experimental treatment targeting health-related behavior might occur. These learning experiences may enable study participants to adapt to a certain environmental stressor and report better adjustment on the second measurement occasion. In such a case, the higher adjustment is not caused by the experimental treatment.
- **Testing**: Effects of a first testing session on a second testing session that involves the same or similar test stimuli may occur. For example, memory effects concerning the responses to test stimuli in the first session may occur that

impact the test score in the second testing session.

- **Instrumentation**: Changes in the “instrument” used for the measurement may occur, for example, differences due to instrument decay or shifts in rater/observer standards due to learning or fatigue.
- **Statistical regression**: If study participants are selected on the basis of extreme scores, for example, the lowest decile of the performance distribution of an achievement test, improvement between two measurement occasions will be observable due to a regression to the mean, irrespective of the treatment applied in the study.
- **Selection of study participants**: Differences between groups compared in a study could be due to the recruitment procedure and not to the treatment applied. For example, when recruitment of study participants results in differences between treatment and control group in terms of participant’s educational level, the effect of an educational intervention might be biased.
- **Sample mortality**: Posttreatment differences between groups might also be affected by dropout of study participants. For example, when examining the effects of a cognitive training on memory performance of persons with dementia, systematic dropout from the control group compared to the treatment group might introduce bias.

To ensure internal validity of a study, techniques must be implemented to control for these extraneous variables in a research design. However, implementing the techniques creates an experimental setting that may differ substantially from natural settings, thereby limiting the generalizability of study results and, thus, ► [external validity](#).

Ensuring Internal Validity

As the internal validity of a scientific study decreases with the number and plausibility of rival hypotheses for the observed effect, techniques are necessary to control for extraneous variables. When implemented into the research design of a study, these techniques allow for different degrees of control over potential confounding effects (Campbell

and Stanley 1963). The most important control technique is randomization. To control for known and unknown sources of extraneous variation, study participants are randomly assigned to conditions resulting in equal distributions of extraneous variables in the groups compared. When randomization is not possible, matching participants is an alternative to create groups of participants with the same degree or type of the extraneous variable. Other techniques include blinding researchers and participants, counterbalancing of study conditions, safeguards against confounding factors of the study settings, or statistical (post hoc) control of nuisance variation.

Conclusion

The value of research results rises and falls with the plausibility and number of alternative interpretations for the effects observed in an experimental study. Internal validity is a useful concept to describe the degree to which a cause-effect relationship among variables might be assumed. When research data is collected, various factors such as maturation, major events, unreliability of instruments, or sample mortality may introduce systematic but irrelevant variance and confound the measurement of the variables under consideration. If left uncontrolled, these factors weaken the internal validity of conclusions drawn from the study's results. However, effective control techniques, e.g., randomization, matching, and statistical control, and research designs are available to researchers that ensure the internal validity of experimental studies (for details see Campbell and Stanley 1963).

Cross-References

► [External Validity](#)

References

- Campbell, D., & Stanley, J. (1963). *Experimental and quasi-experimental designs for research*. Chicago: Rand-McNally.
- Menold, N., & Kemper, C. J. (2015). The impact of frequency rating scale formats on the measurement of

latent variables in web surveys – An experimental investigation using a measure of affectivity as an example. *Psihologija*, 48(4), 431–449.

- Shadish, W., Cook, T., & Campbell, D. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.

Internal Working Models

► [Working Models of Self and Other](#)

Internal-External Locus of Control Scale

Lei Wang and Meizhen Lv

School of Psychological and Cognitive Sciences and Beijing Key Laboratory of Behavior and Mental Health, Peking University, Beijing, China

Definition

The Internal-External Locus of Control Scale (Rotter 1966), which is a 29-item forced-choice test including six filler items intended to make the purpose of the test somewhat more ambiguous, is the most widely used and cited measurement of Locus of Control (LOC). LOC is a personality concept originally proposed by Rotter (1966), defined as a generalized enduring expectancy or belief about how responsive and controllable the environment is. According to this concept, people can be categorized into two types: internal control and external control. People with an *internal locus of control* believe that the environment is responsive to their own relatively permanent characteristics and that rewards are contingent on personal actions, whereas for those with an *external locus of control* the environment and external rewards are seen as uncontrollable.

Introduction

In accordance with social learning theory, Rotter notes that an expectancy for a behavior-

reinforcement sequence is built up in infancy: people develop and acquire experience that differentiates events which are causally related to preceding events and those which are not. Depending upon the generalized expectancies, individuals would differ in the degree to which they attributed reinforcements to their own actions, which results in characteristic differences in behavior in a situation culturally categorized as chance determined versus skill determined. Rotter viewed the personality differences as internal-external control and measured it with the 29-item Internal-External Locus of Control Scale. The scale includes six filler items intended to make the purpose of the test more ambiguous.

Each item of the Internal-External Locus of Control Scale presents a forced-choice pair of statements with one internally oriented and another externally oriented, ensuring items either are lowly correlated with measures of social desirability such as the Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe 1964), and has a proportional split so that one of the two alternatives is endorsed less than 85% of the time, or has significant relationships with other items. Representative items include: *“(a) I have often found that what is going to happen will happen versus (b) Trusting to fate has never turned out as well for me as making a decision to take a definite course of action,”* *“(a) Becoming a success is a matter of hard work, luck has little or nothing to do with it versus (b) Getting a good job depends mainly on being in the right place at the right time,”* *“(a) Heredity plays the major role in determining one’s personality versus (b) It is one’s experiences in life which determine what they’re like (filler).”* Higher scores are indicative of externality and lower scores are indicative of internality.

The measurement of internal and external control contributes to accounting for the baseline appraisals that people hold of the controllability of the environment that are not limited to specific contexts or times, and spillover to color people’s thoughts, feelings, and behaviors. Moreover, the level of locus of control can be used as an indicator of core self-evaluations (Judge and Bono 2001) which reflects how people view

themselves and abilities, though a recent study argued that it may in fact be an evaluation of the environment rather than of the self (Johnson et al. 2015).

Psychometric Properties

The Internal-External Locus of Control Scale demonstrated satisfactory coefficient alphas and test-retest reliability for a 1-month period in the original study. A recent meta-analysis of 120 studies based on 94 samples using the Scale also showed a good average reliability of 0.70 (Ng et al. 2006). Additionally, Rotter also reported that this scale correlates well with other methods used to assess locus of control such as questionnaire, Likert scale, interview assessments, and ratings from a story-completion technique. Its discriminant validity is indicated by the low levels of relationships with such variables as adjustment, social desirability, or need for approval, political liberalness, and intelligence. Its construct validity comes from predicted differences in behavior for individuals and involves attempts to control the environment, achievement motivation, and resistance to subtle suggestion. In summary, the Internal-External Locus of Control Scale shows excellent psychometric properties supporting its reliability and validity.

Related Constructs

Locus of control has been shown to be related to a number of antecedents and outcomes theoretically and empirically. It has been demonstrated that the antecedents of individual differences in locus of control include particular parental characteristics (e.g., contingent/consistent parental behaviors, parental control vs. encouraging autonomy, parental warmth vs. parental rejection), and stressful life events. A meta-analysis has summarized the outcomes of locus of control, showing that LOC has positive effects on job satisfaction, organizational continuance commitment, organizational satisfaction, job burnout, job-included tension, salary, work-family

conflict, life satisfaction, problem-focus coping, and a negative association with turnover intention, role conflict, role overload, leader initiating structure, psychological strain, and physical strain (Wang et al. 2010). LOC has also been associated with learned helplessness (Hiroto 1974), leadership (Howell and Avolio 1993), coping process (Parkes 1984), and commitment to change (Chen and Wang 2007).

Generalizability

Some research findings have revealed limitations in the generalizability of control expectancies for certain minority populations because of differences in experience and cultural perspectives on causality. On the other hand, various perceptions of personal control and control ideology among men and women indicate that gender differences may exist. However, a reliable, methodological precise measure of generalized locus of control for a wide range of children has been developed.

While the majority of research on the Internal-External Locus of Control Scale has relied on Western samples, a growing number of studies utilizing non-Western samples allow for cross-cultural comparison. For example, Chinese employees may report less internal locus of control than their western counterparts (Tong and Wang 2006). A meta-analysis based on 18 cultural regions, including samples from North America (Canada, United States), Oceania (Australia, New Zealand), Western Europe (Germany, the Netherlands, Norway, United Kingdom), Central Europe (Turkey), Middle East (Iran, Israel), Asia (Mainland China, Hong Kong, Japan, Philippines, South Korea, etc.), and Africa (Nigeria) (Of the 119 selected articles, 21% included at least one non-Western sample, and 5% recruited at least two distinct ethnic groups for making cross-cultural comparisons), revealed the cultural relativity which means culture may shape the conception and interpretation of control, resulting in differential effects of LOC across cultural groups (Cheng et al. 2012). Specifically, there is a stronger

LOC-criterion (e.g., external LOC-anxiety) relationship for more individualist cultures, and cultures with greater individualist orientations tend to value agentic goals more.

Other Measures

Some other measures of LOC include Levenson's (1974), Paulhaus' (1983), Pettersen's (1985) and so on. There are also a number of instruments for the situation-specific LOC. Locus of control has been studied extensively within several subdisciplines of psychology, including clinical, developmental, social, and organizational psychology. Several domain-specific measurements have been accordingly developed for use, such as Health Locus of Control Scale (Wallston et al. 1976), Marital Locus of Control Scale (Miller et al. 1983), Work Locus of Control Scale (Spector 1988), and Parental Locus of Control Scale (Campis et al. 1986). Compared to general LOC, context-specific subdimensions generally yielded stronger relationships with context-related criteria. For example, work locus of control correlates more with job satisfaction, affective commitment, and burnout than the general LOC (Wang et al. 2010).

Applications

There are studies linking general locus of control with longevity (Krause and Shaw 2000) and quality of life in people with diverse conditions: HIV, migraines, kidney disease, and epilepsy (Maltby et al. 2007). Fields in which the measure of LOC has been wisely applied include education (e.g., academic achievement; see Findley and Cooper 1983), finance and economics (e.g., mortgage loan behavior; see Wang et al. 2008), business (e.g., consumer research; see Martin et al. 2007), and organizational management (e.g., commitment to change; see Chen and Wang 2007), family (e.g., quality of parent-child relationships; see Campis et al. 1986), Internet use (Chak and Leung 2004), intrinsic religious orientation (Kahoe 1974), and political ideology (Gootnick 1974).

Conclusions

The Internal-External Locus of Control Scale is initially developed by Julian B. Rotter and has since been studied in a variety of areas in psychology, the degree of which indicates the baseline appraisals that people hold of the controllability of the environment. The scale shows excellent psychometric properties supporting its reliability and validity. The generalization issues concerning the gender and age differences as well as cultural diversity in use of the scale should be considered.

Cross-References

- ▶ [Discriminant Validity](#)
- ▶ [Locus of Control](#)
- ▶ [Marlowe-Crowne Social Desirability Scale](#)
- ▶ [Meta-analysis](#)
- ▶ [Satisfaction with Life](#)
- ▶ [Test-Retest Reliability](#)

References

- Campis, L. K., Lyman, R. D., & Prentice-Dunn, S. (1986). The parental locus of control scale: Development and validation. *Journal of Clinical Child Psychology, 15*(3), 260–267.
- Chak, K., & Leung, L. (2004). Shyness and locus of control as predictors of internet addiction and internet use. *Cyberpsychology & Behavior, 7*(5), 559–570.
- Chen, J., & Wang, L. (2007). Locus of control and the three components of commitment to change. *Personality and Individual Differences, 42*(3), 503–512.
- Cheng, C., Cheung, S. F., Chio, J. H., & Chan, M. P. (2012). Cultural meaning of perceived control: A meta-analysis of locus of control and psychological symptoms across 18 cultural regions. *Psychological Bulletin, 139*(1), 152–188.
- Crowne, D. P., & Marlowe, D. (1964). *The approval motive: Studies in evaluative dependence*. New York: Wiley.
- Findley, M. J., & Cooper, H. M. (1983). Locus of control and academic achievement: A literature review. *Journal of Personality and Social Psychology, 44*(2), 419.
- Gootnick, A. T. (1974). Locus of control and political participation of college students: A comparison of uni-dimensional and multidimensional approaches. *Journal of Consulting and Clinical Psychology, 42*(1), 54.
- Hiroto, D. S. (1974). Locus of control and learned helplessness. *Journal of Experimental Psychology, 102*(2), 187.
- Howell, J. M., & Avolio, B. J. (1993). Transformational leadership, transactional leadership, locus of control, and support for innovation: Key predictors of consolidated-business-unit performance. *Journal of Applied Psychology, 78*(6), 891–902.
- Johnson, R. E., Rosen, C. C., Chang, C.-H. D., & Lin, S.-H. J. (2015). Getting to the core of locus of control: Is it an evaluation of the self or the environment? *Journal of Applied Psychology, 100*(5), 1568.
- Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits – Self-esteem, generalized self-efficacy, locus of control, and emotional stability – With job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology, 86*(1), 80–92.
- Kahoe, R. D. (1974). Personality and achievement correlates of intrinsic and extrinsic religious orientations. *Journal of Personality and Social Psychology, 29*(6), 812.
- Krause, N., & Shaw, B. A. (2000). Role-specific feelings of control and mortality. *Psychology and Aging, 15*(4), 617.
- Levenson, H. (1974). Activism and powerful others: Distinctions within the concept of internal-external control. *Journal of Personality Assessment, 38*(4), 377–383.
- Maltby, J., Day, L., & Macaskill, A. (2007). *Personality, individual differences and intelligence*. Harlow: Pearson Prentice Hall.
- Martin, B. A., Veer, E., & Pervan, S. J. (2007). Self-referencing and consumer evaluations of larger-sized female models: A weight locus of control perspective. *Marketing Letters, 18*(3), 197–209.
- Miller, P. C., Lefcourt, H. M., & Ware, E. E. (1983). The construction and development of the miller marital locus of control scale. *Canadian Journal of Behavioural Science, 15*(3), 266–279.
- Ng, T. W. H., Sorensen, K. L., & Eby, L. T. (2006). Locus of control at work: A meta-analysis. *Journal of Organizational Behavior, 27*(8), 1057–1087.
- Parkes, K. R. (1984). Locus of control, cognitive appraisal, and coping in stressful episodes. *Journal of Personality and Social Psychology, 46*(3), 655.
- Paulhus, D. (1983). Sphere-specific measures of perceived control. *Journal of Personality and Social Psychology, 44*(6), 1253.
- Pettersen, N. (1985). Specific versus generalized locus of control scales related to job satisfaction. *Psychological Reports, 56*(1), 60–62.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80*(1), 1.
- Spector, P. E. (1988). Development of the work locus of control scale. *Journal of Occupational Psychology, 61*(4), 335–340.
- Tong, J., & Wang, L. (2006). Validation of locus of control scale in chinese organizations. *Personality and Individual Differences, 41*(5), 941–950.
- Wallston, B. S., Wallston, K. A., Kaplan, G. D., & Maides, S. A. (1976). Development and validation of the health locus of control (HLC) scale. *Journal of Consulting and Clinical Psychology, 44*(4), 580.

- Wang, M., Chen, H., & Wang, L. (2008). Locus of control and home mortgage loan behaviour. *International Journal of Psychology*, *43*(2), 125–129.
- Wang, Q., Bowling, N. A., & Eschleman, K. J. (2010). A meta-analytic examination of work and general locus of control. *Journal of Applied Psychology*, *95*(4), 761.

Internalization

- [Introjection \(Defense Mechanism\)](#)

Internalizing Behaviors

Laura K. Hansen and Sara S. Jordan
University of Southern Mississippi, Hattiesburg,
MS, USA

Synonyms

[Anxiety](#); [Depression](#); [Internalizing disorders](#); [Overcontrolled](#); [Withdrawal](#)

Definition

Internalizing behaviors encompass a dimension of childhood psychopathology that includes behaviors that are directed inward or are overcontrolled and are associated with a number of depressive and anxiety disorders. Examples of internalizing behaviors may include fearfulness, somatic complaints, worrying, and withdrawal.

Introduction

Internalizing behaviors are typically associated with a range of mood and anxiety disorders, primarily classified in the *Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition* (DSM-5; American Psychiatric Association 2015) as depressive disorders and anxiety disorders. Specific internalizing disorders historically include major depressive disorder, persistent

depressive disorder (dysthymia), specific phobia, separation anxiety disorder, social anxiety disorder (social phobia), generalized anxiety disorder, panic disorder, selective mutism (which was previously classified as a disorder of childhood in *DSM-IV*; APA 2000), and other disorders formerly classified as anxiety disorders, such as obsessive-compulsive disorder (now classified as obsessive compulsive and related disorders) and posttraumatic stress disorder (now classified as trauma- and stressor-related disorders) (APA 2000, 2015).

Internalizing disorders are the source of significant distress and impairment, yet they often go unidentified and untreated. Depression and anxiety are associated with genetic, temperamental, and environmental risk factors that influence their development and course (APA 2015). A wide range of assessment tools is available for evaluation of children from early childhood (i.e., toddlerhood). There is also now good evidence to support efficacy of treatments for children and adolescents with a wide range of internalizing disorders, including cognitive-behavior therapy and interpersonal therapy for depression and cognitive-behavioral and exposure-based approaches for anxiety.

History of Internalizing and Externalizing Dimensions

In 1978, Achenbach and Edelbrock proposed an empirically derived system of classification within child psychopathology that identified two broadband dimensions of child behavior: *Internalizing* and *Externalizing* behavior. In their seminal study, Achenbach and Edelbrock used factor analytic methods across informants (parent, teacher, child) and several samples and revealed two broadband behavioral categories: overcontrolled behaviors, which included shyness, anxiety, personality disorders, and inhibition; and undercontrolled behaviors, which included aggression and conduct problems. Children were classified as *internalizers* if 60% or more of their symptoms were drawn from the overcontrolled dimension and *externalizers* if 60% or more of

their symptoms were drawn from the undercontrolled dimension. The externalizing and internalizing behavior dimensions were found to be distinct, with specific, significant correlates associated with children who were categorized according to these dimensions. For example, overcontrolled children (those with more internalizing behaviors) were found to have lower levels of open conflict, were more socially competent, and appeared to be better candidates for conventional mental health treatment compared to externalizing, undercontrolled children (Achenbach and Edelbrock 1978). Further research has consistently supported these two broadband factors (e.g., Eisenberg et al. 2001). Consequently, this terminology has been widely adopted by the field and remains a primary means of conceptualizing behavior problems among youth.

Assessment of Internalizing Behaviors

Internalizing behaviors are often first assessed through use of empirically derived broadband and narrowband questionnaires. Children and adolescents are generally better informants of internal mood states than other informants, with youth ages 9 and older being considered reliable informants on self-report measures (Frick et al. 2010). When assessing internalizing behaviors, child and adolescent self-report should be given greater weight than reports from other informants (Mash and Hunsley 2005). Additionally, it is important to assess internalizing behaviors within a developmental context, as these behaviors may be normative given a child's age (e.g., anxiety about beginning kindergarten, fear of the dark; Ollendick and Silverman 2005).

Broadband measures are helpful for screening for child psychopathology, for differentiating internalizing and externalizing behavior, and for identifying clinically problematic domains of behavior for additional evaluation. Broadband instruments typically assess several specific factors comprising higher order internalizing and externalizing factors (e.g., anxious/depressed, somatic complaints, aggressive behavior), as well as other problem behaviors (e.g., social

problems). Reports are generally obtained from multiple informants (parent, teacher, and self). Narrowband rating scales, symptom checklists, and diagnostic interviews are used for further diagnostic evaluation of specific domains of concern and to assess symptoms associated with specific disorders. Narrowband instruments are also useful for progress monitoring throughout the intervention process.

When evaluating and monitoring symptoms of anxiety in children and adolescents, assessment tools include structured and semistructured interview schedules, observational measures, self-monitoring forms, and rating scales (Silverman and Ollendick 2005). Similarly, the assessment of symptoms of depression primarily involves the use of unstructured, semistructured, or fully structured interviews, as well as rating scales (Klein et al. 2005). Again, it is necessary to take developmental context into account, as the behaviors indicative of depression may manifest differently in younger children versus adolescents, with younger children appearing more depressed and having somatic complaints and adolescents experiencing more cognitive symptoms (i.e., low self-esteem, worthlessness, negative thinking; Klein et al. 2005).

Etiology and Associated Factors

Studies have examined biological and environmental factors associated with the development of internalizing behaviors and disorders in children. Heritability studies support moderate to strong genetic transmission of both depression and anxiety. About one-third of the variance for depression and up to nearly two-thirds of the variance in anxiety are attributable to heritable factors with rates differing across specific dimensions, disorders, and studies (e.g., Hammen et al. 2014; Higa-McMillan et al. 2014).

Family aggregation studies suggest that depression and anxiety run in families, with both children of parents with anxiety and parents of children with anxiety being at increased risk (Hammen et al. 2014; Higa-McMillan et al. 2014). Anxiety appears to employ a more specific

genetic risk for transmission of anxiety, and depression appears to employ a more general risk for psychopathology, with children of depressed mothers experiencing a range of externalizing and internalizing disorders (Beidel and Turner 1997). However, within the domain of anxiety, the risk transmitted appears to a general risk for anxiety, rather than a disorder-specific risk (Higa-McMillan et al. 2014).

Imaging studies suggest a role of the limbic system, specifically the amygdala and hippocampus, in depression and anxiety due to their role in emotion processing, emotion responding, encoding of long-term memories, and threat assessment. Studies have also examined activity of the hypothalamic-pituitary-adrenal axis (HPA) and increased secretion of stress hormones such as cortisol in relation to stress, with persistent anxiety and depression both being associated with dysregulation of the HPA axis (Hammen et al. 2014; Higa-McMillan et al. 2014).

Temperament and personality characteristics may also serve as emotional vulnerabilities for the development of internalizing behaviors and disorders. Specifically, negative affectivity appears to be a common factor across depression and anxiety, while positive affectivity appears to differentiate depression and anxiety in youth, with depressed youth experiencing high negative and low positive affectivity, respectively (Lonigan et al. 1999). In addition, shyness/inhibition and neuroticism are often associated with anxiety (e.g., Higa-McMillan et al. 2014).

Additionally, environmental risk factors have been identified in relation to the development of internalizing behaviors. Specifically, parental overcontrol, parental rejection, marital conflict, and parental modeling of behaviors indicative of anxiety such as avoidance have been associated with anxiety. Environmental exposure to adversity in early childhood (e.g., family disruption, economic challenges, parental depression) tends to be more associated with depression. Finally, difficult or hostile childhood experiences (e.g., stressful events, child maltreatment) are associated with increased risk for symptoms of both depression and anxiety (APA 2015; Hammen et al. 2014).

A range of psychological influences also has been associated with internalizing behaviors and disorders. Cognitive vulnerabilities such as negative schemas and biased information processing (i.e., negative cognitive triad, anxious apprehension) are associated with both depression and anxiety, respectively. Interpersonal vulnerabilities tend to be more associated with depression and selective attention (to perceived threat), whereas learning theory influences (e.g., classical conditioning, reinforcement, and modeling of fears) tend to be more associated with anxiety. All of these theories have been the basis for efficacious interventions designed to treat anxiety disorders in youth and adults (Higa-McMillan et al. 2014).

Thus, there appear to be a variety of pathways through which internalizing behaviors develop and progress. Early identification and treatment are important, as these dimensions of behavior tend to be quite stable over time and the source of significant distress (APA 2015; Higa-McMillan et al. 2014).

Intervention

The primary interventions currently used to treat internalizing behaviors in children and adolescents are based on the cognitive behavioral model, with some variations based on the specific behaviors that are targeted. For example, Cognitive Behavioral Therapy (CBT) for anxious children typically targets the somatic, cognitive, and behavioral components of the specific anxiety symptomatology (Kendall et al. 2010). In general, components of CBT for anxiety include psychoeducation, cognitive restructuring, and exposure to feared situations. Additionally, CBT treatments for anxious children and adolescents frequently include parent and family-based components to enable clients to generalize and sustain skills learned during therapy (Kendall et al. 2010).

Similarly, for symptoms of depression, evidence-based treatments often involve some form of CBT or behavioral therapy. A review of evidence-based treatments for children with depression found that several interventions significantly decreased depression symptoms and

improved overall functioning compared to controls (David-Ferdon and Kaslow 2008). Common components of CBT for child and adolescent depression include social skills training, problem-solving strategies, mood monitoring, pleasant activities scheduling, and self-control methods (David-Ferdon and Kaslow 2008).

Interpersonal therapy has also generated empirical support for treatment of adolescent depression. Interpersonal therapy was created to address the higher levels of interpersonal conflict seen among depressed adolescents compared to their non-depressed peers (Jacobson and Mufson 2010). The goal of interpersonal therapy is to reduce the symptoms of depression by improving interpersonal skills such as communication, problem-solving, and affect expression. Participants and their parents also receive psychoeducation about depression. Interpersonal therapy has been shown to reduce symptoms of depression and improve overall functioning in adolescents (Jacobson and Mufson 2010).

Conclusions

Overall, internalizing behaviors entail symptoms typically associated with a variety of psychological disorders (e.g., anxiety, depression, obsessive-compulsive disorder, and posttraumatic stress disorder). Examples of internalizing behaviors include sadness, withdrawal, shyness, somatic complaints, and inhibition. As discussed above, a number of etiological factors, such as genetic predisposition, temperament, and exposure to adverse environmental circumstances, have been associated with the development of internalizing behaviors. Given the stability of these behaviors over time, it is important to identify, assess, and treat these behaviors as early as possible to alleviate long-term negative consequences and reduce impairment.

Cross-References

- ▶ [Cognitive Behavioral Therapy](#)
- ▶ [Externalizing Behavior](#)

References

- Achenbach, T. M., & Edelbrock, C. S. (1978). The classification of child psychopathology: A review and analysis of empirical efforts. *Psychological Bulletin*, *85*, 1275.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders – Fourth edition text revision*. Arlington: American Psychiatric Association.
- American Psychiatric Association. (2015). *Diagnostic and statistical manual of mental disorders – Fifth edition*. Arlington: American Psychiatric Association.
- Beidel, D. C., & Turner, S. M. (1997). At risk for anxiety: I. Psychopathology in the offspring of anxious parents. *Journal of the American Academy of Child & Adolescent Psychiatry*, *36*, 918–924.
- David-Ferdon, C., & Kaslow, N. J. (2008). Evidence-based psychosocial treatments for child and adolescent depression. *Journal of Clinical Child & Adolescent Psychology*, *37*, 62–104.
- Eisenberg, N., Cumberland, A., Spinrad, T. L., Fabes, R. A., Shepard, S. A., Reiser, M., . . . Guthrie, I. K. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development*, *72*, 1112–1134.
- Hammen, C. L., Rudolph, K. D., & Abaied, J. L. (2014). Child and adolescent depression. In E. J. Mash & R. A. Barkley (Eds.), *Child psychopathology* (3rd ed., pp. 225–263). New York: Guilford.
- Higa-McMillan, C. K., Francis, S. E., & Chorpita, B. F. (2014). Anxiety disorders. In E. J. Mash & R. A. Barkley (Eds.), *Child psychopathology* (3rd ed., pp. 345–428). New York: Guilford.
- Jacobson, C. M., & Mufson, L. (2010). Treating adolescent depression using interpersonal psychotherapy. In J. R. Weisz & A. E. Kazdin (Eds.), *Evidence-based psychotherapies for children and adolescents*. Guilford.
- Kamphaus, R. W., Barry, C. T., & Frick, P. J. (2010). *Clinical assessment of child and adolescent personality and behavior*. Springer.
- Kendall, P. C., Furr, J. M., & Podell, J. L. (2010). Child-focused treatment of anxiety. In J. R. Weisz & A. E. Kazdin (Eds.), *Evidence-based psychotherapies for children and adolescents*. Guilford.
- Klein, D. N., Dougherty, L. R., & Olino, T. M. (2005). Toward guidelines for evidence-based assessment of depression in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, *34*, 412–432.
- Lonigan, C. J., Hooe, E. S., David, C. F., & Kistner, J. A. (1999). Positive and negative affectivity in children: Confirmatory factor analysis of a two-factor model and its relation to symptoms of anxiety and depression. *Journal of Consulting and Clinical Psychology*, *67*(3), 374.
- Silverman, W. K., & Ollendick, T. H. (2005). Evidence-based assessment of anxiety and its disorders in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, *34*, 380–411.

Internalizing Disorders

► [Internalizing Behaviors](#)

International Affective Picture System

Margaret M. Bradley and Peter J. Lang
University of Florida, Gainesville, FL, USA

Definition

The *International Affective Picture System* (IAPS, pronounced “eye-apps”; Lang et al. 2008) is a set of emotionally evocative color photographs representing a wide variety of events and objects encountered in human experience that have been rated on dimensions of pleasure, arousal, and dominance by men and women. IAPS stimuli are widely used in studies of human emotion throughout the world.

Introduction

If scientists wish to study the effects of background noise on the efficiency of factory workers, noise levels are easily measured and controlled, using commonly accepted scales for determining loudness and frequency. Because these established scales are in general use, retest results can be exactly evaluated (even in another laboratory), replicating or disconfirming the original results. In the study of emotion, a similar need for calibrated stimuli exists in laboratory studies of affect. The *International Affective Picture System* is a collection of photographic scenes depicting a wide range of common and uncommon human experiences that have been rated on scales measuring reported pleasantness, arousal, and dominance, providing researchers with reliable metrics when selecting stimuli for use in scientific investigations of emotion.

Description of IAPS

The *International Affective Picture System* (Lang et al. 2008) includes over 1000 color photographs depicting a myriad set of events in the human experience – dressed and undressed people, houses, art objects, household objects, housing projects, erotic couples, funerals, pollution, dirty toilets, cityscapes, seascapes, sports events, wars, disasters, medical treatments, sick patients, mutilated bodies, baby animals, threatening animals, insects, loving families, waterfalls, children playing – a virtual world of pictures. All of the pictures in the IAPS are viewed by large standardization groups of participants (both men and women) and are rated for evoked feelings of pleasure, arousal, and dominance. The pictures are then numbered (4 digits) and catalogued by the group mean and standard deviation for each rating, as well as separately for men and women, and distributed freely to academic researchers. Using these ratings, scientists can select and/or match pictures on the basis of the average reported emotional impact of that picture and are able to control for emotional arousal when investigating effects of hedonic valence, and vice versa. Most importantly, the IAPS manual provides instructions for adding new picture material to an experiment, encouraging replication and extension of published reports using the same or similar stimulus material which promotes a cumulative increase in scientific knowledge.

Affective Ratings

The IAPS stimuli are standardized on the basis of ratings of pleasure and arousal based on both emotion theory and data. In the nineteenth century, Wundt (1896) first argued that affect results from variations in fundamental dimensions of pleasure and arousal. Later, using factor analysis of assess evaluative language, Osgood and co-workers (e.g., Osgood et al. 1957; see also Mehrabian and Russell 1974; Russell 1980) found that the most variance in semantic judgments was accounted for by a single factor, hedonic valence, which ranged from unpleasant

(unhappy, annoyed, despairing, etc.) to pleasant (happy, pleased, hopeful, etc.) and a second dimension he labeled "arousal," which ranges from an unaroused state (calm, relaxed, sleepy, etc.) to a state of high arousal (excited, stimulated, wide awake, etc.).

To measure the pleasure and arousal of IAPS stimuli, a rating instrument called the Self-Assessment Manikin (SAM; Lang 1980; Cook et al. 1987) is used which is a language-free, culture-free measurement tool. As illustrated in Fig. 1, the SAM graphic for pleasure ranges from a smiling, happy figure to a frowning, unhappy figure. For the arousal dimension, SAM ranges from an excited, wide-eyed figure to a relaxed, sleepy figure. Participants indicate feeling *neither* happy nor unhappy (i.e., neutral) or *neither* calm nor aroused using the midpoint of each scale. SAM ratings of pleasure and arousal when rating affective scenes are comparable to the factor analytic scores of pleasure and arousal derived using the relatively longer and more time-consuming semantic differential scale (Bradley and Lang 1994). A third dimension, accounting for much less variance in semantic evaluation research, and termed "potency" or dominance by Osgood et al. (1957), is also rated using SAM and is depicted by a figure that ranges from large (dominant) to small (not dominant). When rating static picture stimuli, ratings of dominance are highly correlated with ratings of hedonic valence, with pleasant pictures rated as higher in dominance than unpleasant pictures. We have speculated that the dominance dimension, which is relatively weak in accounting for

variance in evaluative judgments of symbolic picture stimuli, is more informative as a determining variable in assessing social interactions.

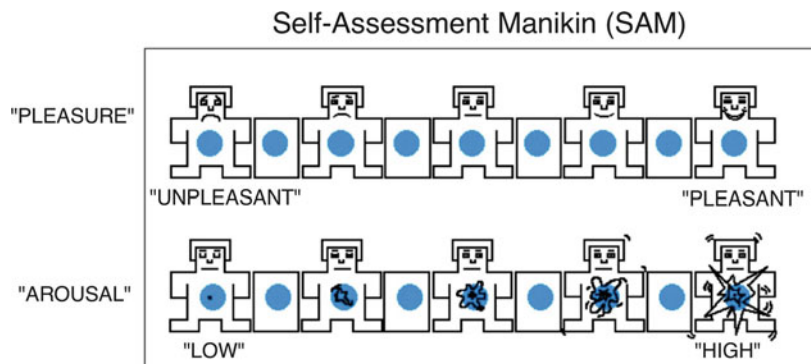
Affective Space

When emotional scenes are plotted in the two-dimensional space defined by its mean pleasure and arousal rating, the resulting "affective space," illustrated in Fig. 2, has a number of characteristic features, of which the most obvious is its boomerang shape. The shape of affective space results from the empirical facts that (1) as pictures are rated as more pleasant or more unpleasant, arousal ratings increase as well and (2) pictures that rated as neutral tend to be rated low in arousal. These observations are supported by the statistics. Across the entire set of pictures, the linear correlation between pleasure and arousal rating is relatively weak ($r = .28$) whereas the quadratic relationship is stronger (.54) and captures the relationship: emotional arousal increases as hedonic valence ratings approach either end of that dimension (i.e., become increasingly more pleasant or unpleasant). These relationships are both stable and reliable (Greenwald et al. 1989; Lang et al. 1993).

We have interpreted this space as consistent with the idea that judgments of pleasure and arousal reflect the level of activation in fundamental appetitive and defensive systems (e.g., Lang and Bradley 2010). Figure 2 illustrates the trajectories through affective space in which activation of either the appetitive or defensive motivational systems varies from low to high. When neither

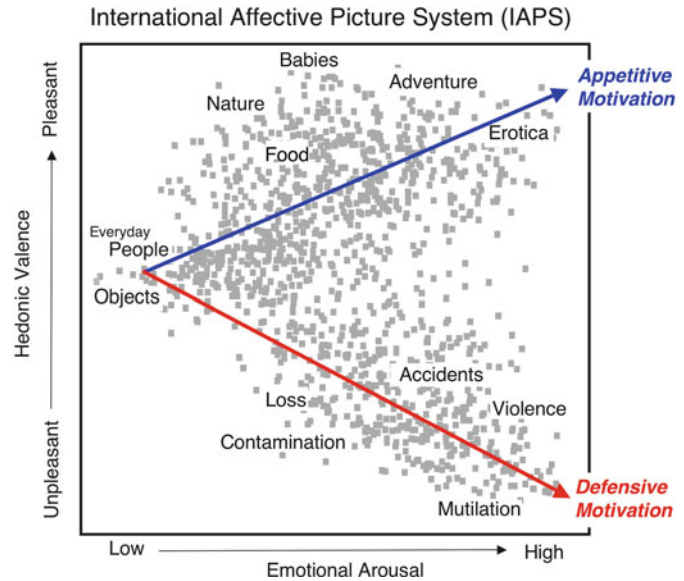
International Affective Picture System,

Fig. 1 The SAM (Self-Assessment Manikin) rating instrument for obtaining judgments of pleasure and arousal; each scale has 9 points



International Affective Picture System,

Fig. 2 When each picture is plotted as a function of its mean pleasure and arousal rating, the resulting affective space has a boomerang shape, consistent with judgments reflecting the level of activation in appetitive or defensive motivational systems. Selected pictures are labeled by hedonic content in affective space



motivational system is active, judgments anchor the neutral, calm position in affective space. As pictures more highly activate either appetitive or defensive systems, they fall further along the appetitive and defensive trajectories illustrated in Fig. 2.

Emotion Research with IAPS

Studies of emotion in healthy young participants have documented reliable changes in autonomic and somatic psychophysiology as well as in brain activity (e.g., EEG, fMRI) when viewing scenes from the IAPS (for an overview, see Bradley and Lang 2007; Lang and Bradley 2010). Studies investigating emotion using the IAPS have documented differential reactivity in behavior, evaluative reports, neural activity, hormonal changes, and other brain and bodily activity, appearing in journals of varied emphasis, including *Science*, *PNAS*, *Nature Neuroscience*, *Journal of Neuroscience*, *Biological Psychiatry*, *Neuroimaging*, *Human Brain Mapping*, *Journal of Cognitive Neuroscience*, *Psychophysiology*, *Cortex*, *Emotion*, *Journal of Abnormal Psychology*, *Schizophrenia Research*, *Neuropsychologia*, *Clinical Neurophysiology*, *Pain*, *Psychiatry Research*, *Archives of General Psychiatry*, *PLoS One* – just to name a few.

Research using the IAPS media to study emotion in psychopathology includes studies of anxiety, bipolar disorder, conduct disorder, schizophrenia, PTSD, depression, obsessive-compulsive disorder, and psychopathy. Studies of substance abuse have utilized the IAPS to study emotional response effects related to alcohol, nicotine, methamphetamine, cocaine, and heroin. Life-span investigations using these media include research on affect change with aging, childhood development, and autism. The IAPS has also been used to study emotional disorder in a great variety of neurological populations – in Parkinson's disease, dementia, Huntington's disease, the minimally conscious, amygdala damage, traumatic brain injury, and in chronic general health problems, including diabetes, migraine, and reflex syncope.

Conclusion

The IAPS provides reliable, standardized emotional stimuli that contribute importantly to evolving databases in the study of emotion. The picture-viewing context has shown itself to be a powerful, eminently controllable experimental methodology, advancing understanding of brain and behavior in normal and pathological emotional states. The availability of this large set of standardized affective stimuli has

provided a platform for much emotion research, facilitating replication, and a true accumulation of knowledge across laboratories and paradigms.

References

- Bradley, M. M., & Lang, P. J. (1994). Measuring emotion: The self-assessment manikin and the semantic differential. *Journal of Behavioral Therapy and Experimental Psychiatry*, *25*, 49–59.
- Bradley, M. M., & Lang, P. J. (2007). Studying emotion with the *International Affective Picture System (IAPS)*. In J. A. Coan & J. J. B. Allen (Eds.), *Handbook of emotion elicitation and assessment*. Oxford: Oxford University Press.
- Cook III, E. W., Atkinson, L., & Lang, P. J. (1987). Stimulus control and data acquisition for IBM PC's and compatibles. *Psychophysiology*, *24*, 726.
- Greenwald, M. K., Cook, Edwin W., III., & Lang, P. J. (1989). Affective judgment and psychophysiological response: dimensional covariation in the evaluation of pictorial stimuli. *Journal of Psychophysiology*, *3*, 51–64.
- Lang, P. J. (1980). Behavioral treatment and bio-behavioral assessment: Computer applications. In J. B. Sidowski, J. H. Johnson, & T. A. Williams (Eds.), *Technology in mental health care delivery systems* (pp. 119–137). Norwood: Ablex Publishing.
- Lang, P. J., & Bradley, M. M. (2010). Emotion and the motivational brain. *Biological Psychology*, *84*, 437–450.
- Lang, P. J., Greenwald, M. K., Bradley, M. M., & Hamm, A. O. (1993). Looking at pictures: Affective, facial, visceral, and behavioral reactions. *Psychophysiology*, *30*, 261–273.
- Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (2008). *International Affective Picture System (IAPS): Instruction manual and affective ratings, Technical Report A-8*. Gainesville: The Center for Research in Psychophysiology, University of Florida.
- Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. Cambridge, MA: MIT Press.
- Osgood, C., Suci, G., & Tannenbaum, P. (1957). *The measurement of meaning*. Urbana: University of Illinois.
- Russell, J. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, *39*, 1161–1178.
- Wundt, W. (1896). *Lectures on human and animal psychology* (trans: Creighton, J. E. & Titchener, E. B.). New York: The Macmillan Co.

International Classification of Diseases

► [International Classification of Diseases 11th Edition \(ICD-11\)](#)

International Classification of Diseases 11th Edition (ICD-11)

Brigitte Khoury, Cary Kogan and
Sariah Daouk

Department of Psychiatry, American University of Beirut Medical Center, Beirut, Lebanon
School of Psychology, University of Ottawa, Ottawa, Canada

Synonyms

[Clinical utility](#); [Global applicability](#); [ICD-11](#); [International classification of diseases](#); [Mental and behavioral disorders](#); [Nosology](#); [Revision field studies](#)

Overview of the International Classification of Diseases 11th Edition (ICD-11)

The International Classification of Diseases and Related Health Problems (ICD) is the World Health Organization's classification of disease states and health conditions (World Health Organization 2016). The ICD is considered to be the “international standard for health reporting and health information” (World Health Organization 2016). It is the most widely used diagnostic classification system for clinical, research, and health management purposes across the world and has been translated into 43 languages (World Health Organization 2016). The ICD is organized as a hierarchical, categorical system, which is “exhaustive and mutually exclusive” (Reed et al. 2016, p. 9). Every physical or mental condition included is assigned a unique alphanumeric code and is classified in a specific level of organization according to its defining characteristics. This structure enables the easy retrieval and comparison of health information such as the incidence and prevalence of diseases (World Health Organization 2016). Mental and behavioral disorders are found in a grouping at the most superordinate level.

ICD Versions

Global health classification systems must serve different audiences and be used for varied purposes. As such, the WHO has published four versions of the ICD-10 for mental and behavioral disorders: the International Statistical Classification of Diseases and Related Health Problems; the ICD-10 Classification of Mental and Behavioral Disorders: Clinical Descriptions and Diagnostic Guidelines; the Diagnostic Criteria for Research (DCR) for ICD Mental and Behavioral Disorders; and the Mental and Behavioral Disorders for global primary care settings (World Health Organization 2016).

WHO member states rely on the International Statistical Classification of Diseases and Related Health Problems to report health statistics (World Health Organization 1992a). It is divided into three volumes, and all diagnostic entities are briefly defined and are assigned alphanumeric codes ranging from A00 to Z99. This version is mainly used by statisticians and administrators. The ICD-10 Classification of Mental and Behavioral Disorders: Clinical Descriptions and Diagnostic Guidelines (CDDG) better described mental disorders, and it is used in clinical settings by mental health professionals and in educational settings (World Health Organization 1992b). This version had greater diagnostic specificity, and it presents the main clinical and associated features of a disorder, as well as information on how to differentiate it from other similar disorders.

The WHO also published the DCR after establishing a joint agreement with the American Psychiatric Association (World Health Organization 1993). The DCR is used in research settings. It operationally defines mental disorder criteria and stipulates fixed symptom thresholds, frequencies, and duration requirements, in a way similar to the DSM-IV (Reed et al. 2016). This was done to help researchers ascertain homogeneous research samples in order to study underlying psychopathology or treatment response. The DCR differs from the CDDG. The CDDG is meant to be most useful in clinical settings by allowing clinicians to consider cultural differences in the manifestation of psychopathology as well as to exercise clinical judgment in the

application of guidelines. The ICD-10 Mental and Behavioral Disorders for global primary care settings contains only 26 disorder categories (commonly seen in such settings) and includes management guidelines for each disorder (World Health Organization 1996).

The ICD-10 was published in 1992, and in 2006 the WHO initiated the revision process to incorporate the latest research findings in to a set of new guidelines. Similar to the ICD-10, several versions of the ICD-11 are being developed for various users (First et al. 2015). This paper will focus on the mental disorders chapter in the proposed ICD-11.

History of ICD

In the late nineteenth century, the International List of Causes of Death (ILCD), the first version of the ICD, was developed. The ILCD was developed for the identification and classification of mortality (World Health Organization 1992b). The WHO, a specialized agency working with the United Nations (UN) formed in 1948, took charge of revising the classification and developed the International Classification of Diseases, Injuries, and Causes of Death (ICD-6). The WHO also acts as the coordinating authority on international public health issues (World Health Organization 2016). The ICD-6 was the first classification system to integrate classification of morbidity (diseases) and mortality, as well as the first to include a chapter on mental disorders (Reed et al. 2016). In 1975, the ICD-9 was adopted by most member states, and the chapter on mental disorders incorporated mental health operational definitions. Soon after that, the WHO collaborated with the US Alcohol, Drug Abuse, and Mental Health Administration to ameliorate the chapter on mental disorders and alcohol and drug problems. The WHO World Health Assembly approved the revisions for the ICD-10 in 1990 (World Health Organization 1992a). In 2006, the WHO established the structural basis and work plan for the latest ICD revision process. One of the key drivers of the revision process is the improvement of the clinical utility and global applicability of the system (Reed 2010).

ICD-11 Revision Process

The WHO Department of Mental Health and Substance Abuse was tasked with the technical responsibility of revising the chapter on mental and behavioral disorders. To initiate the revision, the Department appointed an international advisory group to develop the conceptual framework and monitor the revision process (International Advisory Group for the Revision of ICD-10 Mental and Behavioural Disorders 2011). WHO Department of Mental Health and Substance Abuse also assigned several working groups to review the available scientific and clinical evidence and to develop CDDG proposals for specific disorders using a standardized content form to ensure all diagnostic entities contained the same type and breadth of information (First et al. 2015). The main task of the working groups was to increase the clinical utility and cross-cultural applicability of the ICD while maintaining diagnostic reliability and validity (Reed et al. 2013). Clinical utility was operationalized by the WHO as a classification that (a) is valuable for communication (e.g., among practitioners, patients, families, administrators); (b) possesses implementation characteristics for clinical practice, including its goodness of fit (i.e., accuracy of description), its ease of use, and the time required to use it (i.e., feasibility); (c) is useful for selecting interventions and making clinical management decisions; and (d) is associated with improvements in clinical outcomes at the individual level and in health status at the population level (Reed 2010).

Empirical evidence for the validity, reliability, and clinical utility of the proposed guidelines was gathered at each stage during the development of the ICD Mental and Behavioural Disorders chapter. Specifically, developmental field trials included the following: (a) formative field trials, (b) case-controlled field studies, and (c) ecological implementation field studies.

Formative Field Trials

The focus of the formative field trials was on determining the optimal structure and scope for the revised classification of mental and behavioral

disorder categories (Reed et al. 2016). To achieve these objectives, the WHO collaborated with the World Psychiatric Association (WPA) and the International Union of Psychological Science (IUPsyS). An international survey, the WPA-WHO Global Survey, was developed and disseminated to assess psychiatrists' attitudes toward and use of classifications in their daily clinical practice as well as their desired characteristics for a classification system (Reed et al. 2011). In a similar fashion, psychologists from all over the world were invited to complete the WHO-IUPsyS survey (Evans et al. 2013). The findings suggested removal of categories or subtypes deemed of limited utility, called for more flexible guidelines as opposed to rigid pseudoscientific criteria-based systems, and made the diagnostic criteria more applicable cross-culturally (Keeley et al. 2016). A subsequent formative field study, implemented by the Field Studies Coordinating Group (FSCG), a group struck by the International Advisory Group to manage the field trials for the mental and behavioral disorders chapter, examined mental health professional's cognitive organization of mental disorders (Roberts et al. 2012). The classifications made by the clinicians had some similarities and differences with the existing classification systems (ICD-10 and DSM-IV). These were largely consistent across countries, languages, and the professional disciplines of mental health (Reed et al. 2013). Based on the results of these formative studies and the goal of enhancing clinical utility, the proposed ICD-11 will adopt a flatter hierarchy in which more groupings will be included through using an alphanumerical coding structure (Reed et al. 2016). The new groups included were more consistent with clinicians' conceptual models than the structure of the ICD-10 or the DSM-IV in hopes of ameliorating the psychiatric nosology of the ICD-11.

Case-Controlled Field Studies

Evaluative in nature, the multilingual systemic case-controlled field studies were meant to assess clinicians' application of the conceptual and content changes of specific proposed guidelines developed by the working groups as well as their perceived clinical usefulness. To accomplish

these objectives, the WHO working through the FSCG and in coordination with the respective working groups developed studies employing a clinical vignette methodology comparing clinician decision-making when using the ICD-10 or ICD-11 proposals (Reed et al. 2016). These experimental studies were administered over the Internet drawing participants from more than 12,000 mental health and primary care professionals who are members of the WHO's Global Clinical Practice Network (GCPN), a network developed specifically for the purposes of evaluating the ICD proposals (Reed et al. 2015). Results of these studies will be used to inform further revisions to the guidelines to address areas of diagnostic confusion as well as lower reliability and clinical utility.

Ecological Implementation Field Studies

The ecological implementation field studies are clinic-based trials that will be implemented using the WHO's network of International Field Study Centers. These studies aim to examine the clinical consistency (reliability) and clinical utility of the proposed ICD-11 CDDG guidelines in clinical settings using actual patients (Keeley et al. 2016). The clinical consistency studies will evaluate interrater reliability of the diagnostic criteria based on the following groups of disorders: mood disorders, psychotic disorders, anxiety disorders, disorders associated with stress, and common disorders of childhood. The clinical utility studies focus on providing information on the usefulness of the proposed guidelines. The results of both of these studies will be used to further revise the guidelines prior to their publication.

Relation with the DSM

The ICD and the Diagnostic and Statistical Manual of Mental Disorders (DSM) have been developed by different institutions and for different purposes. The ICD includes all health conditions, whereas the DSM includes mental disorders only. The ICD was developed by the WHO, which is the global public health agency of the United Nations representing 194 member states, whereas

the DSM was established by the American Psychiatric Association (1952), a national professional association. The WHO and the American Psychiatric Association have collaborated on their respective classifications in the past. The first time was to ameliorate the mental disorder chapter and provide empirical support for both the ICD-8 and DSM-II (World Health Organization 1967). More recently, the revision trajectories of the DSM-5 (American Psychiatric Association 2013) and the ICD-11 coincided with substantial interaction among the two teams to better "harmonize" the proposed structure of the ICD-11 chapter on mental and behavioral disorders with the DSM-5. However, important differences exist between the ICD-11 and DSM-5 and are based on the different priorities of the associations (Reed et al. 2016). The DSM-5 stressed the importance of improving the diagnostic validity and the operational criteria, whereas the ICD-11 highlighted the importance of clinical utility and relevant information of the disorder (essential and typical features) in mental health nosology (Stein et al. 2013). As such, the language of the proposed ICD-11 CDDG is flexible to facilitate cultural variation. The proposed ICD-11 CDDG relies on essential features, which provide explicit guidance on those characteristics that help to make a psychiatric diagnosis and differentiate disorder from "normality" and from other disorders (First et al. 2015). This allows more liberty for the exercise of clinical judgment in comparison to DSM-5's strict diagnostic criteria approach.

Category-Level Differences

There are important conceptual category-level differences between the ICD-11 proposals and DSM-5. For example, the ICD-11 chapter on mental and behavioral disorders contains additional categories which are not found in the DSM-5 such as prolonged grief disorder or complex post-traumatic stress disorder (PTSD) under the new grouping of disorders specifically associated with stress (Maercker et al. 2013). Furthermore, the ICD-11 working groups were cautious and warned against the inclusion of a category similar to that of the DSM-5 dysphoric mood dysregulation disorder (Lochman et al. 2015).

Instead, a similar conceptualization of this clinical phenomenon is proposed as a subtype of oppositional defiant disorder in ICD-11.

Since, unlike the DSM-5, the ICD-11 covers all health conditions, clinical entities that are related to but not optimally classified as mental and behavioral disorders can be organized in different chapters (Kogan et al. 2017). For example, the working group on sexual disorders and sexual health proposed the removing of the gender identity diagnosis and sexual dysfunctions from the mental and behavioral chapter into a newly introduced chapter entitled “Conditions Related to Sexual Health” (Drescher et al. 2012). Another suggestion was to create a separate chapter on sleep-wake disorders that is distinct from the mental and behavioral disorder chapter to ameliorate patient care (Reed et al. 2016).

Personality Disorders

The content and organization of the ICD-11 personality disorders are significantly revised. Rather than having discrete categories as in ICD-10 and DSM-5, personality disorders are primarily classified along a single dimension of severity (Tyrer et al. 2011). The removal of discrete personality disorder categories was justified on the basis of their poor validity (Widiger and Simonsen 2007). Once the severity of the disorder is established, subtypes can be specified using any combination of five trait domain qualifiers. These trait domains were developed on the basis of systematic reviews of the literature that suggest the existence of 3–5 higher-order dimensions of personality disturbance. These are antisocial, negative emotional, detached, anankastic, and disinhibited (Mulder et al. 2011). Although the DSM-5 task force for the revised classification of personality disorder initially proposed a similar way of classification using a dimensional scale to assess the severity of the personality disorders with six categories, the proposal was ultimately rejected by the American Psychiatric Association for being too complex and requiring further study (Skodol 2011).

Classification of personality disorders according to a spectrum of severity first facilitates the possibility of having subthreshold diagnostic levels which is more representative of what is seen in the clinical practice. This also allows for better

decision-making in terms of who needs treatment and who does not or what type of treatment is optimal. This system also helps fight off the stigmatized notion that personality disorders are unchangeable and hard to treat.

Conclusion

Diagnostic classification systems are important tools that can bridge health information with clinical practice. The proposed ICD-11 structure is organized in such a way to allow room for clinical judgment and cultural variation across settings. The focus on improving clinical utility of the ICD-11 chapter on mental and behavioral disorders will enable better identification and treatment of mental and behavioral disorders globally. This goal is in line with global mental health efforts to reduce disease burden of mental disorders.

References

- American Psychiatric Association. (1952). *Diagnostic and statistical manual of mental disorders*. Washington, DC: Author.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. Washington, DC: Author.
- Drescher, J., Cohen-Kettenis, P., & Winter, S. (2012). Minding the body: Situating gender identity diagnoses in the ICD-11. *International Review of Psychiatry*, 24(6), 568–577.
- Evans, S., Reed, G., Roberts, M., Esparza, P., Watts, A. D., Correia, J. M., & Saxena, S. (2013). Psychologists' perspectives on the diagnostic classification of mental disorders: Results from the WHO-IUPsyS Global Survey. *International Journal of Psychology*, 48(3), 177–193.
- First, M., Reed, G., Hyman, S., & Saxena, S. (2015). The development of the ICD-11 clinical descriptions and diagnostic guidelines for mental and behavioural disorders. *World Psychiatry*, 14(1), 82–90.
- International Advisory Group for the Revision of ICD-10 Mental and Behavioural Disorders. (2011). A conceptual framework for the revision of the ICD-10 classification of mental and behavioural disorders. *World Psychiatry*, 10, 86–92.
- Keeley, J. W., Reed, G. M., Roberts, M. C., Evans, S. C., Medina-Mora, M. E., Robles, R., . . . & Andrews, H. F. (2016). Developing a science of clinical utility in diagnostic classification systems field study strategies for ICD-11 mental and behavioral disorders. *American Psychologist*, 71(1), 3–16.

- Kogan, C., Burns, S., & Reed, G. (2017). *International classification of diseases, Encyclopedia of Abnormal and Clinical Psychology*. California: Sage Publications.
- Lochman, J., Evans, S., Burke, J., Roberts, M., Fite, P., Reed, G., & Elena Garralda, M. (2015). An empirically based alternative to DSM-5's disruptive mood dysregulation disorder for ICD-11. *World Psychiatry, 14*(1), 30–33.
- Maercker, A., Brewin, C., Bryant, R., Cloitre, M., Ommeren, M., Jones, L., & Somasundaram, D. (2013). Diagnosis and classification of disorders specifically associated with stress: Proposals for ICD-11. *World Psychiatry, 12*(3), 198–206.
- Mulder, R., Newton-Howes, G., Crawford, M., & Tyrer, P. (2011). The central domains of personality pathology in psychiatric patients. *Journal of Personality Disorders, 25*, 364–377.
- Reed, G. (2010). Toward ICD-11: Improving the clinical utility of WHO's international classification of mental disorders. *Professional Psychology: Research and Practice, 41*(6), 457–464.
- Reed, G., Correia, J., Esparza, P., Saxena, S., & Maj, M. (2011). The WPA-WHO global survey of psychiatrists' attitudes towards mental disorders classification. *World Psychiatry, 10*(2), 118–131.
- Reed, G., Roberts, M., Keeley, J., Hooppell, C., Matsumoto, C., Sharan, P., & Leal-Leturia, I. (2013). Mental health professionals' natural taxonomies of mental disorders: Implications for the clinical utility of the ICD-11 and the DSM-5. *Journal of Clinical Psychology, 69*(12), 1191–1212.
- Reed, G., Rebello, T., Pike, K., Medina-Mora, M., Gureje, O., Zhao, M., & Krasnov, V. (2015). WHO's global clinical practice network for mental health. *The Lancet Psychiatry, 2*(5), 379–380.
- Reed, G., Robles, R., & Domínguez-Martínez, T. (2016). Classification of mental and behavioral disorders. In J. Norcross, G. Vanden Bos, & D. Freedheim (Eds.), *APA handbook of clinical psychology: Vol. 4, psychopathology and health* (pp. 3–28). Washington, DC: American Psychological Association.
- Roberts, M. C., Reed, G. M., Medina-Mora, M. E., Keeley, J. W., Sharan, P., Johnson, D. K., Mari, J., Ayuso-Mateos, J. L., Gureje, O., Xiao, Z., Maruta, T., Khoury, B., Robles, R., & Saxena, S. (2012). A global clinicians' map of mental disorders to improve ICD-11: Analysing meta-structure to enhance clinical utility. *International Review of Psychiatry, 24*, 578–590. <https://doi.org/10.3109/09540261.2012.736368>.
- Skodol, A. E. (2011). Scientific issues in the revision of personality disorders for DSM-5. *Personality and Mental Health, 5*, 97–111.
- Stein, D. J., Lund, C., & Nesse, R. M. (2013). Classification systems in psychiatry: Diagnosis and global mental health in the era of DSM-5 and ICD-11. *Current Opinion in Psychiatry, 26*(5), 493–497.
- Tyrer, P., Crawford, M., Mulder, R., Blashfield, R., Farnam, A., Fossati, A., & Swales, M. (2011). The rationale for the reclassification of personality disorder in the 11th revision of the international classification of diseases (ICD-11). *Personality and Mental Health, 5*(4), 246–259.
- Widiger, T., & Simonsen, E. (2007). Alternative dimensional models of personality disorder. Dimensional models of personality disorders. *Refining the research agenda for DSM-V* (pp. 1–22). Washington, DC: American Psychiatric Association.
- World Health Organization. (1967). *International statistical classification of diseases, injuries, and causes of death, 8th revision*. Geneva: Author.
- World Health Organization. (1992a). *The international classification of diseases and related health problems, 10th revision*. Geneva: Author.
- World Health Organization. (1992b). *The ICD-10 classification of mental and behavioural disorders: Clinical descriptions and diagnostic guidelines*. Geneva: World Health Organization.
- World Health Organization. (1993). *The ICD-10 classification of mental and behavioural disorders: Diagnostic criteria for research*. Geneva: World Health Organization.
- World Health Organization. (1996). *Diagnostic and management guidelines for mental disorders in primary care: ICD-10*. Chapter 5, Primary care version.
- World Health Organization. (2016). *International classification of diseases*. <http://www.who.int/classifications/icd/en/>. Accessed 20 Oct 2016.

International Personality Item Pool, The

David M. McCord
Department of Psychology, Western Carolina
University, Cullowhee, NC, USA

Definition

A scientific collaboratory for the development of advanced measures of personality and other individual differences

Introduction

The International Personality Item Pool (IPIP) is officially described as “a scientific collaboratory for the development of advanced measures of personality and other individual differences” (IPIP website: <http://ipip.ori.org/newCitation.htm>). Briefly, it is a collection of over 3000 self-report items suitable for the use in questionnaires assessing personality

characteristics, comprising over 400 scales measuring over 270 personality constructs. These items and scales are in the public domain, intentionally not copyrighted, and are free for use in research or commercial applications. Indeed, at the time of this writing, over 600 peer-reviewed journal articles have been published using IPIP items/scales to measure personality variables of interest. In this brief article, we will review the origins, history, and rationale of the IPIP project, its current and potential applications, and resources available to researchers and students on the IPIP website.

History and Rationale

Although several personality researchers have played key roles in the development of the IPIP, the principal investigator and designer has been Lewis R. Goldberg of the Oregon Research Institute (ORI). Goldberg had earlier (1995) written that the science of personality assessment had advanced “at a dismally slow pace” since the early years of the twentieth century, due (1) in part to the dominance in academia of environmental/situational theories that minimized the importance of personality traits, (2) in part to the absence of a broadly accepted framework or paradigm for personality theory and research, and, notably, also (3) in part to the commercialization of the personality assessment instrument industry (Goldberg 1999; Goldberg et al. 2006). With regard to this latter point, Goldberg asserted that commercial publishers typically prohibit any alteration in wording or order of items, or extraction of partial instruments or specific scales of a copyrighted instrument. Importantly, few publishers allow their tests to be presented on the web, an increasingly common data collection approach that can greatly expand the participant pool. In some cases, scoring keys are considered private intellectual property and are not available to researchers. These factors, combined with inherent financial interests of publishers, led to a stifling of progress in the area of personality assessment, and indirectly personality theory as well. For example, a large proportion of personality research is conducted by graduate students across the country and world, for thesis, dissertation, and general research projects. The costs of the published test instruments, the fact

that you can’t alter them in any way and that you cannot collect data via the web, combine to significantly limit personality research, constrain scientific advancement.

Goldberg (1999) suggested that having a large set of personality assessment items in the public domain, free of any costs or restrictions, would avoid the limitations described above and would be an important boost to personality research and theory. The original items were developed in the Netherlands in the early 1990s (Hendriks et al. 2002). The paradigm was the Big Five model as articulated by Goldberg, with several guidelines to promote uniformity and ease of translation of items. Examples of the guidelines were that the items should be expressed in observable terms, should avoid modifiers, should avoid suggestive wording, should avoid idiom, use proper Dutch, and so forth. This project produced the first 909 items. Additional items came from other data sources, and the first “published” version of the IPIP included 1311 items translated from Dutch into English and German. The project was at that point relocated to the Oregon Research Institute, and Goldberg and colleagues began to collect data from approximately 1000 adult volunteers in the Eugene-Springfield area. These volunteers completed the IPIP items as successive sets came online, and they also completed approximately 30 published personality tests and questionnaires. Details of this critical and ongoing data collection effort are described in the ORI technical report (Goldberg and Saucier 2016), available on the IPIP website. It is noted that at the time of this writing, the IPIP website includes 3320 items. The published instruments completed by the adult sample included widely used multidimensional personality tests such as the NEO PI-R and several other measures of the five-factor or Big Five model of personality, Cattell’s 16PF, the California Psychological Inventory, Cloninger’s Temperament and Character Inventory, Tellegen’s Multidimensional Personality Questionnaire, the Jackson Personality Inventory, and more than 20 others. (References to these tests are provided on the IPIP website.)

The Eugene-Springfield sample completed, over time, all of the IPIP items, as sets were added to the collection, and they completed all of the commercially published instruments (and research instruments) noted above and on the website. This

allowed for correlations to be computed between the IPIP items and the scale scores of the parent instrument (the commercial or research instrument providing the target constructs) and the creation of “proxy” scales that correlated highly with the parent scale and thus could be interpreted as measuring a very similar (though not identical) construct. The IPIP website includes the specific items lists for the IPIP proxy scales, as well as direct comparisons with the parent scale for mean inter-item correlations, Cronbach’s alpha, and, importantly, the direct correlation between the parent scale and the IPIP proxy. Thus, for example, if a graduate student had conceived of a research project that would benefit from measuring personality traits, and the research identified the five-factor model as the most useful framework, they may consider the NEO PI-R. But given the cost and copyright restrictions, including the inability to copy or present it to subjects over the web, the researcher may well choose to use the IPIP proxy for the NEO PI-R, which offers scales with equal or slightly higher reliability and a correlation of .90 on average with the NEO PI-R on the five broad domain scales.

Operational Features

As suggested above, the IPIP website provides convenient and immediate access to several types of information, including the items themselves, psychometric properties of currently formed scales (which are supplemented on an ongoing basis), and scoring keys. One interesting starting place from the website homepage is the link to “Publications that Employ the IPIP.” As noted above, there are now over 600 citations on this list. The authorship of these articles includes numerous well-known personality researchers, and the journals represented include the most rigorous and impactful in our field. This documents the broad acceptance of Goldberg’s project by personality researchers in general. Further indication of the impact of the IPIP on the field of personality research is that the two key references to the project, Goldberg (1999) and Goldberg et al. (2006) have Google Scholar citations of 2141 and 1430, respectively. Also notable is the very high proportion of articles dealing in some way or another with the five-factor model of personality.

A second link from the homepage that is of extraordinary usefulness in academic settings is the one labeled, “All IPIP scales, organized according to an alphabetical list of constructs.” There are currently 274 psychological constructs linked to 463 IPIP scales. For example, the first five of the 274 are Achievement-striving, Activity-level, Adaptability, ADHD, and Adventurous, and the last five are Vulnerability, Warmth, Wisdom, Workaholism, and Zest/Vitality/Enthusiasm. For each of these constructs, one or more IPIP scales are listed. For example, the construct Recklessness may be measured with the IPIP proxy for the NS2 – Recklessness scale of Cloninger’s Temperament and Character Inventory. Many of the constructs are linked to multiple IPIP scales. The value of this section of the IPIP website is its usefulness in a wide variety of exploratory research projects created by undergraduate as well as graduate students. When a student or more advanced researchers identify a construct that would be relevant in a research project, it would be very appropriate to consult the IPIP website to find the closest match conceptually, which would then provide immediate access to a free and unrestricted assessment instrument.

IPIP and the Five-Factor Model

As noted earlier, a large proportion of the published research using the IPIP items reflects the prevalence of the five-factor model (or the Big Five model) in modern personality research. There are numerous five-factor instruments for which IPIP proxies have been developed. The largest five-factor model (FFM) instrument is based on the 300 IPIP items that were identified as the highest correlates of the 30 facet-level scales of the NEO PI-R (Costa and McCrae 1992). The importance of the NEO PI-R created a strong demand for an IPIP proxy; however, the 300-item instrument was cumbersome in many research environments, as it took more than 30–35 min to complete on average. (The NEO PI-R itself is only 240 items.) Thus, John A. Johnson (2014) initiated a major web-based data collection effort, using the 300-item version, that rewarded volunteers with a customized personality interpretive report upon completion, and

over several years, he accumulated more than 300,000 cases. This allowed him to form four-item facet scales with acceptable reliability, yielding a 120-item set that provides excellent measurement at the level of the five domains and acceptable measurement at the facet level. This instrument takes less than 15 min to complete and is thus very practical in many research settings as well as applied settings. Interested users may actually take the long (300-item) or short (120-item) form of the IPIP-NEO and receive Johnson's narrative interpretive report (<http://www.personal.psu.edu/~j5j/IPIP/>).

An IPIP-based instrument that is perhaps the most widely used item set is the 50-item proxy for the NEO-FFI (Costa and McCrae 1992), with ten items for each of the five domains of the five-factor model. These items are fully presented on the IPIP website and have been used by numerous researchers. One published psychometric study (Socha et al. 2010) presents a confirmatory factor analysis of this item set. Another variation worthy of note is an interesting creation by Donnellan and colleagues. They developed "mini-IPIP" five-factor scales, with four items per domain (Donnellan et al. 2006). This allows for reasonably precise measurement of all five personality factors using only 20 items.

Summary and Concluding Comments

Three broad trends converged in time to produce the IPIP project. First, the notable shift beginning in the early 1980s by test publishers to more assertively guard their copyright eventually triggered Goldberg's righteous indignation and his vocal insistence that for the sake of science personality assessment tools must be in the public domain. Second, the five-factor model of personality, with its relatively long history in the background, emerged as the dominant paradigm during the late 1980s and early 1990s, triggering an explosive growth in the volume of personality-related research. Third, the impact of the advent of the World Wide Web cannot be overstated, as it provided a tangible, albeit digital, home for Goldberg's collaboratory. The IPIP has exceeded all expectations with regard to its contributions to personality assessment science.

As noted above, there are now more than 600 peer-reviewed publications using IPIP items, and the publication rate is steadily increasing. IPIP items have been translated into 40 different languages. To paraphrase Goldberg, the development of cost-free, non-copyrighted, open-source personality assessment tools has proven to be a really great idea.

Cross-References

► Big-Five Model

References

- Costa Jr., P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R™) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa: Psychological Assessment Resources.
- Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini-IPIP scales: Tiny-yet-effective measures of the big five factors of personality. *Psychological Assessment, 18*, 192–203.
- Goldberg, L. R. (1995). What the hell took so long? Donald Fiske and the big-five factor structure. In P. E. Shrout & S. T. Fiske (Eds.), *Personality research, methods, and theory: A festschrift honoring Donald W Fiske* (pp. 29–43). Hillsdale: Erlbaum.
- Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring the lower-level facets of several five-factor models. In I. Mervielde, I. Deary, F. De Fruyt, & F. Ostendorf (Eds.), *Personality psychology in Europe* (Vol. 7, pp. 7–28). Tilburg: Tilburg University Press.
- Goldberg, L. R., & Saucier, G. (2016). Oregon Research Institute Technical Report 56, no. 1. Downloaded from http://ipip.ori.org/ESCS_TechnicalReport_January2016.pdf
- Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. C. (2006). The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality, 40*, 84–96.
- Hendriks, A. A. J., Hofstee, W. K. B., & de Raad, B. (2002). The five-factor personality inventory: Assessing the big five by means of brief and concrete statements. In B. de Raad & M. Perugini (Eds.), *Big five assessment*. Seattle: Hogrefe & Huber.
- International Personality Item Pool: A scientific collaboratory for the development of advanced measures of personality traits and other individual differences (<http://ipip.ori.org/newCitation.htm/>). Internet Web Site.
- Johnson, J. A. (2014). Measuring thirty facets of the five factor model with a 120-item public domain inventory:

Development of the IPIP-NEO-120. *Journal of Research in Personality*, 51, 78–89.

Socha, A., Cooper, C. A., & McCord, D. M. (2010). Confirmatory factor analysis of the M5-50: An implementation of the international personality item pool item set. *Psychological Assessment*, 22(1), 43–49.

International Society for the Study of Individual Differences

Julie Aitken Schermer¹ and Donald H. Saklofske²

¹Management and Organizational Studies,
The University of Western Ontario,
London, ON, Canada

²Psychology Department, The University of
Western Ontario, London, ON, Canada

Definition

The International Society for the Study of Individual Differences (ISSID).

Key Information

ISSID was created as an international society of researchers, “to investigate the major dimensions of individual differences in the context of experimental, physiological, pharmacological, clinical, medical, genetical, statistical and social psychology, and to seek the determinants, causes and concomitants of individual differences, using concepts derived from these disciplines” (Eysenck 1983, p. i). As one of the founders, Hans Eysenck (1983) described that the society was formed to provide an environment for “the discussion and exchange of information and ideas relevant to the measurement, structure, dynamics and biological bases of individual differences” (p. ii). The first committee of executive officers for the society were H. J. Eysenck as president, M. Zuckerman as president-elect, and R. M. Stelmack as secretary-treasurer. The ISSID website (<https://www.issid.org/>) lists the presidents, officers, and directors since the inception of the society. Following negotiations with Pergamon Press (now Elsevier), the journal,



International Society for the Study of Individual Differences, Fig. 1 Inaugural meeting: London, England 1983



International Society for the Study of Individual Differences, Fig. 2 8 Years Later: Oxford University, 1991

Personality and Individual Differences (PAID), also founded by Hans Eysenck, became the society's official journal and remains so to this day (see <https://www.journals.elsevier.com/personality-and-individual-differences/>). Four editors have served the journal since its inception: Hans Eysenck, Gisli Gudjonsson, Tony Vernon, and Don Saklofske.

Since the first meeting held in June 1983 in London England, ISSID has grown considerably as a research society (Fig. 1). The society holds a major conference every 2 years and to date there have been 17 successful meetings in North America, Europe, and Australia. The 2019 conference will be held in Florence, Italy. ISSID also sponsors various award programs including the promotion of new and promising young researchers (Fig. 2).

References

Eysenck, H. J. (1983). International Society for the Study of Individual Differences (ISSID). *Personality and Individual Differences*, 4(6), i–ii.

Interpersonal Adjective Scales

Thane M. Erickson, Tara A. Crouch and
Jamie A. Lewis
Department of Clinical Psychology, Seattle
Pacific University, Seattle, WA, USA

Synonyms

[Interpersonal Adjective Scales-Revised](#)

Definition

The Interpersonal Adjective Scales is a 64-item self-report measure used to assess interpersonal traits based on the interpersonal circumplex (IPC).

Introduction

Based upon lexical, rational, and empirical item selection from a large pool of trait-descriptive

adjectives, Wiggins (1979) developed a set of self-reported trait adjectives to assess the interpersonal domain of personality, as contrasted with non-interpersonal traits (e.g., temperament, mental ability). These items served as the basis for the original 128-item Interpersonal Adjective Scales (IAS), which drew from 16 bipolar categories to form eight 16-item scales. Subsequent revision reduced the item set to a 64-item format termed the IAS-Revised (IAS-R; Wiggins et al. 1988). The title was later amended to the IAS (Wiggins 1995), which has become a widely utilized assessment of interpersonal dispositions.

Core Features

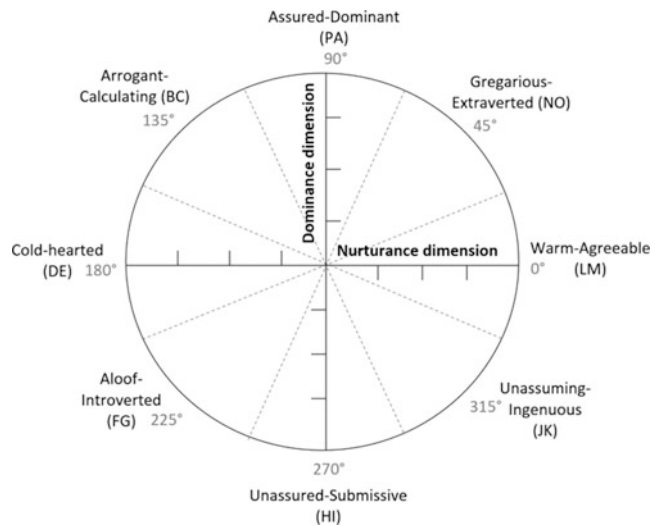
The IAS was designed as an interpersonal circle or *circumplex* (IPC) measure, based on the assumption that the interpersonal domain is best represented by a range of tendencies arrayed conceptually around a circle as combinations or blends of two orthogonal, fundamental interpersonal dimensions. These vertical and horizontal dimensions or axes on the IAS are labeled as dominance (versus submissiveness) and nurturance (versus coldness), respectively, otherwise characterized as dominance and affiliation, agency and communion, or status and love in other IPC measures. Like many circumplex measures, the IAS incorporates eight subscales or “octants” with traditional

IPC labels (see Fig. 1), starting at 12 o’clock and proceeding counterclockwise: assured-dominant (PA), arrogant-calculating (BC), cold-hearted (DE), aloof-introverted (FG), unassured-submissive (HI), unassuming-ingenuous (JK), warm-agreeable (LM), and gregarious-extraverted (NO). Angular degrees start at 0° at the LM octant (3 o’clock) and also increase in counterclockwise fashion, completing the circle at 360°. Sample items, in order from assured-dominant to gregarious-extraverted octants, include terms such as *firm, sly, ruthless, unsociable, meek, boastless, tenderhearted,* and *extraverted*. Octant subscales are designed to capture blends of the underlying dimensions. For instance, the assured-dominant octant represents pure dominance, whereas arrogant-calculating represents high dominance and low nurturance, and gregarious-extraverted represents both high dominance and high nurturance. Octant subscales positioned closely on the perimeter of the circle are more closely related, both conceptually and statistically, whereas octants with greater distance are more dissimilar.

Format

The IAS presents individual trait-descriptive adjectives and invites respondents to rate how accurately each adjective describes them as individuals. Items feature an 8-point Likert scale

Interpersonal Adjective Scales, Fig. 1 An interpersonal circumplex with Interpersonal Adjective Scales octant scale names, labels, and angular locations



ranging from 1 (*extremely inaccurate*) to 8 - (*extremely accurate*). Each of the eight octant scales contains eight adjectival items.

Scoring

Items for each octant are summed to create octant total scores. Wiggins (1995) suggested that octant scores may be calculated if individuals respond to six or more items within an octant and less than five items are missing overall. To some respondents, particular items may be unfamiliar or challenging due to negations of familiar words (e.g., *unsly*, *unwily*; Markey and Markey 2009). However, the IAS may be presented with definitions attached to each item or a glossary at the end of the measure; whether such aids are presented or not has no appreciable impact on responses with regard to underlying structure (Adams and Tracey 2004). In addition, the “structural summary method” of scoring permits derivation of other useful circumplex indices that indicate an individual’s average interpersonal “direction” (angular displacement on the circle), the extent to which an individual’s interpersonal traits are well differentiated (in contrast to “flat” profiles), and prototypicality (fit to ideal circumplex patterns; Wright et al. 2009).

Psychometric Properties

Reliability. Internal consistency estimates for the original scales fell in the $\alpha = 0.74\text{--}0.92$ range (Wiggins 1979) and 0.72–0.88 for the revised measure (Wiggins et al. 1988). Moreover, recent analyses suggested relatively high reliability of the underlying axes of the IAS compared to other circumplex instruments (Strack et al. 2013). Furthermore, Wright et al. (2012) found evidence of ipsative and rank-order stability in IAS scores over time.

Structure. Exploratory methods have yielded evidence about the underlying structure of the IAS. Wiggins (1979) conducted principal component analysis (PCA) to show that a two-dimensional structure can account for variability in the interpersonal domain of trait adjectives (the original long

form of the IAS); these items also evidenced circumplex ordering of scales relatively consistent with expectations, in several samples. Subsequently, Wiggins et al. (1988) demonstrated circumplex properties of the 64-item IAS via PCA, finding octant scale projections at expected angular locations around the circle on two underlying components. Similarly, in reanalyses of published correlation matrices from two large student samples, Gurtman and Pincus (2000) applied smallest space analysis (SSA), a nonmetric form of multidimensional scaling (MDS), which attested to two latent dimensions and the expected projections of scales around these dimensions. Other studies employing exploratory techniques such as MDS similarly suggest circumplex properties of the IAS (Adams and Tracey 2004).

Whereas exploratory tests of structure are useful, confirmatory procedures provide the strongest means to explicitly test a circulant correlation model. A circumplex reflects not only a conceptual model of the relationship between interrelated constructs but also a particular pattern of covariance between octant scales – reflected in a circulant correlation matrix (Guttman 1954). This pattern assumes the presence of higher correlations among scales which are hypothesized to be conceptually similar (e.g., 45° apart), whereas the magnitude (and sometimes direction) of correlations diminishes as the distance between scales on the circle increases, e.g., (PA vs. BC) > (PA vs. DE) > (PA vs. FG). Scales at opposite sides of the circle are expected to correlate negatively or negligibly. Such a pattern of correlations suggests fit to a circulant model. Confirmatory tests often involve testing all pairwise correlations of scales (288 comparisons for eight scales).

Several studies have tested circumplex structure for the IAS in confirmatory tests. For instance, Gaines et al. (1997) described the IAS as a quasi-circumplex based on structural equation models (SEM). However, Gurtman and Pincus (2000) argued that SEM was not state of the art for testing circumplex properties and instead conducted confirmatory factor analysis that provided strong support for relative ordering of scales based on correlations, with nearly equal spacing around the circle (and deviations from equal spacing likely to

have little practical consequence). Analogously, randomization tests of hypothesized order relations showed that the IAS (with or without item definitions/glossary) fits a circumplex model (Adams and Tracey 2004). Moreover, both exploratory and confirmatory tests suggested circumplex structure in Spanish samples varying in social and demographic characteristics, with multigroup analyses finding factorial invariance across Spanish and American samples (Martínez-Arias et al. 1999). As such, the IAS is among the measures meeting the most robust circumplex criteria.

Construct validity. IAS octant scales have exhibited meaningful associations with a broad range of personality constructs. Much of this research has relied upon college and nonclinical samples, although interpersonal traits are likely to be relevant to clinical constructs and contexts. Wiggins and Broughton (1991) mapped a range of 172 personality scales onto the circumplex using the IAS, including interpersonal problems and personality disorder symptoms; examples of well-known instruments mapped onto interpersonal domains include the sociability scale of the Hogan Personality Inventory (68°, assured-dominant [PA] octant), a schizoid personality subscale of the MMPI (236°, aloof-introverted [FG] octant), the fear of negative evaluation scale (287°, unassured-submissive [HI] octant), the warmth facet of the extraversion factor of the NEO-PI (37°, gregarious-extraverted [NO] octant), and the femininity scale of the Bem Sex Role Inventory (354°, warm-agreeable [LM] octant). Additional convergent validity data are available in the IAS manual (Wiggins 1995).

Other demonstrations of the utility of the IAS include investigations of change in interpersonal traits over time in early adulthood (Wright et al. 2012), ambivalent or contradictory endorsement of IAS scales predicting cross-situational variability in social behavior (Erickson et al. 2015), and examination of the interpersonal correlates of atrophy in brain regions in the context of neurodegenerative disease (Sollberger et al. 2009). Additionally, some studies have found a pattern generally reflective of higher dominance and lower nurturance in men relative to women (Trapnell and Wiggins 1990; Wiggins 1979).

Other Versions of the IAS

Trapnell and Wiggins (1990) extended the IAS, creating a version which includes trait adjectives to assess both the IPC dimensions and Big Five constructs. Extraversion and agreeableness constructs are closely aligned with dominance and affiliation (nurturance) on the IPC, representing slight rotations. The revised IAS-Big Five (IASR-B5) assesses neuroticism, openness to experience, and conscientiousness – factors that are independent of the IPC and therefore complementary to it – in addition to the core 64 interpersonal items of the IAS (8 items per IAS octant scale and 20 items for each of the 3 other factors). Scales on the IASR-B5 demonstrated internal consistency, expected factor structure, and convergent validity with relevant personality measures (Trapnell and Wiggins 1990). A recent application of this measure found that several of the IASR-B5 dimensions (including interpersonal factors) interacted to predict individual variability in baseline levels and rate of change in borderline personality symptoms (Wright et al. 2010).

Conclusion

The IAS is an elegant measure boasting the parsimony of trait adjectives, ideal circumplex structure, and a wide variety of potential applications. It remains a gold-standard circumplex measure of the interpersonal domain of personality.

Cross-References

- ▶ Circumplex (General)
- ▶ Interpersonal Circumplex
- ▶ Interpersonal Trust Scale
- ▶ Inventory of Interpersonal Problems

References

- Adams, R. S., & Tracey, T. G. (2004). Three versions of the Interpersonal Adjective Scales and their fit to the circumplex model. *Assessment, 11*, 263–270. <https://doi.org/10.1177/1073191104268488>.

- Erickson, T. M., Newman, M. G., Peterson, J., & Scarsella, G. (2015). Ambivalent interpersonal circumplex responding predicts cross-situational variability of social behavior. *Journal of Personality*, *83*, 429–440. <https://doi.org/10.1111/jopy.12117>.
- Gaines, S. O., Jr., Panter, A. T., Lyde, M. D., Steers, W. N., Rusbult, C. E., Cox, C. L., & Wexler, M. O. (1997). Evaluating the circumplexity of interpersonal traits and the manifestation of interpersonal traits in interpersonal trust. *Journal of Personality and Social Psychology*, *73*, 610–623. <https://doi.org/10.1037/0022-3514.73.3.610>.
- Gurtman, M. B., & Pincus, A. L. (2000). Interpersonal Adjective Scales: Confirmation of circumplex structure from multiple perspectives. *Personality and Social Psychology Bulletin*, *26*, 374–384. <https://doi.org/10.1177/01461672002650>.
- Guttman, L. (1954). A new approach to factor analysis: The radex. In P. F. Lazarsfeld (Ed.), *Mathematical thinking in the social sciences* (pp. 258–348). Glencoe: Free Press.
- Markey, P. M., & Markey, C. N. (2009). A brief assessment of the interpersonal circumplex: The IPIP-IPC. *Assessment*, *16*, 352–361. <https://doi.org/10.1177/1073191109340382>.
- Martínez-Arias, R., Silva, F., Díaz-Hidalgo, M. T., Ortet, G., & Moro, M. (1999). The structure of Wiggins' interpersonal circumplex: Cross-cultural studies. *European Journal of Psychological Assessment*, *15*, 196–205. <https://doi.org/10.1027//1015-5759.15.3.196>.
- Sollberger, M., Stanley, C. M., Wilson, S. M., Gyurak, A., Beckman, V., Growdon, M., . . . , & Rankin, K. P. (2009). Neural basis of interpersonal traits in neurodegenerative diseases. *Neuropsychologia*, *47*, 2812–2827. <https://doi.org/10.1016/j.neuropsychologia.2009.06.006>.
- Strack, M., Jacobs, I., & Grosse Holtforth, M. G. (2013). Reliability of circumplex axes. *Sage Open*, *3*, 1–12. <https://doi.org/10.1177/2158244013486115>.
- Trapnell, P. D., & Wiggins, J. S. (1990). Extension of the Interpersonal Adjective Scales to include the Big Five dimensions of personality. *Journal of Personality and Social Psychology*, *59*, 781–790. <https://doi.org/10.1037/0022-3514.59.4.781>.
- Wiggins, J. S. (1979). A psychological taxonomy of trait descriptive terms: The interpersonal domain. *Journal of Personality and Social Psychology*, *37*, 395–412. <https://doi.org/10.1037/0022-3514.37.3.395>.
- Wiggins, J. S. (1995). *Interpersonal Adjective Scales professional manual*. Odessa: Psychological Assessment Resources.
- Wiggins, J. S., & Broughton, R. (1991). A geometric taxonomy of personality scales. *European Journal of Personality*, *5*, 343–365. <https://doi.org/10.1002/per.2410050503>.
- Wiggins, J. S., Trapnell, P., & Phillips, N. (1988). Psychometric and geometric characteristics of the revised Interpersonal Adjective Scales (IAS-R). *Multivariate Behavioral Research*, *23*, 517–53. https://doi.org/10.1207/s15327906mbr2304_8.
- Wright, A. G., Pincus, A. L., Conroy, D. E., & Hilsenroth, M. J. (2009). Integrating methods to optimize circumplex description and comparison of groups. *Journal of Personality Assessment*, *91*, 311–322. <https://doi.org/10.1080/00223890902935696>.
- Wright, A. C., Pincus, A. L., & Lenzenweger, M. F. (2010). Modeling stability and change in borderline personality disorder symptoms using the revised Interpersonal Adjective Scales-Big Five (IASR-B5). *Journal of Personality Assessment*, *92*, 501–513. <https://doi.org/10.1080/00223891.2010.513288>.
- Wright, A. C., Pincus, A. L., & Lenzenweger, M. F. (2012). Interpersonal development, stability, and change in early adulthood. *Journal of Personality*, *80*, 1339–1872. <https://doi.org/10.1111/j.1467-6494.2012.00761.x>.

Interpersonal Adjective Scales-Revised

► Interpersonal Adjective Scales

Interpersonal Circle

► Interpersonal Circumplex

Interpersonal Circumplex

Michael B. Gurtman
Psychology Department, University of
Wisconsin-Parkside, Kenosha, WI, USA

Synonyms

Interpersonal circle

Definition

The interpersonal circumplex is a circular model of the interpersonal domain of personality.

Introduction

The interpersonal circumplex is a two-dimensional circular model of the interpersonal domain of personality and a tool for those who study and assess individual differences in

interpersonal traits, behaviors, and other related interpersonal constructs. The circumplex serves as guide for model-based interpersonal assessment practices and as a research framework for exploring and testing hypotheses about the interpersonal domain of personality. Its main applications are in clinical, counseling, and personality psychology.

Overview and Features

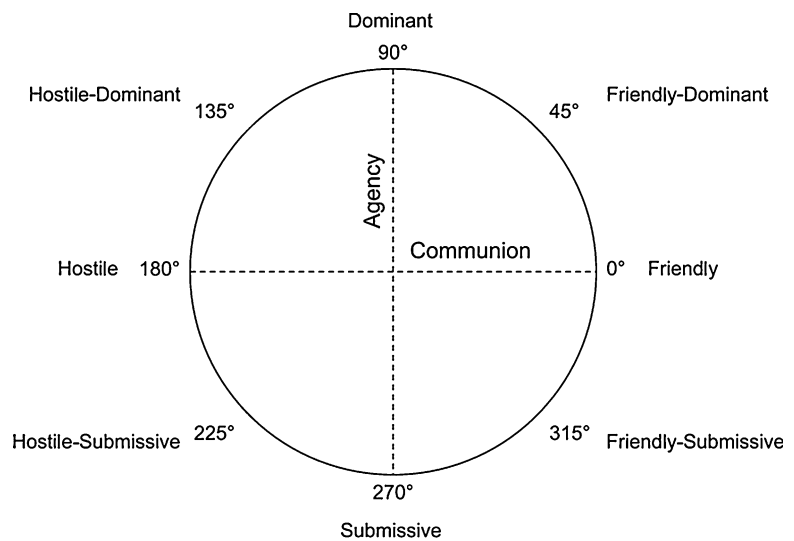
The interpersonal circumplex (e.g., Wiggins 1979, 1982), also referred to as the interpersonal circle (e.g., Kiesler 1983, cf. Leary 1957), is a two-dimensional, circular model of a set of interpersonal variables. The variables that define the domain are thus organized as a circle – arranged on a circular continuum with no beginning or end (Gurtman 2009, 2015). Circumplex models have been formulated for a number of interpersonal variables, including interpersonal traits, impacts, problems, values, motives, goals, supports, sensitivities, strengths, and efficacies (see Locke 2011). A version of an interpersonal circumplex – part of the Abridged Big Five-Dimensional Circumplex, or AB5C – has also been derived based on the Big 5 Model of personality traits (Hofstee et al. 1992; see also De Raad 1995). Circumplex models are not restricted to the interpersonal domain but have

also been proposed for other broadly defined personality domains – notably, core affect (e.g., Russell and Barrett 1999), emotion (e.g., Plutchik 1997), vocational interests (e.g., Tracey and Rounds 1997), and universal human values (e.g., Schwartz 1992).

Figure 1 shows a generic version of an interpersonal circumplex and reveals its key structural and substantive features. As noted in Gurtman (2015), the geometry of the circle is not simply a concise and convenient summary of how a particular domain is organized, but its features can be extrapolated to provide the prescriptive set of criteria for evaluating the structure of a particular domain (and also its putative measures). These criteria, also described elsewhere (e.g, Gurtman and Pincus 2003), include (a) two-dimensionality, (b) constant radius, and (c) a continuous or uniform distribution of variables in the circular space.

As applied to the interpersonal circumplex, two-dimensionality implies that differences between variables in the interpersonal domain are reducible to differences on two (orthogonal) dimensions. The two dimensions help identify the broad thematic differences between interpersonal categories and provide a kind of Cartesian system for locating such categories in the interpersonal space. Historically, the vertical dimension in this space has been described as *dominance* (vs. *submissiveness*) and the horizontal dimension

Interpersonal Circumplex, Fig. 1 A generic interpersonal circumplex, including dimensions, categories, and polar coordinates (From Gurtman 2009)



as *hostility* vs. *friendliness* or *nurturance* (e.g., Wiggins 1982). Reviewing the early literature, Kiesler (1983) labeled these dimensions, respectively, as *control* and *affiliation*.

Today, it is more common to refer to the same two dimensions, in broader terms, as *agency* and *communion*. These, according to Wiggins (1991), are meta-concepts that provide the “conceptual coordinates” for understanding and measuring interpersonal constructs. The terms come from the seminal work of Bakan (1966), who related agency (individuation) and communion (connection) to the “dual modalities” of human existence. As elaborated by others, agency subsumes a set of interrelated concepts such as power, autonomy, control, status, mastery, and dominance; communion subsumes concepts of love, affiliation, union, and connection (Horowitz 2004; McAdams et al. 1996; Wiggins 1991).

Consequently, circumplex models posit that each interpersonal variable in the system can be conceptualized as a particular “blend” of agency (positive or negative) and communion (positive or negative). For example, dependency constructs are generally defined by positive communion and negative agency but vary in the extent to which each is emphasized (Pincus and Gurtman 1995). The “dark triad” constructs of narcissism, Machiavellianism, and psychopathy (Paulhus and Williams 2002; Jones and Paulhus 2011) are each characterized by positive agency and negative communion but again vary in their emphases (and also on other non-interpersonal factors). The particular blend of agency and communion is part of the core interpersonal identity of the construct.

A second property of circular models is the ideal of *constant radius*. As evident in Fig. 1, each variable is equidistant from the center (origin) and thus has an equal “projection” or “communality” in this space. Technically, the sum of (squared) agency and (squared) communion would be a constant for each interpersonal variable in the system (implied by the equation for a circle). Overall, agency and communion are equally relevant for describing interpersonal differences.

The third property of circumplex models is the *continuous* or *uniform distribution* of variables around the periphery of the circle, with no major

gaps or discontinuities. As indicated elsewhere (Gurtman 2015), at any point on the circle, it should be possible theoretically to identify a meaningful interpersonal concept. In practice, measures of personality designed to operationalize an interpersonal circumplex (e.g., the Interpersonal Adjective Scales, Wiggins (1979)) will divide the circle into 8 or 16 equally spaced sectors and thus sample content from each region of the space. The continuous/uniform distribution property distinguishes the circumplex from (two-factor) simple structure models, such as traditional versions of the Big 5 Model.

A unique feature of circumplex models is that they use a *polar coordinate system* to locate variables (and ultimately people) along the circular continuum. This is also shown in Fig. 1. Each variable’s position can be expressed as the *angular displacement* (in degrees, counterclockwise) from a fixed starting point (by convention, at the “three o’clock position”). As an important corollary, the *angular discrepancy* between two variables’ positions on the circle is related (inversely) to the variables’ similarity (Gurtman and Pincus 2003). On the interpersonal circumplex, variables with a smaller angular discrepancy – hence, closer together on the circle – will be more similar, conceptually and empirically. Variables 180° apart are bipolar opposites (Kiesler 1983).

Finally, it is sometimes useful to divide the interpersonal circumplex into four basic quadrants, typically labeled friendly-dominance, hostile-dominance, hostile-submissiveness, and friendly-submissiveness. (See Fig. 1.) These broad distinctions are based simply on the possible positive/negative pairings of agency and communion, with each quadrant encompassing a 90° section of the circle. Smith and Williams (2016) offer a recent example of a research program utilizing this system.

History of the Interpersonal Circumplex

The history of the interpersonal circumplex model and its tradition within the field of clinical psychology is described in many places (e.g., Pincus and Gurtman 2006; Wiggins 1982), including,

most recently, in a chapter by Fournier et al. (2011). Wiggins (1996) presented a very readable “informal history.” Wiggins (1991) put the model into a broader historical and scholarly context, underscoring its important connection to the meta-concepts of agency and communion.

The precursor to the interpersonal circumplex was the *interpersonal circle*, developed in the 1950s by the Kaiser Foundation Research Group as a clinical tool for the observation and analysis of interpersonal data. The model was built on the work of Harry Stack Sullivan, in particular his emphasis on the interpersonal mechanisms comprising personality. In the seminal article describing the group’s efforts, Freedman et al. (1951) provided the key assumptions and principles underlying the model. The circle emerged as an attempt to systematize the variables of personality, measure variables at multiple levels of analysis, and accommodate a range of adjustments from normal to abnormal. A second article by Laforge et al. (1954) presented methods for quantifying and summarizing interpersonal data. LaForge and Suczek (1955) introduced the Interpersonal Checklist, a 144-item inventory designed to measure the variables of the interpersonal system in accord with theory. Leary’s (1957) *Interpersonal Diagnosis of Personality* was the culmination of the group’s work, and its publication was a milestone event in the history of the interpersonal circumplex tradition (e.g., Wiggins 1982).

Independently, Louis Guttman (1954) introduced the term *circumplex*, presenting it as a kind of “structural theory” to explain the interrelationships of different kinds of tests including

those of mental ability. He defined the circumplex as “a system of variables which has a circular law of order” (p. 325). He also demonstrated that, under certain ideal conditions, a set of tests with circumplex structure would yield a *circulant* correlation matrix (see the example of Fig. 2). Although the values of the correlation parameters are not fixed, the particular (repeating) pattern of off-diagonal values is characteristic, as depicted in the figure. The circulant is particularly important for fitting a set of test data to the circumplex model (e.g., Browne 1992; Tracey 2000) – and thus evaluating whether a given circumplex measure (see next section) possesses ideal properties.

The integration of “interpersonal” and “circumplex” can be traced to a series of publications (e.g., Foa 1961; Lorr and McNair 1963; Schaefer 1959; Wiggins 1973) that recognized the potential synergy of linking the interpersonal circle (and theories of social behavior, more generally) to the circumplex, which, in turn, offered a rigorous statistical and explanatory model. Authoritative articles by Wiggins (1979) and later Kiesler (1983) ushered in the modern era in the history and the advancement of the interpersonal circumplex model and were particularly important for refining key concepts and articulating principles of test development.

Interpersonal Circumplex Measures

The Interpersonal Adjective Scales (IAS; Wiggins 1979) initiated the development of personality tests constructed explicitly on the basis of the circumplex

Variable	V1	V2	V3	V4	V5	V6	V7	V8
V1	1.00							
V2	0.50	1.00						
V3	0.00	0.50	1.00					
V4	-0.50	0.00	0.50	1.00				
V5	-1.00	-0.50	0.00	0.50	1.00			
V6	-0.50	-1.00	-0.50	0.00	0.50	1.00		
V7	0.00	-0.50	-1.00	-0.50	0.00	0.50	1.00	
V8	0.50	0.00	-0.50	-1.00	-0.50	0.00	0.50	1.00

Interpersonal Circumplex, Fig. 2 One example of a circulant matrix. Values are based on Wiggins (1979)

Interpersonal Circumplex, Table 1 Interpersonal circumplex measures and their constructs

Interpersonal circumplex measure	Interpersonal construct
Checklist of Interpersonal Transactions (CLOIT)	Behaviors
Circumplex Scales of Interpersonal Efficacy (CSIE)	Self-efficacy
Circumplex Scales of Interpersonal Values (CSIV)	Values or motives
Impact Message Inventory (IMI)	Impacts or evoked reactions
Interpersonal Adjective Scales (IAS)	Traits
Interpersonal grid	Perceptions of behavior
Interpersonal Sensitivities Circumplex (ISC)	Irritants
Inventory of interpersonal goals	Interaction goals
Inventory of Interpersonal Problems-Circumplex (IIP)	Problems
Inventory of Interpersonal Strengths (IIS)	Competencies
Social Actions Scale Circumplex (SAS-C)	Social supports

From Gurtman (2015)

model. Since then, many other tests followed, creating what Locke (2011) has referred to as a “family” of interpersonal inventories addressing a variety of interpersonal constructs, each predicated on a common theoretical model. Locke’s (2011) chapter provides a comprehensive review of the major inventories and also includes several newer and promising instruments. Almost all the inventories divide the circumplex into eight equally spaced *octants* and thus yield scores on eight scales that are then amenable to a common set of analytic procedures (next section). Table 1, based closely on Locke’s (2011) chapter and reproduced from Gurtman (2015), offers a list of contemporary interpersonal circumplex measures. (Most references can be found in Locke’s chapter.)

Applying the Circumplex: Person Centered

Circumplex measures of personality produce a set of individual scores that will typically reflect the

underlying structure of the circle and consequently call for and benefit from certain circular analytic approaches. This was recognized by the Kaiser Research Group, who developed an innovative set of methods for displaying, summarizing, and interpreting person data derived from their circular measures (e.g., LaForge et al. 1954). In this section, I will give an overview of contemporary methods, which are also described more fully in Gurtman and Pincus (2003) and Gurtman (2009).

The starting point is the *circular profile*, as shown graphically in Fig. 3. The profile represents a given person’s set of scores on a particular circumplex measure – typically eight equally spaced octant scores – displayed in a polar coordinate system. Scores radiate from the origin and are circularly arranged. Like the circumplex itself, the profile has no beginning or end, and the order mirrors the theoretical arrangement of the variables on the circle. Circular profiles typically are structured in characteristic ways, rising to a peak value and then declining on the basis of proximity. Consequently, as shown in the figure, circular profiles tend to be displaced or shifted away from the origin in the direction of the high score, which facilitates interpretation. Thus, in the figure, Profile A suggests hostile-dominant interpersonal tendencies (a shift toward that quadrant), and Profile B suggests friendly-submissive tendencies.

Circular profiles lend themselves to summary analyses that reduce the profiles to their key structural features. The Kaiser Research Group pioneered these techniques – based on circular or directional statistics – and also developed the implications for interpersonal assessment and diagnosis (e.g., Leary 1957). Their approach has been characterized as the *vector method* (Gurtman and Pincus 2003). It involves treating each score on the circle as a *vector* and then calculating a *resultant vector*, which would thereby express the overall trend of the person’s profile. The resultant vector consequently locates the person within the two-dimensional interpersonal space. The *angular direction* of the vector indicates the predominant theme of the profile (its interpersonal central tendency), and *vector length* is a measure of its differentiation or extremity (related to

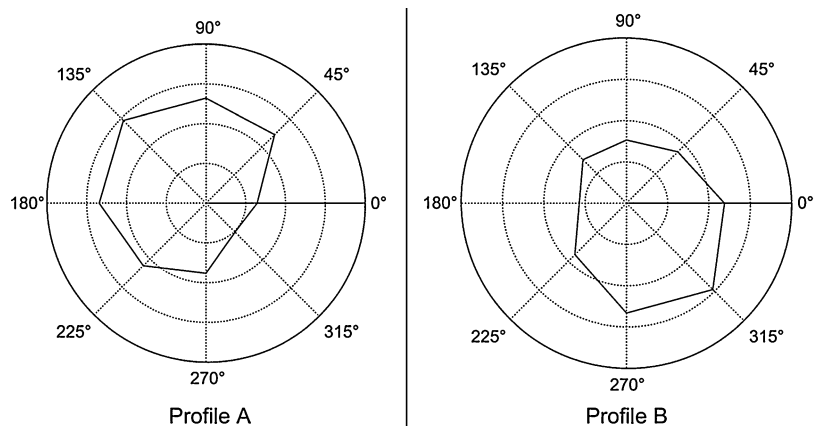
interpersonal variability). For example, an angle of 138° would suggest a hostile-dominant style – but this summary interpretation would depend on whether the person’s profile was well differentiated (high vector length). Wiggins et al. (1989) were among the first to apply the vector method to interpersonal circumplex data and to examine its implications for interpersonal classification. Additional information, examples, and relevant formulas are in Gurtman and Pincus (2003) among other sources (e.g., Wiggins et al. 1989; Wright et al. 2009)

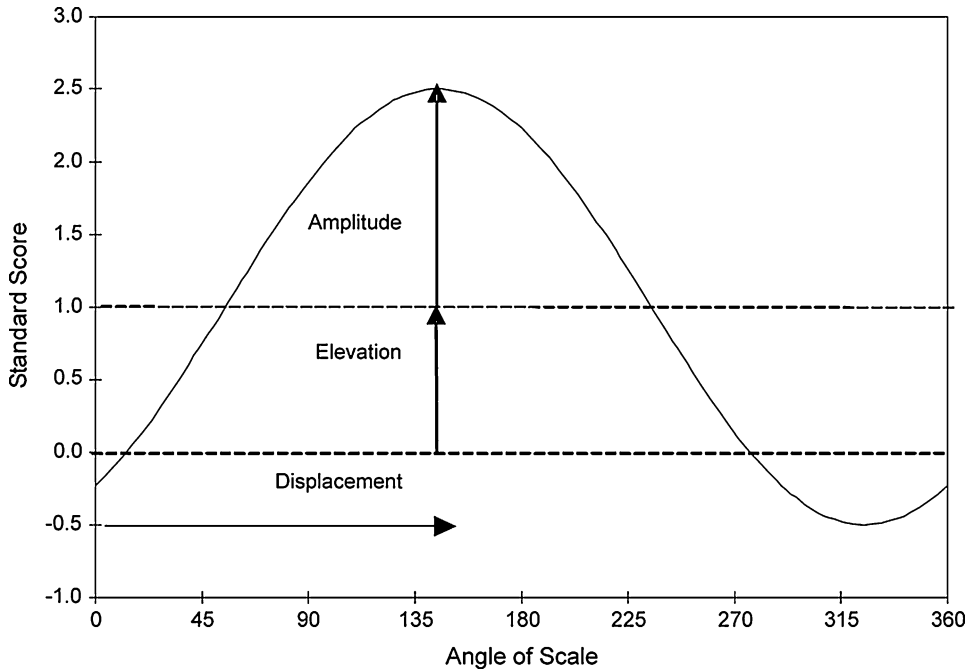
The vector method essentially reduces a person’s profile to a single point in interpersonal space, which also conveys the person’s standing on agency (y-axis) and communion (x-axis). When an interpersonal tendency is represented by a single point in two-dimensional space, this simplifies analysis of change and difference. For example, a person’s movement in the circumplex space (across time) can be easily charted and apprehended. More formally, Moskowitz and Zuroff (2004) introduced the concepts of *flux*, *pulse*, and *spin* as ways of quantifying temporal changes in an individual’s interpersonal positioning; their research suggests that high intraindividual variability (on these indices) is related to greater psychopathology. Similarly, it is possible to compare interactants’ positions in the circumplex space in relation to each other or generally. Theories of *interpersonal complementarity* (Horowitz 2004; Kiesler 1983, 2006)

suggest that interactants’ relative positions in the circumplex space will be lawful and predictable – specifically, as part of the interpersonal transaction, individuals are “pulled” toward corresponding positions on the x-axis (communion) and reciprocal (opposite) positions on the y-axis (agency). The vector method enables tests of this important theoretical principle.

An alternative and newer approach for interpersonal profile analysis is the *structural summary method* (SSM; Gurtman and Balakrishnan 1998; Wright et al. 2009). This involves fitting the pattern of circumplex scores to a cosine curve (a circular model; see Fig. 4) This model has four parameters, each with interpretive significance. *Elevation* is the mean level of the curve and is related to a person’s standing on the general factor of the circumplex measure. *Angular displacement* indicates the angle associated with high point of the curve – at its peak value – which suggests the predominant theme of the profile. *Amplitude* is the measure of profile differentiation or structured patterning; it is the distance between the mean and peak value of the curve. *Goodness of fit* is a summary statistic that indicates how well the profile fits the calculated, cosine curve model; high R2 values reflect a prototypic profile that can be simplified to the model. The SSM has now been used in a variety of studies, including, recently, those designed to examine interpersonal heterogeneity in the expression of different forms of psychopathology

Interpersonal Circumplex, Fig. 3 Two hypothetical circular profiles (Based on Gurtman 2009)





Interpersonal Circumplex, Fig. 4 Illustration of the cosine curve model for the structural summary method (From Gurtman and Pincus 2003)

(or *interpersonal pathoplasticity*; e.g., Cain et al. 2012; Pincus and Wright 2011; Przeworski et al. 2011).

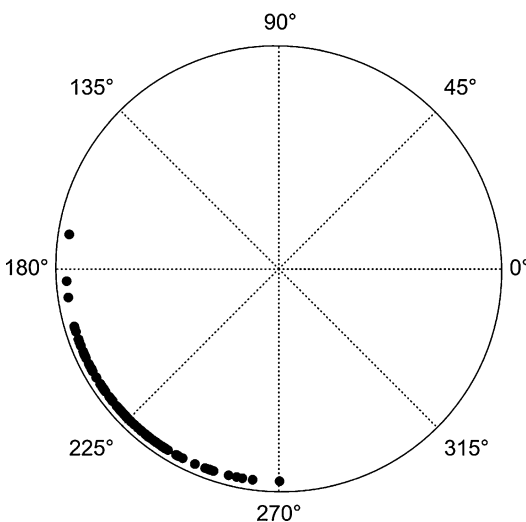
Applying the Circumplex: Group Centered

The methods, just described, have been adapted for examining group characteristics and differences. Rather than focusing on the individual case, the analysis is on an aggregate, and the purpose is generally to characterize the group in various ways. As one example, a researcher may be interested in the interpersonal features of a sample of patients with borderline personality disorder (e.g., Hilsenroth et al. 2007), and the circumplex serves as a tool and framework for the analysis. See Gurtman and Pincus (2003) for additional details and examples.

Profile averaging is a simple and straightforward approach to combining individual circumplex data. Typically, a group composite (mean profile) is calculated by averaging the

scores of the group members on the eight octants of the circumplex measure. The mean profile will generally have better fit to the circular model (cosine curve) than individual profiles because individual differences cancel out. The mean profile of the group can then be analyzed using either the vector method or the SSM, as described earlier. For the vector method, the resultant (vector) locates the group in the circumplex space and thus indicates the predominant interpersonal theme associated with the group (angular displacement) and the group's degree of interpersonal distinctiveness or differentiation (vector length). Both are aspects of the group's "interpersonalness." The SSM also adds information about elevation – the group's mean level reflecting its standing on the measure's general factor – and goodness of fit to the circular model – indicated by R^2 and related, theoretically, to the prototypicality of the group profile (see Gurtman and Pincus 2003; Wright et al. 2009). A limitation of profile averaging is that the distinctive features of individual cases are lost through the averaging procedure.

Circular plots (also called *circular distributions*) provide an alternative, graphical approach to studying group characteristics while, at the same time, preserving access to the individual data points (see Gurtman and Pincus 2003). As shown in the example of Fig. 5, a circular plot involves projecting each person's interpersonal location onto the periphery of the circle (i.e., each person's angular displacement is plotted at a fixed radius). Using circular statistics, it is then possible to calculate the *circular mean* (central tendency of the points) and also the *circular standard deviation* (dispersion around the mean). The circular mean for the Fig. 5 example is 224° , which indicates that individuals are centered at a point in the hostile-submissive quadrant of the circle. The circular standard deviation (here, 18°) is a measure of how closely concentrated cases are around that focal point. For some grouping variables, cases may occupy a narrow sector of the circle (low standard deviation), while, for other variables, individuals may be widely distributed with no meaningful central tendency (high standard deviation). Like other distributions, circular plots also convey other valuable information, such as outliers, minimum and maximum scores, clusters, and asymmetries. A limitation of circular plots is that they begin with simplified data (point



Interpersonal Circumplex, Fig. 5 Example of a circular distribution of 100 hypothetical individuals (Based on Gurtman 2009)

representations of individual cases), which are then analyzed using (less familiar) circular statistics. Also, to be effective, they are dependent on graphical display.

Applying the Circumplex: Variable Centered

Many studies have now used the interpersonal circumplex as a kind of “nomological net” (Gurtman 1992) for elucidating the interpersonal features of different personality variables. To the extent that the circumplex is a valid structural and taxonomic model of the interpersonal domain, it provides a means for objectively evaluating the “interpersonalness” of different constructs and their measures – in a sense, the quality (substance) and the quantity of the interpersonal content.

Wiggins and Broughton (1991) offered an excellent demonstration of this approach. From a large number of personality inventories and tests administered in their studies, they identified scales that, on an a priori basis, could be categorized as “interpersonal.” The Interpersonal Adjective Scales (IAS) operationalized the interpersonal circumplex. To determine each scale’s “interpersonal coordinates,” they then calculated the correlations of each scale with the two factors of the IAS (dominance and nurturance). Ultimately, they were able to classify 172 personality scales into one of eight octants of the circumplex, based on the objective criteria of the scale’s angular location and its vector length. Importantly, the name of the scale was not necessarily a clear indicator of its classification on the circumplex, and not all scales initially selected were indeed interpersonal (based on vector length). Perusing their table (spanning eight pages!) would show how interpersonal nuancing occurs as a function of angular proximity.

Applying similar empirical methods or an adaptation of the SSM, investigators have now subjected many personality constructs to this kind of interpersonal scrutiny and analysis. In recent years, the *dark triad of personality* consisting of Machiavellianism, narcissism, and psychopathy, as well as other dark-side personality constructs, has drawn considerable attention; for a recent

circumplex-based analysis, see Southard et al. (2015). Measures of DSM personality disorders have also been frequently evaluated for their interpersonal features and implications using the circumplex as a standard; for a recent SSM-based analysis, see Williams and Simms (2016). Other notable variables that have been studied include autonomy, dependency, self-esteem, perfectionism, rejection sensitivity, and social competence.

Conclusion

The interpersonal circumplex is one part of the rich tradition that gives particular emphasis to interpersonal factors in personality. The chapters, books, and review articles cited in this entry offer depth and detail about the model and its broader context.

Cross-References

- ▶ Agency
- ▶ Circumplex (General)
- ▶ Communion
- ▶ Dark Tetrad of Personality, The
- ▶ Gurtman, Michael B.
- ▶ Horowitz, Leonard M.
- ▶ Interpersonal Adjective Scales
- ▶ Interpersonal Complementarity
- ▶ Interpersonal Theory of Psychiatry (Sullivan)
- ▶ Inventory of Interpersonal Problems
- ▶ Leary, Timothy
- ▶ Leising, Daniel
- ▶ Markey, Patrick
- ▶ Paulhus, Delroy L.
- ▶ Pincus, Aaron L.,
- ▶ Sullivan, Harry Stack
- ▶ Wiggins, Jerry S.
- ▶ Wright, Aidan G. C.

References

- Bakan, D. (1966). *The duality of human existence: Isolation and communication in western man*. Boston: Beacon Press.
- Browne, M. W. (1992). Circumplex models for correlation matrices. *Psychometrika*, *57*, 469–497.
- Cain, N. M., Ansell, E. B., Wright, A. G. C., Hopwood, C. J., Thomas, K. M., Pinto, A., . . . , & Grilo, C. M. (2012). Interpersonal pathoplasticity in the course of major depression. *Journal of Consulting and Clinical Psychology*, *80*(1), 78–86.
- De Raad, B. (1995). The psycholexical approach to the structure of interpersonal traits. *European Journal of Personality*, *9*(2), 89–102.
- Foa, U. G. (1961). Convergences in the analysis of the structure of interpersonal behavior. *Psychological Review*, *68*(5), 341–353.
- Fournier, M. A., Moskowitz, D. S., & Zuroff, D. C. (2011). Origins and applications of the interpersonal circumplex. In L. M. Horowitz & S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 57–73). Hoboken: Wiley.
- Freedman, M. B., Leary, T. F., Ossorio, A. G., & Coffey, H. S. (1951). The interpersonal dimension of personality. *Journal of Personality*, *20*, 143–161.
- Gurtman, M. B. (1992). Construct validity of interpersonal personality measures: The interpersonal circumplex as a nomological net. *Journal of Personality and Social Psychology*, *63*, 105–118.
- Gurtman, M. B. (2009). Exploring personality with the interpersonal circumplex. *Social and Personality Psychology Compass*, *3*(4), 601–619. <https://doi.org/10.1111/j.1751-9004.2009.00172.x>.
- Gurtman, M. B. (2015). Circumplex models. In *The encyclopedia of clinical psychology* (pp. 1–12).
- Gurtman, M. B., & Balakrishnan, J. D. (1998). Circular measurement redux: The analysis and interpretation of interpersonal circle profiles. *Clinical Psychology: Science and Practice*, *5*, 344–360.
- Gurtman, M. B., & Pincus, A. L. (2003). The circumplex model: Methods and research applications. In J. Schinka & W. F. Velicer (Eds.), *Handbook of psychology: Research methods in psychology* (Vol. 2, pp. 407–428). Hoboken: Wiley.
- Guttman, L. (1954). A new approach to factor analysis: The radex. In P. F. Lazerfeld (Ed.), *Mathematical thinking in the social sciences* (pp. 258–348). Glencoe: Free Press.
- Hilsenroth, M. J., Menaker, J., Peters, E. J., & Pincus, A. L. (2007). Assessment of borderline pathology using the inventory of interpersonal problems circumplex scales (IIP-C): A comparison of clinical samples. *Clinical Psychology & Psychotherapy*, *14*(5), 365–376.
- Hofstee, W. K., de Raad, B., & Goldberg, L. R. (1992). Integration of the big five and circumplex approaches to trait structure. *Journal of Personality and Social Psychology*, *63*, 146–163.
- Horowitz, L. M. (2004). *Interpersonal foundations of psychopathology*. Washington, DC: American Psychological Association.
- Jones, D. N., & Paulhus, D. L. (2011). Differentiating the Dark Triad within the interpersonal circumplex. In L. M. Horowitz & S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 249–267). Hoboken: Wiley.

- Kiesler, D. J. (1983). The 1982 interpersonal circle: A taxonomy for complementarity in human transactions. *Psychological Review*, *90*(3), 185–214.
- Kiesler, D. J. (1996). *Contemporary interpersonal theory and research: Personality, psychopathology, and psychotherapy*. John Wiley & Sons, Oxford.
- Laforge, R., & Suczek, R. F. (1955). The interpersonal dimension of personality: III. An interpersonal check list. *Journal of Personality*, *24*, 94–112.
- Laforge, R., Leary, T. F., Naboisek, H., Coffey, H. S., & Freedman, M. B. (1954). The interpersonal dimension of personality: II. An objective study of repression. *Journal of Personality*, *23*, 129–153.
- Leary, T. (1957). *Interpersonal diagnosis of personality*. New York: Ronald Press.
- Locke, K. D. (2011). Circumplex measures of interpersonal constructs. In L. M. Horowitz & S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 313–324). Hoboken: Wiley.
- Lorr, M., & McNair, D. M. (1963). An interpersonal behavior circle. *The Journal of Abnormal and Social Psychology*, *67*(1), 68–75.
- McAdams, D. P., Hoffman, B. J., Mansfield, E. D., & Day, R. (1996). Themes of agency and communion in significant autobiographical scenes. *Journal of Personality*, *64*, 339–377.
- Moskowitz, D. S., & Zuroff, D. C. (2004). Flux, pulse, and spin: Dynamic additions to the personality lexicon. *Journal of Personality and Social Psychology*, *86*, 880–893.
- Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism and psychopathy. *Journal of Research in Personality*, *36*(6), 556–563.
- Pincus, A. L., & Gurtman, M. B. (1995). The three faces of interpersonal dependency: Structural analysis of self-report dependency measures. *Journal of Personality and Social Psychology*, *69*, 744–758.
- Pincus, A. L., & Gurtman, M. B. (2006). Interpersonal theory and the interpersonal circumplex: Evolving perspectives on normal and abnormal personality. In S. Strack (Ed.), *Differentiating normal and abnormal personality* (2nd ed., pp. 83–111). New York: Springer.
- Pincus, A. L., & Wright, A. G. C. (2011). Interpersonal diagnosis of psychopathology. In L. M. Horowitz & S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 359–381). Hoboken: Wiley.
- Plutchik, R. (1997). The circumplex as a general model of the structure of emotions and personality. In R. Plutchik & H. R. Conte (Eds.), *Circumplex models of personality and emotions* (pp. 17–45). Washington, DC: American Psychological Association.
- Przeworski, A., Newman, M. G., Pincus, A. L., Kasoff, M. B., Yamasaki, A. S., Castonguay, L. G., & Berlin, K. S. (2011). Interpersonal pathoplasticity in individuals with generalized anxiety disorder. *Journal of Abnormal Psychology*, *120*(2), 286–298.
- Russell, J. A., & Barrett, L. F. (1999). Core affect, prototypical emotional episodes, and other things called emotion: Dissecting the elephant. *Journal of Personality and Social Psychology*, *76*(5), 805–819.
- Schaefer, E. S. (1959). A circumplex model for maternal behavior. *The Journal of Abnormal and Social Psychology*, *59*(2), 226–235.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, *25*, 1–65.
- Smith, T. W., & Williams, P. G. (2016). Assessment of social traits in married couples: Self-reports versus spouse ratings around the interpersonal circumplex. *Psychological Assessment*, *28*(6), 726–736.
- Southard, A. C., Noser, A. E., Pollock, N. C., Mercer, S. H., & Zeigler-Hill, V. (2015). The interpersonal nature of dark personality features. *Journal of Social and Clinical Psychology*, *34*(7), 555–586.
- Tracey, T. J. G. (2000). Analysis of circumplex models. In H. E. A. Tinsley & S. D. Brown (Eds.), *Handbook of applied multivariate statistics and mathematical modeling* (pp. 641–664). San Diego: Academic.
- Tracey, T. G., & Rounds, J. B. (1997). Circular structure of vocational interests. In R. Plutchik & H. R. Conte (Eds.), *Circumplex models of personality and emotions* (pp. 183–201). Washington, DC: American Psychological Association.
- Wiggins, J. S. (1973). *Personality and prediction: Principles of personality assessment*. Reading: Addison-Wesley.
- Wiggins, J. S. (1979). A psychological taxonomy of trait-descriptive terms: The interpersonal domain. *Journal of Personality and Social Psychology*, *37*(3), 395–412.
- Wiggins, J. S. (1982). Circumplex models of interpersonal behavior in clinical psychology. In P. S. Kendall & J. N. Butcher (Eds.), *Handbook of research methods in clinical psychology* (pp. 183–221). New York: Wiley.
- Wiggins, J. S. (1991). Agency and communion as conceptual coordinates for the understanding and measurement of interpersonal behavior. In W. W. Grove & D. Cicchetti (Eds.), *Thinking clearly about psychology: Vol. 2. Personality and psychotherapy* (pp. 89–113). Minneapolis: University of Minnesota Press.
- Wiggins, J. S. (1996). An informal history of the interpersonal circumplex tradition. *Journal of Personality Assessment*, *66*, 217–233.
- Wiggins, J. S., & Broughton, R. (1991). A geometric taxonomy of personality scales. *European Journal of Personality*, *5*(5), 343–365.
- Wiggins, J. S., Phillips, N., & Trapnell, P. (1989). Circular reasoning about interpersonal behavior: Evidence concerning some untested assumptions underlying diagnostic classification. *Journal of Personality and Social Psychology*, *56*(2), 296–305.
- Williams, T. F., & Simms, L. J. (2016). Personality disorder models and their coverage of interpersonal problems. *Personality Disorders: Theory, Research, and Treatment*, *7*(1), 15–27.
- Wright, A. G., Pincus, A. L., Conroy, D. E., & Hilsenroth, M. J. (2009). Integrating methods to optimize circumplex description and comparison of groups. *Journal of Personality Assessment*, *91*(4), 311–322.

Interpersonal Complementarity

Pamela Sadler¹ and Erik Woody²

¹Department of Psychology, Wilfrid Laurier University, Waterloo, ON, Canada

²Department of Psychology, University of Waterloo, Waterloo, ON, Canada

Definition

Interpersonal complementarity is a concept that denotes important ways in which two people's behavior, as they interact, may fit together and influence each other.

Introduction

Individuals tend to have their own preferred or typical interpersonal traits, called interpersonal styles. Particular pairings of such interpersonal styles may either mesh or clash, yielding distinctive outcomes. For example, two individuals with warm interpersonal styles may interact relatively easily and enjoyably, compared to a warm person and a cold person. Two dominant individuals may tend to clash and work together less effectively, compared to a dominant person and a submissive person.

In addition, this fit between people is a dynamic phenomenon, in that as two individuals interact, they may modify their habitual interpersonal behaviors in response to each other. These changes, which reflect processes of mutual influence and adaptation, occur over a wide span of time scales, from rapid changes within minutes during one interaction, to more gradual shifts over several months across many interactions. For example, as a result of interacting with a hostile-submissive partner, a habitually warm-submissive individual may shift toward a more hostile-dominant pattern of behavior.

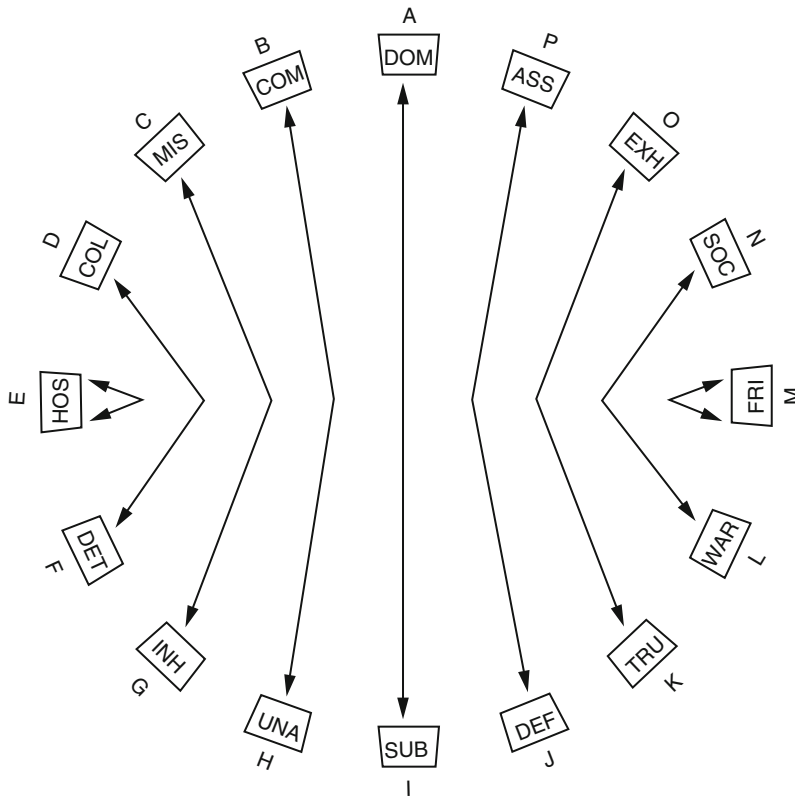
Although such shifts during interactions may improve the fit between the partners' respective styles, they may also be effortful or stressful for the individual, because they depart from his or her

habitual or preferred style. Nonetheless, over a relatively long period of time, such shifts may lead to lasting changes in a person's general interpersonal style. For example, interpersonal therapists aim to bring about enduring change in a client's interpersonal style by repeatedly eliciting patterns of behavior during therapy sessions (Carson 1982; Kiesler 1996).

Interpersonal Theory: The Interpersonal Circle and Interpersonal Complementarity

The concept of complementarity originated in classic interpersonal theory, pioneered by Leary (1957). This theory has as its foundation a structural model called the interpersonal circle, in which a comprehensive spectrum of interpersonal behaviors is hypothesized to form a circular structure, like a color wheel. This circular structure is called a circumplex. At its center is the intersection of two major orthogonal, underlying interpersonal dimensions: affiliation (friendly to hostile) and dominance (dominant to submissive). By convention, the affiliation dimension is represented as the horizontal axis and the dominance dimension the vertical axis. According to interpersonal theory, each type of interpersonal behavior represents a combination of respective levels of these two major underlying dimensions, and the distance from the origin represents the intensity of the particular type of behavior.

Working within this model, Carson (1969) argued that the extent of complementarity of two interpersonal behaviors is determined by their degree of sameness along the affiliation dimension and their degree of oppositeness along the dominance dimension. For instance, friendly dominant behavior and friendly submissive behavior are complementary, whereas friendly dominant behavior and hostile dominant behavior are not. Kiesler (1983) elaborated these ideas by advancing a model consisting of 16 stylistic prototypes around the interpersonal circle and specifying all hypothesized complementary pairings of these prototypes. As shown in Fig. 1, these complementary pairings are symmetric with regard to



Interpersonal Complementarity, Fig. 1 Complementarity according to Kiesler’s 16 segments of the interpersonal circle. Segments are labeled in counter-clockwise fashion both alphabetically (A, B, C, and so on) and using short-forms of the representative interpersonal style for that segment as follows: *DOM* Dominant, *COM* Competitive, *MIS* Mistrusting, *COL* Cold, *HOS* Hostile, *DET* Detached, *INH* Inhibited, *UNA* Unassured, *SUB*

Submissive, *DEF* Deferent, *TRU* Trusting, *WAR* Warm, *FRI* Friendly, *SOC* Sociable, *EXH* Exhibitionistic, *ASS* Assured. Reprinted from Kiesler, D. J. (1983). The 1982 Interpersonal Circle: A taxonomy for complementarity in human transactions. *Psychological Review*, 90 (p. 202, Fig. 3). Reproduced by permission of American Psychological Association: <http://www.apa.org/about/contact/copyright/>

the affiliation dimension. Although Kiesler’s model of complementarity is much more fine-grained than Carson’s, both are based on the same two core principles: greater affiliation fits with and invites greater affiliation, which is called *correspondence*; and greater dominance fits with and invites greater submissiveness (and vice versa), which is called *reciprocity*.

The concept of interpersonal complementarity – that as people interact, their behaviors fit together and influence each other in important ways – has very broad implications across social, personality, and clinical psychology. Unfortunately, some key terms in interpersonal theory have meanings that may be different from the meaning of these terms

outside the tradition of interpersonal theory (Sadler et al. 2009). *Complementarity* in interpersonal theory is a general term covering both similarity of behavior across partners (e.g., friendliness pulls for friendliness) and dissimilarity (e.g., dominance pulls for submissiveness). In contrast, social psychologists tend to reserve *complementarity* to denote cases of dissimilarity. What interpersonal theorists call *correspondence* (on affiliation) tends to be called *reciprocity* by social psychologists, and what interpersonal researchers call *reciprocity* (on dominance) may be called *compensation* by communication theorists. It is important to see beyond these terminological differences to appreciate the underlying commonalities across these research traditions.

Empirical Support for Interpersonal Complementarity

Kiesler (1996) reviewed a considerable body of research evidence in support of the hypothesis that responses to interpersonal behavior tend to be complementary. Across many studies, friendly dominant and friendly submissive behaviors tend to evoke each other, and hostile dominant and hostile submissive behaviors tend to evoke each other (although the evidence for the latter may be somewhat weaker). An interesting example of a study strongly confirming the hypotheses of interpersonal complementarity is an experiment by Sadler and Woody (2003). They used a mutual-influence model in structural equation modeling to show that as people interact, they become more positively correlated in their respective levels of affiliation and more negatively correlated in their levels of dominance.

An important implication of interpersonal theory is that complementary interpersonal styles should tend to lead to more pleasing, productive relationships. Consistent with this idea, Sadler et al. (2011) reviewed a wide range of evidence showing that complementarity tends to promote a variety of positive subjective and objective outcomes.

Processes Underlying Complementarity

Thus, adjustments in partners' interpersonal behaviors that increase complementarity are probably often maintained, at least in part, by their mutual reward value. However, there must be other underlying processes at work in complementarity, as well. Notably, many individuals who come to psychotherapy for interpersonal problems have styles pulling for responses from others that, although complementary, are ungratifying for the individual (Carson 1969, 1982). For example, a person with a strongly hostile submissive style may repeatedly evoke hostile dominant behaviors from others, who are therefore experienced as punishingly harsh and domineering. Although bringing the person much stress and dissatisfaction, such a hostile submissive style may paradoxically be highly stable.

Based on the consideration of such cases, interpersonal theorists such as Carson (1982) and Kiesler (1996) propose that a self-validation

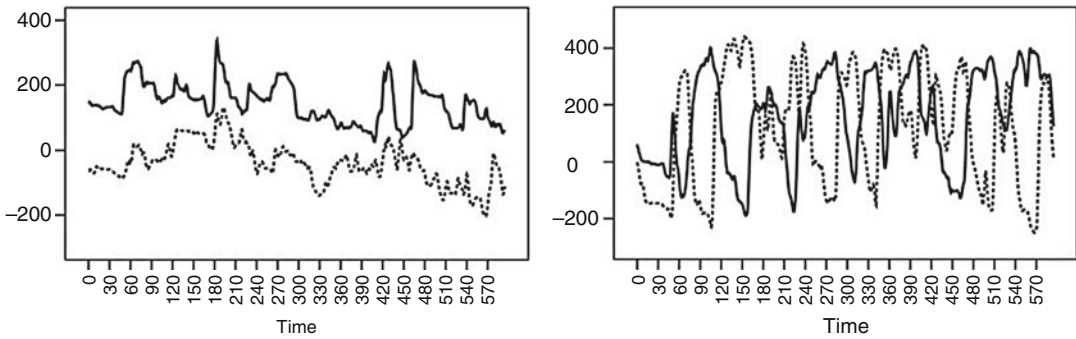
process may often underlie complementarity. For example, a hostile submissive individual may come to expect harsh, domineering responses from others. These expectations may seem to validate the person's own hostile submissive style, which thus may come to predominate unwittingly in the person's actions toward others. In turn, this hostile submissive behavior will repeatedly evoke responses from others that confirm the individual's interpersonal expectations. The resulting self-fulfilling feedback loop, which Kiesler (1996) called the *interpersonal transaction cycle*, may provide an illusory sense of prediction and understanding, thereby maintaining behavior even when it leads to unrewarding or self-defeating outcomes. In essence, the individual may not realize that it is actually his or her own behavior that is evoking unwelcome behavioral consistency in others.

In this way, the concept of interpersonal complementarity provides an intriguing theory of the development and maintenance of pathological personality adjustment. As a person's interpersonal style becomes more intense and rigid, it pulls ever more consistently for a narrow range of complementary responses from others. In turn, this narrowing range of responses from others tends to confirm ever more strongly the cognitive expectations underlying the style, which therefore becomes expressed more intensely and rigidly (Kiesler 1996). Thus, over many interactions, a self-fulfilling process may make a problematic interpersonal adjustment much worse.

Interaction Dynamics: Complementarity as Interdependent Oscillations

Interpersonal style is often discussed as if it is relatively static, changing only gradually and relatively slowly. However, even within a relatively brief interaction, individuals may show a marked degree of variation in their moment-to-moment interpersonal behavior. Moreover, the concept of complementarity suggests that these variations may become coordinated, or *entrained*, between the two interacting people.

To examine this possibility, Sadler et al. (2009) applied an approach called the Continuous Assessment of Interpersonal Dynamics (CAID), in which



Interpersonal Complementarity, Fig. 2 Graphs of times series for affiliation (*left*) and dominance (*right*), based on data from one mixed-gender dyad during an interaction. The *solid line* shows the data for the female and the *dotted line* the data for the male. Time is in seconds. Reprinted from Sadler, P., Ethier, N., & Woody, E. (2011).

observers use a computer joystick technique to provide moment-to-moment ratings of interpersonal behavior on the plane defined by the axes of affiliation and dominance. Observers separately rate the stream of behavior of each person in an interaction, and then the resulting two time series may be put together to assess the pattern and degree of entrainment between partners.

To illustrate, Fig. 2 shows the results for a particular mixed-gender pair of individuals over the course of a short interaction. The graph to the left illustrates the pattern of variation over time for affiliation, with the solid trajectory representing the male interaction partner and the dashed trajectory the female interaction partner. The graph to the right illustrates the corresponding pattern for dominance.

Both graphs show that the moment-to-moment variations have an oscillating pattern, and this type of cyclical variation is typical for most interacting pairs, although to somewhat varying extents from one pair to another. Moreover, the variations for affiliation appear to be positively related across the partners, whereas the variations for dominance are negatively related across the partners. A simple way to quantify the extent of coordination in moment-to-moment variation between the partners is to calculate the correlation between their values over time, called a *cross-correlation*. In this case, the cross-correlation for affiliation is 0.45, and the cross-correlation for dominance is -0.50 . The signs of these correlations are consistent with the hypotheses of

Interpersonal complementarity. In L. M. Horowitz & S. N. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (p. 136, Fig. 8.4). New York: Wiley. Reproduced by permission of John Wiley & Sons.

complementarity – that is, sameness on affiliation and oppositeness on dominance.

Although these signs are typical for most interacting pairs, there are substantial differences in such cross-correlations, reflecting distinct patterns of entrainment. Accordingly, the CAID approach has found application in studying moment-to-moment complementarity in many different types of interpersonal interactions, including, for example, psychotherapy (Thomas et al. 2014) and personality disorder (e.g., Sadler et al. 2015).

Conclusion

The concept of interpersonal complementarity draws attention to important ways in which interaction partners serve as a context that affects the expression of and may lastingly alter a person's interpersonal traits. It also points the way toward a more dynamic and dyadic conception of personality, in which patterns of variation and entrainment enrich the picture afforded by the relatively static, overall levels denoted by classic traits (Pincus et al. 2014).

References

- Carson, R. C. (1969). *Interaction concepts of personality*. Chicago: Aldine.
- Carson, R. C. (1982). Self-fulfilling prophesy, maladaptive behavior, and psychotherapy. In J. C. Anchin & D. J.

- Kiesler (Eds.), *Handbook of interpersonal therapy* (pp. 64–77). Elmsford: Pergamon.
- Kiesler, D. J. (1983). The 1982 interpersonal circle: A taxonomy for complementarity in human transactions. *Psychological Review*, *90*, 185–214.
- Kiesler, D. J. (1996). *Contemporary interpersonal theory and research: Personality, psychopathology, and psychotherapy*. New York: Wiley.
- Leary, T. F. (1957). *Interpersonal diagnosis of personality*. New York: Ronald Press.
- Pincus, A. L., Sadler, P., Woody, E., Roche, M. J., Thomas, K., & Wright, A. G. C. (2014). Multimethod assessment of interpersonal dynamics. In C. J. Hopwood & R. F. Bornstein (Eds.), *Multimethod assessment of personality and psychopathology* (pp. 51–91). New York: Guilford.
- Sadler, P., & Woody, E. (2003). Is who you are who you're talking to? Interpersonal style and complementarity in mixed-sex interactions. *Journal of Personality and Social Psychology*, *84*, 80–96.
- Sadler, P., Ethier, N., Gunn, G., Duong, D., & Woody, E. (2009). Are we on the same wavelength? Complementarity as shared cyclical patterns within an interaction. *Journal of Personality and Social Psychology*, *97*, 1005–1020.
- Sadler, P., Ethier, N., & Woody, E. (2011). Interpersonal complementarity. In L. M. Horowitz & S. N. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 123–142). New York: Wiley.
- Sadler, P., Woody, E., McDonald, K., Lizdek, I., & Little, J. (2015). A lot can happen in a few minutes: Examining dynamic patterns within an interaction to illuminate the interpersonal nature of personality disorders. *Journal of Personality Disorders*, *29*(4), 526–546.
- Thomas, K. M., Hopwood, C. J., Woody, E., Ethier, N., & Sadler, P. (2014). Momentary assessment of interpersonal process in psychotherapy. *Journal of Counseling Psychology*, *61*(1), 1–14. <https://doi.org/10.1037/a0034277>.

Interpersonal Dependency

Andrew S. McClintock and
Shannon M. McCarrick
Ohio University, Athens, OH, USA

Synonyms

Adaptive dependency; Dependence; Emotional dependency; Functional dependency; Maladaptive dependency; Reliance on others

Definition

Interpersonal dependency is a fairly stable personality trait characterized by the tendency to rely on others for nurturance, support, and guidance.

Introduction

Interpersonal dependency is a complex, multifaceted personality trait that has adaptive and maladaptive variants (Bornstein et al. 2003; Bornstein 2005). Both adaptive and maladaptive forms of dependency involve relying on others for nurturance, support, and/or guidance. However, healthy dependency is marked by behavior flexibility, wherein the individual relies on others when the situation is appropriate and engages in self-reliance when autonomous functioning is required. These individuals tend to see themselves as competent, and they develop strong, secure bonds with significant others. Individuals with adaptive dependency have insight into their dependent behavior and are able to delay short-term gratification to strengthen their long-term, supportive relationships. Adaptive dependency is associated with less psychopathology, stronger interpersonal connections, and increased satisfaction with life (e.g., see Bornstein et al. 2003).

Conversely, maladaptive dependency is characterized by an *overreliance* on others. Individuals with maladaptive dependency see themselves as weak and inferior, and so they tend to cling to those deemed stronger and more competent. Whereas adaptive dependency is flexible and appropriate to the situation, maladaptive dependency is rigid, excessive, and inflexible. Individuals with maladaptive dependency engage in inappropriate help-seeking behaviors, which can strain relationships and even lead to interpersonal rejection. Maladaptive dependency is associated with a myriad of negative consequences for the dependent person, those close to him/her, and society as a whole (Bornstein 2012). For instance, maladaptive dependency is associated with physical illness, functional impairment, and increased use of health care services (Bornstein 2012). Moreover, maladaptive dependency has been

linked to numerous forms of psychopathology, including depression, social anxiety, panic, disordered eating, substance abuse, avoidant personality disorder, borderline personality disorder, and especially dependent personality disorder (e.g., see Bornstein 2005).

According to Bornstein's (2005) model, maladaptive dependency entails cognitive, emotional, motivational, and behavioral features. Bornstein (2005) suggested that the primary cognition in a maladaptive dependency orientation is the *helpless self-schema* (i.e., the perception of oneself as weak and inept, along with the perception of others as strong and powerful). Emotionally, individuals with maladaptive dependency experience intense anxiety and profound sadness, and they can be crippled with fears of rejection/abandonment; losing a close other is perceived as a threat to the dependent person's ability to function. Maladaptively dependent individuals, according to Bornstein (2005), are motivated to develop and maintain strong ties to caregivers. The behavioral features of maladaptive dependency are much more diverse than originally believed and include passivity, submissiveness, ingratiation, reassurance seeking, self-promotion, and intimidation. Although these behaviors are quite heterogeneous in that some are passive and others are more active and even aggressive, Bornstein (2005) argues that all can be conceptualized as methods for maintaining ties with close others. Importantly, the cognitive, emotional, motivational, and behavioral features of maladaptive dependency are thought to perpetuate one another in a cyclical fashion. For example, the belief that one is weak relative to others might trigger fears that a significant other will abandon him/her for a more desirable person. Fears of abandonment, in turn, might spur behaviors (e.g. clinging, excessive reassurance seeking) that actually increase the chances of rejection/abandonment, thus creating a self-fulfilling prophecy (Bornstein 2005).

Several researchers have proposed a two-factor model of dependency comprised of an emotional component and a functional component (e.g., see Morgan and Clark 2010). Emotional dependency is characterized by an attachment to a significant other, concerns about separation, and active

requests for emotional support. In contrast, functional dependency is characterized by submissiveness, low self-confidence, and a desire for others to lead and guide the dependent person. These two components of dependency are well elucidated by their positions on the interpersonal circumplex; emotional dependency falls near the communal pole of the horizontal dimension (behaviors that invite emotional support and nurturance from others), whereas functional dependency falls near the submissive pole of the vertical dimension (behaviors that invite direction and guidance from others) (see McClintock et al. 2015b). McClintock and colleagues (2015b) discovered that emotional dependency and functional dependency are relatively orthogonal, suggesting that these interpersonal styles are quite different and perhaps should not be combined within the same umbrella term "dependency." It should also be noted that functional dependency is associated with more distress and interpersonal dysfunction, as compared to emotional dependency (Pincus and Wilson 2001; McClintock et al. 2015).

When maladaptive dependency is particularly pronounced, a diagnosis of dependent personality disorder (DPD) may be warranted. DPD is classified among the Cluster C (i.e., anxious or fearful) personality disorders in the DSM-5 (American Psychiatric Association [APA] 2013). The base rate of DPD among the general population is estimated to be 0.49% (APA 2013), which amount to over 1.5 million people in the United States, although higher base rates – particularly in clinical samples – have been reported (see Bornstein 2005). The essential feature of DPD is a "pervasive and excessive need to be taken care of that leads to submissive and clinging behavior and fears of separation" (APA 2013, p. 675). The DSM-5 lists eight DPD criteria (e.g., "urgently seeks another relationship as a source of care and support when a close relationship ends"), five of which need to be present to reach a DPD diagnosis.

Section III of the DSM-5 presents an alternative model for diagnosing personality disorders that represents personality disorders as combinations of personality dysfunctions and various configurations of 25 pathological personality traits

(APA 2013). Four personality disorders, including DPD, were excluded from this alternative model because of concerns about construct validity and clinical utility. As a result, individuals who display the signs of DPD would be diagnosed in the alternative model as *personality disorder-trait specified* and would be described with three pathological traits: anxiousness, submissiveness, and separation insecurity (APA 2013). There is debate in the field about whether DPD should be included in the next iteration of the alternative model, as well as whether submissiveness is a core feature of DPD (see Bornstein 2012).

Given that maladaptive dependency and DPD are associated with a litany of negative consequences, one might suppose that extensive resources have been devoted to treatment development and efficacy trials. However, the literature on treatment of pathological dependency is woefully underdeveloped (Disney 2013), both in terms of empirical research and treatment guidelines. The research that does exist is replete with methodological shortcomings. For instance, most of the research in this area has relied on heterogeneous samples, typically composed of clients with various Cluster C personality disorders. These sampling procedures obscure the specific outcomes of dependent/DPD clients. A second issue is that most studies in this area did not employ controls or viable comparisons, thus introducing a host of effects (e.g., regression to the mean, placebo, experimenter effects) that threaten internal validity. As a result of these methodological shortcomings, there is now a plethora of uncontrolled research for the treatment of Cluster C personality disorders generally, but a dearth of rigorous, controlled research on the treatment of maladaptive dependency/DPD specifically. Indeed, no treatment should be regarded as efficacious in the treatment of maladaptive dependency/DPD.

One treatment approach that has shown some promise is mindfulness-based therapy. The rationale for this approach is that maladaptively dependent individuals tend to devalue their own thoughts, feelings, and moment-to-moment experiences and instead navigate their lives by relying on close others, and thus mindfulness techniques may help these individuals to become more aware

and appreciative of their internal experiences. In one study (McClintock and Anderson 2015), 70 maladaptively dependent undergraduates underwent a mood induction to exacerbate the core cognitive and affective features of maladaptive dependency. Participants were then randomly assigned to listen and participate in a 20-min recording of either a mindfulness intervention or a distraction (control) intervention. Relative to controls, participants in the mindfulness condition reported greater increases in state mindfulness and greater reductions in dependency-related distress. The distress reduction was statistically mediated by state levels of mindfulness. The findings from this investigation imply that mindfulness may enable individuals with maladaptive dependency to deescalate from a symptomatic state (McClintock and Anderson 2015).

A related study (McClintock et al. 2015a) evaluated the efficacy of a five-session mindfulness treatment, titled Mindfulness Therapy for Maladaptive Interpersonal Dependency (MT-MID). MT-MID incorporates formal (e.g., sitting meditation) and informal (e.g., mindfulness of current emotions) mindfulness techniques to assist dependent individuals in valuing and appreciating themselves and their own moment-to-moment experiences. Forty-eight maladaptively dependent undergraduates were randomly assigned to either MT-MID or a minimal contact control. Results suggested that MT-MID outperformed the control by producing large effects on four dependency-related outcomes (i.e., maladaptive interpersonal dependency, helplessness, fears of negative evaluation, and excessive reassurance seeking) at posttreatment and a 4-week follow-up. A secondary analysis of these data suggested that MT-MID led to improvements in both emotional dependency and functional dependency (McClintock et al. 2015b).

Conclusion

Interpersonal dependency is a relatively stable, multifaceted personality trait that affects functioning from childhood to old age. Interpersonal dependency should not be equated with its maladaptive variant, as dependency exists to some extent in most, if not all, people and can promote

mental health and well-being. Maladaptive dependency, on the other hand, is expressed as an overreliance on other people and can lead to various psychological and interpersonal problems. More research is needed to develop and evaluate treatments for maladaptive dependency and DPD.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Association.
- Bornstein, R. F. (2005). *The dependent patient: A practitioner's guide*. Washington, DC: American Psychological Association.
- Bornstein, R. F. (2012). Illuminating a neglected clinical issue: Societal costs of interpersonal dependency and dependent personality disorder. *Journal of Clinical Psychology, 68*, 766–781.
- Bornstein, R. F., Languirand, M. A., Geiselman, K. J., Creighton, J. A., West, M. A., Gallagher, H. A., & Eisenhart, E. A. (2003). Construct validity of the relationship profile test: A self-report measure of dependency-detachment. *Journal of Personality Assessment, 80*, 64–74.
- Disney, K. L. (2013). Dependent personality disorder: A critical review. *Clinical Psychology Review, 33*, 1184–1196.
- McClintock, A. S., & Anderson, T. (2015). The application of mindfulness for interpersonal dependency: Effects of a brief intervention. *Mindfulness, 6*, 243–252.
- McClintock, A. S., Anderson, T., & Cranston, S. (2015a). Mindfulness therapy for maladaptive interpersonal dependency: A preliminary randomized controlled trial. *Behavior Therapy, 46*, 856–868.
- McClintock, A.S., McCarrick, S.M., Anderson, T., Himawan, L., Hirschfeld, R. (2015b). Development and validation of a six-item version of the Interpersonal Dependency Inventory. *Assessment, 1*–11, <https://doi.org/10.1177/1073191115605178>.
- Morgan, T. A., & Clark, L. A. (2010). Passive-submissive and active-emotional trait dependency: Evidence for a two-factor model. *Journal of Personality, 78*, 1325–1352.
- Pincus, A. L., & Wilson, K. R. (2001). Interpersonal variability in dependent personality. *Journal of Personality, 69*, 223–251.

Interpersonal Manipulativeness

- ▶ [Manipulativeness](#)

Interpersonal Psychoanalysis

- ▶ [Interpersonal Theory of Psychiatry \(Sullivan\)](#)

Interpersonal Psychotherapy

- ▶ [Interpersonal Theory of Psychiatry \(Sullivan\)](#)

Interpersonal Reactivity Index

Sinead Cronin

Department of Psychology, Oakland University,
Rochester, MI, USA

Synonyms

[Empathy questionnaire](#); [Interpersonal reactivity questionnaire](#)

Definition

The Interpersonal Reactivity Index (IRI; Davis 1980, 1983, 1996) is a self-report measure of dispositional empathy. The IRI contains four subscales including perspective taking, fantasy, empathetic concern, and personal distress.

Introduction

The Interpersonal Reactivity Index (IRI; Davis 1980, 1983, 1996), developed by Mark Davis, measures dispositional empathy as a set of four separate but related dimensions (Davis 1996). Thus, the IRI takes a multidimensional approach to measuring individual differences in empathy by assessing both cognitive and perspective-taking capabilities as well as emotional reactivity (Davis 1980). While previous research had focused on either emotional or cognitive aspects of empathy, the IRI was specifically designed to assess both concepts by measuring separate but

related dispositional tendencies to be responsive to others (Davis 1983). It should be noted that the IRI is not intended to assess situational empathy (i.e., empathetic reactions to a specific stimulus), rather as a measure of dispositional empathy (i.e., a stable character trait; e.g., Konrath 2013).

The IRI is a 28-item self-report inventory with four, 7-item subscales that measure different dimensions of empathy. The perspective-taking (PT) scale assesses the cognitive tendency to adopt the psychological perspective of others in everyday life (e.g., “I sometimes try to understand my friends better by imagining how things look from their perspective.”). The fantasy (FS) scale assesses tendencies to imaginatively identify with the feelings and actions of fictional characters (e.g., “I really get involved with the feelings of the characters in a novel.”). The final two scales measure emotional reactions in response to others’ distress. The empathetic concern (EC) scale assesses feelings of warmth, compassion, and concern for others in distress (e.g., “I often have tender, concerned feelings for people less fortunate than me.”). Finally, the personal distress (PD) scale measures self-focused feelings of personal anxiety and discomfort in response to the misfortune of others (e.g., “When I see someone who badly needs help in an emergency, I go to pieces.” (Davis 1983, 1996).

Construction

In developing the IRI, Davis (1980) gathered an initial pool of over 50 items, some of which were taken from existing measures of empathy, but the majority were new, original items designed to assess either cognitive aspects of empathy or a range of emotional responses to observed experiences of others. Each item consists of a self-statement, and responses are provided on 5-point Likert-type scales ranging from 0 (*does not describe me well*) to 4 (*describes me very well*). Initial factor analyses revealed the existence of four major factors (fantasy, perspective taking, empathetic concern, and personal distress), which emerged similarly for men and women. The frequency with which items loaded on more than one factor was low, providing strong support for the four identified factors. A second

45-item questionnaire was then developed by retaining or adapting items with heavy factor loadings and constructing new items designed specifically to assess one of the four empathy factors. Following factor analysis of these 45 items, items loading on more than one factor were dropped, and items that loaded most heavily on their respective factors for both men and women were retained which resulted in the current 28-item version of the IRI. Initial analyses of the four seven-item subscales suggested acceptable internal reliabilities (coefficient alphas ranging from 0.70 to 0.78) and test-retest reliabilities over 60–70 days (correlations ranging from 0.61 to 0.79).

Correlates, Construct Validity, Translations, and Application Settings

Initial research conducted by Davis found the four dimensions of the IRI to be related to other constructs relevant to empathy in expected ways. The perspective-taking subscale has shown positive associations with self-esteem (mean $r = 0.23$) and negative associations with measures of social dysfunction (Davis 1983). The perspective-taking, empathetic concern, and fantasy dimensions were positively associated with measures of selflessness and concern for others (Davis 1983). Empathetic concern was negatively associated with measures of loneliness (mean $r = -0.14$; Davis 1983). Personal distress was positively associated with shyness (mean $r = 0.47$), loneliness (mean $r = 0.23$), and social anxiety (mean $r = 0.41$) and negatively associated with measures of self-esteem (mean $r = -0.42$) and extraversion (mean $r = -0.30$). Perspective taking was positively associated with empathetic concern (mean $r = 0.33$) and negatively associated with personal distress (mean $r = -0.25$; Davis 1983). Sex differences were found for each subscale, such that women scored higher than men, with the biggest difference emerging on the fantasy scale (Davis 1980).

In relation to other commonly used measures of empathy, the Jefferson Scale of Physician Empathy has been found positively related to the empathetic concern, perspective-taking, and

fantasy subscales of the IRI but not the personal distress subscale (e.g., Hojat et al. 2005). Davis (1983) examined associations between the IRI subscales and the cognitive Hogan Empathy Scale (Hogan 1969), as well as the Mehrabian and Epstein Emotional Empathy Scale (Mehrabian and Epstein 1972). Findings indicated that all four IRI scales were positively associated with emotional empathy. The perspective-taking scale was strongly associated with cognitive empathy; the fantasy and empathetic concern scales were also positively associated with cognitive empathy, albeit to a lesser extent. However, the personal distress scale of the IRI was negatively associated with cognitive empathy.

The IRI has been translated and validated in a variety of languages including Dutch (De Corte et al. 2007), French (Gilet et al. 2013), Spanish (Fernández et al. 2011), and Chinese (Siu and Shek 2005), among others. The IRI scales have been utilized to assess empathy in a variety of settings and populations, most notably in samples of medical professionals including medical students, nurses, and physicians (Konrath 2013). However, the reliable four-factor structure of the IRI has not emerged when administered to some populations, including samples of recovering methadone maintenance patients (e.g., Alterman et al. 2003) and violent offenders (e.g., Beven et al. 2004). For example, Beven et al. (2004) administered the IRI to a sample of violent offenders, and their factor analysis indicated that only three factors emerged, none of which were similar to the original four factors identified by Davis (1980, 1983). Further, all IRI scales, with the exception of the perspective-taking scale, demonstrated unacceptable reliability in this sample. The authors suggest that these findings may be due to lower literacy skills and levels of insight in this population, as Davis (1996) has suggested that self-reported assessment of empathy may require these attributes.

Conclusion

The IRI is a short and effective assessment of dispositional empathy as a multidimensional

construct with excellent psychometric properties in most populations. The four IRI scales of perspective taking, fantasy, empathetic concern, and personal distress are validated in multiple languages and are recommended for use across a variety of cultures and application settings (Konrath 2013). However, the IRI may not be appropriate for use in samples of individuals with poor verbal/literacy skills and levels of insight (e.g., Beven et al. 2004), which may be somewhat necessary for self-report assessment of empathy (Davis 1996).

Cross-References

- ▶ Empathy
- ▶ Personality Assessment
- ▶ Self-Report

References

- Alterman, A. I., McDermott, P. A., Cacciola, J. S., & Rutherford, M. J. (2003). Latent structure of the Davis Interpersonal Reactivity Index in methadone maintenance patients. *Journal of Psychopathology and Behavioral Assessment, 25*, 257–265.
- Beven, J. P., O'Brien-Malone, A., & Hall, G. (2004). Using the Interpersonal Reactivity Index to assess empathy in violent offenders. *Journal of Forensic Psychology, 1*, 33–41.
- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology, 10*, 85.
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology, 44*, 113–126.
- Davis, M. H. (1996). *Empathy: A social psychological approach*. Boulder: Westview Press.
- De Corte, K., Buysse, A., Verhofstadt, L., Roeyers, H., Ponnet, K., & Davis, M. H. (2007). Measuring empathic tendencies: Reliability and validity of the Dutch version of the Interpersonal Reactivity Index. *Psychologica Belgica, 47*, 235–260.
- Fernández, A. M., Dufey, M., & Kramp, U. (2011). Testing the psychometric properties of the Interpersonal Reactivity Index (IRI) in Chile: Empathy in a different cultural context. *European Journal of Psychological Assessment, 27*, 179–185.
- Gilet, A., Mella, N., Studer, J., Grün, D., & Labouvie-Vief, G. (2013). Assessing dispositional empathy in adults: A French validation of the Interpersonal

Reactivity Index (IRI). *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences Du Comportement*, 45, 42–48.

Hogan, R. (1969). Development of an empathy scale. *Journal of Consulting and Clinical Psychology*, 33, 307–316.

Hojat, M., Mangione, S., Kane, G. C., & Gonnella, J. S. (2005). Relationships between scores of the Jefferson Scale of Physician Empathy (JSPE) and the Interpersonal Reactivity Index (IRI). *Medical Teacher*, 27, 625–628.

Konrath, S. (2013). A critical analysis of the Interpersonal Reactivity Index. *MedEdPORTAL Directory and Repository of Educational Assessment Measures (DREAM)*.

Mehrabian, A., & Epstein, N. (1972). A measure of emotional empathy. *Journal of Personality*, 40, 525–543.

Siu, A. M., & Shek, D. T. (2005). Validation of the Interpersonal Reactivity Index in a Chinese context. *Research on Social Work Practice*, 15, 118–126.

Interpersonal Reactivity Questionnaire

► [Interpersonal Reactivity Index](#)

Interpersonal Relationships

► [Received Support](#)

Interpersonal Self

Jonathan Gore
Eastern Kentucky University, Richmond,
KY, USA

Synonyms

[Public self](#)

Definition

The component of the self-concept that is tied to relational and social contexts.

Introduction

The self has long been conceptualized as taking two forms: the interpersonal and the individual self. The interpersonal self (or public self) is the component of the self-concept that is tied to a variety of relational and social contexts (Baumeister 1986). The aspects tied to the interpersonal self are the characteristics that a person expresses when in the presence of others. Often distinguished from the individual (or private) self, the interpersonal self is composed of categories of self-aspects across a variety of domains. Whereas the individual self composes the “core” set of traits that are expressed regardless of the social environment, the interpersonal self can vary widely and is more adaptive to various relational contexts and social roles. For example, a college student’s interpersonal self may be composed of a student role (reserved, studious, and serious), a friend role (outgoing, silly, and spontaneous), and a romantic role (affectionate, kind, and emotionally expressive).

The Self as a Social Construct

Theories of the self-construction process have traditionally centered around the individual self and the relatively rigid personality traits that provide its foundation. Recently, however, self-theorists have argued that the construction of the self is more interpersonal than it is individualized (Forgas and Williams 2014). As strong relationships are formed with close others and the consequences of being a part of social groups become more important, these interpersonal experiences not only become a key part of how the self-changes over time but also how it is constructed from the beginning.

How the Interpersonal Self Develops

The way the individual and the social environment interact can explain how the interpersonal self develops. As people navigate various social contexts, they also experience various forms of feedback from the other people in those contexts.

Often, those sources of feedback are used as important pieces of information for the self-concept, that information is internalized, and the domain-specific behavior is reflected back to the social environment (Felson 1993; Tice 1992). These reflected appraisals of the social environment serve as the person's understanding of what is valued or devalued within a given context. Because different contexts reward different behaviors, people become attuned to the specific set of characteristics that are adaptive within each context. As the behaviors receive positive or negative responses from the other people in those environments, the person rehearses the rewarded behavioral patterns until those patterns are internalized into the interpersonal self for that context. Over time, if the person experiences a wide array of social contexts, he or she will also have a series of "if-then" self-domains and repertoire of behaviors that respond to each context (Mischel and Shoda 1995).

Individual Differences in the Interpersonal Self

People who have a strong desire to connect with others will often have a well-developed set of interpersonal self-domains. Such people include members of collectivistic cultures (Suh 2007), people who have a highly relational construal of the self (Cross et al. 1999), people who are high in self-monitoring (i.e., people who display the valued traits within social contexts; Snyder 1987), and people who are high in rejection sensitivity (Ayduk et al. 2000).

Conclusion

The interpersonal self is a primary component in the way people define themselves. By interacting with the social environment, people develop, maintain, and change their self-concepts through multiple relational and group domains. Although some people have a more complex interpersonal self-structure than others, most humans possess a well-developed network of self-aspects that ties themselves to their social world.

Cross-References

- ▶ [Collectivistic Cultures](#)
- ▶ [Interdependent and Independent Self-Construal](#)
- ▶ [Personality Coherence](#)
- ▶ [Personality Stability](#)
- ▶ [Self-Complexity](#)
- ▶ [Self-Concept](#)
- ▶ [Self-Monitoring](#)
- ▶ [Self-Monitoring Scale](#)
- ▶ [Symbolic Interactionism](#)
- ▶ [Role of Peers in Personality Development, The](#)
- ▶ [Role of the Family in Personality Development, The](#)
- ▶ [Working Models of Self and Other](#)

References

- Ayduk, O., Mendoza-Denton, R., Mischel, W., Downey, G., Peake, P. K., & Rodriguez, M. (2000). Regulating the interpersonal self: Strategic self-regulation for coping with rejection sensitivity. *Journal of Personality and Social Psychology*, *79*, 776–792.
- Baumeister, R. F. (Ed.). (1986). *Public self and private self*. London: Springer.
- Cross, S. E., Bacon, P. L., & Morris, M. L. (1999). The relational-interdependent self-construal and relationships. *Journal of Personality and Social Psychology*, *78*, 791–808.
- Felson, R. B. (1993). The (somewhat) social self: How others affect self-appraisals. In J. M. Suls (Ed.), *The self in social perspective* (pp. 1–26). Hillsdale: Erlbaum.
- Forgas, J. P., & Williams, K. D. (Eds.). (2014). *The social self: Cognitive, interpersonal and intergroup perspectives*. New York: Psychology Press.
- Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review*, *102*, 246–268.
- Snyder, M. (1987). *Public appearances, private realities: The psychology of self-monitoring*. New York: Freeman.
- Suh, E. M. (2007). Downsides of an overlay context-sensitive self: Implications from the culture and subjective well-being research. *Journal of Personality*, *75*, 1321–1343.
- Tice, D. M. (1992). Self-concept change and self-presentation: The looking glass self is also a magnifying glass. *Journal of Personality and Social Psychology*, *63*, 435–451.

Interpersonal Sensitivity

- ▶ [Social Monitoring System](#)

Interpersonal Theory

► [Inventory of Interpersonal Problems](#)

Interpersonal Theory of Psychiatry (Sullivan)

F. Barton Evans

Department of Psychiatry, East Tennessee State University, Johnson City, TN, USA

Synonyms

[Interpersonal psychoanalysis](#); [Interpersonal psychotherapy](#); [Sullivanian psychology](#)

Definition

Harry Stack Sullivan's interpersonal theory emphasized the role of interpersonal relationships, social development and culture in the formation of personality. His social psychologically based theory was among the earliest and most cogent critiques of Sigmund Freud's psychoanalytic drive theory and his psychosexual developmental theory. Sullivan posited that the human development arose out of a need for interpersonal relatedness more than satisfaction of drives, well before Bowlby's important discoveries regarding attachment. Sullivan's stages of human development involved meeting important psychosocial tasks, which in turn characterized the individual's personality.

Introduction

Harry Stack Sullivan (1892–1949), an American psychiatrist and psychoanalyst working in the 1930s and 1940s, was the founder and chief proponent of a model of psychoanalytic thinking called variously interpersonal psychodynamic theory or interpersonal psychoanalysis (IPT). Along

with Erich Fromm (1996) and Karen Horney (1937), Sullivan is perhaps best known for his social psychologically based critique of Sigmund Freud's psychoanalytic drive theory, in which Sullivan emphasized the role of social development and culture in the formation of personality. Moving substantially afield from traditional psychoanalysis, his novel approach to psychodynamic psychotherapy presaged modern relational, intersubjective, and object relations approaches which currently dominate psychoanalytic practice.

Interpersonal Theory: Some Basic Concepts

Harry Stack Sullivan (1938) stated that psychoanalysis was the science of interpersonal living in which "personality is made manifest in interpersonal situations, and not otherwise." (p. 32). Perhaps Sullivan's most important, fundamental, and neglected contribution was his extraordinary theory of personality and vision of what it is to be human. Whereas great thinkers like Freud, Jung, and Kraepelin oriented their penetrating insights on the functioning of the individual, Sullivan offered a systematic conception of mankind in its social context. For Sullivan, psychiatry, and all that derived from it such as theories of personality and treatment, was redefined as the science of interpersonal living, quite radically different from previous psychoanalytic conceptualizations (see Greenberg and Mitchell 1983). To develop a deeper understanding of Sullivan's interpersonal theory, the reader is strongly encouraged to read Sullivan's primary sources – *Conceptions of modern psychiatry* (1940/53) and, most importantly, *The interpersonal theory of psychiatry* (1953) as well as Evans (1997) overview.

Sullivan's most elegant postulate was his *one genus hypothesis* in which he states, "everyone is much more simply human than otherwise" (1953: 32) or "we are all much more simply human than otherwise, be we happy and successful, contended and detached, miserable or mentally disordered, or whatever" (1940/1953: 16). While the one genus hypothesis has a seemingly maudlin ring to it, on closer examination, it becomes clear that Sullivan meant that we are more like Ted Bundy, the pederast, and the hopeless schizophrenic as well as Mother Teresa and Gandhi, than

otherwise. For Sullivan, understanding what is common to all humanity, the basic biological, psychological, and social principles of living, was more critical than the relatively insignificant differences between people.

Also core to IPT is the *centrality of individual experience*, which Sullivan defines as “anything lived, undergone or the like. Experience is the inner component of events in which a living organism participates in as such. . . Experience is not the same as the event in which the organism participates” (1953: 26–27). Focusing on the client’s experience allows the psychotherapist to discover the meaning of an individual’s experience, not as fitting into an a priori set of concepts but rather starting with an individual’s experience as something to be discovered and not assumed. Sullivan’s cautiousness demonstrated deep respect for the complexity and uniqueness experience of others, noting “essential inaccessibility about any personality other than one’s own” (1972: 5). For Sullivan, that which is truly intrapsychic is purely private and essentially unknowable. Once a person discusses, or even anticipates discussing, an “internal” experience, it is no longer private or internal but becomes an interpersonal event influenced by social forces, most importantly by the therapeutic relationship. Speculations about people’s unconscious fantasies are, at best, inferences, which are not possible to prove or, at worst, wild and potentially harmful guesses.

Motivation in Sullivan’s Theory

Sullivan shares in common with all psychodynamic theorists a strong interest in the question of human motivation. Similar to Freud’s (1905) pleasure principle, Sullivan believed that humans experienced the alternation of *tension* and *euphoria*. He stated that euphoria is the experience of a state of well-being arising from the reduction or elimination of tensions regarding human biological and psychosocial requirements of living. Sullivan defined two distinct categories of tensions, *tension of needs* and *tension of anxiety*, the latter of which is quite different from Freud’s pleasure principle where euphoria comes as the result of gratifying psychosexual (oral, anal, phallic, and genital) needs.

Sullivan’s concept of the *tension of needs* referred to the experienced component of various specific biological requirements. While the tension of needs is conceptually close to Freud’s theory of the libido (Freud 1920), Sullivan explored the concept more deeply and included such tensions as hunger, thirst, warmth, dermal physiochemical regulation (e.g., removal of urine and feces from the skin), and oxygen requirements as well as general biological requirements such as the need to sleep and the need for touch and human contact. Sullivan’s tension of needs was either experienced through specific *zones of interaction* or experienced in *general*. Instead of focusing on the satisfaction of specific physiological needs, Sullivan made the important observation that all of infants’ needs require interpersonal cooperation because of their utter dependency on others. This defining element in IPT was that the reduction (satisfaction) of the tension of needs could not be considered independently of interactions between people. Sullivan thought that the tensions of need, and interactions with others to satisfy these needs, progress throughout human development and required increasingly more complex forms of interpersonal cooperation. The quality of the interpersonal cooperation required in meeting physical needs, as well as the characteristic way that purely interpersonal needs were met, was the essential determinant of human development, rather than Freud’s belief in importance of the satisfaction of specific psychosexual needs in and of themselves.

The critical process of the linking of satisfaction of zonal and general needs to interactions with others is expressed in Sullivan’s (1953) *theorem of tenderness*; the infant’s tension of needs stimulates tension in the mothering one, and this tension is experienced as tenderness and movement relief of the infant’s needs. The relaxing effect of the satisfaction of the need is associated with the tenderness of the mother creating a general reciprocal *need for tenderness* as well. The need for tenderness is, in Sullivan’s words, “the very genuine beginnings of purely interpersonal or human needs” (1953: 40). Sullivan further noted the serious consequences of a failure of the mothering one to attend to the infant’s

repeated expression of the tension of needs, a state he called *apathy*. Spitz's (1945) hospitalism studies dramatically further confirmed infants' need for maternal care and tenderness beyond meeting physical requirements.

Sullivan's second tension, *tension of anxiety*, is perhaps the most unique and central motivational postulate within his interpersonal theory and clinical practice. This concept had no parallel in Freud's drive theory and marked the beginning of the relational model in psychodynamic theory (see Greenberg and Mitchell 1983). Here Sullivan indicates that the *tension of anxiety* in the infant occurs when anxiety in the mothering one induces anxiety in the infant through the process of *empathy*. Anxiety had nothing to do with the physical needs of the infant but rather "the infant's, as also in the mother's, communal existence with a *personal* environment" (1953: 41–42). In this definition, Sullivan posited a distinct interpersonal tension, which could only be relaxed through the removal of anxiety, which in turn leads to the experience of *interpersonal security*. Alongside the infant's need for satisfaction (reduction of tension of needs), the infant also has the need for interpersonal security. The tension of anxiety appears as part of the person's psychological "apparatus," but does not operate like a zonal tension, which have easily foreseeable actions to relieve them. Early experiences of the tension of anxiety are overwhelming, because the infant cannot readily locate the source of his or her anxiety. As such, infant experiences of anxiety remain in the most primitive mode of experience and are only gradually and poorly differentiated later in life. As Sullivan stated (1953: 43), "the infant has no capacity for action toward the relief of anxiety," leading to an underlying deep rooted sense of helplessness or powerlessness. Just as tenderness in the mother increases the feelings of well-being in the child, which induces further tenderness in the mother, the induction of anxiety from the mothering one to the child establishes a similar, but disintegrative, feedback loop of ever increasing anxiety in the interpersonal field.

The need for interpersonal security, i.e., the absence of the tension of anxiety, was especially critical from Sullivan's perspective. As will be

discussed later, significant early experience with anxiety exerts a distorting effect on development and personality. Not only does frequent or prolonged anxiety profoundly disturb the infant's sense of interpersonal security and expectations for positive interpersonal cooperation, but his or her cognitive development is impaired as well. When anxiety becomes attached to zonal needs such as hunger and eliminative process or with general needs such as need for closeness or tenderness, the development of normal processes of need resolution becomes disturbed or impaired. Sullivan frequently remarked that significant early experiences of anxiety could establish patterns of interaction in opposition to the infant's other needs. Throughout his discussion of the tension of anxiety, theorem of tenderness, and the need for interpersonal security, Sullivan put forth an innate need for interpersonal relatedness as independent from the satisfaction of physical needs that was essential for the survival of the infant.

Dynamisms of Personality

Before considering Sullivan's theory of development, one more core concept central to his thinking must be considered, the concept of the *dynamism*. Sullivan (1953: 103–104) defined a dynamism as a "relatively enduring pattern of energy transformations which recurrently characterize an organism in its duration as a living organism," and defined a pattern as "an envelope of relatively insignificant particular differences," emphasizing that the common principles of interpersonal behavior were more critical than the relatively insignificant, particular differences between people. In his concept of the dynamism, Sullivan stressed that while human behavior is a process of ever-unfolding flux and change within the interpersonal field, i.e., dynamic, it became organized into "relatively enduring patterns" toward the satisfaction of needs and the avoidance of interpersonal distress and insecurity. All significant variations or patterns occurred between species; within our species, humans were simply more human than otherwise. Sullivan's dynamisms were either zonal dynamisms, directed at satisfaction of needs, or interpersonal dynamisms directed toward attachment, anxiety avoidance, or

interpersonal cooperation. Sullivan defined human experience in terms of process and function, rather than concrete mechanisms such as Freud's structural theory of the id, ego, and super-ego. Sullivan opposed using such Freudian concepts, which lent themselves to reification and reduction of the pattern of processes into hypothetical structures. Sullivan directly criticized Freud's structural theory as mechanistic and inferential, which could too easily be mistaken for actual processes.

On the other hand, Sullivan does provide important conceptualizations about inner processes. Sullivan (1950b: 302) stated, "Everything that can be found in the human mind has been put there by interpersonal relations, excepting only the capabilities to receive and elaborate the relevant experiences. This statement is intended to be the antithesis of any doctrine of human instincts." He deviated from the psychoanalytic language of *object* and *object relations*, preferring instead his more experience-near concepts of *personification* and the *self-system*. His concepts of the dynamic self-system will be discussed below.

Sullivan's Epochs of Development

Like Freud's psychoanalytic developmental theory and Piaget's cognitive developmental theory, Sullivan's development approach is organized around specific **epochs of development**. Each epoch has its own distinctive developmental tasks and successful movement to the next epoch is largely dependent on negotiating the tasks of the prior epoch. Sullivan outlined in detail six pre-adult epochs: infancy, childhood, the juvenile era, preadolescence, early adolescence, and late adolescence as well adulthood. Sullivan defined *infancy* as the period from birth until the development of articulate speech. *Childhood* marks the appearance of the need for playmates, both adult and child, and is the first step in developing interpersonal communication through language. The *juvenile era* begins with the child's entrance into school and continues until when the child finds a chum. Most importantly, it was the first developmental stage in where family limitations and peculiarities were open to substantial modification. In *preadolescence*, the need for chumship, an

intimate relationship with a compeer, a person of comparable age and status, is the central developmental event. *Early adolescence* begins with puberty and genital sexuality, the psychologically strong interest in member of opposite sex, and involves resolving the complex interplay between the dynamisms of lust, security, and intimacy. In *late adolescence*, the person begins to integrate the partially developed aspects of the personality into an age-appropriate, early adult identity.

The cornerstone of Sullivan's developmental theory is the role of *infancy* in the formation of the person, and it is here that he lays down the principle building blocks what is most essential in human development. Many of his initial postulates mentioned above, e.g., tension and euphoria, the tension of need and anxiety, theorem of tenderness, and modes of experience, organized his thinking on the infant's biopsychosocial underpinnings. For Sullivan, interpersonal security is essential, and anxiety was an especially complex peril for the infant. The infant cannot destroy, remove, avoid, or neutralize the source of anxiety (the mothering one), and crying is ineffectual or, worse, brings greater proximity to anxious, anxiety-provoking or malevolent mothering.

While the infant-mothering one's interpersonal interaction initially involved meeting zonal needs of the infant, general interpersonal dynamisms rapidly develop through the infant's fundamental experiences of tenderness, unsatisfactoriness, or malevolence with the mothering one. Sullivan noted that these interpersonal dynamisms contained both a behavioral component, i.e., predispositions toward action, and an "intrapsychic," cognitive component, i.e., the representation of interpersonal relatedness. In keeping with his strong emphasis on cognitive development, Sullivan reasoned that the infant formed an increasingly complex elaboration of experience in *recall* and *foresight* of interpersonal events, which he called *personification*. Personification is the essential process where the infant comes to interpret the interpersonal world through the formulation of a set of internal assumptions, ideas, and fantasies about people and the self, based on interpersonal experience. The first personification is of the *good mother*, formed early in infancy, which is

the infant perception and foresight of the pattern of recurrent interactions with the mother in which she satisfactorily responds to the infant's needs. Sullivan (1953) emphasized that personification is not the "real" mother but rather the complex organization of the infant's experience with *mothering*. Sullivan defined personification as the cognitive representation of learned experiences of transactional relatedness, i.e., the presentation of the transactions of interpersonal cooperation and the concurrent experiences of interpersonal security. The earliest form of personification, from Sullivan's perspective, was not yet differentiated into an object (the "real" mother) or a subject (the self).

As experience with the mother increased, Sullivan believed that the infant develops differentiated personifications of the *good mother* and the *bad mother*. From Sullivan's perspective, these two concepts are actually representations of good and bad *mothering*, i.e., representations of the flow of experience where the distinction between self and other is a primitive and vaguely differentiated sense of satisfying, unsatisfying, or seriously anxiety-ridden interpersonal transaction. A differentiation between inside and outside, you and me, and self and other was in no sense the infant's earliest representation. What the infant first experiences is the quality of relatedness, out of which experiences of self and other later arise. While the infant is "built" for interpersonal relatedness, the impact of the facilitating environment is especially critical during the highly dependent state of early infancy. The impact of anxiety in infancy is central as experiences of anxiety become associated with need states and the necessary personification of interpersonal cooperation for the resolution of needs is hindered.

From his conceptualizations about the good and bad mother emerged the first psychodynamic theory of the development of the *self* or, in Sullivan's terms, the *self-dynamism*. While Sullivan defined personality as the entire interpersonal functioning of the person, the self arises from the cognitive representation of those experiences about what one takes oneself to be. The process by which one develops this sense of self comes through interpersonal interaction. As Sullivan

stated (1940/1953: 22), "The self may be said to be made up of reflected appraisals of others." Through that seamless flow of behavior, interpersonal reaction (consequences), and cognitive encoding of these sequences, which we call learning, a second kind of personification arises from this linkage of experience of the personifications of the good and bad mother to the increasing sense of the infant's body. Sullivan called this personification the *sense of self*, found within the dynamism of the *self-system*. The self-system is the dynamic self-other inner representations of interpersonal relations, which then become predispositions for engaging in future interpersonal relatedness. Out of the experience of this dynamic interplay of self and other, the human develops *personifications*, the complex inner elaboration of experience of recall and foresight of interpersonal events. Personification is the essential way the infant comes to interpret the interpersonal world, through the formulation of a set of internal models, assumptions, ideas, and fantasies about people and the self, based on interpersonal experience. These include internalized experiences of interpersonal cooperation or disconnection as well as consensual validation (development of common understanding about the meaning of interpersonal experience) or confusion and befuddlement. Sullivan emphasized that personifications were internal representations of interpersonal experience and not veridical memory.

Self-personifications of "good me, bad me and not me" are organized around these interpersonal experiences. When interpersonal relatedness is threatened and signaled by the experience of anxiety, the person engages in *security operations*, psychological and behavioral maneuvers organized primarily to reduce anxiety by escaping the insecurity of experiencing the self as "*bad-me*." When escape is not possible and anxiety is overwhelming, then inner representations of interpersonal experience are dissociated as "*not me*." If this sounds similar to Bowlby's attachment theory (see Holmes 1993), it may be of interest that Sullivan developed his concept of anxiety over 20 years before Bowlby's first publication on attachment. In remaining epochs of development, the period including childhood through late

adolescence and adult maturity, Sullivan moves away from the more specific interactions between the infant and the mothering one. Sullivan casts his developmental epochs as times of changing patterns of socialization and of learning increasingly complex patterns of interpersonal cooperation. Naturally, the developing person will also modify or change his or her internal representations of the interpersonal world, the personifications of self and others.

Childhood marked the expansion of the interpersonal world, including relationships with other children and adults, and was the first step in the development of the critical operation of interpersonal communication through language. While the child was primarily concerned with his or her relationship with parents, the focus of their interpersonal cooperation changed. Sullivan pointed out that in childhood, the quality of interpersonal cooperation shifted from the mother's empathic attunement to the infant's biological and security needs to the growing necessity for the child to meet parents' demands for socialization. Parents' capacity to empathically understand what they can reasonably expect from the child also plays a central role. This shift in development is perhaps best captured in Sullivan's *theorem of reciprocal emotion* in which the child-parent interpersonal integration is focused on "reciprocal process in which (1) complementary needs are resolved, or aggravated; (2) reciprocal patterns of activity are developed, or disintegrated; and (3) foresight of satisfaction, or rebuff, of similar needs is facilitated" (Sullivan 1953: 198). Sullivan further added to his concept of empathy the concept of *sanity of educational efforts*, i.e., the ability of parents to set expectations for their child according to the child's developmental readiness to meet these expectations. The parents' reactions to the child's natural needs-oriented behavior exerted considerable influence on the child's social maturation and development of a positive (or negative) sense of self.

Childhood also occasioned a distinct shift in parent-child relations toward increased socialization, requiring that the child restricted personal needs in order to adapt to the demands of adult world. Sullivan paid special attention to the

effects of this shift on the development of the personification of the self and others, the representational component of interpersonal cooperation. Under the pressure of socialization by the parents and other adults, the child learned to forgo immediate felt needs in order to avoid social disapproval and the activations of bad-me personifications. Because the child's need for interpersonal attachment remained so powerful, the avoidance of the experience of anxiety (signaling the impending withdrawal of tenderness from the parent) continued to be an enormously powerful motivation. *Security operations* were language and behavioral maneuvers organized primarily to reduce anxiety by escaping the insecurity of experiencing the self as bad-me. The childhood era, with its increased opportunity for frustration arising from socialization, was a time of accelerated development of the self-system. Sullivan believed that the child's growing capacity for language was a major instrument of socialization and was the other major influence on the developing personality. The goal of healthy development was to develop *syntactic* interpersonal experience in which language was used to form clear communication with others. On the other hand, the child's need to escape disapprobation of parents could lead to the use of language to mislead or deceive, a concept Sullivan called *empty verbalisms*. Sullivan concluded his chapters on the childhood epoch with a discussion about the operation of anger in the interpersonal world of the child. He rejected outright psychoanalytic ideas about a primary aggressive drive and innate sadism but instead chose to emphasize the social function of anger and its mutation, under unfortunate circumstances, into the patterns of resentment (concealed anger) and malevolent transformation (mistrust and exploitation of others).

The next developmental epoch for Sullivan was the *juvenile era*, one of his most novel, empirically sturdy, and valuable contributions. The juvenile was introduced a vastly broader scope of socializing influences beyond those found in the childhood era. These new social influences not only provided the juvenile with an opportunity to evaluate the sanity of his or her parent's expectations, through comparisons with teachers and

other juveniles' parents, and more importantly this epoch opened the juvenile to a world of peer relationships. Sullivan noted that childhood in Western civilization ended for almost everyone with the abrupt introduction of the child to school. The school became a new major instrument of socialization and offered an unparalleled opportunity to correct problematic patterns of interpersonal cooperation established in childhood. Behavior tolerated or encouraged by the family was now unacceptable in the juvenile world of new authority figures and peers, creating inner tension about, and new motivations to modify, existing interpersonal patterns, personifications, and self-system dynamisms. For Sullivan, the juvenile era was the first period of development where the maturing person became really social, where the juvenile's need for his parents, so central in earlier phases of development, was complemented with what he called the need for *compeers*, otherwise known as *peer relations*. An entirely new and important pattern of relationship emerged with peer relationships, which Sullivan termed the experience of *social accommodation*. In addition to the kind of unilateral, top-down authority the juvenile experiences with adults, peer relations offered the juvenile the opportunity and requirement to interact with peers with direct or symmetrical reciprocity through the processes of *cooperation*, *compromise*, and *competition*. The social judgment of the juvenile by his peers became a significant concern during juvenile era. Social patterns such as *ostracism*, *stereotyping*, and *disparagement* became significant impediments in the development of a healthy sense of self. By the end of the juvenile era, Sullivan postulated that the developing person constructed a concept of an *orientation in living*, a generic, recurrent set of patterns or tendencies of interpersonal relations that were manifest in all spheres of life.

The next epoch for IPT is *preadolescence*, which was distinguished by a significant transformation in peer relationships and interpersonal relatedness. Preadolescence began with the appearance of a different kind of peer relationship than the playmates in the juvenile era. This interest was a new, more specific relationship to a

particular member of the same sex who becomes a *chum* or a close friend. For Sullivan, the chum represented the first step in the maturation of interpersonal relations in which the other person's (in this case, the chum's) needs were keenly felt as relatively as important as one's own. Sullivan believed that there was a critical difference in the nature of peer relationships in the juvenile era from those experienced in preadolescence, as juveniles were often insensitive to the importance of other people. Relationships in preadolescence involved a mutual understanding, acceptance, and desire to satisfy each other's needs for connection and security. He proposed that this shift arises from the need for *interpersonal intimacy*, which he defined as "the type of situation involving two people which permits validation of all components of personal worth" (1953: 246). Sullivan was very specific in distinguishing interpersonal intimacy from what he called *lust*. A failure to develop interpersonal intimacy led to the *experience of loneliness*, which, though difficult to describe, was a very important motivation in interpersonal development. Sullivan noted that the experience of loneliness was more powerful than anxiety, in that people would search for companionship even though it caused considerable anxiety. Loneliness as an organizing concern began in the preadolescent period but became a much more intense driving force in the next epoch of development, early adolescence.

Sullivan's next epoch of development, *early adolescence*, arrived with "eruption of true genital interest, felt as lust" (1953: 263) and continued until the integration of the complex interpersonal and physical events of puberty became organized into socially acceptable patterns of sexual relationships. Sullivan saw *lust*, the last of the truly zonal tensions of need, as the experiential component of the genital need culminating in genital activity leading to orgasm. Like all tensions of need, lust required interpersonal cooperation around which dynamisms of lust must develop and internal physical maturational changes leading to genital interest launched the preadolescent into early adolescence, whether ready or not. Sullivan believed that the eruption of the need for lustful satisfaction in early adolescence collided

with the developing interpersonal needs for personal security (freedom from anxiety) and for interpersonal intimacy (collaboration with at least one other person leading to freedom from loneliness). Sullivan formulated that this most natural change in interest collided with powerful cultural influences, which made a smooth developmental transition difficult. The early adolescents' self-esteem was closely associated with their choice of love/lust interest based on peer group influences, and Sullivan systematically highlighted some of the complications in integrating lust, security, and intimacy.

In his last epoch of development, Sullivan attempted to formulate what lay beyond the resolution of the complexities of early adolescence. Sullivan's conception of *late adolescence* began, not with a biological or societally induced change but the achievement of an interpersonal capacity, which he called "preferred genital activity" (1953: 297). Once the late adolescent completed the difficult task of forming a relatively clear sexual identity, he or she was free to work on "the establishment of a fully human or mature repertory of interpersonal relations, as permitted by available opportunity, personal or cultural" (1953: 297). He believed that many of us failed to achieve our potential inherent in being fully human, which resulted in an arrest of development marked by a late adolescent and adult life of inner conflict, boredom, and ongoing turmoil and conflict in work, family, and intimate relationships. Sullivan commented that the opportunity to move beyond late adolescence could be dictated by events beyond the control of the individual, such one's socioeconomic status and other real-life restrictions or may have to do with longstanding personal problems which came from warps in development. He noted an explosion of growth of experience in the syntactic mode of language during late adolescence, which created situations to better able to understand oneself and others, which in turn could provide very useful corrections in problems in living. Sullivan described how new autonomy available during late adolescence, found in high school, new work circumstances, and especially college education could offer expanded opportunity to broaden the late

adolescent's awareness of other people's attitudes toward living, of the degree of interdependence in living, and of different ways of handling interpersonal problems.

From Sullivan's perspective, the major interpersonal barrier to benefiting from such new opportunities naturally came from inadequate and inappropriate elaborations of the self-system created by unfortunate early developmental experience. All too often people arrived in late adolescence with a derogatory view of themselves in some or many areas of their life. Such individuals viewed themselves as inferior, inadequate, or not capable or deserving of intimacy and love. In contrast, for Sullivan, mature individuals were self-confident, assertive without being aggressive, good judges of others, and able to establish intimacy and easy communication. The interpersonal consequence of inadequate self-personifications was that others found the inadequate late adolescent difficult to establish satisfying relationships with, thus confirming the inadequate individual's worst fears. Sullivan also believed that "self-respect is necessary for the adequate respect of others" (1953: 308). Conversely individuals with an inadequate sense of self were likely to distort and misrepresent the thoughts, feelings, and motivations of others. Inappropriate representations of others found in the use of stereotyping and disparagement were at the core expressions of low self-esteem. Overcoming these patterns, literally coming to grip with anxiety and its impact on one's self-regard rather than being in the grip of anxiety, was critical for the late adolescent to develop into a mature adult. If fortunate circumstances did not intervene, Sullivan believed that, short of an extraordinary intervention, only psychotherapy could restore the individual to the path of mature development.

Conclusion

Though dating back to the 1930s and 1940s, Harry Stack Sullivan's interpersonal theory provides a surprisingly modern corrective to Freud's drive theory. While having important overlaps with psychoanalytic object relations theory,

relational theory, intersubjectivity, and self-theory, IPT explored the biopsychosocial world of human development with stunning immediacy and presaged many empirical findings supporting its underpinnings (see Evans 1997). While not well recognized, IPT is alive and well in modern attachment theory as well as studies of peer relationships and self-esteem and self-concept that clearly show important relationships with healthy human development.

Cross-References

- ▶ [Anal Stage](#)
- ▶ [Drive Theory](#)
- ▶ [Instincts and Tension Reduction](#)
- ▶ [Latency Stage of Development](#)
- ▶ [Neo-Freudians](#)
- ▶ [Object Relations Theory](#)
- ▶ [Phallic Stage](#)
- ▶ [Pleasure Principle](#)
- ▶ [Psychoanalysis](#)
- ▶ [Psychodynamic Perspective](#)
- ▶ [Psychodynamic Processes](#)
- ▶ [Psychosexual Stages of Development \(Freud\)](#)
- ▶ [Structural Model](#)

References

- Evans III, F. B. (1997). *Harry Stack Sullivan: Interpersonal theory and psychotherapy*. London: Routledge.
- Freud, S. (1905). Three essays on the theory of sexuality. In J. B. Stachey (Ed.) (1994) *The standard edition of the complete works of Sigmund Freud (Vol. 7)*. London: Hogarth Press, pp. 125–243.
- Freud, S. (1920). Three essays on the theory of sexuality. In J. B. Stachey (Ed.) (1994) *The standard edition of the complete works of Sigmund Freud (Vol. 18)*. London: Hogarth Press, pp. 3–64.
- Fromm, E. (1996). *The essential Fromm: Life between having and being*. London: Continuum Intl Pub Group.
- Greenberg, J. R., & Mitchell, S. A. (1983). *Object relations in psychoanalytic theory*. Cambridge, MA: Harvard.
- Holmes, J. (1993). *John Bowlby and attachment theory*. New York: Routledge.
- Horney, K. (1937). *The neurotic personality of our time*. New York: WW Norton & Company.
- Spitz, R. (1945). Hospitalism: An inquiry into the genesis of psychiatric conditions in early childhood. *Psychoanalytic Study of the Child*, 2, 53–73.
- Sullivan, H. S. (1938). *Psychiatry: Introduction to the study of interpersonal relations: The data of psychiatry. Psychiatry, 1*, 121–134.
- Sullivan, H. S. (1940). *Conceptions of modern psychiatry* (2nd ed.). New York: W. W. Norton & Co.
- Sullivan, H. S. (1950). Tensions interpersonal and international: A psychiatrist's view. In: *Tensions that cause war*, ed. H. Cantril. Urbana: University of Illinois Press, pp. 79–138.
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: W W Norton & Co.
- Sullivan, H. S. (1972). *Personal psychopathology*. New York: W. W. Norton & Co.

Interpersonal Trust Scale

Anthony Evans

Department of Social Psychology, Tilburg University, Tilburg, The Netherlands

Synonyms

[Dispositional trust](#); [Generalized trust](#); [Propensity to trust](#)

Definition

The Interpersonal Trust Scale (ITS) measures the generalized expectancy that the word, promise, or statement of another individual or group can be relied upon. The ITS consists of 25 items measuring trust in specific groups (such as parents, teachers, and public officials) and trust in people in general.

Introduction

Interpersonal trust plays an important role in personal relationships and economic exchanges, and researchers in psychology and economics have argued that trust leads to individual well-being and smooth societal functioning (Rotter 1980; Thielmann and Hilbig 2015). We trust in our coworkers to contribute to group projects; we trust that companies will provide us with reliable

products and services; and we trust that governments will treat citizens fairly. Recognizing the centrality of trust to social life, Rotter (1967) introduced the ITS to measure individual differences in trust. Rotter (1967) proposed that trusting behavior is related to the general expectancy that others can be relied upon and that this expectancy is shaped through daily interactions with peers, authority figures, and other social agents. Hence, the ITS measures the extent to which people believe that others can be relied upon to live up to their promises. Different studies have proposed that the ITS measures trust a single construct or four related dimensions: political cynicism, interpersonal exploitation, societal hypocrisy, and reliable role performance (Chun and Campbell 1974).

The Determinants and Consequences of Trust

The determinants of trust: What are the demographic characteristics associated with trust? Social status, birth order, education, and gender have small or inconsistent correlations with trust (Rotter 1967; Rotter and Stein 1971). Among children, trust develops with age (Evans et al. 2013), but remains relatively consistent throughout adulthood (Evans and Revelle 2008; Yamagishi et al. 2015). On the other hand, trust is significantly related to involvement in social groups: For example, individuals involved in religious organizations tend to be higher in trust than agnostics and atheists (Rotter 1967). Parental characteristics also exert influence over the development of trust – fathers positively influence the level of trust in sons, and mothers positively influence the levels of trust in both sons and daughters (Katz and Rotter 1969). Moreover, individuals with parents from two different religious backgrounds tend to be less trusting of others (Rotter 1967).

The consequences of trust: Interpersonal trust is associated with a number of positive outcomes. According to their peers, individuals high in trust are more likely to be seen as humorous, friendly, and popular (Rotter 1967). High school students who score high in trust are also less likely to

engage in unethical behaviors, such as shoplifting (Wright and Kirmani 1977). Importantly, trusting individuals are not more likely to be gullible; rather, trust is seen as a sign of social intelligence (Rotter 1980). Recently, studies have focused on the relationship between the trust and economic decision-making; individuals who are high in dispositional trust are more likely to invest money with strangers (Evans and Revelle 2008; Yamagishi et al. 2015).

Conclusion

Interpersonal trust plays a role in both personal and professional relationships. Trusting behavior, in turn, is related to general beliefs about whether people can be relied upon (Rotter 1967, 1980). Individual differences in the propensity to trust may help to explain the formation and maintenance of social relationships.

Cross-References

- ▶ [Human Nature and Human Universals](#)
- ▶ [Interpersonal Trust Scale](#)
- ▶ [Machiavellianism Scale \(Mach-IV\)](#)

References

- Chun, K. T., & Campbell, J. B. (1974). Dimensionality of the Rotter interpersonal trust scale. *Psychological Reports, 35*, 1059–1070.
- Evans, A. M., & Revelle, W. (2008). Survey and behavioral measurements of interpersonal trust. *Journal of Research in Personality, 42*, 1585–1593.
- Evans, A. M., Athenstaedt, U., & Krueger, J. I. (2013). The development of trust and altruism during childhood. *Journal of Economic Psychology, 36*, 82–95.
- Katz, H. A., & Rotter, J. B. (1969). Interpersonal trust scores of college students and their parents. *Child Development, 40*, 657–661.
- Rotter, J. B. (1967). A new scale for the measurement of interpersonal trust. *Journal of Personality, 35*, 651–665.
- Rotter, J. B. (1980). Interpersonal trust, trustworthiness, and gullibility. *American Psychologist, 35*, 1–7.
- Rotter, J. B., & Stein, D. K. (1971). Public attitudes toward the trustworthiness, competence, and altruism of

twenty selected occupations. *Journal of Applied Social Psychology*, 1, 334–343.

- Thielmann, I., & Hilbig, B. E. (2015). Trust: An integrative review from a person–situation perspective. *Review of General Psychology*, 19, 249–277.
- Wright, T. L., & Kirmani, A. (1977). Interpersonal trust, trustworthiness and shoplifting in high school. *Psychological Reports*, 41, 1165–1166.
- Yamagishi, T., Akutsu, S., Cho, K., Inoue, Y., Li, Y., & Matsumoto, Y. (2015). Two-component model of general trust: Predicting behavioral trust from attitudinal trust. *Social Cognition*, 33, 436–458.

e.g., expert ratings, external judgments, clinical diagnostics). Regularly, it is assumed that rating data reflect ratees' characteristic values independent of the rater who made the assessment. Hence, raters are assumed to be interchangeable as their individual perspective should be negligible. Measures of interrater agreement or interrater reliability can be used as psychometrical indicators of the suitability of this assumption.

Interpersonally Malevolent

- [Dark Tetrad of Personality, The](#)

Interrater Reliability

Markus Antonius Wirtz
Institute of Psychology, University of Education
Freiburg, Freiburg, Germany

Synonyms

[Absolute agreement](#); [Concordance](#); [Observer agreement](#)

Definition

Concordance, agreement, or reliability of ratings or observational data. Measures of interrater reliability and interrater agreement are estimates of the accuracy or the rater-independent invariance or of ratings or observational data.

Introduction

Rating methods are frequently used in personality psychology to provide a measure of a person's trait or state characteristics. Rating data are estimates of persons' (ratees') characteristic values from an independent third perspective (rater,

Determining the Interrater Reliability for Metric Data

Generally, the concept of reliability addresses the amount of information in the data which is determined by true underlying ratee characteristics. If rating data can be assumed to be measured at least at interval scale level (metric data), reliability estimates derived from classical test theory (CTT) can be adopted. If the value of characteristic X of ratee i is rated by a rater j , the value x_{ij} is assumed to be an additive composition of the ratees' true value μ_i and a random error component e_{ij} . Using the basic axioms of CTT, it can be derived that the total variance of X equals the sum of true variance and error variance. Hence, the amount of true variance in the data $\text{VAR}(x_{ij})$ corresponds to the fraction $\text{VAR}(\mu_i)/\text{VAR}(x_{ij})$ or $\text{VAR}(\mu_i)/[\text{VAR}(\mu_i) + \text{VAR}(e_{ij})]$. Reliability measures are defined as unbiased estimates of this fraction. High reliability is ensured if a high (vs. low) amount of true (vs. error) variance determines data information. Intraclass correlation coefficients (ICC) are such unbiased reliability estimates under certain conditions (McGraw and Wong 1996).

The simplicity of these considerations is complicated by the fact that the assumption of a completely unsystematic error e_{ij} component for rating data is usually not met. Normally, it is necessary to split up the error term into *systematic* and *unsystematic* error components to get a valid model underlying the assessment process (Hallgren 2012). Several observation biases may contribute to the systematic error component: e.g., leniency bias, strictness bias, central tendency, tendency to extreme values, consistency biases

(e.g., Halo effect, first impression), positional effects (e.g., contrast effects), and identification bias (Wirtz and Caspar 2002). As all systematic biases constitute a problem for the basic assumption of CTT, several aspects have to be regarded to choose an appropriate reliability estimation approach.

The leniency and strictness biases are especially important issues demanding the application of different reliability assessments. Regularly, the unambiguous interpretation of rating data is distorted if rater A generally tends to rate lower (or higher) values than rater B for the same ratees. Reliability measures including rater-specific mean differences as part of the error component descend systematically the more leniency or strictness biases affect the data. Different reliability measures have been developed, which allow to include or exclude rater-specific mean differences as part of the error component (Shrout and Fleiss 1979; McGraw and Wong 1996).

- *Not-adjusted or agreement reliability measures* consider rater-specific mean differences as a systematic problem for the quality of assessment data. Increasing mean differences between different raters results in a systematic attenuation of reliability estimates. Accordingly, high reliability estimates imply the similarity of absolute rating data for the same ratees determined by different raters. If all raters rated all ratees (fully crossed design), $ICC_{2,1}$ allows for an appropriate reliability assessment. For not fully crossed designs (ratees were rated by different subgroups of raters), $ICC_{1,1}$ can be computed (McGraw and Wong 1996).
- *Adjusted or consistency reliability measures* are not attenuated if leniency or strictness effects affect the data. Mean differences between different raters have no impact on reliability estimates. Accordingly, high reliability estimates imply that ratees have a similar relative position in the rater-specific data distribution. This would be the case if different raters judged the same ratee to deviate similarly from the rater-specific average rating value. Hence, high reliability does not indicate

necessarily that the absolute rating data are similar. $ICC_{3,1}$ is an appropriate adjusted or consistency measure (McGraw and Wong 1996). It can only be computed in fully crossed designs. Pearson correlation is a special case of $ICC_{3,1}$ for two raters when data variance is identical for both raters.

Not adjusted or agreement reliability measures are the standard estimates of interrater reliability as they reflect the rater-independent reliability of absolute data information. The use of *adjusted* or *consistency reliability measures* may be possible in special cases and must be substantiated carefully: These reliability estimates would only be appropriate if the deviation of data points from the rater-specific mean values ($x_{ij} - \bar{x}_{.j}$) provide the basis for further data interpretation or analysis.

Each of these ICC definitions provides an estimate of the reliability of single rater data. Alternatively, $ICC_{2,2}$ and $ICC_{3,2}$ are estimates of the reliability of the mean values of all raters. $ICC_{1,2}$ is an estimate of the reliability of the mean values of the mean number of raters per ratee. According to the Spearman–Brown prophecy formula, $ICC_{.2}$ measures are systematically and substantially higher than $ICC_{.1}$ measures. Hence, using mean values of several raters instead of single rater data is an effective way to improve reliability. But if the assessment is performed by single raters in rating practice, the use of $ICC_{.2}$ measures is inadmissible. Generally, $ICC > .7$ indicates appropriate interrater reliability.

ICC allows for an appropriate consideration of leniency and strictness effects. Hoyt (2000) shows how generalizability theory can be applied to model further observational biases (e.g., interaction effects of raters and ratees).

Determining the Interrater Agreement for Categorical Data

Cohen's κ is the most frequently used coefficient to determine interrater agreement of dichotomous (e.g., "yes" vs. "no") or polytomous (e.g., type of personality) categorical rating data. The percentage of agreement does not reflect interrater

agreement appropriate because it is substantially affected by random chance agreement and the base rate of single categories. For example, for dichotomous ratings, chance agreement equals 50% if both categories exhibit a base rate of 50% and 82% if one category exhibits a base rate of 10% or 90%, respectively. Cohen's κ can be characterized as a chance-corrected agreement measure. Its calculation is based upon the proportion of observed agreement (p_o) and the proportion of chance agreement (p_e , expected agreement assuming stochastically independent raters): $\kappa = (p_o - p_e)/(1 - p_e)$. Cohen's κ has been developed for two raters: For more than two raters, the median of all pairwise determined values or Fleiss' kappa can be applied. $\kappa = 1$ indicates perfect agreement, $\kappa = 0$ no systematic or chance agreement, and negative κ values indicate systematic disagreement. As a rule of thumb, Fleiss (1981) suggests to classify κ values within the range of $>.40$ to $.75$ as "fair to good," $>.75$ "excellent."

Several critical aspects of scrutinizing Cohen's κ 's suitability as a sound agreement measure have to be regarded (Brennan and Prediger 1981; Uebersax 1987). The most important shortcoming is its dependency on the base rate of the rating categories (Cook 1998). For dichotomous data, κ systematically attenuates the more the base rate of single categories departs from $.5$ – all others aspects being equal. Hence, the same rating quality is reflected by systematically varying κ values. Especially, for high- or low-prevalent categories, a substantial attenuation of κ values has to be expected. Yules Y or latent trait modeling approaches may be used to correct for such base rate problems (Uebersax 1987). Because correcting for base rates in turn may lead to other interpretation problems, Cohen's κ and base rate-corrected measures should be applied simultaneously to document and interpret interrater agreement for categorical data comprehensively (Wirtz and Caspar 2002).

For polytomous ratings ($N > 2$ categories), weighted Cohen's κ_w has been developed as an alternative agreement indicator. Cohen's original κ considers all kinds of disagreement by different raters to be equally important, because only

identical vs. not identical ratings are distinguished. In other words, different kinds of disagreement are given the same weight. Cohen's κ_w allows to define different weights to each category combination according to the significance regarding its content. For example, if disagreement "category A vs. B" is assumed to be less serious than disagreement "category A vs. C," the latter should be given a higher weight. Hence, the value of weighted Cohen's κ_w is attenuated, if more serious disagreements prevail. Cohen's κ_w is also recommended as the most valid agreement measure for ordinal data: If the distances between ordinal categories can be quantified, these distance measures provide the basis for the weighting coefficients: The higher the distance between two categories, the higher their impact on the value of Cohen's κ_w . Although Kendall's W is sometimes used to quantify agreement for ordinal data, it is not recommendable, because W is a correlation measure indicating consistency and not agreement (see consistency definition for ICC above). For large data samples, Rasch-analysis allows for a psychometrical sound analysis of ordinal rating data (Bonk and Ockey 2003).

Analyzing and Improving Quality of Rating Data

Generally, it is necessary to determine rating quality in a pilot study to ensure sufficient interrater agreement or reliability in a main rating study. After introducing, clarifying, and initially practicing the rating task, raters have to rate a sample that is representative for the sample in the following main study. Within the pilot study, it is preferable that all raters rate all ratees (fully crossed design) or all ratees are rated by randomly chosen raters (at least two per ratee). If appropriate agreement or reliability measures indicate sufficient rating quality, the rating procedures can be adopted in the main study. In the pilot study, each ratee is rated by more than one rater, but regularly researchers aim to ensure sufficient data quality generated by only rater per ratee in the main study. Hence, it is important to analyze estimates for single rater data (see remarks on ICC_{.,1} above). If substantial

problems of rating quality arise in the pilot study, an interrater training has to be conducted. Most important elements of such trainings are: feedback by study supervisor and other raters, discussion of typical disagreements, discussion of typical or exceptional cases, giving typical examples, clarification of raters' implicit concepts and definitions, adjustment of theoretical and conceptual background, simplifying the information process by adopting category definitions, and providing information about systematic observational biases (Wirtz and Caspar 2002). Subsequently, rating quality has to be determined empirically in a new pilot sample.

Conclusion

Developing, studying, analyzing, and improving rating procedures can be a challenging and time-consuming part of research processes. At first sight, it may seem to be a disproportionate effort for just one step in more complex research processes. But a thorough and rigorous analysis is inevitable if ratings provide access to empirical information. Firstly, insufficient measurement quality may lead to considerable problems in subsequent analyses. For example, all effect size estimates attenuate systematically and substantially with decreasing reliability. Secondly, problems in rating quality correspond to misspecifications in construct definitions and problems at the conceptual level underlying the study purpose. Hence, ensuring interrater agreement and reliability may lead to questions, reflections, clarifications, and solutions, which have comprehensive and valuable impacts on overall research quality.

Cross-References

- ▶ [Multitrait-Multimethod Analysis](#)
- ▶ [Observer-Report Assessment of Personality and Individual Differences](#)
- ▶ [Parallel-Forms Reliability](#)
- ▶ [Psychometrics](#)
- ▶ [Reliability](#)
- ▶ [Test-Retest Reliability](#)

References

- Bonk, W. J., & Ockey, G. J. (2003). A many-facet Rasch analysis of second language group oral discussion task. *Language Testing*, 20(1), 89–110.
- Brennan, R. L., & Prediger, D. J. (1981). Coefficient κ : some uses, misuses, and alternatives. *Educational and Psychological Measurement*, 41, 687–699.
- Cook, R. J. (1998). Kappa and its dependence on marginal rates. In P. Armitage & T. Colton (Eds.), *The encyclopedia of biostatistics* (pp. 2166–2168). New York: Wiley.
- Fleiss, J. L. (1981). Statistical methods for rates and proportions (pp. 38–46). New York: John Wiley.
- Hallgren, K. A. (2012). Computing inter-rater reliability for observational data: an overview and tutorial. *Tutorials in Quantitative Methods for Psychology*, 8(1), 23–34.
- Hoyt, W. T. (2000). Rater bias in psychological research: when is it a problem and what can we do about it? *Psychological Methods*, 5, 64–86.
- McGraw, K. O., & Wong, S. P. (1996). Forming inferences about some intraclass correlation coefficients. *Psychological Methods*, 1, 30–46.
- Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: uses in assessing rater reliability. *Psychological Bulletin*, 86(29), 420–428.
- Uebersax, J. S. (1987). Diversity of decision-making models and the measurement of interrater agreement. *Psychological Bulletin*, 101, 140–146.
- Wirtz, M., & Caspar, F. (2002). *Interrater agreement and interrater reliability*. Göttingen: Hogrefe.

Intersexual Competition

- ▶ [Female Mate Choice](#)

Intersexual Selection

- ▶ [Female Mate Choice](#)

Intervening Variable Analysis

- ▶ [Mediation \(Statistical\)](#)

Intervening Variable Models

- ▶ [Indirect Effect Models](#)

Interviews

Magnus Englander
Malmö University, Malmö, Sweden

Synonyms

[Clinical assessment](#); [Clinical intake](#); [Consultations](#); [Conversations](#); [Dialogues](#); [Qualitative Data collection](#)

Definition

In the discipline of psychology, an interview is primarily a type of inquiry and/or assessment in which data is gathered (or generated) from the interviewee's first-person perspective as situated within an interpersonal, social context.

Introduction

The overall purpose of the interview is to gain psychological knowledge about either the client and/or research participant and/or the phenomenon under investigation. The interview is traditionally situated within a face-to-face context where a clinical and/or research psychologist asks or engages the client/participant about psychological relevant content. Although the interview is often accompanied by standardized psychological tests and assessments, it is still seen as the principle context from which to ground professional judgment. Interviews in clinical and research settings are often categorized as unstructured, structured, or semistructured. All types of interviews have methodological issues that can be directly traced to epistemological problems concerning the relation between the cultural, interpersonal, and psychological dimensions, the latter, of course, serving as the primary emphasis in contemporary psychology. Interviews are also loaded with ethical issues in which private matters are made public, forcing the psychologist to deal with the tension between vulnerability, trust,

dignity, and the law. The following entry will cover the main formats of both clinical and research interviews, although with a focus on epistemological issues.

Types of Interviews

Clinical interviews are often contrasted with research interviews, even though these could at times be combined, as in clinical research. In the clinical psychological or psychiatric interview, the purpose is to gain knowledge about the person in order to assess psychological issues relating to, for example, development, diagnosis, personality, and social context. Clinical interviews could also signify the beginning phase of a treatment process, thus constituting the first phase in developing a therapeutic relationship and alliance within a professional, interpersonal context. There can often be thematic cross-over between the subject matter of research interviews and those of clinical interviews. In-depth qualitative research interviews could also initiate a situation in which the participants start reflecting on issues and thus disclose sensitive, psychological insights. Hence, both the clinical as well as the research interview demand high standards in terms of ethical considerations. Whether clinical or research oriented, the psychological interview is a rigorous scientific activity and a method for data collection.

Psychological interviews can be categorized into three distinct formats, such as (1) the structured interview, (2) the unstructured interview, or (3) the semistructured interview. Conventionally, the structured format is associated with research purposes, the unstructured with clinical work, whereas the semistructured is seen as a compromise between the two. However, such a categorization becomes an oversimplification, especially in light of recent developments in qualitative research methodologies. In addition, the methodological evaluation of these three formats is similar to how psychological tests are being critically assessed, that is, how the specific format relates to issues of validity and reliability. Nonetheless, approaching the psychological interview in terms of one of these three formats could also be

seen as correlative of the psychologist's theoretical perspective, which will be further disclosed in what here follows.

The structured interview is similar to psychological testing in that it considers questions from a behavioristic, experimental perspective, that is, the questions are seen as stimuli or prompts that evoke a certain response from the psychological subject. Most notably is the standardized psychiatric interview (e.g., First et al. 1997; Zimmerman 2013), developed to match the *Diagnostic and Statistical Manual for Mental Disorders* of the American Psychiatric Association (2013). The method is seen as useful in upholding an objective distance from the client or research participant, and minimizing interpersonal-based distractions from asking the essential, clinical questions. The structured interview is also seen as useful in the sense of research purposes, especially in terms of technically being able to assure interrater reliability and thus laying the ground for rigorous operationalization and measurement. Here, priority is thus given to standardization. The idea behind a structured interview can therefore be linked to the experimental research tradition in psychology, valuing an investigation in which one controls for intervening, confounding variables, such as, for example, personal factors of the interviewer or interpersonal factors such as social interaction.

The unstructured interview format is often seen as the polar opposite to the structured interview, especially in regard to the epistemic value of interrater reliability and standardization. Nevertheless, the term "unstructured" is highly misrepresentative, because most interviewers work from some sort of theoretical orientation or from past, professional experience. Often praised by clinicians as meeting essential criteria such as ecological validity and also a format more congruent with an ethical stance (i.e., priority to the person, in contrast to priority of standardization). The unstructured interview could thus be seen as having an advantage in the exploratory milieu of the clinical interview, in which interpersonal factors such as empathy and alliance take center stage. When it comes to both the clinical and the research interview, Rogers (1945) has made a

lasting contribution to the argument in favor of the unstructured interview and provided empirical evidence (in terms of recordings of interview situations) that granting epistemic authority to the client and/or research participant as opposed to the pre-established questions is beneficial for epistemic, clinical, and ethical reasons. Although this is not to say that Rogers's approach is free from pre-established theoretical criteria and ethical problems, instead his work has challenged the negative assumption of the unstructured interview as being unscientific.

The third and last format covered here is the semistructured interview, perhaps seen as seeking the best parts of the previous two formats, however, also opening up for new methodological and ethical challenges. In the most general sense, the semistructured interview can provide for some openness in following the client or research participant, opening up for empathy and alliance, as well as following certain pre-establish questions. The semistructured interviewer can make sure that the essential clinical and/or research questions are asked and at the same time allowing for an interpersonal encounter to develop. Within this third format, the interviewer is working from a constant shift in attitude between pre-establish questions and the interaction (as in a figure-ground relation). In this format, the psychologist has to be situated within the contextual flow of the interaction and the communication process, sometimes realizing that some pre-established questions have already been answered (e.g., when having allowed the client and/or research participant to freely explore or elaborate in an open question format). One way to look at the semistructured interview is that it can spontaneously combine unstructured and structured approaches within one situation. In terms of mainstream, natural scientific psychology, this means that one could combine qualitative and quantitative approaches to data collection procedures. In contrast, there are also examples of semistructured interviews with a strict qualitative emphasis (Kvale and Brinkmann 2009). Such qualitative, semistructured interviews can be rooted in either an empirical (empiricist) or a phenomenological theory of science (Giorgi 2009), in which the former seems to be the most

customary approach. On the other hand, examples of semistructured phenomenological interviews are also prevalent in psychiatry, psychology, and cognitive neuroscience, such as the clinical (and research) diagnostic oriented EASE-interview (Jansson and Nordgaard 2016; Parnas et al. 2005; Parnas and Henriksen 2014), the individual psychological assessment (Fischer 1994), and the more research oriented, such as empathic interviewing (e.g., Churchill 2010; Englander 2012) and explicitation interviewing (e.g., Maurel 2009; Petitmengin 2006; Vermersch 1999).

All three formats naturally have their pros and cons. Considering the nature of the psychological object of investigation and its relation to the interview as a data collection procedure and/or initial situation for therapy, the format could thus be seen to vary based on the interviewer's psychological perspective. For example, the natural scientific orientation of the cognitive-behavioral psychologist matches the structured interview, whereas the theory-oriented psychodynamic practitioner and liberatory emphasis of the humanistic psychologist may find better fits with the unstructured and semistructured approach to interviews. Nevertheless, framing the combination between interview format and psychologist's perspective should be seen mainly as theoretically motivated, provided that most psychologists (especially clinicians) are unlikely to be theoretical purists. In addition, given the fact that psychologists are situated in a society means that they also must adapt and relate to a set of predetermined organizational and cultural structures. For example, psychologists are socially interdependent on other agents in society, such as insurance companies or grant application boards, both that favor standardization criteria. In addition, lately, the mainstream research community of the American Psychological Association (APA) (2010) has defined psychology as a STEM discipline (Science, Technology, Engineering, and Mathematics), which seems to limit psychology to rest on an empirical theory of science (Giorgi 2014), consequently reinforcing a focus on operationalization, measurement, and standardization. On the other hand, the result of the second Task Force on Evidenced-Based Therapy Relationship

(Norcross and Wampold 2011), in evaluating good psychotherapeutic outcome, identified interpersonal and relationship factors (e.g., empathy, alliance, collaboration) as necessary ingredients to any treatment method. Such results raise several critical questions concerning the use of standardization in any type of clinical inquiry, making the semistructured interview into a viable alternative. However, the demand for specialized, interpersonal training and the effort to break new ground in our contemporary age of standardization makes the alternative of the semistructured interview a more difficult road to follow.

Although the unstructured and semistructured interviews are often seen as highly demanding in terms of specialized interpersonal or personal training, all formats of clinical and research interviews obviously require some sort of training and supervision, especially in relation to methodological and ethical issues. To conduct psychodynamic interviews demands years of specialized training, including having to go through several years of psychoanalysis oneself. The person-centered approach in humanistic psychology also includes extensive, specialized training in one's ability to listen to the client and/or research participant, and the retrospective ability as a therapist and/or researcher to critically assess one's own interactions within interview situations, using video or audio recordings. Becoming a phenomenological psychological interviewer also requires demanding interpersonal as well as methodological training, in which, for example, one must be able to constantly shift from the focus researcher/clinician to person (i.e., interpersonal and ethical) to researcher/clinician to research object/diagnosis (i.e., epistemic) (e.g., Englander 2012). However, due to its standardized approach, the structured interview can be seen as interpersonally less demanding and more procedurally oriented. Nonetheless, depending on the level of care adopted on behalf of the interviewer and/or help needed by the interviewee, given the specific nature of the topic or emotional content, even the structured interview demands extensive academic, professional, and ethical training (including proper clinical supervision).

Methodological Issues

The history of the psychological interview can be traced all the way back to the actual subject matter of psychology as a modern science – even its very scope and method as a discipline. Psychology took the *psyche* as its scientific object of study, although the *psyche* has historically come to refer to everything from consciousness, to the unconscious, to behavior, to cognition, and so forth, depending on the paradigmatic shifts of the psychologist's theoretical orientation. The epistemic relation of particular interest to empirical psychology has been that of causality, whereas phenomenological psychology has focused on intentionality. The persistent problem throughout the history of psychological interviews has thus been an unsettling argument either for or against the inclusion of the subject as an intentional agent. Nevertheless, data collection into the first-person perspective, using the interview format, no matter one's theoretical orientation, seems to prevail (even though a historical era of extreme Watsonian behaviorism could be seen as an exception). As Kvale and Brinkmann (2009) have shown, the trajectory of the psychological interview can be found in, for instance, the Freudian clinical interview, the qualitative research interviews in Mayo's Hawthorne study, or Piaget's interviews with children. In addition, one could also trace psychological interviews to qualitative subjective reports and its historical origin to the method of introspection. Although the different versions of introspection varied from self-observation to internal perception (and Brentano's famous distinction between the two), it was the latter that was used by Wundt (Danziger 1990, 2001). In a general sense, introspection as situated within an empirical perspective is an internal perception of an image and can be seen as analogous to external sense perception of the empirical world (Danziger 2001). Nonetheless, it was the Wurzburg school, with its controversial findings of the imageless thought, that challenged a psychology based on an empirical theory of science (Giorgi 2014). Thus, the problems related to the method of introspection raise similar fundamental epistemological questions in regard to

psychological interviews, as both data collection methods (despite numerous methodological variations) seek some sort of qualitative data from the first-person perspective. Just like the method of introspection did in the beginning days of modern psychology, the method of interviewing challenge the whole discipline of psychology as having its epistemological ground in an empirical theory of science.

Epistemological disputes regarding interviews often emerge as methodological issues originating in the fundamental problem of what theory of science should guide the science of psychology. For example, some qualitative psychological researchers have introduced validity checks, commonly referred to as triangulation. In such a procedure, the participants are not just being interviewed, but after the analysis (or sometimes during the analysis), assume the expert role of the scientist in which they perform validity checks of the analysis. Such validity checks could be seriously questioned on the obvious ground that non-psychologists are carrying out levels of scientific validity checks. However, every so often when human subjectivity is at stake, as in psychological research or in a clinical setting, and when different levels of authority are involved (e.g., interviewer/clinician versus participant/client), human subjectivity is seen as anybody's business, sometimes even relativized. In addition, and from an ethical stance, the psychologists will often have to assume that the client and/or the research participant has the last word, hence ethically protecting the client and/or the research participant. In other words, where does the psychologist draw the line between ethics and epistemology, especially as such boundaries are played out in the interpersonal context of the interview situation? As Kvale (2006) has emphasized, even in empathic and caring types of interviews, different levels of authority between the interviewer and the interviewee are always present. Unfortunately, the ethical stance often becomes ad hoc matters following the epistemic stance, or the other way around, instead of being properly interpersonally and socially contextualized (Englander 2015). At times, some postmodern approaches can view the actual words used by the interviewee as the

psychological finding itself, thus granting the participants final authority in the context of psychological science, and hence skipping the psychological analysis altogether.

Moreover, the methodological problems relating to the first-person perspective and access to such a perspective are still heavily debated in psychology. Nevertheless, taking an interest in the first-person perspective is not exclusive to psychology, but also prevalent in neighboring medical sciences such as neurology and neuroscience. For instance, and to follow a critical stance once voiced by Erwin Straus (1966), the whole growing field of cognitive neuroscience and neuropsychology would not be much more than images on a computer screen without a consultation of the first-person perspective – to provide meaning and sensibility. In other words, the nature of the psychological phenomenon within the interpersonal research context of the interview is different from the nature of the empirical object as approached by the experimental method (Giorgi 2014), and as scientists we have to find ways to respect their “mutual constraints” (Varela 1996, p. 330), but perhaps also work interdisciplinary toward a “mutual enlightenment” (Gallagher 1997, p. 195). Hence, the first-person perspective, no matter how it is interpreted and approached within the interview situation, self-reports, or even different methods of introspection, still remains one of the core methodological problems in terms of the data base of a psychological science. The interview is not immune to the fundamental methodological issues of psychology, but situates itself within the same epistemological problem of how to gain access to the first-person perspective of the client and/or research participant.

Perhaps the most discussed methodological problem related to the use of interviews, especially in terms of qualitative psychological research, is that of representativeness. Interview-based research are often misjudged as having the same epistemological context as population research, in which samples are evaluated on the basis of their representativeness to a particular population. One could argue that such a misconception does not directly apply to structured interviews, as this format could be evaluated in a similar way as population research is evaluated; mostly due to the similar reduction such as

operationalization, measurement, and standardization. However, unstructured and semistructured interview research often searching for qualitative results with a focus on psychological meaning (that rest on intentionality) as opposed to causality (or statistical correlations) cannot be evaluated following the logic of population research. Because psychological meanings are context dependent, the ground for such interview research is thus the psychological context (e.g., social, developmental) in which the psychological phenomenon (e.g., experiencing a lack of understanding from one’s peers, the experience of learning algebra) appear, and not something that is inside a population. In other words, sampling strategies in population research, in order to satisfy criteria of inferential statistics within the discipline of social statistics, is not to be confused with selection criteria in qualitative interview research. Empirical psychology (including qualitative empirical psychology), adopting population research strategies, has historically had problems in dealing with this fundamental epistemological difference.

Recently, phenomenological philosophers (e.g., Zahavi 2014), psychiatrists (e.g., Parnas et al. 2005), and psychologists (e.g., Englander 2012) have proposed a second-person access to the first-person perspective situated within a broader human context (i.e., the lifeworld). Such a proposal is congruent with Giorgi’s (2009, 2014) suggestion of a phenomenological theory of science as a base for human scientific psychology, based on interview material. Second-person access, with its initial focus on interpersonal understanding and social context, could also contribute in solving the inter-related boundary problems between epistemology and ethics – problems that are played out in the struggle between modern and postmodern approaches to psychological research.

Conclusion

Interviews’ underlying value is to collect material about the other person’s first-person perspective within an interpersonal context in order to either research a psychological phenomenon or be engaged in clinically work with a client. The three different types of interviews (structured,

unstructured, and semistructured) can be traced to (on a theoretical level) different psychological perspectives, including the historical era in which these paradigms were originally formed. The format of the structured interview also correlates with other agencies operating in a contemporary Western society, in which standardization is prioritized. The unstructured and semistructured interview formats provide for sensible alternatives in which also psychological meaning can be qualitatively assessed or researched. Even though there is an internal conflict within psychology as to how interviews should be conducted and what theory of science it should rest on, the psychologist's interest in the other person's first-person perspective remains important for epistemic as well as ethical reasons. In other words, psychological interviews have a very important role for the science of psychology, especially as long as the psyche remains its subject matter. The conflict of how knowledge should be viewed and how it should be balanced with ethics (within the context of the interview) will most likely persist as the ongoing struggle in what constitutes as the proper theory of science for psychology. Did knowledge precede the interview, or did it generate during the interview, or can it be seen as something constructed after the interview, or is the interview merely a microcosm of what is happening in society at large? In addition, there is also a different point of departure, a phenomenological alternative, suggesting that no matter where or when anything is caused or constructed or generated, psychological meanings will appear in a psychological context, and such meanings can always be described and will be of value for a psychological science.

Cross-References

- ▶ [Revised Diagnostic Interview for Borderlines](#)
- ▶ [Semi-Structured Interviews](#)

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington: American Psychiatric Publishing.
- American Psychological Association (APA). (2010). *Psychology as a core science, technology, engineering, and mathematics (STEM) discipline: Report of the American Psychological Association 2009 presidential task force on the future of psychology as a STEM discipline*. Washington, DC: American Psychological Association.
- Churchill, S. D. (2010). Second person perspectivity in observing and understanding emotional expression. In L. Embree, M. Barber, & T. J. Nenon (Eds.), *Phenomenology 2010, Vol. 5: Selected essays from North America. Part 2: Phenomenology beyond philosophy* (pp. 81–106). Bucharest/Paris: Zeta Books/Arghos-Diffusion.
- Danziger, K. (1990). *Constructing the subject: Historical origins of psychological research*. Cambridge: Cambridge University Press.
- Danziger, K. (2001). Introspection: History of the concept. In N. J. Smelser & P. B. Baltes (Eds.), *International encyclopedia of the social and behavioral science* (pp. 7888–7891). Amsterdam: Elsevier.
- Englander, M. (2012). The interview: Data collection in descriptive phenomenological human scientific research. *Journal of Phenomenological Psychology, 43*(1), 13–35.
- Englander, M. (2015). Selfhood, empathy, and dignity. In S. Ferrarello & S. Giacchetti (Eds.), *Identity and values* (pp. 75–88). Cambridge: Cambridge Scholars Publishing.
- First, M. B., Gibbon, M., Spitzer, R. L., & Williams, J. B. W. (1997). *Structured clinical interview for DSM-IV Axis II personality disorders (SCID-II)*. Washington, DC: American Psychiatric Press.
- Fischer, C. T. (1994). *Individualizing psychological assessment*. Hillsdale: Lawrence Erlbaum Associates Publisher.
- Gallagher, S. (1997). Mutual enlightenment: Recent phenomenology in cognitive science. *Journal of Consciousness Studies, 4*(3), 195–214.
- Giorgi, A. (2009). *The descriptive phenomenological method in psychology: A modified Husserlian approach*. Pittsburgh: Duquesne University Press.
- Giorgi, A. (2014). Phenomenological philosophy as the basis for a human scientific psychology. *The Humanistic Psychologist, 42*(3), 233–248.
- Jansson, L., & Nordgaard, J. (2016). *The psychiatric interview for differential diagnosis*. Cham: Springer.
- Kvale, S. (2006). Dominance through interviews and dialogues. *Qualitative Inquiry, 12*, 480–500.
- Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing*. Thousand Oaks: Sage.
- Maurel, M. (2009). The explication interview: Examples and applications. *Journal of Consciousness Studies, 16*(10–12), 58–89.
- Norcross, J. C., & Wampold, B. E. (2011). Evidence-based therapy relationships: Research conclusions and clinical practices. *Psychotherapy, 48*(1), 98–102.
- Parnas, J., & Henriksen, M. G. (2014). Disordered self in the schizophrenia spectrum: A clinical and research perspective. *Harvard Review of Psychiatry, 22*(5), 251–265.
- Parnas, J., Moller, P., Kircher, T., Thalbitzer, J., Jansson, L., Handest, P., & Zahavi, D. (2005). EASE:

- Examination of anomalous self-experience. *Psychopathology*, 38(5), 236–258.
- Petitmengin, C. (2006). Describing one's subjective experience in the second person: An interview method for the science of consciousness. *Phenomenology and the Cognitive Sciences*, 5, 229–269.
- Rogers, C. R. (1945). The nondirective method as a technique for social research. *American Journal of Sociology*, 50(4), 279–283.
- Straus, E. W. (1966). *Phenomenological psychology*. New York: Basic Books.
- Varela, F. J. (1996). Neurophenomenology: A methodological remedy for the hard problem. *Journal of Consciousness Studies*, 3(4), 330–349.
- Vermersch, P. (1999). Introspection as practice. *Journal of Consciousness Studies*, 6(2–3), 17–42.
- Zahavi, D. (2014). *Self and other*. Oxford: Oxford University Press.
- Zimmerman, M. (2013). *Interview guide for evaluating DSM-5 psychiatric disorders and the mental status examination*. Philadelphia: Psych Products Press.

Intimacy

- ▶ [Love and Belongingness Needs](#)
- ▶ [Working Models of Self and Other](#)

Intimacy Avoidance

Magdalena Śmieja
 Institute of Psychology, Jagiellonian University,
 Krakow, Poland

Definition

Intimacy avoidance describes the degree to which an individual withdraws from close emotional contact from a relationship partner.

Introduction

Intimacy, encompassing positive involvement, self-disclosure, and mutual understanding, is one of the central features of a close relationship. High levels of intimacy predict greater relationship satisfaction and relationship

longevity, while low levels of intimacy are associated with faster declines in relationship contentment. An unfulfilled need for intimacy leads to loneliness and depression (Prager 1995). Although experiencing high levels of intimacy in romantic relationships is undeniably beneficial, it also carries a variety of risks. Substantial interdependence, indispensable for developing close connections, increases the risk of being hurt, betrayed, and/or rejected. For that reason, the goal of seeking intimacy with a romantic partner is usually balanced against the opposing goal of minimizing the likelihood of rejection. If people are able to set rejection concerns aside and put seeking intimacy ahead of diminishing the likelihood of being hurt, they experience their relationship as satisfying and fulfilling. However, some situations (e.g., the painful dissolution of a close relationship), and some individual differences, may decrease the individuals' desire and ability to engage in intimacy.

People differ in their general orientation toward the pursuit of intimacy goals in romantic relationships. The extent to which an individual experiences the need for close interpersonal relationships has been described as *intimacy motive*. According to McAdams (1984), intimacy motive, which is different from other interpersonal motives, such as the *need for affiliation* or the *need for power*, affects social behaviors to a remarkable degree. People low in intimacy motivation spend less time thinking about and interacting with others, and feel less emotionally involved in social interactions, in comparison to people high in intimacy motivation. Those who are less focused on self-disclosure, interdependence, and reliance in a relationship also show lower levels of ego achievement and higher levels of interpersonal ego diffusion. Scores on the Social Dating Goals Scale, a 13-item self-report scale assessing individual need for intimacy, are positively correlated with secure attachment style and negatively correlated with anxious attachment style.

Another individual difference found in the realm of intimate behaviors relates to *sensitivity to the dangers associated with closeness*. Some individuals appear to perceive more risk in

intimacy than others. Those who identify greater risk in closeness, compared to those who recognize it as less dangerous, tend to be less extraverted, less trustful, and less assertive in interpersonal situations, while at the same time taking a more jealous and possessive approach toward love (Pilkington and Richardson 1988). Chronically accessible risk-in-intimacy schema leads people high in that kind of rejection sensitivity to interpret ambiguous situations in a manner that is consistent with their fears, especially to interpret negatively toned situations as involving rejection (Pilkington and Woods 1999). As a result, individuals who are fearful of intimacy experience fewer and less pleasant social interactions and perceive other people to be less responsive to them.

Sensitivity to the risk of being dependent and vulnerable may be moderated by feeling more or less positively regarded by one's romantic partner. According to the *risk regulation model* (Murray et al. 2006), high confidence in the positive regard of one's partner allows people to risk dependence and intimacy, while feeling less favorably regarded by one's partner primes self-protection goals, such as keeping a safe distance or even dissolving a relationship. Since situations of dependence activate stronger rejection anxiety among people who generally feel less valued, the ability for developing intimate relationship may be inhibited by *low self-esteem*. People characterized by low global self-esteem often underestimate how positively their partner sees them and are likely to see the slightest offense as rejection, something that motivates them to decrease their dependence on the other by avoiding intimacy. For people who generally feel more valued, relationship-related threats activate perceptions of acceptance and bolster feelings of closeness and intimacy. Importantly, although individuals low in self-esteem are highly motivated to protect themselves from rejection, they desire intimacy, and during times of low interpersonal threat, they strive to form and maintain close relationships. That feature distinguishes individuals low in self-esteem from persons for whom the risk of being hurt is so aversive that they chronically avoid intimacy.

Attachment theory developed by John Bowlby, and extended by Cindy Hazan and Phillip Shaver (Bowlby 1969; Hazan and Shaver 1987), explains such dispositional tendencies as coming from individuals' experiences with caregivers in childhood and with romantic partners as adults. From that theoretical perspective, individuals enter relationships with well-developed cognitive representations of the self and others. These cognitive representations, called internal working models of attachment, are associated with particular patterns of interactions, beliefs, attitudes, and strategies of conflict resolution. Individuals who have had past experiences with an unavailable or rejecting attachment figure, who punished them when they attempted to seek proximity under distress, have learned that closeness can be dangerous. As a consequence, they tend to hold negative mental representations of others and a strong preference for self-reliance.

Individuals who have developed such an *avoidant model of attachment* in early childhood may be reluctant or even unable to pursue intimacy in romantic relationships, because they lack a secure base on which they could build such interactions. While persons low in avoidance are comfortable with intimacy and seek it out in their close relationships, those who are avoidant experience chronic discomfort with closeness and try to create mental and physical distance between themselves and their relationship partners. As a result, they are often involved in relationships that are low in interdependence and commitment. Heightened avoidance is also associated with lower trust and satisfaction, as well as with more frequent negative emotions and less frequent positive emotions in romantic relationships. Consequently, avoidant individuals are less likely to find themselves in high-quality relationships than people low in attachment avoidance.

Although highly avoidant individuals chronically escape closeness in relationships due to a self-protective motivation, that inclination may be more or less pronounced. It appears especially strong in negative, distressing interpersonal situations. When experiencing distress brought on by conflict, avoidant individuals usually eschew closeness by detachment and the deactivation of emotions. The tendency to avoid closeness

may be lessened in long-term relationships perceived as being of a high quality. Research shows that highly avoidant individuals are more likely to desire physical and psychological closeness with their partner, if they perceive their relationships favorably, compared to avoidant individuals who perceive their relationship to be of a lower quality (Slotter and Luchies 2014).

Avoidant individuals' feelings of closeness might be also empowered by *downward comparisons* to their romantic partners. While persons low in avoidance feel more positive affect when the partner is superior rather than inferior to themselves, avoidant individuals experience outperforming their partners as more beneficial than being outperformed (Thai et al. 2016). Most probably, that reaction is consistent with their negative working model of the partner.

Recent studies suggest that even highly avoidant individuals do benefit from social interactions and that they suppress their interest in social connections rather than actually experience a true lack of it. In casual, short-term interactions with strangers, they report elevated feelings of psychological closeness after a positive interaction relative to a negative interaction. Consequently, avoidant people's non-chalance displayed in the face of rejection seems to be a defensive facade masking implicit fears. Most probably, avoidant individuals do have attachment concerns, but exert cognitive effort to suppress them. As research shows, such a defensive strategy collapses under pressure: avoidant individuals experiencing cognitive load, when asked to imagine the end of their romantic relationship, exhibit increased accessibility of attachment-related thoughts (Mikulincer et al. 2004). Results of laboratory experiments reveal a remarkable dissociation between avoidant individuals' explicit and implicit responses to psychological threats. For example, after thinking about separation from a romantic partner, avoidant individuals display positive explicit attitudes toward interpersonal distance and self-reliance, while their implicit attitudes imply that they actually experience ambivalence (Mikulincer et al. 2010). Most probably, that ambivalence is kept on a preconscious level, largely inaccessible to mindful reflection, by the repression or suppression of rejection fears.

The phenomenon of intrapersonal conflict between avoidant individuals' implicit and explicit reactions to intimacy also emerged in studies on the biological underpinnings of attachment processes. As it was demonstrated, although highly avoidant individuals do not report elevated psychological distress in the face of negative events in their romantic relationships, they are physiologically reactive to such situations, exhibiting heightened blood pressure, skin conductance reactivity, and elevated levels of cortisol (Diamond and Fagundes 2010).

Conclusion

It seems that all people have a similar profound need for intimacy; however some of us are unable to meet it. Research on individual differences in intimacy avoidance suggests that people eschew engaging in interdependent, close relationships not for the doubtful pleasure of being emotionally detached but rather because they are unable to overcome their fears and their hypersensitivity to rejection.

Cross-References

- ▶ [Anxious-Ambivalent Attachment Styles](#)
- ▶ [Attachment Theory](#)
- ▶ [Avoidant Attachment Style](#)
- ▶ [Disorganized Attachment Style](#)
- ▶ [Insecure Attachment](#)

References

- Bowlby, J. (1969). *Attachment and loss* (Vol. I, *Attachment*). New York: Basic Books.
- Diamond, L. M., & Fagundes, C. P. (2010). Psychobiological research on attachment. *Journal of Social and Personal Relationships*, 27(2), 218–225. <https://doi.org/10.1177/0265407509360906>.
- Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52, 511–524.
- McAdams, D. P. (1984). Human motives and personal relationships. In V. J. Derlega (Ed.), *Communication, intimacy, and close relationships* (pp. 41–70). Orlando: Academic.

- Mikulincer, M., Dolev, T., & Shaver, P. R. (2004). Attachment-related strategies during thought suppression: Ironic rebounds and vulnerable self-representations. *Journal of Personality and Social Psychology, 87*(6), 940–956. <https://doi.org/10.1037/0022-3514.87.6.940>.
- Mikulincer, M., Shaver, P. R., Bar-On, N., & Ein-Dor, T. (2010). The pushes and pulls of close relationships: Attachment insecurities and relational ambivalence. *Journal of Personality and Social Psychology, 98*(3), 450–468. <https://doi.org/10.1037/a0017366>.
- Murray, S. L., Holmes, J. G., & Collins, N. L. (2006). Optimizing assurance: The risk regulation system in relationships. *Psychological Bulletin, 132*(5), 641–666. <https://doi.org/10.1037/0033-2909.132.5.641>.
- Pilkington, C. J., & Richardson, D. R. (1988). Perceptions of risk in intimacy. *Journal of Social and Personal Relationships, 5*(4), 503–508. <https://doi.org/10.1177/0265407588054006>.
- Pilkington, C. J., & Woods, S. P. (1999). Risk in intimacy as a chronically accessible schema. *Journal of Social and Personal Relationships, 16*(2), 249–263. <https://doi.org/10.1177/0265407599162007>.
- Prager, K. J. (1995). *The psychology of intimacy*. New York: Guilford Press.
- Slotter, E. B., & Luchies, L. B. (2014). Relationship quality promotes the desire for closeness among distressed avoidantly attached individuals. *Personal Relationships, 21*(1), 22–34. <https://doi.org/10.1111/per.12015>.
- Thai, S., Lockwood, P., Pinkus, R. T., & Chen, S. Y. (2016). Being better than you is better for us: Attachment avoidance and social comparisons within romantic relationships. *Journal of Social and Personal Relationships, 33*(4), 493–514. <https://doi.org/10.1177/0265407515578826>.

Intimacy Motive

Jan Hofer
 Department of Developmental Psychology, Trier University, Trier, Germany

Synonyms

[Need for interpersonal intimacy](#); [Need for love and belonging](#)

Definition

The intimacy motive is defined as a recurrent preference or readiness for experience of warmth,

closeness, and communicative interaction with other people (McAdams 1992). Like other basic human motives, the intimacy motive is conceived as a relatively stable personality component that energizes, directs, and selects behavior in certain situations.

Introduction

From infancy to old age humans hardly thrive when isolated from their fellow men. Being physically and emotionally close to other people is not only pleasant but also helps individuals at all times in all cultural contexts to flourish, to survive in infancy, to become a competent and happy member of their social group, or ultimately to find a sexual partner and produce offspring. People are typically very reluctant to break social bonds – even abusive ones – and deprivation of close relationships is associated with a variety of developmental disorders. Thus, various scholars postulate a fundamental, probably innate human need for social acceptance, belonging, and interpersonal exchange that has been shaped by forces in the environment of evolutionary adaptedness.

Despite such a wide agreement among psychologists that a considerable part of human behavior, cognition, and emotion originates from this fundamental social motive, theoretical models term and define the nature of individuals' need for social contact differently. Prominent examples are the need for *love and belonging* in Maslow's hierarchy of needs (1954), the need for *relatedness* that together with autonomy and competence represents one of the basic psychological needs in self-determination theory (Deci and Ryan 2000), or *the need to belong* that integrates human tendencies to seek and maintain relationships of breadth and depth into a single motivational entity (Baumeister and Leary 1995).

Additionally, theoretical approaches differ from each other whether they define the human need for establishing and maintaining social relationships as an explicit, consciously accessible motive or an implicit motive that guides human experience and behavior without conscious awareness. Current theoretical and empirical

advancements, however, suggest that individuals' experience and behavior are best understood by considering two distinct motivational systems (for details see McClelland et al. 1989): whereas the explicit system includes self-attributed strivings such as peoples' goals and values, consciously inaccessible needs form the implicit system of motivation.

Intimacy and Affiliation

Research on implicit motives illustrates that human motivation for social bond is indeed a double-edged sword marked by aspects of affiliation (breadth) and intimate attachments (depth) (Weinberger et al. 2010). On the one hand, there is the tendency for affiliation that makes people seek the – maybe sometimes superficial – company of others to gain social acceptance and security and to avoid unpleasant affects, loneliness, disregard, and uncertainty (e.g., Heyns et al. 1958). On the other hand, some people are more focused on close intimate dyadic interactions. This approach-oriented tendency desires interaction with others to experience warm mutual exchange and lacks a fear of rejection that characterizes the need for affiliation (McAdams 1992). Needs for affiliation and intimacy, respectively, are – due to the theoretical and empirical overlap (Hofer and Busch 2011) – often combined into a single motive category for affiliation-intimacy (Winter 1994). Research has shown though that they predict different psychological and behavioral outcomes. Findings on correlates of the intimacy motive will briefly be highlighted in the following.

Measurement and Correlates of the Intimacy Motive

Evidence suggests that early measures of the affiliation motive (e.g., Heyns et al. 1958) confounded avoidance- and approach-oriented facets and thus research produced puzzling findings on the motive's correlates (see Weinberger et al. 2010). Consequently, distinct measures for both explicit

and implicit affiliation and intimacy, respectively, were developed. With respect to implicit motives that are typically assessed via content analysis of imaginative stories produced to ambiguous pictures cues (see McClelland et al. 1989), McAdams (1980) developed a coding system for the implicit intimacy motive emphasizing the positive and communal facets of human affiliation. According to McAdams (1980), a number of indicators in fantasy stories (e.g., mentioning of dialogue, feelings of harmony, and social responsibility) reflect the core experience of intimacy motivation, i.e., a noninstrumental sharing of one's thoughts, feelings, and inner life with other human beings.

Research has shown that individuals with a high implicit intimacy motive spend more time in close dyadic interactions than in group interactions. They are more likely to initiate contact by seeking physical proximity to others. They pay more attention to their close relationships, prefer to listen to, and are more self-disclosing to persons who are close to them than to strangers, and they are more concerned about the well-being of these persons. Furthermore, when asked to recall significant experiences in life, they are more likely to retrieve memories that focus on close relationships. When lacking opportunities to satisfy their need for intimacy (e.g., being single), women high in intimacy motivation are more uncertain and report lower levels of gratification than women low in intimacy motivation. In dyadic interactions they show more eye contact, smiling, and laughter than individuals low in intimacy motivation. They are rather liked by their peers and are rated as warm, natural, cooperative, and sincere with no intention of manipulative control (for an overview, see Weinberger et al. 2010).

Also longitudinally, peoples' happiness in their romantic relationships could be predicted by the strength of their intimacy motive (McAdams and Vaillant 1982). Hagemeyer et al. (2013) report that an implicit need for communion and intimacy particularly predicts the quality and stability of couple relationships when it occurs in tandem with a strong explicit desire for closeness. Hence, individuals benefit most from their implicit intimacy motive when their conscious desires and goals channel and thus help to satisfy

their inner intimacy needs. In other words, individuals' intimacy-oriented strivings and goal-directed behavior are only associated with enhanced well-being if these goals are fostered by a strong implicit need for intimacy. Thus, implicit intimacy motivation predicts positive relationship outcomes particularly among individuals whose explicit traits and strivings foster the realization of intimacy (Winter et al. 1998). In a recent study (Edelstein et al. 2010), a biological marker of close relationships was best predicted by the interplay of implicit and explicit motives: individuals high in implicit intimacy motivation and low in self-reported attachment avoidance showed the highest levels of estradiol, i.e., a sex hormone that has been associated with the regulation of attachment and caregiving behavior in men and women.

Conclusion

Research clearly demonstrates that intimacy motivation is a good predictor of how people experience and behave in their relationships to romantic partners and friends. A high intimacy motive impels individuals to search for opportunities for intimate sharing in everyday life. They are inclined to strengthen important relationships which enable them to experience joy and shared delight when feeling accepted and welcomed by others. Thus, it is no surprise that intimacy-motivated people report higher levels of well-being as well as less severe illness and seem to be more resistant to stress (e.g., McAdams 1992).

Although a single motive index is often reported for affiliation- and intimacy-oriented concerns, future studies on relationship-oriented outcomes ought to separately assess for avoidance-oriented affiliation and hope-oriented intimacy in order to broaden our knowledge on common and distinct behavioral and psychological correlates of both motivational features. For example, in a recent study with Cameroonian and German participants, it was shown that the frustrations of the needs for intimacy and affiliation, respectively, were both related to higher levels of feelings of envy, i.e., an unpleasant blend of

feelings caused by a comparison with a person or group of persons who possess something we desire. In contrast, only the strength of the affiliation motive predicted individuals' levels of indirect aggressive behavior (Hofer and Busch 2011). The last-mentioned study is somewhat unique as most research is conducted with samples recruited in so-called Western-educated-industrialized-rich-democratic (WEIRD) societies (Henrich et al. 2010). Given that humans universally are innately prepared to form social bonds, more research in non-Western cultural contexts is indispensable. Findings may illustrate how the needs for intimacy and affiliation develop and how they are expressed and satisfied in cultural contexts that differ from each other in their emphasis on interpersonal harmony and relatedness.

Cross-References

- ▶ Evolutionary Psychology
- ▶ Implicit Measures of Personality
- ▶ Need for Affiliation
- ▶ Need to Belong

References

- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*, 497–529.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*, 227–268.
- Edelstein, R. S., Stanton, S. J., Henderson, M. M., & Sanders, M. R. (2010). Endogenous estradiol levels are associated with attachment avoidance and implicit intimacy motivation. *Hormones and Behavior*, *57*, 230–236.
- Hagemeyer, B., Neberich, W., Asendorpf, J. B., & Neyer, F. J. (2013). (In)Congruence of implicit and explicit communal motives predicts the quality and stability of couple relationships. *Journal of Personality*, *81*, 390–402.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences*, *33*, 61–135.
- Heyns, R. W., Veroff, J., & Atkinson, J. W. (1958). A scoring manual for the affiliation motive. In

- J. W. Atkinson (Ed.), *Motives in fantasy, action, and society: A method of assessment and study* (pp. 205–218). Princeton: Van Nostrand.
- Hofer, J., & Busch, H. (2011). When the needs for affiliation and intimacy are frustrated: Envy and indirect aggression among German and Cameroonian adults. *Journal of Research in Personality, 45*, 219–228.
- Maslow, A. (1954). *Motivation and personality*. New York: Harper.
- McAdams, D. P. (1980). A thematic coding system for the intimacy motive. *Journal of Research in Personality, 14*, 413–432.
- McAdams, D. P. (1992). The intimacy motive. In C. P. Smith (Ed.), *Motivation and personality: Handbook of thematic content analysis* (pp. 224–228). New York: Cambridge University Press.
- McAdams, D. P., & Vaillant, G. E. (1982). Intimacy motivation and psychosocial adjustment: A longitudinal study. *Journal of Personality Assessment, 46*, 586–593.
- McClelland, D. C., Koestner, R., & Weinberger, J. (1989). How do self-attributed and implicit motives differ? *Psychological Review, 96*, 690–702.
- Weinberger, J., Cotler, T., & Fishman, D. (2010). The duality of affiliative motivation. In O. C. Schultheiss & J. C. Brunstein (Eds.), *Implicit motives* (pp. 71–88). New York: Oxford University Press.
- Winter, D. G. (1994). *Manual for scoring motive imagery in running text*, Version 4.2. Ann Arbor: University of Michigan Department of Psychology.
- Winter, D. G., John, O. P., Stewart, A. J., Klohnen, E. C., & Duncan, L. E. (1998). Traits and motives: Toward an integration of two traditions in personality research. *Psychological Review, 105*, 230–250.

intimacy versus isolation, in light of more recent research.

Introduction

In 1950, Erik Erikson published his book, *Childhood and Society*. With his inspiration from Sigmund Freud's psychosexual stages of development, Erikson sought to understand not only how people developed psychologically and socially but what major challenges and decisions they faced along the way. While attempting to answer these questions, Erikson came up with his eight stages of psychosocial development. According to his theory, people pass through eight universal stages from birth to adulthood. At the heart of every psychosocial conflict there are specific issues that an individual strives to master and important relationships they seek to cultivate. To master the central problems of each stage, a person must confront and negotiate between conflicting biological and sociocultural forces. If a person is able to reconcile the conflict between these two forces, they will gain important virtues or character strengths the ego can use to solve related crises in the future. If a person fails to master the conflicts of a specific stage these conflicts will likely reemerge later in life and negatively impact personal functioning. Restoring normal, healthy development involves readdressing and resolving unsettled conflicts from previous stages that have created self-deficits within an individual. When past unsettled conflicts are resolved, an individual should experience a more fully integrated sense of self, allowing them to resume psychological and social growth.

Intimacy Versus Isolation

Ian Moore and Steven Abell
Department of Clinical Psychology, University of Detroit Mercy, Detroit, MI, USA

Synonyms

[Erikson's psychosexual stages of development](#); [Erikson's sixth stage of psychosexual development](#); [Erikson's theory of development](#); [Love: Intimacy vs. isolation](#)

Definition

The following entry describes Erikson's (1950, 1956) sixth psychosexual stage of development,

Intimacy Versus Isolation

As an individual develops and matures, the psychosocial conflicts they face become increasingly complex. One of the most complex psychosocial conflicts is seen in Erikson's sixth stage of development; intimacy vs. isolation. This stage, according to Erikson, represents polar extremes of involvement with others. At one end of the

spectrum is intimacy, which relates to seeking intense interpersonal relationships with others. At the other end there is isolation, which relates to self-absorption and “unjudicious distancing from others” (Erikson 1956). When entering early adulthood (approximately ages 18–40), a primary focus becomes forming deep and intimate relationships with others. In order to achieve true engagement with others, Eriksson believed a certain degree of self-delineation is necessary. When seeking true engagement with others, an individual must come to terms with the fact that achieving intimacy or interpersonal fusion with another person involves the possible loss of identity. Coming to terms with such a decision is hardly easy and often is a source of great conflict at this stage of development. If an individual is able to resolve this conflict, they will gain the virtue of love allowing them to give and receive love, support, and comfort as well as feel a sense of connectedness in interpersonal relationships. If, however, an individual is unable to resolve this conflict, perhaps due to the fear of losing their sense of identity, they may isolate. People who isolate will likely experience stereotyped, shallow, or formalized relationships. Instead of seeking meaningful relationships with others they avoid relational commitments, are apt to feel a sense of loneliness or alienation, and to be socially withdrawn.

The Intimate and the Isolate

Erikson’s theory provided a sound theoretical basis for understanding intimacy and isolation, but to appreciate his theory, a more complete definition of intimacy and isolation was needed. In 1956, Stern et al. strove to create a theoretical model of both the intimate and isolate personality types. In their study, they determined that people with intimate personality types differed from people with isolate personality types in the following ways: reaction to others, coping mechanisms, impulse expression and control, energy regulation, organization and integration, frame of reference, ego qualities, childhood environment, and developmental aspects. On every variable

listed, those with intimate personality types displayed more adaptive and positive functioning compared to those with isolate personality types. Of key importance were their differences in reactions to others, coping mechanisms, and childhood environment. Intimate personality types generally reacted to others with affection, showed a nurturing coping style, and reported a permissive childhood environment with many close relationships. By contrast isolate personality types reacted to others with rejection and withdrawal, showed an aggressive coping style, and reported a strict childhood environment with few close relationships. Clinical psychologist Robert Yufit (1969) sought to confirm these results. Not only did Yufit manage to confirm the differences found by Stern, Stein, and Bloom, Yufit also found an important correlate in the development of intimacy. Yufit’s findings indicated that trust plays a large part in the development of intimacy. Intimate personality types reported higher levels of trust in others and lower levels of disruptive anxiety compared to isolate personality types, thus aiding in the development of close relationships to others. Taken collectively, these studies helped provide a clearer definition of intimacy and isolation by uncovering certain key factors that underlie each personality type.

Factors Influencing Intimacy and Isolations

Having a firmer definition of intimacy and isolation allowed researchers to begin to study other aspects of this concept. One important area of study was attempting to understand what specific events helped influence the intimacy vs. isolation crisis. Through a combination of questionnaires, interviews, and projective tests, Orlofsky et al. (1973) discovered a set of three factors that helped determine intimacy outcomes. According to their findings, intimacy statuses were influenced by the presence or absence of close relationships with friends, the presence or absence of an enduring/committed relationship with a significant other, and the depth or superficiality of those relationships. Additionally, researchers found

that by using these criteria they could break down intimacy status into five unique stages which they referred to as intimate, preintimate, stereotyped relationships, pseudointimate, and isolate. The isolate individual was mostly influenced by the absence of close relationships with male or female friends (thus being socially withdrawn) whereas the other four stages of intimacy were more influenced by the presence of enduring/committed relationships and the depth of those relationships. An intimate person experienced both deep and meaningful relationships to male and female friends as well as a committed love relationship with a significant other. Preintimate individuals are not so dissimilar from intimate individuals except that they have not yet entered a committed relationship and they tend to view romantic relationships as something “devoid of ties” (Orlofsky 1976, p. 75). People with a stereotyped intimacy status have relations with male and female friends, but they often lack depth and are superficial. Finally, the pseudointimate enters long-term relationships, but these are often superficial. In a follow-up study, Orlofsky (1976) found that another key factor that influenced a person’s level of intimacy was the degree of mutual knowledge and understanding between partners. Findings indicated that greater levels of intimacy were experienced by those who reported more open and understanding relationships.

Identity Status in Relation to Intimacy and Isolation

In his theory, Erikson postulated that the maturity and development of a person’s ego identity was highly related to intimacy (1950). Before this could be studied, a comprehensive measure for understanding identity status was needed and developmental psychologist James Marcia (1966) attempted to provide such a measure. Through his work Marcia speculated that there are four unique modes of reacting to one’s identity crisis: identity achievement, moratorium, foreclosure, and identity diffusion. In identity achievement, an individual has gone through an identity crisis and made an identity commitment. Those in moratorium are still in the identity crisis phase and are exploring

various identities. People experiencing foreclosure have not had an identity crisis, but rather conform to the expectations of others. Finally those in identity diffusion for some reason are not attempting to make a commitment to an identity. Identity achievement is seen as the highest level of development, followed by moratorium, foreclosure, and identity diffusion. The measure of identity formation developed by Marcia facilitated a significant amount of research. In general, researchers found that the higher a person’s ego identity development, the higher the levels of intimacy they can achieve (Kacerguis and Adams 1980; Orlofsky et al. 1973). Put differently, those in the intimate and preintimate stages of the intimacy crisis had more highly developed ego identities than did people in the pseudointimate, stereotyped relationship and isolate stages. Additional findings indicate that a person’s occupational identity development was a predictor of identity and intimacy development. It was found that while occupational identity (ones identity tied to work) was not a prerequisite for identity and intimacy formation, people who are actively exploring or are committed to their occupational identity are more likely to have deeper, more intimate relationships than people who lack occupational identity (Kacerguis and Adams 1980). Thus both of these studies were able to support empirically what Erikson had speculated that favorable outcomes of the intimacy vs isolation crisis are more likely in individuals who have a greater sense of personal identity.

How Intimacy and Isolation Influence Relationships

Further research on intimacy status has also shown that intimacy status influences relationship closeness, satisfaction, and information disclosure (Prager 1989). It was discovered that higher levels of achieved intimacy status (Orlofsky et al. 1973) were positively associated with relationship closeness and satisfaction. Additionally, higher levels of intimacy were related to increased levels of self-disclosure to the romantic partner. Individuals who had achieved intimacy reported on average that they felt a stronger connection with and closeness to

their romantic partner than did those who were in the lower stages of intimacy development. Further intimate individuals reported greater frequency and comfort in self-disclosing information to their partner than did other groups. Not surprisingly, the highest levels of relational closeness and satisfaction were reported among couples where both partners had achieved intimate status. These individuals reported the highest levels of self-disclosure which led to higher levels of comfort experienced in their relationships. Thus, findings point to the strongest, most intimate relationships existing among couples where both partners successfully resolved the intimacy vs. isolation crisis.

Conclusion

If one chooses isolation they tend to be socially withdrawn and experience shallow, superficial relationships with others. If one achieves intimacy, they achieve the virtue of love, which results in closer, deeper, and more rewarding relationships with others. The conflict a person must resolve in this stage to become intimate means to give of one's self, which results in the loss of some personal identity. Some of the first empirical studies done on Erikson's work sought to define the constructs underlying intimacy vs isolation. After establishing firmer definitions of intimacy and isolation, research shifted towards understanding the various stages of intimacy and how each is achieved. An important area of research also revolved around the relationship between identity status and intimacy. It was found that ego identity status was related to intimacy in that the more established one's ego identity, the higher levels of intimacy they experience. Finally, it has been found that achieving intimacy is positively associated with self-disclosure and satisfaction in relationships. Further, the closest relationships are those in which both partners achieved intimacy. Little research has been conducted on intimacy vs. isolation in the technological age. With the increase in technology, connectedness between people has seemingly increased, but the depth of relationships may be more superficial and less intimate (Schnarch 1997). Going forward it

will become important to understand the implications of how technology will affect the development and expression of psychological intimacy.

References

- Erikson, E. (1950). *Childhood and society*. New York: Norton.
- Erikson, E. (1956). The problem of identity. *Journal of the American Psychoanalytic Association*, 4, 56–121.
- Kacerguis, M. A., & Adams, G. R. (1980). Erikson stage resolution: The relationship between identity and intimacy. *Journal of Youth and Adolescence*, 9(2), 117–126.
- Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of personality and social psychology*, 3(5), 551–558.
- Orlofsky, J. L. (1976). Intimacy status: Relationship to interpersonal perception. *Journal of Youth and Adolescence*, 5(1), 73–88.
- Orlofsky, J., Marcia, J., & Lesser, I. (1973). Ego identity status and the intimacy versus isolation crisis of young adulthood. *Journal of personality and social psychology*, 27(2), 211–219.
- Prager, K. (1989). Intimacy status and couple communication. *Journal of Social and Personal Relationships*, 6, 435–449.
- Schnarch, D. (1997). Sex, Intimacy, and the Internet. *Journal of Sex Education and Therapy*, 22(1), 15–20.
- Stern, G., Stein, M., & Bloom, B. (1956). *Methods in personality assessment*. Glencoe: Free Press.
- Yufit, R. (1969). Variations of intimacy and isolation. *Journal of Projective Techniques and Personality Assessment*, 33(1), 49–58.

Intolerance

- ▶ [Claims \(Horney\)](#)

Intolerance of Others

- ▶ [Prejudice](#)

Intragroup Dynamics

- ▶ [Groups](#)

Intraindividual Structure and Variation

- ▶ [Idiographic Study of Personality](#)

Intra-personal Conflict

- ▶ [Approach-Avoidance Conflict](#)

Intrauterine Life

- ▶ [Hypothalamic–Pituitary–Adrenal Axis](#)

Intrinsic and Extrinsic Motivation

Lisa Legault
Clarkson University, Potsdam, NY, USA

Synonyms

Intrinsic motivation – interest, enjoyment, inherent satisfaction

Extrinsic motivation – instrumental motivation, noninherent motivation

Definitions

Intrinsic motivation (IM) refers to engagement in behavior that is inherently satisfying or enjoyable. IM is noninstrumental in nature, that is, intrinsically motivated action is not contingent upon any outcome separable from the behavior itself. Rather, the means and end are one and the same. For example, a child may play outdoors – running, skipping, jumping – for no other reason than because it is fun and innately satisfying.

Conversely, Extrinsic motivation (EM) refers to performance of behavior that is fundamentally

contingent upon the attainment of an outcome that is separable from the action itself. In other words, EM is instrumental in nature. It is performed *in order to* attain some other outcome. For instance, a teenager might wash dishes at home *in order to* receive an allowance. Similarly, a student may study for a test *in order to* receive an A. Extrinsic motivation is multidimensional and varies from completely external (e.g., washing dishes to get an allowance) to completely internal (e.g., engaging in recycling because one perceives oneself to be an environmentally responsible citizen).

Introduction: The Intrinsic-Extrinsic Distinction

Early research on intrinsic motivation (IM) began with the investigation into how extrinsic rewards affected intrinsic motivation for an interesting task. Initial studies found that if an individual engaged freely in an activity (out of interest) and was subsequently offered an external reward such as money (Deci 1971) or points (Lepper et al. 1973) for engaging in that activity, then intrinsic motivation toward the activity declined. Although these initial findings were controversial because they challenged operant theories of behavioral reinforcement, a subsequent meta-analysis affirmed that when extrinsic rewards are *expected* and *tangible*, they indeed undermine intrinsic motivation for an activity (Deci et al. 1999). The main reason for this undermining effect is because extrinsic rewards tend to shift the individual's reasons for performing the behavior from internal (e.g., interest, fun) to external (e.g., to receive the reward), thus changing the source of the motivation and *locus of causality* for action.

Although intrinsic motivation is considered the most optimal form of motivation and is associated with various benefits – including enjoyment, persistence, and psychological well-being (Deci and Ryan 2008), extrinsic motivators are sometimes thought to be helpful to promote action for behaviors that are not intrinsically interesting (e.g., recycling, doing homework, obeying traffic laws). In other words, the desire to entice or

compel people to comply with standards of socially desirable behavior is sometimes at odds with the preservation and promotion of individual autonomy and intrinsic motivation. Mounting evidence suggests, however, that despite the initial ease and allure of extrinsic motivators, they carry a substantive cost to learning and the development of autonomous self-sustaining behavior (Kohn 1999). After all, the use of incentives and rewards to motivate people decreases the likelihood that genuine interest and self-generated motivation will develop and persist.

Influences on Intrinsic and Extrinsic Motivation

Intrinsic motivation is a natural human tendency – in other words, people will actively strive toward doing the things they find interesting or enjoyable. However, in order for intrinsic motivation to flourish, the social environment must nurture it. Social contexts exert an influence on the experience of intrinsic motivation by affecting perceived *autonomy* and *competence*.

In general, when the social environment supports autonomy by increasing an internal perceived locus of causality (i.e., the behavior stems from personal choice and internal causation rather than external pressure), then intrinsic motivation is enhanced. In contrast, when the social environment neglects or thwarts autonomy by increasing an external perceived locus of causality (e.g., by offering extrinsic rewards or making demands), then intrinsic motivation is undermined. Thus, to the extent that the social environment uses controlling behavioral strategies and external constraints, reinforcers, and punishers, then motivation will become less intrinsic and more extrinsic – because personal autonomy is compromised. For instance, it has been found that threats of punishment (Deci and Cascio 1972), deadlines (Amabile et al. 1976), and surveillance (Plant and Ryan 1985) all work to diminish intrinsic motivation and increase extrinsic motivation.

Perceived competence also affects intrinsic motivation. When the social environment

undermines perceived competence, intrinsic motivation decreases; in contrast, when the social environment increases perceived competence in an activity, then intrinsic motivation rises. For instance, positive feedback (e.g., verbal praise) tends to fuel perceptions of personal effectance and bolster intrinsic motivation. Interestingly, however, this strengthening effect of positive feedback on intrinsic motivation requires that the individual also experience autonomy in performing the action, in addition to feeling competent.

Different Forms of Extrinsic Motivation

Intrinsic motivation characterizes behaviors that are fun, interesting, and optimally challenging. When activities are void of these qualities, there will be little motivation to engage in them – unless incentives are available or external/social contingencies are made salient, that is, unless there exists extrinsic motivation. Not all extrinsic motivation is the same, however, and some forms of extrinsic motivation feel more self-endorsed and self-concordant than others. Rather than being a one-dimensional construct, extrinsic motivation is a broad class of motivations that range in the extent to which they are autonomous, that is, the extent to which they stem from an internal perceived locus of causality and sense of personal volition. Therefore, even if an activity is not fun or enjoyable (and thus not intrinsically motivated), it may nonetheless be internally regulated as opposed to externally controlled.

Self-determination theory (Deci and Ryan 1985) proposes a continuum of extrinsic motivation that ranges in terms of the level of internalization – that is, the degree to which behavior is self-determined (see Fig. 1). The most external form – *external regulation* – refers to behavior that is controlled mainly through external factors (e.g., deadlines, rewards, directives, punishers). This type of behavior serves mostly to satisfy external demands, and so the source of motivation and causality for behavior is external rather than internal. *Introjected regulation* refers to behavior wherein external

Type of Extrinsic Motivation	Nature of External Contingency	Underlying Reason for Behavior	Example
External Regulation	Consequences, incentives, compliance	To receive or avoid a consequence; to fulfill an external requirement	"I avoid making prejudiced comments so that other people will think I'm nonprejudiced"
Introjected Regulation	Feelings of internal pressure; to avoid guilt or to boost the ego	Because it "should" be done	"I avoid acting in a prejudiced manner because I would feel bad about myself if I didn't"
Identified Regulation	Personal valuing of a behavior, sense of importance	Because it is important	"I avoid being prejudiced because it is an important goal"
Integrated Regulation	Expression of self and identity; congruence with self and other values	Because it reflects core values and self/identity	"I avoid being prejudiced because I see myself as a nonprejudiced person"

Intrinsic and Extrinsic Motivation, Fig. 1 Types of extrinsic motivation applied to the example of motivation to regulate racial prejudice (Adapted from Legault et al. 2007)

pressures have been partially deflected inward, but not truly adopted or internalized. This type of motivation feels quite controlling, but more from a sense of internal rather than external pressure. *Identified regulation* is a more autonomous form of extrinsic motivation and denotes the point at which behavior becomes internally governed and self-endorsed. This type of regulation occurs when the individual values or identifies with the outcome of the activity. Although identifications feel autonomously chosen, they may nonetheless be separate from the individual's other values and beliefs and thus may not reflect the person's core self or overarching value system. Finally, the most autonomous form of extrinsic motivation, *integrated regulation*, refers to behavior that is fully internalized. At this point, identifications have been merged with other deeply held beliefs, values, and needs. Integrated motivation feels consonant with the self; such behavior serves almost a means of self-expression and identity. Because of this, integrated behavior is associated with feelings of self-integration and psychological well-being (Weinstein et al. 2011). Despite being highly internalized, integrated regulation is nonetheless extrinsic because it serves the expression of something other than pure enjoyment or

interest (i.e., deeply held values or beliefs, core identity).

Conclusion

Whereas intrinsic motivation denotes the performance of an action out of interest or enjoyment, extrinsic motivation arises from an externally or socially created reason to perform an action. Extrinsic motivators such as money or other rewards can produce extrinsic motivation due to the fact that they generate desire for the consequence of the activity; they do not produce desire to engage in the activity for its own sake. When people engage in activities for extrinsic rewards, their motivation is entrenched in the environment rather than within themselves. Conversely, intrinsic motivation exists within the individual and can be harnessed and enhanced by environments that support the individual's autonomy and competence. Intrinsic motivation underlies people's natural inclinations to seek out novelty and challenge, as well as to learn, develop, and grow. Unlike extrinsic motivation, intrinsic motivation is associated creativity and vitality (Deci and Ryan 2008).

Cross-References

- ▶ [Need for Autonomy, The](#)
- ▶ [Need for Competence, The](#)
- ▶ [Self-Determination Theory](#)

References

- Amabile, T. M., DeJong, W., & Lepper, M. R. (1976). Effects of externally imposed deadlines on subsequent intrinsic motivation. *Journal of Personality and Social Psychology*, 34(1), 92.
- Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*, 18, 105–115.
- Deci, E. L., & Cascio, W. F. (1972). *Changes in intrinsic motivation as a function of negative feedback and threats*, paper presented at Eastern Boston, April 1972 Psychological Association meeting.
- Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory on human motivation, development, and health. *Canadian Psychology*, 49, 182–185.
- Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125(6), 627.
- Kohn, A. (1999). *Punished by rewards: The trouble with gold stars, incentive plans, A's, praise, and other bribes*. Boston: Houghton Mifflin Harcourt.
- Legault, L., Green-Demers, I., Grant, P., & Chung, J. (2007). On the self-regulation of implicit and explicit prejudice: A self-determination theory perspective. *Personality and Social Psychology Bulletin*, 33(5), 732–749.
- Lepper, M. R., Greene, D., & Nisbett, R. E. (1973). Undermining children's intrinsic interest with extrinsic reward: A test of the "overjustification" hypothesis. *Journal of Personality and Social Psychology*, 28(1), 129–137.
- Plant, R. W., & Ryan, R. M. (1985). Intrinsic motivation and the effects of self-consciousness, self-awareness, and ego-involvement: An investigation of internally controlling styles. *Journal of Personality*, 53(3), 435–449.
- Weinstein, N., Deci, E. L., & Ryan, R. M. (2011). Motivational determinants of integrating positive and negative past identities. *Journal of Personality and Social Psychology*, 100(3), 527–544.

Intrinsic Interest

- ▶ [Interest](#)

Intrinsic Motivation

- ▶ [Interest](#)
- ▶ [Intrinsic and Extrinsic Motivation](#)

Intrinsic Stimuli

- ▶ [Hypothalamic–Pituitary–Adrenal Axis](#)

Introjected Regulation

- Bilge Uzun¹ and Ahmet Aydemir²
¹Department of Psychological Counselling and Guidance, Bahcesehir University, Istanbul, Turkey
²Faculty of Educational Sciences, Bahcesehir University, Istanbul, Turkey

Synonyms

[Autonomy](#); [Contingency](#); [Contingent self-esteem](#); [External motivator](#); [Extrinsic motivation](#); [Introjected regulation](#); [Introjection](#); [Motivation](#); [Motivator](#); [Organismic integration](#); [Organismic integration theory](#); [Regulation](#); [Self-determination](#); [Self-determination theory](#); [Self-esteem](#); [Self-regulation](#)

Introduction

Introjected regulation refers to performing an action due to a sense of obligation rather than an internal desire or for enjoyment. It is a type of extrinsic motivation, included within the Organismic Integration Theory (OIT), a sub-theory of Self-Determination Theory (SDT; Deci and Ryan 1995). In this respect, STD argues there is a self-determination continuum in which different types of motivations are situated based on their degree of autonomy. As the degree of autonomy of a

motivation increases, it becomes more internalized. The continuum starts with amotivation, where there is no self-determination; continues in increasing autonomy with extrinsic motivation and its subtypes external regulation, introjected regulation, identified regulation, and integrated regulation; and ends with intrinsic motivation where autonomy is maximized. This process is outlined in detail in the following sections.

Self-Determination Theory

SDT, as an organismic model, proposes people are active agents that have an internal tendency to engage with the world around them throughout their lives. Within this process, SDT presents a framework to contextualize the relationships between motivation, personality development, psychological needs, and well-being (Ryan and Deci 2006). It sees the self as an outcome of one's development through organismic integration. It states there are certain psychological needs that contribute toward well-being when satisfied but cause ill-being if not satisfied. These needs are competence, relatedness, and autonomy. The satisfaction of these needs is crucial for optimal functioning, personal and social development, and positive mental health. One's self is developed via organismic integration through the satisfaction of these needs. As such, these needs form the basis for human motivation.

Motivation

Motivation is concerned with intentionally applying energy in a particular direction with persistence toward certain goals. There are two types of motivation: intrinsic and extrinsic. Intrinsic motivation refers to autonomously acting for the sake of gaining inherent satisfaction from an activity itself. It is vital for social and cognitive development and a primary source of joy and vigor. Extrinsic motivation involves performing actions that work toward attaining specific outcomes (Deci and Ryan 1995). Personal and social development, building meaningful relationships, and

contributing to society can be viewed as intrinsic motivators since achieving them provides an inherent reward. Acquiring money, becoming famous, and being attractive can be seen as extrinsic motivators since they serve as instruments to reach other external rewards rather than being rewards themselves.

STD conceptualizes self-regulation as occurring on a continuum. Motivation, along this continuum, varies in terms of autonomy depending on the degree to which the value and regulation of the behavior are internalized and integrated (Deci et al. 1996). Internalization refers to the acceptance of regulations and includes the alteration of external occurrences into internal progresses. Integration is concerned with the transformation of regulations and external processes into one's own sense of self. By using internalization and integration, people try to increase the autonomy of their behaviors to feel more self-determined. Though both autonomous and externally controlled behaviors are intentional, motivated behaviors change within the self-determination continuum depending on the level of their formation through internal or external means. In accordance with SDT, OIT details the varying types of motivations and external factors that increase or decrease the internalization and integration of regulations (Ryan and Deci 2000).

Types of Motivation

Amotivation

At the lowest end of the self-determination continuum lies amotivation. It consists of lack of intention to act, nonregulation, and lack of control. In this state, people are reluctant to act either because they do not find the activity valuable, do not believe that the activity will result in a beneficial outcome, or do not feel competent enough for the completion of the activity.

Extrinsic Motivation

Next on the self-determination, continuum lies extrinsic motivation, which includes external regulation, introjected regulation, identified regulation, and integrated regulation.

External Regulation

External regulation is the least autonomous type of extrinsic motivation. It includes behaviors performed in order to gain an external reward, avoid a peripheral punishment, or comply with a contextual demand. Behaviors in external regulation are non-internalized and initiated and maintained by external contingencies. As such, these behaviors, though intentional, are dependent upon, and so controlled by, outside factors.

Introjected Regulation

A somewhat more autonomous but still external type of extrinsic motivation is introjected regulation. Introjection is the partial internalization of a regulation without integrating it into one's own perception of self. It includes a relative self-control where operative behaviors are performed due to the pressure of gaining internal rewards or avoiding internal punishments. Internal rewards include pride and ego boosts, while internal punishments include guilt, shame, or anxiety. In introjected regulation, an action is performed because it is thought to be mandatory or customary. As such, introjected regulation is representative of contingent self-esteem and feelings of self-worth. Contingent self-esteem refers to thinking well of one's self based on fitting certain standards or fulfilling external expectations due to social comparisons. In introjected regulation, even though the behavior is internal in that it no longer needs external pressure to be performed, its regulatory processes are still external to one's perception of the self. Thus, although introjected regulation includes internally driven behavior, the behavior is not accepted in its entirety as one's own and remains external to the self.

One specific form of introjected regulation is ego involvement. Ego involvement concerns the motivations people act upon to display competence or evade incompetence to maintain their self-worth. Ego involvement is not representative of self-determination in that it is initiated by an internal force that is not integrated. It is a controlling form of regulation, rather than an autonomous one. As such, even if ego involvement does boost self-esteem, that self-esteem is bound to be contingent upon one's continuous success.

That is why though introjected regulation is found to be positively related to putting in more effort, it is also positively correlated with anxiety and feelings of worthlessness in times of failure.

Identified Regulation

An even greater autonomous form of extrinsic motivation is identified regulation. Identified regulation entails attributing personal importance and conscious valuing to a regulation. The behavior is engaged willingly since the regulation, now important and valuable, is accepted as one's own. Thus self-determination for external stimuli occurs.

Integrated Regulation

The most autonomous type of extrinsic motivation is integrated regulation. Integrated regulation involves the congruence of regulation with one's own values and needs resulting in a coherent sense of self. Thus, one becomes self-determined with respect to a behavior that is formed through the integration of an external regulation. Though integrated regulation shares similar characteristics with intrinsic motivation, it is still classified as an extrinsic motivation. This is because behaviors in integrated regulations are performed to attain specific goals, while in intrinsic motivation, they are executed for the inherent joy of the behavior itself.

Intrinsic Motivation

Intrinsic motivation is the most autonomous and self-determined regulation, taking its place at the highest end of the self-determination continuum. In intrinsic motivation, a behavior is performed autonomously without any external demands and constraints. As such, the only reward desired from such behavior is the spontaneous inherent experience of joy. This self-determined behavior enriches the development of one's self through organismic integration, resulting in a more integrated, stronger sense of self-esteem and self-worth. This true self-esteem differs from contingent self-esteem in that it develops through behavior that stems from internal desires. As such, while contingent self-esteem is temporary and negatively related with mental health, true self-esteem is more solid, stable, and secure and is positively related to well-being (Orth 2017).

Conclusion

A behavior's level of autonomy is an important indicator of the consequences of that behavior in that the more autonomous a behavior is, the better the quality of its consequences. In other words, the higher a behavior is on the self-determination continuum, the better outcomes it will produce. Numerous studies have been conducted on the effect of different types of motivation on the consequences of behavior. These studies determined that as the self-determination of a motivation increases, the behavior becomes more willingly and enjoyable conducted. This results in better and higher conceptual learning and understanding, information processing and recall, performance, feeling of competence, and overall well-being. Introjection, on the other hand, was found to be positively correlated with anxiety and maladaptive coping (Deci et al. 1996). This shows that though individuals acting on introjected regulation or other extrinsic motivations may be successful, they are also likely to be suffering from anxiety and a constant fear of feeling worthless if they fail. Thus, not only the resulting performance but also the underlying motivation should be studied before analyzing the outcomes of behaviors so that people may reach true self-esteem rather than contingent self-esteem and thus enhance their well-being.

References

- Deci, E. L., & Ryan, R. M. (1995). Human autonomy. In *Efficacy, agency, and self-esteem* (pp. 31–49). Boston: Springer.
- Deci, E. L., Ryan, R. M., & Williams, G. C. (1996). Need satisfaction and the self-regulation of learning. *Learning and Individual Differences, 8*(3), 165–183.
- Orth, U. (2017). The lifespan development of self-esteem. In J. Specht (Ed.), *Personality development across the lifespan* (pp. 181–195). San Diego: Elsevier Academic.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68.
- Ryan, R. M., & Deci, E. L. (2006). Self-regulation and the problem of human autonomy: Does psychology need choice, self-determination, and will? *Journal of Personality, 74*(6), 1557–1586.

Introjected Value

- ▶ [Conditions of Worth \(Rogers\)](#)

Introjection

- ▶ [Introjected Regulation](#)

Introjection (Defense Mechanism)

Laura Cariola
University of Edinburgh, Edinburgh, UK

Synonyms

[Identification](#); [Incorporation](#); [Internalization](#)

Definition

Introjection as a defense mechanism refers to the internalization of mental representations attributed to an external object, or the so-called introject, introjected object, or internal object (Rycroft 1995).

Introduction

Although the terms introjection, internalization, identification, and incorporation are often used interchangeably and inconsistently (Conte and Plutchik 1995), they are also considered as distinctive modes of psychological development (Meissner 1981) and are opposite to the externalizing process of projection.

Introjection is assumed to be part of normative development and it continues throughout the life cycle. Introjections of external objects enable one to build mental representations and schemas of the

self and the external world, and they include various cognitive modes, such as sensorimotor, lexical, and symbolic (Piaget 1954). By introjecting new experiences of the external world, existing mental representation and schemas are combined and extended, and self-representations are reconfigured. Introjects are also often distorted by unconscious fantasies, and followed by secondary identifications.

Whereas primary identification relates to early infancy when the self is not experienced as a differentiated identity from external objects, secondary identification takes place at a higher developmental level and relates to the process of identifying with an external object that then is transformed into an internal object (Freud 1917/ 2001a). Such secondary identification aims to reduce feelings of separation and hostility, and increase feelings of closeness, between the self and the external object, and thus it is regarded as a defense mechanism (Freud 1923/2001b).

Introjects and the Development of Personality

By drawing on Freud's structural model of the mind (1923/2001b), introjected objects become part of an individual's self-schema and the structure of the psychic apparatus. For example, the demands of parental figures may be internalized as an integral part of the individual to the extent that ego boundaries become blurred and a sense of separate identity may be lost. Parents may be also represented in the form of simplistic components, such as the good or bad parent figure, that become source of high or low self-esteem respectively (Klein 1997; see Bateman and Holmes 1999).

Anna Freud (1936) outlines in *Identification with the Aggressor* that assimilating oneself to and identifying with a threatening external object aims to avoid feelings of anxiety and to control aggression by internalizing aggressive characteristics of the dreaded object. Such introjections with an anxiety-provoking object represent the assimilation of the anxiety and traumatic experience (see also Freud 1920/2001c). Identification with the

attributes of the aggressor also transforms the passivity and weakness of the attacked person into the strength and active role associated with the attacker. Identification with the aggressor is seen as a normal part of development of the super-ego, but in later stages, particularly in combination with projection, introjection is associated with the development of symptoms of paranoia. For example, when a husband projects his own impulses of unfaithfulness onto his faithful wife and counteracts with obsessional jealousy (Freud 1936, p. 120).

Introjection and Psychopathology

Threatening experiences and negative emotions can also be transformed into unexplained bodily symptoms, such as pain and somatic illness – commonly referred to as conversion disorder. These physical symptoms relate to the introjection of attributes of an ambivalent object where he afflicted bodily organ then represents the introjection (Fenichel 1945). Such hypochondriasis enables the individual to ward off feelings of guilt, responsibility, and instinctual impulses by complaining about the illness or to complain that others ignore his or her wishes for dependency (Vaillanet 1992).

Conclusion

Introjection is a normative process that results in changes of the ego, including behavior, personality, and schemas. By experiencing and interacting with the external world, these changes enable an individual to develop and maintain a sense of self-esteem and interpersonal relationships. As a defense, an external object can be transformed into an internal object to reduce feelings of separation and hostility, and increase feelings of closeness, between the self and the external object.

Cross-References

- ▶ [Conscious, Preconscious, and Unconscious](#)
- ▶ [Defense Mechanisms](#)
- ▶ [Projection \(Defense Mechanism\)](#)

- ▶ [Psychoanalysis](#)
- ▶ [Psychodynamic Perspective](#)
- ▶ [Structural Model](#)

References

- Bateman, A., & Holmes, J. (1999). *Introduction to psychoanalysis: Contemporary theory and practice*. London: Routledge.
- Fenichel, O. (1945). *The psychoanalytic theory of neuroses*. New York: Norton.
- Freud, A. (1936). *The ego and the mechanisms of defence*. London: The Hogarth Press and the Institute of Psycho-Analysis.
- Freud, S. (2001a). Mourning in melancholia. S. E. 14 (pp. 237–260). London: Hogarth Press (Original work published 1917).
- Freud, S. (2001c). *Beyond the pleasure principle, group psychology, and other works*. S.E. 18. London: Hogarth Press. (Original work published 1920).
- Freud, S. (2001b). *The ego and the id*. S. E. 19. London: Hogarth Press (Original work published 1923).
- Klein, M. (1997). Notes on some schizoid mechanism. In *Envy and gratitude and other works 1946–1963* (pp. 1–24). London: Random House Press (Original work published 1946).
- Meissner, W. W. (1981). *Internalization in psychoanalysis*. New York: International University Press.
- Rycroft, C. (1995). *A critical dictionary of psychoanalysis*. London: Penguin.
- Piaget, J. (1954). *The construction of reality in the child*. New York, NY: Basic Books.
- Plutchik, R. (1995). A theory of ego defenses. In H. R. Conte & R. Plutchick (Eds.), *Ego defenses: Theory and measurement* (pp. 13–37). New York: Wiley.
- Vaillanet, G. (1992). *Ego mechanisms of defense: A guide for clinicians and researchers*. Washington, DC: American Psychiatric Press.

Intropin

- ▶ [Dopamine](#)

Introspection

- ▶ [Meditation](#)
- ▶ [Self-Dialogue](#)
- ▶ [Self-Reflection](#)

Introspectionism

Rui Miguel Costa

WJCR – William James Center for Research,
ISPA – Instituto Universitário, Lisbon, Portugal

Definition

Introspection is the method of studying psychological processes based on systematic self-observation of thoughts, perceptions, feelings, and bodily sensations. The term “introspectionism” appears to have been introduced by behaviorist critics who subsumed all the diverse views and meanings of introspection under a common umbrella; there was never an introspectionist movement (Danziger 1980; Freitas Araujo and Maluf de Souza 2016).

Wilhelm Wundt (1832–1920)

Wilhelm Wundt is the psychologist most closely linked to introspection in experimental psychology. Yet he made very limited use of introspection, and when he did, it was essentially for recording reactions to the presentation of external stimuli in the study of perception and sensation. In this regard, he distinguished between *selbstbeobachtung* (self-observation) and *innere wahrnehmung* (internal perception), which have been both translated to English as introspection. It was on internal perceptions that experimental psychology should rely, that is, quick and attentive observations to avoid the interference of self-reflection and insufficient memory (Danziger 1980). The greater reliance of experimental psychology on introspection was a later development, one criticized by Wundt (Blumenthal 1975; Danziger 1980).

In what Wundt differed more from behaviorists was not on experimental methods, but rather on the “mentalist” interpretation of the experimental results (Danziger 1980). According to Wundt, each mental phenomenon is an indivisible whole

he called apperceptive synthesis. Any component parts of a mental event should be seen as hypothetical constructs that are never observable in isolation (Blumenthal 1975). The succession of psychological events is not embedded in the ordinary space-time framework; therefore, they cannot be predicted in the way physical events can. In other words, psychic causality cannot be explained in terms of physical causality as it is not clear how one apperceptive synthesis causes another apperceptive synthesis in manners similar to what happens with the objects of the physical world (Danzinger 1979). Moreover, each apperceptive synthesis comes with an intrinsic sense of volition, whose intensity can nevertheless vary; this makes that apperceptive syntheses should be described in terms of intentions and goals (Danzinger 1979).

William James (1842–1910)

In other context of the late nineteenth century and early twentieth century, William James defended introspection as a method of scientific investigation in psychology, albeit noting its potential fallibility (Freitas Araujo and Maluf de Souza 2016; James 1884). He noted the distinction between “the immediate *feltness* of a mental state and its perception by a subsequent act of reflection” (James 1884, p. 1), the latter being inevitable when one wants to give names to what was experienced in order to communicate it; thus, one should be cautious that the subsequent self-reflection could interfere in the observed experience, a problem noted by Wundt. James additionally observed that the stream of consciousness contains both substantive and transitive parts, as he called them. The substantive parts are immediate sensory and imaginary experiences that can be held in mind for a certain period, whereas the transitive parts refer to the relations between the substantive ones; because transitive parts pass rather quickly, they can be difficult to note. For James, many psychologists using introspection were ignoring these transitive parts, which have their own specific affect and influence on the mind. With these caveats in mind, introspection

was seen as indispensable for psychological investigations (Freitas Araujo and Maluf de Souza 2016; James 1884).

Introspection appears to have been crucial for the development of the influential James-Lange theory of emotion. In this case, introspection of bodily and emotional states helped to conclude that feelings result from the perception of visceral and muscular changes in response to external stimuli (James 1894). This theory has received empirical support (Craig 2011) but also criticisms on the basis that subjective emotional experiences cannot be entirely explained by awareness of peripheral physiological responses (Cannon 1927; Northoff 2012). In any case, introspection is needed to assess the subjective experiences in the study of emotion.

James’ introspection was also crucial for his pioneer work of describing mystical experiences (James 1902), as he resorted to introspective research on his own mystical states, in parallel with the study of others’ reports of such experiences. This is a particular good example of how attentive introspection gives visibility to experiences that many people ignore or have difficulties putting in words. According to James (1902), mystical experiences are transient events, “more like states of feeling than like states of intellect” (p. 370), hence difficult to transmit to others who had not felt them. “Although so similar to states of feeling, mystical states seem to those who experience them to be also states of knowledge” (p. 370), as ideas emerge full of significance, but often in a rather inarticulate form. One can feel as if lifted above the normal sense of self, as if the usual sense of self is in suspension. And these states always have a long-lasting effect on the mind (James 1902). More recently, to these features others have been added, such as feelings of eternity or infinity, fusion with a larger whole, experiencing things as more real than real, being as if outside of time, and loss of the usual sense of space and time (Barrett and Griffiths 2018; Hood et al. 2001).

The investigation on mysticism continues to the present day, relying on introspection with addition of self-report measures, experimental

methodologies, and brain imagining techniques (Barrett and Griffiths 2018; Hood et al. 2001; Levin and Steel 2005) with, among other things, implications for the study of the subjective perception of time (Berkovich-Ohana and Wittmann 2017; Wittmann 2015) and potential therapeutic effects of psychedelics (Barrett and Griffiths 2018).

Modern Trends

Introspection is the method for observing mental events as they flow in consciousness. This means that its aim is not to judge what is right or wrong in them from analytical point of views that obviously have complementing roles in psychology. Self-reported alterations in the perception of time or in the intensity of body awareness do have psychological meaning and neurophysiological correlates regardless of the time of the clock or of the weight shown by the weighing scale (Bervokich-Ohana et al. 2013; Berkovich-Ohana and Wittmann 2017; Costa et al. 2016; Speth et al. 2016; Wittmann 2015). Unusual visual phenomena, such as synesthesias, are real for those who see them and can only be communicated by words (Banissy et al. 2014; Nielsen et al. 2013).

Furthermore, psychological meaning can be ascribed to reports that are not objectively right; for example, difficulties describing emotions and bodily sensations that objectively take place might reflect psychological problems, defense mechanisms, less intense emotional reactions, and lower sexual desire (Costa et al. 2018). In cases like these, correlations with other variables are more important than face value. A related problem to introspection lies in that many of mind's processes are unconscious or have unconscious determinants, but knowledge of unconscious processes has to be derived from observations of conscious processes, including self-observations. Freud's self-analysis seems a clear example, and Freudian theories about the influence of unconscious processes on self-reported conscious ones started to be studied empirically (Costa et al. 2018).

Another critique to introspection as a scientific method is that it is impossible to divide the person who observes from the person who is observed, making observations unreliable (Freitas Araujo and Maluf de Souza 2016). However, others noted that the value of introspection lies precisely in a kind of fusion between observer and observed by which inner and outer experiences are unified in a single one in a manner akin to mindfulness meditation (Stanley 2012). In this sense, introspection is not attention to the self as abstracted from the external world, because both the inner and the outer worlds are experienced simultaneously as single, indivisible, psychological events. Interestingly, such observed-observer unity in introspection is likely to bring a distance from the studied mental phenomena by avoiding the interference of self-reflection, which comes when the self who observes is split from the observed self (Stanley 2012). This can be complemented by later analytical inquiries.

Introspection is clearly necessary in the field of altered states of consciousness, where the subjective experiences need to be compared with other subjective experiences: this includes the study of meditation, hypnosis, flow, psychoactive substances, sexual experiences, and spiritual experiences (Bervokich-Ohana et al. 2013; Berkovich-Ohana and Wittmann 2017; Costa et al. 2016; Levin and Steel 2005; Nielsen et al. 2013; Speth et al. 2016; Studerus et al. 2010; Tagliazucchi et al. 2016; Wittmann 2015; Winkler and Csémy 2014).

These are catchy examples as most phenomena occurring in consciousness are likely only possible to be studied, at least partly, through introspection. The best way of using it is an open question.

References

- Banissy, M. J., Jonas, C., & Cohen Kadosh, R. (2014). Synesthesia: An introduction. *Frontiers in Psychology*, 5, 1414.
- Barrett, F. S., & Griffiths, R. R. (2018). Classic hallucinogens and mystical experiences: Phenomenology and neural correlates. *Current Topics in Behavioral Neurosciences*, 36, 393–340.

- Berkovich-Ohana, A., & Wittmann, M. (2017). A typology of altered states according to the consciousness state space (CSS) model: A special reference to subjective time. *Journal of Consciousness Studies*, *24*, 37–61.
- Bervokich-Ohana, A., Dor-Ziderman, Y., Glicksohn, J., & Goldstein, A. (2013). Alterations in the sense of time, space, and body in the mindfulness-trained brain: A neurophenomenologically-guided MEG study. *Frontiers in Psychology*, *4*, 912.
- Blumenthal, A. L. (1975). A reappraisal of Wilhelm Wundt. *American Psychologist*, *30*, 1081–1088.
- Cannon, W. B. (1927). The James-Lange theory of emotions: A critical examination and an alternative theory. *American Journal of Psychology*, *39*, 106–124.
- Costa, R. M., Pestana, J., Costa, D., & Wittmann, M. (2016). Altered states of consciousness are related to higher sexual responsiveness. *Consciousness and Cognition*, *42*, 135–141.
- Costa, R. M., Oliveira, G., Pestana, J., Costa, D., & Oliveira, R. F. (2018). Do psychosocial factors moderate the relation between testosterone and female sexual desire? The role of interoception, alexithymia, defense mechanisms, and relationship status. *Adaptive Human Behavior and Physiology*. <https://doi.org/10.1007/s40750-018-0102-7>.
- Craig, A. D. (2011). Significance of the insula for the evolution of human awareness of feelings from the body. *Annals of the New York Academy of Sciences*, *1225*, 72–82.
- Danziger, K. (1979). The positivist repudiation of Wundt. *Journal of the History of the Behavioural Sciences*, *15*, 205–230.
- Danziger, K. (1980). The history of introspection reconsidered. *Journal of the History of the Behavioural Sciences*, *16*, 241–262.
- Freitas Araujo, S., & Maluf de Souza, R. (2016). "... to rely on first and foremost and always": Revisiting the role of introspection in William James's early psychological work. *Theory & Psychology*, *26*, 96–111.
- Hood, R. W., Ghorbani, N., Watson, P. J., Ghramaleki, A. F., Bing, Davision, H. K., ... Williamson, W. P. (2001). Dimensions of the mysticism scale: Confirming the three-factor structure in the United States and Iran. *Journal for the Scientific Study of Religion*, *40*, 691–705.
- James, W. (1884). On some omissions of introspective psychology. *Mind*, *9*, 1–29.
- James, W. (1894/1994). The physical basis of emotion. *Psychological Bulletin*, *101*, 205–210.
- James, W. (1902/1917). *The varieties of religious experience*. New York: Longmans, Green, and Co.
- Levin, J., & Steele, L. (2005). The transcendent experience: Conceptual, theoretical, and epidemiologic perspectives. *Explore*, *1*, 89–101.
- Nielsen, J., Kruger, T. H. C., Hartmann, U., Passie, T., Fehr, T., & Zedler, M. (2013). Synesthesia and sexuality: The influence of synaesthetic perceptions on sexual experience. *Frontiers in Psychology*, *4*, 751.
- Northoff, G. (2012). From emotions to consciousness – a neuro-phenomenal and neuro-relational approach. *Frontiers in Psychology*, *3*, 303.
- Speth, J., Speth, C., Kaelen, M., Schloerscheidt, A. M., Feilding, A., Nutt, D. J., & Carhart-Harris, R. L. (2016). Decreased mental time travel to the past correlates with default-mode network disintegration under lysergic acid diethylamide. *Journal of Psychopharmacology*, *30*, 344–353.
- Stanley, S. (2012). Intimate distances: William James' introspection, Buddhist mindfulness, and experiential inquiry. *New Ideas in Psychology*, *30*, 201–211.
- Studerus, E., Gamma, A., & Vollenweider, F. X. (2010). Psychometric evaluation of the altered states of consciousness rating scale (OAV). *PLoS One*, *5*, e12412.
- Tagliazucchi, E., Roseman, L., Kaelen, M., Orban, C., Muthukumaraswamy, S. D., Murphy, K., ... Carhart-Harris, R. (2016). Increased global functional connectivity correlates with LSD-induced ego-dissolution. *Current Biology*, *26*, 1043–1050.
- Winkler, P., & Csémy, L. (2014). Self-experimentations with psychedelics among mental health professionals: LSD in the former Czechoslovakia. *Journal of Psychoactive Drugs*, *46*, 11–19.
- Wittmann, M. (2015). Modulations of the experience of self and time. *Consciousness and Cognition*, *38*, 172–181.

Introspective

► Introversion

Introversion

Bernard Davidson and Christopher Drescher
Department of Psychiatry and Health Behavior,
Augusta University, Augusta, GA, USA

Synonyms

Avoidant; Introspective; Quiet; Reserved; Self-reflective; Shyness; Solitary

Definition

Considerable variation exists in how introversion is defined. Carl Jung originally defined

introversion to refer to relatively stable characteristics of personality marked by a turning inward or self-reflective introspective focus of energy (Vinas 2014). Many modern personality psychologists view introversion/extraversion as a bipolar dimension, with introversion typically being viewed as the absence of the qualities of extraversion. Extraversion is conceptualized as being comprised as social effectiveness, stimulus seeking, and gregariousness, while introversion has generally been treated as the absence of these extraverted qualities and the presence of shyness and social avoidance (Wilt and Revelle 2009). However, others have stressed the positive qualities of self-reflection, inner directedness, and self-satisfaction that characterize introversion (Cain 2012).

Introduction

Jung was the original theorist to use the term introversion. Jung (1923) contrasted introversion, to the outgoing often other social focused and affiliative behaviors comprising extraversion. While Jung acknowledged that individuals typically display both introverted and extraverted characteristics, he stressed the tendency for one aspect to be more dominant. Jung initially conceptualized these as different types of behavioral expressions or traits and not as a bipolar dimension with introversion seen as a lesser expression of the more favorable extraverted end of the continuum.

Hans Eysenck (1957, 1967) further studied introversion (and extraversion) positing that biological underpinnings drive these differences in behavior, with introverts showing a greater sensitivity to arousal, thereby rendering them more likely to retreat from higher levels of social stimuli. Eysenck's arousal theory has received moderate research support (Matthews and Gilliland 1999), and his various tools to measure introversion/extraversion remain in use. As one of the first researchers to systematically and empirically investigate introversion, Eysenck's influence is evident in modern introversion work.

Introversion and extraversion continue to be traits that are commonly addressed in various models of personality (Wilt and Revelle 2009). Perhaps the most influential of the modern personality theories is Robert McCrae and Paul Costa's Five-Factor Model (FFM) of personality (Costa and McCrae 1992a). This theory identifies five basic personality dimensions of which extraversion/introversion is one. The core feature of extraversion is the disposition to engage in social behavior; hence, introversion is a lack of inclination toward social engagement.

Recent attention has been directed to the positive qualities of introversion, as referred to in Susan Cain's (2012) book on this topic. Cain presents an exhaustive review of how this trait has largely been devalued and emphasizes the positive qualities of introversion. This is contrary to the populist notion of extraverted gregariousness and outer directedness that minority world culture often equates with health and happiness. The popularity of Cain's (2012) book shows a reinigorated interest in the positive qualities of introversion and the *contextual* arenas where the proclivity to enact a more self-reflective inward-focused approach to environmental demands offers advantages as compared to an outward-focused and stimulus seeking temperamental and behavioral manner. More recent descriptions have also recognized the term "ambiversion" to refer to the capacity for individuals to possess qualities of both of these traits or behavioral expressions (Grant 2013), paralleling Jung's (1923) initial assertions.

Measurement

The proliferation of multiple theories of personality has led to the development of various measures, many of which include an introversion/extraversion factor. For the most part, these measures treat introversion as one pole of an introversion/extraversion dimension, with the term "extraversion" typically referring to the whole scale.

Eysenck created a number of personality measurements that included an extraversion/introversion dimension, starting with the Maudsley Personality Inventory (MPI; Eysenck 1959).

This scale defined introversion as a lack of the extraverted qualities of being outgoing and uninhibited. Later versions of Eysenck's personality inventories built on the MPI including the Eysenck Personality Questionnaire-Revised (EPQ-R; Eysenck and Eysenck 1992) and the Eysenck Personality Profiler (EPP; Eysenck and Wilson 1991).

Multiple measures associated with the FFM of personality, such as the Personality Inventory Revised (NEO-PI-R; Costa and McCrae 1992b) and NEO Five-Factor Inventory (NEO-FFI; Costa and McCrae 1992b), are commonly used to measure introversion/extraversion. These measures define introversion as an absence of the extraversion factor and its components, such as sociability, assertiveness, and positive emotionality.

One of the most well-known, and controversial, personality measures, the Myers-Briggs Type Indicator (MBTI; Briggs and Myers 1998), assesses distinctive Jungian personality "types," one of which is the introvert (vs. the extrovert). In other words, the MBTI is a categorical measure. On the MBTI, introverts are people who orient their energy to the inner world. The MBTI has been criticized regarding its ability to reliably identify specific personality "types," yet its popularity and place in the public consciousness is significant.

Biological Components

As early as 1929, Jung speculated that a link might eventually be uncovered between his typology and physiology. Modern empirical work would seem to bear this out. For example, introversion is similar across cultures (Allik 2005) indicating a strong biological component. The search to understand introversion from a biological perspective has been present since the mid-twentieth century.

Gray (1973) theorized about the neural basis of introversion using his Behavioral Inhibition System (BIS) and Behavioral Activation System (BAS). He proposed that sensitivity of the BIS correlates with increased anxiety, while sensitivity of the BAS correlates with increased impulsivity. It was further suggested that anxiety correlates with introversion, while impulsivity correlates

with extraversion. At the neurobiological level, the central aspect of the BIS system is a "septohippocampal comparator which detects mismatch between the actual and predicted state of the world" (Matthews and Gilliland 1999, p. 585). Gray conceived the BAS as mesolimbic dopaminergic pathways ascending from the brainstem (Matthews and Gilliland 1999). This theory suggests that persons with a more active BIS and a less active BAS would be more introverted. Smillie (2008) has integrated Gray's theory with related theories of reinforcement sensitivity to advance neuroscientific understandings of personality traits from this perspective.

Eysenck's (1967) introversion-arousal hypothesis contrasted with Gray's theory. Eysenck suggested that introverts have higher baseline levels of arousal in the ascending reticular activating system than extroverts. Eysenck assumed that people would seek out environments that create an optimal level of arousal. As such, introverts would seek out less arousing contexts, while extraverts would do the opposite. On balance empirical evidence regarding Eysenck and Gray's theories suggests that each theory is successful at explaining some empirical findings regarding introversion while falling short in other areas; however, Eysenck's theory explains a broader range of phenomenon (Matthews and Gilliland 1999).

Temperament research is also relevant to understanding the biological basis of introversion. Kagan and Snidman's (2004) longitudinal study of temperament suggests that from an early age, persons can be sorted into relatively stable "low-reactive" and "high-reactive" groups. At the neurobiological level, persons in the high-reactive group display amygdala sensitivity that translates to introversion at the behavioral level, while the low-reactive group displays the opposite pattern (i.e., extraversion). Kagan and Snidman have suggested that these findings align well with Jung's original typology of introversion/extraversion.

Another influential neuroscientific area of study regarding introversion is the dopamine hypothesis of introversion, which posits that introversion is associated with lower levels of dopamine in the brain's reward system. This

hypothesis is intuitively appealing, as increased activity of the dopamine reward pathways in the brain is associated with a number of traits related to extraversion (e.g., talkativeness, positive affect). However, research from various perspectives gives mixed support to this hypothesis (Wacker and Smillie 2015).

Finally, findings from evolutionary psychology are relevant to understanding introversion at the biological level. Introversion likely has reproductive costs and benefits. Introversion is associated with fewer lifetime sexual partners (reproductive cost) and fewer hospitalizations (reproductive benefit) (Nettle 2005). The introversion/extraversion trait appears to be determined by multiple genes and variably beneficial depending on context.

Developmental Course

Temperamental factors (e.g., high reactivity) underlying introversion are present in infants (Kagan and Snidman 2004). While some variation in development will be impacted by environmental influences, an infant with a highly reactive temperament is unlikely to develop an extraverted personality as an adolescent. Extraversion/introversion emerges as an important personality trait in young childhood and remains so through adolescence and into adulthood (Tackett et al. 2012). Introversion is relatively stable within adults regardless of life events, although all facets of introversion tend to increase with age (McCrae et al. 2005). The most pronounced effects are a decrease in excitement seeking and positive affect with age (McCrae et al. 2005).

Clinical Considerations

Being introverted is not a pathological state but rather a variation on normal personality. However, introversion is related to some clinical concerns. Introversion negatively affects the course of depression, especially when researchers consider a lack of positive affect as the core feature of introversion (Clark et al. 1994). Others have suggested that extreme instances of social introversion (i.e., withdrawn traits and shyness) may underlie personality disorders (de Clercq et al. 2009).

Given introversion's clinical relevance, the DSM-5 Personality and Personality Disorder Work Group considered including it as a personality facet in the DSM-5. However, the DSM-5 ultimately decided against including personality traits in the main text. The personality traits were instead included in DSM-5's section III, Emerging Measures and Models. This section does not use the word introversion, but the traits of withdrawal, intimacy avoidance, anhedonia, depressivity, and restricted affect are facets of the opposite pole of extraversion, termed "detachment."

Cultural Differences

The structure of personality, which includes an extraversion/introversion factor, is *relatively* universal across cultures (Allik 2005). However, differences in mean levels of extraversion are present. Persons from minority world contexts (e.g., the United States and Europe) tend to be less introverted than their majority world counterparts in Asia and Africa (Allik 2005). These findings align with anecdotal reports of Asian and Asian-American students displaying a more introverted style than Caucasian students (Cain 2012; Davidson et al. 2015).

Despite some evidence of differences, it is important to note that the differences observed between ethnogeographic groups are often small in comparison to within group variation in introversion. Furthermore, cross-cultural research of this nature is fraught with methodological difficulties (e.g., translation of measures, identification of comparable samples). As such, reliable cultural differences in the overall level of introversion are difficult to establish. However, more subtle and complex cultural differences in introversion and its relation to other psychological processes may be present. For example, Trapmann et al. (2007) meta-analysis indicated that introversion might aid or impede academic success depending on nationality.

Nuanced gender differences in introversion are present across cultures. Men are more introverted than women in some ways (men are less warm and gregarious and experience less positive emotions), while women are more introverted than men for other facets of introversion (women are

less assertive and seek less excitement) (Costa et al. 2001). The magnitude of gender differences varies across cultures, with more individualistic cultures showing greater gender differences in the facets of introversion (Costa et al. 2001).

Contextual Considerations

Little (2010) introduced the term “restorative niches” to describe how extraverts and introverts may differ in seeking out optimal levels of stimulation in their environments to reestablish equilibrium. While describing that extraverts can function in quiet low stimulus settings as well as introverts in high stimulating settings (the inverse of their usual choice), it is described how performance (e.g., cognitive and social) will decline over time, respectively, for each under these circumstances. In order to regain an optimal equilibrium, it is posited that extraverts will seek out increased stimulation, while introverts will seek out more quiet and less stimulating interactions and situations. This refueling or seeking a “restorative niche” enables the individual to regain their optimal balance. These observations are in line with the descriptions of “goodness of fit” that McClowry et al. (2008) describe in their description of temperament and personality as operating within environments that vary in capacity to minimize or maximize trait expression and function. A congruent fit between demands of the environment and temperament and personality style likely results in optimal performance, while a poor fit increases chances for maladaptive performance (Davidson et al. 2015).

Example of Contextual Considerations: Implications for Education

As has been poignantly described by Cain (2012), the bias toward viewing the introvert as possessing less of the positive extraverted qualities and skill sets still persists. The implications for education have been identified as a major area of concern for consideration in this regard. For example, in a medical school education setting, Davidson et al. (2015) observed how the reduced sociability and increased reflective learning style of introverts are commonly perceived by their “preceptors” or instructors as representing disinterest. A common

bias in this setting is to view the more socially active, vocal, and animated behavior of extraverts as representing greater interest and involvement. Conversely, more self-reflective, introspective, and solitary problem solving is often interpreted as isolative, avoidant, and withdrawn. Much of the medical school curriculum that calls for active engagement and group interaction (e.g., problem-based learning) leaves introverts at a decidedly disadvantage. Does this reflect a poor goodness of fit between preferred style (basic temperamental tendencies) and environmental and cultural demands?

Davidson et al. (2015) collected anecdotal evidence from introverted medical students and found the following themes quite common. Introverted students are aware that their preferred thinking and interaction styles are often at odds with training contexts. They often report feeling like misfits, harboring fear toward giving a wrong verbal answer, struggling to break into a conversation, and experiencing frustration with perceiving the expectation to talk more while desiring additional time to reflect prior to responding. This is not to suggest that introverted students do not need to be proficient in engaging in group discussion and problem solving but rather that their preceptors, who often hold considerable power over their academic fate, would be wise to learn how these individuals process information and enact group interaction, in differing, not inferior ways. Some comments from introverted students they have observed include, “I have always been the quiet keep-to-myself type and thought most clearly when there were fewer outside stimuli intruding on my thoughts,” “One of the issues that people may have with introverts in general is likely that they don’t know what’s going on with them, people said I was intimidating and standoffish just because I didn’t talk much,” and “if extraverts are able to reduce their tendency to lead the group, there will be more freedom and room for introverts to contribute,” (p. 101). With curriculum expectations favoring thinking aloud, blurting out quick answers, and rapid responding in general, this hardly provides an optimal goodness of fit for introverted students, to seek restorative niches to rebalance their optimal levels of functioning.

Davidson et al. (2015) examined strategies to enhance medical school education for introverts; however there is no reason why these should not be applicable to education as a whole. They advise instructors to recognize the positive aspects of introversion, appreciating the self-reflective analysis of problems before rushing to answer, as well as appreciating the manner in which introverted students “refuel” by turning inward rather than seeking input from others at times they find the need for introspective critical analysis. Also, there is a need to recognize that evaluation methods common to many school environments appear biased to the extravert with rating forms and observational modes favoring quick responding, fast engagement in group discussion, and a rapid proclivity to lead discussions. Less obvious are valuing aspects of introversion such as “thinks before speaks,” “offers a synthesis of information,” and “listens to others before engaging” (Davidson et al. 2015) would more accurately reflect the knowledge base and contributions of introverts.

It is also critical for educators to distinguish between introverted behavior and anxious behavior. Introverts, while generally quiet and introspective, do not necessarily manifest anxious behavior when acting in uncharacteristic manners. For example, an introvert, asked to make a speech in front of a crowded auditorium, can prepare in such a manner to lessen discomfort by practice, preparation, and realistic expectations. If this behavior were to be so dysfunctional such that avoidance was dominant that it interfered with the individual’s progress toward goal achievement that would likely represent a clinical level of anxiety. Introverted individuals do enjoy interaction and are able to stay focused. Anxious individuals worry about future events and tend to manifest avoidance as a way of dealing with this. Subjecting non-anxious, introverted students to clinical interventions designed to reduce anxiety may be counterproductive and invalidating.

Conclusion

Introversion, a trait characterized by a self-reflective, inward turning, and often solitary

approach to intellectual analysis and social interaction, has been included in descriptions of personality since Carl Jung first introduced his theory of personality types in 1921. His original intent was to contrast this temperamental expression with the separate trait of extraversion (outgoing, energetic, affiliative). Introversion-extraversion continues to be one of the most popular traits incorporated in personality theories (Costa and McCrae 1992a; Wilt and Revelle 2009). Much description has been devoted to the biological foundations underlying introversion and extraversion. Eysenck (1957, 1967) stressed differences in sensitivities to arousal to explain characteristic stimulus seeking or retreat behaviors. This laid the groundwork for exploration of the presumed biological underpinnings of introversion and extraversion, with Kagan and Snidman (2004) garnering support for the relative stability of these traits over time.

Straying away from the original descriptions of Jung, subsequent approaches came to focus on an introversion-extraversion continuum with introversion viewed as less of the positive qualities of extraversion. Solitary, introspective analysis has often been devalued in highly industrialized and high socioeconomic nations that place an emphasis on the ideal of the outgoing, gregarious, and often boisterous individual.

Recent interest in this trait or personality style has focused on distinguishing it from representing a low end of extraversion and has stressed the merits of this orientation for social, academic, and creative accomplishments (Cain 2012). Close scrutiny and inclusion of cultural imperatives has rendered a changing view of introversion, distinguishing it from social anxiety and interpersonal isolationism. Introverted individuals, while seeking solace in quiet environments, can succeed and excel with tasks that demand increased interpersonal collaboration and participation. However, after engaging in these activities, they will usually find that quiet more solitary activities are preferred in their restoring an optimum equilibrium. Rather than viewing introverts or extraverts as superior in functioning, it appears much more useful to view their behavior within the contextual environments that their temperaments are being expressed. This notion of

goodness of fit appears to capture well how differing temperaments are optimally expressed in different surroundings or situational demands. The implications for education are readily apparent and stress the inadequacy of the “one size fits all model.”

Cross-References

- ▶ Big-Five Model
- ▶ Extraversion
- ▶ Extraversion-Introversion (Eysenck’s Theory)
- ▶ Extraversion-Introversion (Jung’s Theory)
- ▶ Eysenck Personality Profiler
- ▶ Eysenck, Hans
- ▶ Goodness of Fit Model
- ▶ Inhibited and Uninhibited Children
- ▶ Maudsley Personality Inventory (MPI)
- ▶ Multidimensional Personality Questionnaire (MPQ)
- ▶ Myers-Briggs Type Indicator (MBTI)
- ▶ NEO Inventories
- ▶ Psychological Types (Jung)
- ▶ Shyness
- ▶ Sociability
- ▶ Temperament
- ▶ Type D Personality

References

- Allik, J. (2005). Personality dimensions across cultures. *Journal of Personality Disorders, 19*, 212–232.
- Briggs, K. C., & Myers, I. B. (1998). *Myers-Briggs type indicator*. Palo Alto: Consulting Psychologists Press.
- Cain, S. (2012). *Quiet: The power of introverts in a world that can’t stop talking*. New York: Crown.
- Clark, L. A., Watson, D., & Mineka, S. (1994). Temperament, personality, and the mood and anxiety disorders. *Journal of Abnormal Psychology, 103*, 103–116.
- de Clercq, B., van Leeuwen, K., van den Noortgate, W., de Bolle, M., & de Fruyt, F. (2009). Childhood personality pathology: Dimensional stability and change. *Development and Psychopathology, 21*, 853–869. <https://doi.org/10.1017/S0954579409000467>.
- Costa, P. T., & McCrae, R. R. (1992a). Four ways five factors are basic. *Personality and Individual Differences, 13*, 653–665.
- Costa, P. T., & McCrae, R. R. (1992b). *NEO PI-R professional manual*. Odessa: Psychological Assessment Resources.
- Costa, P. T., Terracciano, A., & McCrae, R. R. (2001). Gender differences in personality traits across cultures: Robust and surprising findings. *Journal of Personality and Social Psychology, 81*, 322–331. <https://doi.org/10.1037/0022-3514.81.2.322>.
- Davidson, B., Gillies, R. A., & Pelletier, A. L. (2015). Introversion and medical student education: Challenges for both students and educators. *Teaching and Learning in Medicine: An International Journal, 27*, 99–104. <https://doi.org/10.1080/10401334.2014.979183>.
- Eysenck, H. J. (1957). *The dynamics of anxiety and hysteria: An experimental application of modern learning theory to psychiatry*. London: Routledge/Kegan Paul.
- Eysenck, H. J. (1959). The “Maudsley Personality Inventory” as determinacy of neurotic tendency and extraversion. *Zeitschrift für Experimentelle und Angewandte Psychologie, 6*, 167–190.
- Eysenck, H. J. (1967). *The biological basis of personality*. Springfield: Thomas.
- Eysenck, H. J., & Eysenck, S. B. G. (1992). *Manual for the Eysenck personality Questionnaire-Revised*. San Diego: Educational and Industrial Testing Service.
- Eysenck, H. J., & Wilson, G. (1991). *The Eysenck personality profiler* (1st ed.). Guildford: Psi-Press.
- Grant, A. M. (2013). Rethinking the extraverted scales ideal: The ambivert advantage. *Psychological Science, 24*, 1024–1030. <https://doi.org/10.1177/0956797612463706>.
- Gray, J. A. (1973). Causal models of personality and how to test them. In J. R. Royce (Ed.), *Multivariate analysis and psychological theory* (pp. 409–463). London: Academic.
- Jung, C. G. (1923). *Psychological types* (trans: Baynes, H. G.). Harcourt, Brace. (Original work published 1921). Retrieved from <http://psychclassics.yorku.ca/Jung/types.htm>
- Jung, C. G. (1929). The significance of constitution and heredity in psychology. In *The structure and dynamics of the psyche: volume 8 of the collected works of C. G. Jung* (pp. 107–113). Princeton: Princeton University Press.
- Kagan, J., & Snidman, N. (2004). *The long shadow of temperament*. Cambridge, MA: The Belknap Press of Harvard University Press.
- Little, B. R. (2010). Acting out of character in the immortal profession: Toward a free trait agreement. *Academic Matters*. Retrieved from <http://www.academicmatters.ca/2010/04/acting-out-of-character-in-the-immortal-profession-toward-a-free-trait-agreement/>
- Matthews, G., & Gilliland, K. (1999). The personality theories of H. J. Eysenck and J. A. Gray: A comparative review. *Personality and Individual Differences, 26*, 583–626.
- McClowry, S. G., Rodriguez, E. T., & Koslowitz, E. T. (2008). Temperament-based intervention: Re-examining goodness of fit. *European Journal of Developmental Science, 2*, 120–135.
- McCrae, R. R., et al. (2005). Universal features of personality traits from the observer’s perspective: Data from

- 50 cultures. *Journal of Personality and Social Psychology*, 88, 547–561. <https://doi.org/10.1037/0022-3514.88.3.547>.
- Nettle, D. (2005). An evolutionary approach to the extraversion continuum. *Evolution and Human Behavior*, 26, 363–373. <https://doi.org/10.1016/j.evolhumbehav.2004.12.004>.
- Smillie, L. D. (2008). What is reinforcement sensitivity? Neuroscience paradigms for approach-avoidance process theories of personality. *European Journal of Personality*, 22, 359–384.
- Tackett, J. L., Slobodskaya, H. R., Mar, R. A., Deal, J., Halverson Jr., C. F., Baker, S. R., et al. (2012). The hierarchical structure of childhood personality in five countries: Continuity from early childhood to early adolescence. *Journal of Personality*, 80, 847–879. <https://doi.org/10.1111/j.1467-6494.2011.00748.x>.
- Trapmann, S., Hell, B., Hirn, J. W., & Schuler, H. (2007). Meta-analysis of the relationship between the big five and academic success at university. *Journal of Psychology*, 215, 132–151. <https://doi.org/10.1027/0044-3409.215.2.132>.
- Vinas, F. (2014). Introspective persons. In A. C. Michalos (Ed.), *Encyclopedia of quality of life and well-being research* (pp. 3381–3382). Dordrecht: Springer.
- Wacker, J., & Smillie, L. D. (2015). Trait extraversion and dopamine function. *Social and Personality Psychology Compass*, 225–238. <https://doi.org/10.1111/spc3.12175>.
- Wilt, J., & Revelle, W. (2009). Extraversion. In M. Leary & R. Hoyle (Eds.), *Handbook of individual differences in social behavior* (pp. 27–45). New York: Guilford.

cannot point to a specific process that generated them. Intuition typically represents the holistic perception of multiple cues, which amounts to a ready capacity to recognize patterns. Thus, intuition can be defined as the capacity to comprehend facts with immediacy and without conscious reasoning. Individuals experience intuition as the direct perception of facts without effort.

Introduction

Modern research on intuition began with (e.g., Carl G. Jung's 1926) work on psychological types, according to which individuals vary in the extent that they relied on “unconscious perception,” the habitual reliance on information obtained without reflection and with less effortful thinking. This conception is reflected in the construction of the popular Myers-Briggs Type Indicator, which remains an oft-used measure of personality type, especially in organizational contexts. In more recent work, intuition has been conceived of as a thinking style or mode of thought, which plays a prominent role in contemporary theories of judgment, decision-making, and social cognition.

Intuition

Markus Kemmelmeier and Tatyana Kaplan
University of Nevada, Reno, Reno, NV, USA

Synonyms

Feeling; Hunch; Insight; Instinct

Definition

Intuition is a strategy of knowledge use characterized by a lack of effortful reasoning with which knowledge is accessed or generated, often with great speed. When relying on intuition, individuals have little conscious awareness of the origins or basis of their thoughts and feelings and

Psychological Perspectives on Intuition

Contemporary “dual-process” theories juxtapose intuitive thought, characterized by low levels of reflection, with rational thought, characterized by the application of rule-based reasoning (e.g., Kahneman 2011). A critical assumption of such models is that individuals variously employ more rational or more intuitive *modes* of thought depending on their motivation or the affordances of the situation. To the extent that an issue or object is of limited relevance to one's goals, individuals might invest few attentional resources and base judgments and decision on what comes to mind readily and easily and employ cognitive shortcuts in reasoning. However, to the extent that an issue, object, or question is relevant to goals or anticipated outcomes, individuals tend to pay close

attention and submit available evidence to close scrutiny before arriving at a judgment or decision.

Psychological research has often portrayed intuition as a low-effort mode of thought that renders individuals susceptible to error, which could have been avoided with effortful, rational thought. Coherent with this notion, there is a body of research demonstrating that reliance on intuitive thought is associated with failure on tasks requiring mathematical and logical thought or the active recombination of different pieces of knowledge (Myers 2004). Thus, intuition has often been associated with spontaneous, often affect-based responses of questionable validity.

However, intuition or low-effort thought can be highly adaptive, as intuition may reflect the effective application of substantive knowledge. Experts rely heavily and successfully on intuition (Phillips et al. 2004). Over the course of an extended process of learning, repeated exposure allows individuals to connect recurring patterns with appropriate responses. This allows experts to develop an intuitive “sense” of their domain in ways that they may only require a minimum of conscious thought and effortful reasoning to arrive at valid conclusions. At the same time, experts may often possess the knowledge and self-awareness to determine when they may or may not rely on their own intuition.

Decades of research in person perception have demonstrated that personality judgments based on only very short exposure to others (so-called thin slices) result in predictions that are as accurate or even superior to those based on extensive observation (see Myers 2004, for a review), though this accuracy is qualified by the specific personality dimension that is to be judged (Carney et al. 2007). Whereas there is little doubt that first impressions can be wrong, they are often compelling because of their predictive power, especially with regard to one’s own evaluations and preferences. Thoughtful elaboration of personal choices can reduce appreciation and satisfaction of decision outcomes (Wilson 2004). Intuitive choice, operationalized as making choices without having to provide a justification, generally produces greater satisfaction with outcomes.

A comprehensive body of research has established an interactive relationship between affect and intuition. Individuals are more likely to rely on an intuitive mode of thought when they are experiencing positive affect. Likewise, individual differences in the tendency to rely on an intuitive mode of thought are more likely to emerge when individuals are in a positive emotional state (Hicks et al. 2010). In turn, reliance on intuition seems to foster positive affect. For instance, when “processing fluency” is high, that is, when individuals experience themselves as being able to think about something quickly and efficiently, the consequence is often positive affect (Topolinski 2011).

A topic of continued interest has been the interplay between intuition and creativity. In terms of personality, there is much evidence to support that highly creative individuals rely on an intuitive mode of thought (Wolfradt and Pretz 2001). Reliance on intuition appears to be equally related to higher openness to experience, which presumably encourages individuals to rely on their intuition-based responses, even when they are novel and unusual or do not conform to social norms. However, with intuition reflecting a mode of thought accessible to all individuals, its reliance is contingent on contextual factors. Especially in business organizations, promoting environments that encourage reliance on intuition may enhance creative production and innovation (e.g., Hodgkinson et al. 2009).

A prominent example of a theory of intuition is Seymour Epstein’s (2014) cognitive-experiential self-theory (CEST; but see also Phillips et al. 2004; Topolinski 2011). According to this dual-process theory, the preconscious intuitive-experiential system is associated with adaptation, automaticity, efficiency, speed, and affect. The system is revised through reinforcement and associative learning, meaning it is sensitive to recurring constellations of stimuli, which are acquired and recognized rapidly. Simply put, the intuitive-experiential system learns contingencies between stimuli in an individual’s environment. When these contingencies between stimuli change they are eventually acquired by the

intuitive-experiential system. This however, implies an unlearning of existing patterns, and the system may be highly inert with successful change when exposed to the new contingencies. The intuitive-experiential system also relies heavily on the experience of affect, which may sway judgments based on this system.

By contrast, the analytical-rational system is associated with conscious, deliberate, and rational thought. Whereas it operates slowly, it is orientated toward rationality in the sense of creating coherent reasoning, with thoughts related to each other and toward the observed reality in a systematic and logical manner.

According to CEST, the intuitive-experiential system works independently of the rational system, but both work in conjunction to direct behavior. Individuals can demonstrate a preference for either rational or experiential perception processes. This individual difference is often assessed through the rational-experiential inventory (REI), whose subscales assess the need for cognition (NFC), reflecting preference for rational thought, and faith in intuition (FI). The FI is an oft-used instrument in the measurement of the disposition to rely on an intuitive mode of thought (e.g., Wolfradt and Pretz 2001).

Conclusion

Contemporary research is animated by sometimes competing perspectives on intuition. Although there exist individual differences in reliance on intuition, as a mode of thought it is employed by all people. At the same time, reliance on intuition is very much tied to one's level of knowledge and experience with a particular domain. Broadly speaking, individuals at either extreme are likely to rely on intuition. Those with a lack of knowledge rely on intuitive associations and feelings because they may lack potentially complex cognitive operations to understand a particular issue or problem. Conversely, those with an abundance of knowledge are particularly likely to rely on intuition because they have overlearned needed cognitive operations and because their spontaneous

associations are an accurate reflection of recurring contingencies in their environment. However, whether intuition yields advantageous outcomes is qualified by various aspects of the situation and the task at hand.

Cross-References

- ▶ [Cognitive-Experiential Self-Theory](#)
- ▶ [Creativity](#)
- ▶ [Myers-Briggs Type Indicator \(MBTI\)](#)
- ▶ [Need for Cognition](#)
- ▶ [Person Perception and Accuracy](#)
- ▶ [Positive Affect](#)
- ▶ [Psychological Types \(Jung\)](#)
- ▶ [Self-Knowledge](#)

References

- Carney, D. R., Colvin, C. R., & Hall, J. A. (2007). A thin slice perspective on the accuracy of first impressions. *Journal of Research in Personality, 41*(5), 1054–1072.
- Epstein, S. (2014). *Cognitive-experiential theory: An integrative theory of personality*. Oxford: Oxford University Press.
- Hicks, J. A., Cicero, D. C., Trent, J., Burton, C. M., & King, L. A. (2010). Positive affect, intuition, and feelings of meaning. *Journal of Personality and Social Psychology, 98*(6), 967–979.
- Hodgkinson, G. P., Sadler-Smith, E., Burke, L. A., Claxton, G., & Sparrow, P. R. (2009). Intuition in organizations: Implications for strategic management. *Long Range Planning, 42*(3), 277–297.
- Jung, C. G. (1926). *Psychological types*. London: Routledge and Kegan Paul.
- Kahneman, D. (2011). *Thinking, fast and slow*. New York: Farrar, Straus and Giroux.
- Myers, D. G. (2004). *Intuition: Its powers and perils*. New Haven: Yale University Press.
- Phillips, J. K., Klein, G., & Sieck, W. R. (2004). Expertise in judgment and decision making: A case for training intuitive decision skills. In D. J. Koehler & N. Harvey (Eds.), *Blackwell handbook of judgment and decision making* (pp. 297–315). Malden: Blackwell.
- Topolinski, S. (2011). A process model of intuition. *European Review of Social Psychology, 22*(1), 274–315.
- Wilson, T. D. (2004). *Strangers to ourselves*. Cambridge, MA: Harvard University Press.
- Wolfradt, U., & Pretz, J. E. (2001). Individual differences in creativity: Personality, story writing, and hobbies. *European Journal of Personality, 15*(4), 297–310.

Inventory of Interpersonal Problems

Carly A. Parsons and Lynn E. Alden
Department of Psychology, University of British
Columbia, Vancouver, BC, Canada

Synonyms

Complementarity; Interpersonal circumplex;
Interpersonal theory; Transaction cycles

Definition

The Inventory of Interpersonal Problems-Circumplex (IIP-C) is a self-report questionnaire that assesses a broad range of interpersonal problems.

Introduction

The IIP-C comprises 64 items divided into eight scales arranged in a circular (circumplex) pattern. The IIP-C has been shown to have strong psychometric properties and is widely used in clinical and research contexts. It has been translated into 12 languages. The original English language 64-item version and a 32-item short form are commercially available (Horowitz et al. 2000).

Development and Validation

The initial Inventory of Interpersonal Problems (IIP) was developed by L.M. Horowitz and his colleagues (Horowitz et al. 1988). Horowitz et al. recorded interpersonal complaints reported by individuals seeking outpatient psychotherapy from the Kaiser Permanente San Francisco Medical Center and translated these complaints into items worded to reflect interpersonal behaviors that the individual identified as “hard to do” or “things I do too much.” Following the format of the widely used Symptom Checklist-90 (SCL-90),

each item was rated in terms of how distressing the problem was for the individual on a scale ranging from 0 (*not at all*) to 4 (*extremely*). After redundant and ambiguous items were eliminated, the remaining 127 items were subjected to principal components analysis, which yielded six viable subscales. The six scales were shown to have strong internal consistency and test-retest reliability. The construct validity of the IIP was established by demonstrating meaningful patterns of convergent validity with other interpersonal measures and therapist ratings and discriminant validity with conceptually unrelated psychological symptoms measured by the SCL-90. The original measure was shown to be sensitive to patient- and therapist-reported change in brief dynamic psychotherapy (Horowitz et al. 1988).

Building on Horowitz’s original measure, Alden et al. (1990) developed the IIP-Circumplex (IIP-C) version based on interpersonal models of social behavior. Interpersonal theorists generally agree that interpersonal dispositions and behaviors are most appropriately conceptualized as falling in a circular arrangement around the orthogonal dimensions of dominance versus submission and nurturance versus hostility. Accordingly, Alden and her colleagues subjected ipsatized IIP scores to a principal component analysis in which two components were extracted. Those components were found to reflect problem versions of the familiar interpersonal dimensions of dominance and nurturance. Item factor loadings on the dimensions were converted to angular locations in the circular space marked by the two dimensions. The circular space was then divided into eight sectors with theoretical midpoints marking the center of each octant. Within each sector, the eight items displaying the highest multiple correlations with the principal components were selected to form octant scales. The items in each scale reflected a common interpersonal theme. The resulting IIP-C scales were assigned labels that reflected the core thematic content, specifically *domineering*, *vindictive*, *cold*, *socially avoidant*, *nonassertive*, *exploitable*, *overly nurturant*, and *intrusive*. The IIP-C was shown to have structural consistency across samples and to converge with other interpersonal circumplex measures (Alden et al. 1990).

Scope

The IIP-C is clinically useful for treatment planning and evaluation. The measure offers several other conceptual advantages. Other measures can be projected onto the circumplex to allow a comparison of the relative interpersonal connotations of the measure. In addition, a single individual's eight-octant profile can be reduced to a single point in two-dimensional interpersonal space, thereby proving an overall summary of the individual's problematic interpersonal behavior, which can be used to compare individuals or groups (e.g., Alden and Phillips 1990).

Research

The IIP-C, in its various forms and translations, has frequently been the measure of choice for researchers interested in the clinical correlates of interpersonal problems. In the past decade, research involving the IIP-C has been conducted in samples with a wide range of diagnoses including depressive, anxiety, eating, substance use, and personality disorders. Some research has attempted to facilitate differential diagnosis by identifying unique patterns of interpersonal problems characteristic of whole diagnostic categories, specific diagnoses, and common comorbidities (e.g., obsessive-compulsive personality disorder with and without obsessive-compulsive disorder; Cain et al. 2015). The most common clinical application of the measure, however, has been an exploration of the interpersonal pathoplasticity of psychological disorders. Interpersonal pathoplasticity refers to the mutual interactions between psychopathological and interpersonal factors. Research exploring this phenomenon that has used the IIP-C has focused on identifying subgroups of individuals within a diagnostic group who have distinct profiles of interpersonal problems and then exploring the characteristic clinical features of each. Alternatively, the differential relationships between specific interpersonal problems or subscales and clinically relevant factors are assessed within diagnostic groups. Examples of clinical correlates frequently

explored include age of onset, diagnostic severity, gender, personality traits, self-esteem, affect, and attachment style. As an illustrative example, Wright and colleagues (2013) analyzed the IIP-C scores of patients with borderline personality pathology and identified six homogeneous subgroups – intrusive, vindictive, avoidant, non-assertive, moderate exploitable, and severe exploitable – that differed in number of past suicide attempts and degree of antisocial and self-injurious behaviors.

The second most common theme of research implicating the IIP-C has involved the exploration of interpersonal problems as predictors of treatment outcome and process variables. Predictors have included specific interpersonal problems, interpersonal profiles, and overall levels of interpersonal distress. Specific outcome measures explored have included rates and patterns of symptom improvement, posttreatment and follow-up symptom severity, and attrition. A related body of research has focused on change in interpersonal problems themselves as a result of treatment, sometimes as a predictor of symptomatic outcome. Whereas some researchers have used samples with isolated diagnoses (including depressive, anxiety, eating, and personality disorders), others have conducted cross-diagnostic research using larger inpatient or outpatient samples. Similarly, while outcomes are typically measured for individual treatment, a few studies have compared multiple treatment modalities in an attempt to determine differential response as a function of interpersonal style (e.g., König et al. 2015). In terms of process variables, therapeutic alliance has been of greatest empirical interest. Alliance has been measured both at precise stages of treatment and in terms of change over time and has been assessed using both client and therapist ratings. Although such studies are typically concerned with patient interpersonal problems, therapist interpersonal problems have also been considered (e.g., Zeeck et al. 2012).

Other targets of clinical research using the IIP-C in the past decade have included the temporal stability of interpersonal problems without treatment, patient-therapist agreement in perceptions of patient interpersonal problems, and

interpersonal problems as a mediator of clinically relevant relationships (e.g., specific problems differentially mediate the relationship between attachment style and suicide-related behaviors; Stepp et al. 2008). It is important to note, of course, that uses of the IIP-C have not been restricted to clinical applications.

Conclusion

The IIP-C is a psychometrically sound measure developed within the conceptual framework of interpersonal theories. The measure has proven useful in the study and treatment of interpersonal dysfunction.

Cross-References

- ▶ Circumplex (General)
- ▶ Horowitz, Leonard M.
- ▶ Interpersonal Circumplex
- ▶ Interpersonal Complementarity
- ▶ Leary, Timothy
- ▶ Pincus, Aaron L.
- ▶ Wiggins, Jerry S.

References

- Alden, L. E., & Phillips, N. (1990). An interpersonal analysis of social anxiety and depression. *Cognitive Therapy and Research, 14*, 499–513.
- Alden, L. E., Wiggins, J. S., & Pincus, A. (1990). Construction of circumplex scales for the inventory of interpersonal problems. *Journal of Personality Assessment, 55*, 34–45.
- Cain, N. M., Ansell, E. B., Simpson, H. B., & Pinto, A. (2015). Interpersonal functioning in obsessive-compulsive personality disorder. *Journal of Personality Assessment, 97*(1), 90–99.
- Horowitz, L. M., Rosenberg, S. E., Baer, B. A., Ureño, G., & Villaseñor, V. S. (1988). Inventory of interpersonal problems: Psychometric properties and clinical applications. *Journal of Consulting and Clinical Psychology, 56*, 885–892.
- Horowitz, L. M., Alden, L. E., Wiggins, J. S., & Pincus, A. (2000). *The inventory of interpersonal problems*. Menlo Park: Mind Garden Publishing.
- König, J., Onnen, M., Karl, R., Rosner, R., & Butollo, W. (2015). Interpersonal subtypes and therapy response in patients treated for posttraumatic stress disorder. *Clinical Psychology & Psychotherapy*. <https://doi.org/10.1002/cpp.1946>.
- Stepp, S. D., Morse, J. Q., Yaggi, K. E., Reynolds, S. K., Reed, L. I., & Pilkonis, P. A. (2008). The role of attachment styles and interpersonal problems in suicide-related behaviors. *Suicide and Life-Threatening Behavior, 38*(5), 592–607.
- Wright, A. G. C., Hallquist, M. N., Morse, J. Q., Scott, L. N., Stepp, S. D., Nolf, K. A., & Pilkonis, P. A. (2013). Clarifying interpersonal heterogeneity in borderline personality disorder using latent mixture modeling. *Journal of Personality Disorders, 27*(2), 125–143.
- Zeeck, A., Orlinsky, D. E., Hermann, S., Joos, A., Wirsching, M., Weidmann, W., & Hartmann, A. (2012). Stressful involvement in psychotherapeutic work: Therapist, client and process correlates. *Psychotherapy Research, 22*(5), 543–555.

Inversion

- ▶ Reaction Formation (Defense Mechanism)

Investigative Occupational Types

Christopher Marcin Kowalski¹ and Julie Aitken Schermer²

¹Health and Rehabilitation Sciences, Department of Psychology, The University of Western Ontario, London, ON, Canada

²Management and Organizational Studies, The University of Western Ontario, London, ON, Canada

Synonyms

Careers; Interests; Occupational types; Vocations

Definition

A category of occupations from Holland's (1973) RIASEC (realistic, investigative, artistic, social, enterprising, and conventional) model of vocational interests that involve the examination, prediction, and understanding of social and natural occurrences or phenomena.

Investigative Vocational Interests

According to Holland (1973), individuals with the investigative personality type prefer occupations that involve the investigation of physical, biological, and social phenomena (e.g., psychologist, scientist). These individuals typically avoid careers that are social, persuasive, enterprising, or business related. Investigative individuals tend to value science and see themselves as intelligent, scholarly, and academically gifted, but lacking in interpersonal skills. People with this vocational interest type are often described as introverted, careful, scholarly, pessimistic, self-reliant, curious, rational, and critical. Holland (1996) posited that individuals thrive in environments that are congruent with their personality types, meaning investigative individuals will flourish in investigative environments, that is, environments that require analytical and scientific ability. An investigative environment is one that requires skepticism and reinforces creative problem-solving and the development and understanding of knowledge.

The location of the investigative type on Holland's hexagonal model is adjacent to the realistic type and artistic types and on the opposite side of the spectrum of the enterprising type. According to the theory, this means that out of the six occupational types, the investigative type is most closely related to the artistic and realistic types and least related to the enterprising type. Prediger (1982) posited that the investigative type lies in the ideas and things quadrant of his two-dimensional conceptualization (people vs. things, data vs. ideas). That is, an individual with an investigative personality would be attracted to careers that deal with the manipulation and observation of physical nonhuman objects, rather than interacting with other people, and manufacturing and developing ideas and theories, rather than inputting data (e.g., data entry).

Correlations with Personality and Individual Differences

The study of personality traits in relation to vocational interests has been a topic of immense interest for psychology researchers for the past

few decades. Unsurprisingly because of its widespread popularity, the five-factor model has been the object of much of this research. Using meta-analytic methods, Barrick et al. (2003) found a small positive relationship between investigative vocational interests and conscientiousness ($r = 0.07$), a moderate relationship between investigative interests and emotional stability ($r = 0.12$) and openness to experience ($r = 0.25$). More specifically, investigative interests have been found to correlate significantly and negatively with gregariousness (a facet of extraversion; $r = -0.11$) and emotionality (a facet of openness to experience; $r = -0.12$). Investigative interests have been found to correlate positively with the facets of openness of adventurousness ($r = 0.12$), intellect ($r = 0.24$), and liberalism ($r = 0.13$; Armstrong and Anthoney 2009). Research has also found significant positive associations between investigative vocational interests and general, verbal, numeric, and performance intelligence (Carless 1999).

Sex and Cultural Differences

Sex differences in vocational types are one of the most consistent findings in occupational research. Using meta-analytic methods, Su et al. (2009) found that the greatest mean effect size ($d = 0.90$) regarding sex differences is for Prediger's things-people dimension. More specifically, men were much more likely to be interested in occupations that dealt with things (e.g., investigative occupations), while women preferred working with people. Furthermore, these researchers found a significant effect size for the investigative type ($d = 0.26$) favoring men.

Research has also indicated a small main effect for ethnic differences in investigative interests. Fouad (2002) found that Asian Americans ($\bar{x} = 50.43$) tended to score higher on investigative interests than Caucasians ($\bar{x} = 47.26$), Hispanic/Latinos ($\bar{x} = 46.82$), African Americans ($\bar{x} = 44.92$), and American Indians ($\bar{x} = 43.17$). In the same study, Fouad (2002) also found a

small difference in investigative occupational interests when comparing students to professionals where professionals ($\bar{x} = 50.06$) tended to score higher than students ($\bar{x} = 43.91$).

Conclusion

Individuals with an investigative vocational interest profile tend to be male; are emotionally stable, conscientious, open to experience, and non-emotional; and value intellectual pursuits and manipulation of objects. Career areas would include jobs which deal with research, such as biologists, chemists, and other scientific fields.

References

- Armstrong, P. I., & Anthony, S. F. (2009). Personality facets and RIASEC interests: An integrated model. *Journal of Vocational Behavior, 75*, 346–359.
- Barrick, M. R., Mount, M. K., & Gupta, R. (2003). Meta-analysis of the relationship between the five-factor model of personality and Holland's occupational types. *Personnel Psychology, 56*, 45–74.
- Carless, S. A. (1999). Career assessment: Holland's vocational interests, personality characteristics, and abilities. *Journal of Career Assessment, 7*, 125–144.
- Fouad, N. A. (2002). Cross-cultural differences in vocational interests: Between-group differences on the strong interest inventory. *Journal of Counseling Psychology, 49*, 283–289.
- Holland, J. L. (1973). *Making vocational choices: a theory of careers*. Englewood Cliffs: Prentice-Hall.
- Holland, J. L. (1996). Exploring careers with a typology: What we have learned and some new directions. *American Psychologist, 51*, 397–406.
- Prediger, D. J. (1982). Dimensions underlying Holland's hexagon: Missing link between interests and occupations? *Journal of Vocational Behavior, 21*, 259–287.
- Su, R., Rounds, J., & Armstrong, P. I. (2009). Men and things, women and people: A meta-analysis of sex differences in interests. *Psychological Bulletin, 135*, 859–884.

Investigative Psychology

- ▶ [Offender Profiling](#)

Investment Model Scale

Christopher R. Agnew, Ezgi Besikci and
Kenneth Tan
Department of Psychological Sciences, Purdue
University, West Lafayette, IN, USA

Definition

The Investment Model Scale is a self-report measure designed to assess the constructs within the Investment Model of Commitment Processes, including commitment level (7 items) and its theorized bases: satisfaction level, quality of alternatives, and investment size (5 items each).

Introduction

The Investment Model of Commitment Processes is a social psychological model that details factors predicting level of commitment to a given target (most often commitment to a relationship with a specific person). It is among the most prominent and tested models of relationship commitment within the social and behavioral sciences.

With respect to an interpersonal relationship, commitment is defined as the intent to remain in the relationship, psychological attachment to a partner, and long-term orientation toward the relationship (Arriaga and Agnew 2001). According to the Investment Model, commitment is determined by three independent yet interrelated factors (or “bases”): the amount of satisfaction derived from a relationship, the quality of available alternatives to that relationship, and the size of investment put into the relationship. Satisfaction is a function of the outcomes an individual gains from a relationship compared to personal expectations of what is acceptable (referred to as “comparison level” in the terminology of interdependence theory, from which aspects of the model are originally derived; Thibaut and Kelley 1959). If outcomes are equal to or greater than expectations, one will be relatively satisfied with the relationship and will be more committed

to it. Alternatives to a relationship refer to any other alternatives one might have outside a given relationship, including potential other relationship partners, other people in general (e.g., spending time with friends rather than one's current partner), or preferring to have no relationship at all. As one perceives that better alternatives to the current relationship are available elsewhere, one's commitment to a given relationship is reduced. Finally, investment refers to both tangible (e.g., material possessions, money, friends) and intangible (e.g., time, effort, identity) resources put into a relationship that would be lost or mired if the relationship were to dissolve. With greater investments comes greater relationship commitment. Collectively, the highest level of commitment is derived from a relationship featuring high satisfaction, no alternatives, and more investments (Rusbult 1980; Rusbult 1983; Rusbult et al. 2012).

Creation of the Investment Model Scale

Early research on the Investment Model used a variety of different self-report items to assess its constructs (e.g., Farrell and Rusbult 1981; Rusbult 1980; Rusbult and Farrell 1983). As the model became the focus of increasing research, the need to create valid and reliable measures of its constructs, measures that could be used by researchers across laboratories worldwide, became clear. This led to the creation, and in 1998 the publication, of the Investment Model Scale (IMS) in the journal *Personal Relationships* (Rusbult et al. 1998). The IMS provides scales to measure commitment level and its three theorized bases – satisfaction level, quality of alternatives, and investment size. The scales included some items used in past research on the Investment Model (e.g., from Rusbult 1983) as well as new items.

The IMS includes both global items measuring the Investment Model constructs (7 items to measure commitment, 5 items each to measure satisfaction, alternatives, and investments) and facet items to capture more concrete exemplars of the 3 bases of commitment (5 items each for satisfaction, alternative, and investments), assessed on a

9-point scale ranging from 0 (*do not agree at all*) to 8 (*agree completely*). The global items aimed to measure each construct at a more abstract level, while the facet items were crafted to help respondents better understand the constructs under consideration, thus enhancing the comprehensibility of the global items. (Only global items are then used in analyses to test Investment Model hypotheses.) Facet items used for measuring satisfaction assess the extent to which an individual's specific needs for intimacy, companionship, sexuality, security, and emotional involvement are met in the relationship. Quality of alternatives facet items capture the extent to which given needs could be gratified in alternative relationships (e.g., by another romantic relationship, family, friends, or by being alone). Finally, investment facet items ask about invested time, shared identity, memories, intellectual life, and self-disclosure.

Reliability, Factor Structure, and Validity of the Investment Model Scale

Three studies are presented in the Rusbult et al. 1998 paper to provide tests of the reliability of both the global and facet items. Overall, analyses revealed high reliability, with alpha coefficients for global items ranging from .91 to .95 for commitment, .92 to .95 for satisfaction, .82 to .88 for quality of alternatives, and .82 to .84 for investment size. Reliabilities calculated for facet items were, as expected, somewhat lower as compared with the global items, as the facet items were designed to assess particular (and not necessarily related) aspects of the given base constructs, with alphas ranging from .73 to .93.

The factor structure underlying the IMS was also tested in the 1998 paper. Consistently across the three studies, a four-factor solution best fit the data, with the items crafted to measure each of the constructs loading on the intended construct, and collectively accounting for 98% of the variance. High item-total correlations were observed for the items measuring each factor and no substantial cross-loadings were detected.

Rusbult and colleagues also provided tests to assess the convergent, discriminant, and

predictive validity of the IMS. The IMS scales were found to be moderately correlated with measures that, theoretically, they should be associated with (e.g., measures of other relational constructs such as dyadic adjustment, trust, love, closeness) and not significantly associated with measures where an association would not be expected (e.g., measures of personal dispositions, such as self-esteem and need for cognition).

Finally, to provide evidence for predictive validity, the authors conducted follow-up phone interviews several months after an initial study to obtain information regarding the stability of the relationships originally assessed by the IMS. Commitment level at Time 1 was found to be a significant predictor of Time 2 breakup status. In addition, examination of Time 2 breakup responsibility reports revealed that participants who reported breaking up with their partners (“leavers”) evidenced significantly lower commitment at Time 1, whereas those remaining in their relationship (“stayers”) reported significantly higher levels of commitment at Time 1.

Widespread use of the Investment Model Scale in Research

According to Google Scholar, as of May 2017, the 1998 publication in which the IMS was presented had been cited more than 1500 times. It remains the most cited measure of commitment level (and its theorized antecedent within the Investment Model framework) in use today. Moreover, the IMS has been modified for use to assess commitment to a host of targets beyond relational partners, including customers’ commitment to a given brand (Li and Petrick 2008) and US citizens’ commitment to the “War on Terror” waged under President George W. Bush following the September 11, 2001, terrorist attacks (Agnew et al. 2007).

Conclusion

The Investment Model Scale continues to serve as a useful tool to study commitment, in both interpersonal and noninterpersonal contexts.

References

- Agnew, C. R., Hoffman, A. M., Lehmler, J. J., & Duncan, N. T. (2007). From the interpersonal to the international: Understanding commitment to the “War on Terror”. *Personality and Social Psychology Bulletin*, 33, 1559–1571.
- Arriaga, X. B., & Agnew, C. R. (2001). Being committed: Affective, cognitive, and conative components of relationship commitment. *Personality and Social Psychology Bulletin*, 27, 1190–1203.
- Farrell, D., & Rusbult, C. E. (1981). Exchange variables as predictors of job satisfaction, job commitment, and turnover: The impact of rewards, costs, alternatives, and investments. *Organizational Behavior and Human Performance*, 27, 78–95.
- Li, X. R., & Petrick, J. F. (2008). Tourism marketing in an era of paradigm shift. *Journal of Travel Research*, 46, 235–244.
- Rusbult, C. E. (1980). Commitment and satisfaction in romantic associations: A test of the investment model. *Journal of Experimental Social Psychology*, 16, 172–186.
- Rusbult, C. E. (1983). A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in heterosexual involvements. *Journal of Personality and Social Psychology*, 45, 101–117.
- Rusbult, C. E., Agnew, C. R., & Arriaga, X. B. (2012). The Investment Model of Commitment Processes. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology, volume 2* (pp. 218–231). Los Angeles: Sage.
- Rusbult, C. E., & Farrell, D. (1983). A longitudinal test of the investment model: The impact on job satisfaction, job commitment, and turnover of variations in rewards, costs, alternatives, and investments. *Journal of Applied Psychology*, 68, 429–438.
- Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The investment model scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, 5, 357–387.
- Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York: Wiley.

Involutionary Coping Mechanisms

- ▶ Defense Mechanisms

Invulnerability

- ▶ Fearlessness

IPA

► Intelligence-Personality Associations

Ipsative Measures of Personality

Christopher Marcin Kowalski¹ and Julie Aitken Schermer²

¹Health and Rehabilitation Sciences, Department of Psychology, The University of Western Ontario, London, ON, Canada

²Management and Organizational Studies, The University of Western Ontario, London, ON, Canada

Definition

Ipsative measures, also known as forced-choice measures, are measures that force respondents to select from two or more equally socially desirable options.

Ipsative measures, as opposed to Likert scale measures in which respondents choose the degree to which they identify or agree with statements (e.g., 1, strongly disagree, to 5, strongly agree), force respondents to select from two or more equally socially desirable choices. Hicks (1970) differentiated three types of ipsative assessment. In a purely ipsative assessment situation (e.g., Edwards Personal Preference Schedule; EPPS; Edwards 1954), the sum of the scores obtained over the constructs assessed for each respondent is a constant. In other words, a purely ipsative measure is one that produces a mean across all of the scales, and that mean is the same for each person. Hicks (1970) defined a partially ipsative measure (e.g., Gordon Personal Profile; Gordon 1953) as a measure that does not precisely meet the criteria for a purely ipsative test but has common characteristics with tests that do fit this criteria. Hicks (1970) cites seven possible reasons why an ipsative measure may not be purely ipsative.

1. Participants only partially order alternatives.
2. Scales consist of differing numbers of items.
3. Not all of the items that are ranked by the participants are scored.
4. Scales are scored differently for differing respondent characteristics.
5. Items differ in how they are weighted.
6. At least one of the scales is deleted when data are analyzed.
7. The measure includes sections that are normative.

The third category discussed by Hicks (1970) is forced-choice normative assessment (e.g., Narcissistic Personality Inventory; NPI; Raskin and Hall 1979). These measures have a forced-choice format but produce scores in a way more congruent with absolute measures. For example, the NPI (Raskin and Hall 1979) instructs respondents to choose between two options. Both options assess the same measure; one option reflects high narcissism; the other reflects low narcissism. In forced-choice normative measures, items from one scale are never paired with items from another scale (Hicks 1970).

Uses

Although ipsative measures are less common than normative measures, ipsative measures are used in personality (e.g., NPI; Raskin and Hall 1979) and interest assessments, e.g., Jackson Vocational Interest Survey (JVIS; Jackson 1977) or the Kostick Perception and Preference Inventory (PAPI; Kostick 1977).

Advantages

One reason that ipsative scales are sometimes preferable relative to normative scales is that they are less susceptible to social desirability bias, as respondents are forced to choose between two or more options, with no obviously more desirable qualities. For example, the JVIS (Jackson 1977) instructs respondents to indicate their preference between “Making unusual glass vases” and “Attending a faculty meeting to decide on textbooks for the

coming year.” While if these items were separated and assessed by means of a Likert-type scale, social desirability bias may influence respondents into endorsing both items.

Moreover, ipsative measures are less susceptible to faking as ipsative measures are sometimes scored less intuitively than normative measures (Bowen et al. 2002; Martin et al. 2002). Martin et al. (2002) found that there was no difference in degree of faking between individuals who were instructed to complete an ipsative occupational measure honestly and individuals who were instructed to fake-good, while individuals who were instructed to fake-good on a normative version of the measure faked to a significantly greater extent than individuals who were instructed to respond honestly.

Ipsative measures may also be preferable when the purpose of assessment is not to examine differences between individuals, but is to determine areas where the respondent is likely to be scored the least or scored the highest. For example, the JVIS (Jackson 1977) may not be optimal for assessing inter-individual differences, but because of its ipsative nature, it will maximize differences between scores on vocational interest scales (e.g., teaching and creative arts) to saliently represent the most optimal and least optimal vocational interests for that particular individual (Hicks 1970).

Disadvantages

The main disadvantage of ipsative measures is the limitations placed on the results with respect to data analysis and interpretation using standard statistical procedures (e.g., means, standard deviations, correlations; Johnson et al. 1988). In multi-scale ipsative measures (i.e., when a pair or group of statements assess more than a single construct such as the JVIS; Jackson 1977), the scores on each subscale are dependent as items are endorsed relative to other items from other subscales. Hence, ipsative measures violate the assumption of independent error variance, which underlie classical psychometric analyses (Baron 1996). For example, Johnson et al. (1988) posited that

because the sum of covariances between purely ipsative scales and other criterion variables invariably equal zero and the sum of correlations approach zero, any correlations between scales may be in fact artifactual, rather than reflecting a true relationship between scales. Furthermore, ipsative scales are essentially ordinal in nature and, as such, do not meet the assumptions for analyses by standard parametric analyses, which require an interval or ratio level of measurement. Although some researchers reject the use of standard analyses, especially analyses based on analysis of correlations, for ipsative data (e.g., Johnson et al. 1988), there are others that posit using such analytical techniques may, in some cases, still provide interpretable and useful results (Baron 1996).

Previous research has suggested that ipsative scales can, under certain circumstances, artificially inflate internal reliability estimates (Tenopyr 1988). Tenopyr (1988) found that introducing a scale with perfect reliability to an instrument where the other scales were random generated artificially high internal consistency estimates in the remaining scales. Furthermore, ipsative measures cannot be factor analyzed in the same manner that normative measures can be (Johnson et al. 1988) because scores on ipsative measures are necessarily interdependent.

Another issue related to the use of ipsative measures is that they cannot be used to compare participants on a scale-by-scale basis (Johnson et al. 1988). Ipsative measures usually produce intraindividual scores among multiple constructs; scores for an individual on these constructs are distributed around the individual's mean (Hicks 1970). It must be noted, however, that these statistical issues dissipate with decreased ipsativity of the scales (Hicks 1970; Johnson et al. 1988), so scales such as the NPI (Raskin and Hall 1979), which are best described as forced-choice normative measures as they do not pair statements tapping into different constructs (Hicks 1970), avoid most of the issues associated with ipsative measures. Because measures such as these usually have less responses than normative scales usually have (e.g., the NPI is essentially dichotomous), reduced variance compared to more continuous scales can still be an issue.

Conclusion

Ipsative measurement is a mode of measurement that forces participants to select from two or more equally socially desirable responses. These types of measures have a number of advantages over normative measures, including reduced susceptibility to social desirability bias and faking, and is better suited for measurement when maximizing differences between subscales is desirable (e.g., career interest scales). Ipsative measurement also has a number of disadvantages that become more problematic as ipsativity is increased, including limitations in data analysis and interpretability, inflated reliability, and validity of assessment of differences between individuals.

References

- Baron, H. (1996). Strengths and limitations of ipsative measurement. *Journal of Occupational and Organizational Psychology, 69*, 49–56.
- Bowen, C., Martin, B. A., & Hunt, S. T. (2002). A comparison of ipsative and normative approaches for ability to control faking in personality questionnaires. *The International Journal of Organizational Analysis, 10*, 240–259.
- Edwards, A. L. (1954). *Personal preference schedule: Manual*. New York: The Psychological Corporation.
- Gordon, L. V. (1953). *Gordon personal profile*. Oxford: World Book.
- Hicks, L. E. (1970). Some properties of ipsative, normative, and forced-choice normative measures. *Psychological Bulletin, 74*, 167–184.
- Jackson, D. N. (1977). *Jackson vocational interest survey manual*. Port Huron: Research Psychologists Press.
- Johnson, C. E., Wood, R., & Blinkhorn, S. F. (1988). Spuriousness and spuriousness: The use of ipsative personality tests. *Journal of Occupational Psychology, 61*, 153–162.
- Kostick, M. (1977). *Kostick's Perception and Preference Inventory*. Applied Psychology Associates: Brookline, MA
- Martin, B. A., Bowen, C.-C., & Hunt, S. T. (2002). How effective are people at faking on personality questionnaires? *Personality and Individual Differences, 32*, 247–256.
- Raskin, R. N., & Hall, C. S. (1979). A narcissistic personality inventory. *Psychological Reports, 45*, 590.
- Tenopyr, M. L. (1988). Artifactual reliability of forced-choice scales. *Journal of Applied Psychology, 73*, 749–751.

Ipsative Stability

Andrea N. Wiemann and Constance J. Jones
Department of Psychology, California State
University, Fresno, CA, USA

Introduction

In order to describe and understand human behavior, psychologists most typically compare individuals to one another. This so-called *nomothetic* approach produces generalizations across individuals with respect to characteristics, but may not perfectly capture single individuals' unique qualities. An alternative, less frequently used method to describe and understand human behavior involves the so-called *idiographic* approach, which focuses on capturing the most essential or salient characteristics of single individuals, and therefore involves intraindividual rather than interindividual comparisons of characteristics.

With respect to measurement, the nomothetic approach involves *normative* measures, which allow for comparisons of variable scores across multiple individuals. This variable-centered approach often results in individuals receiving scores in reference to a “normative” group (e.g., Roberts et al. 2001). Classic normative measures of personality include the California Psychological Inventory (Gough and Bradley 1996), Big Five measures (McCrae and John 1992), and the like. In contrast, the idiographic approach involves *ipsative* measures, which allow for comparisons within single individuals. This person-centered approach involves intraindividual comparisons, determining the saliency of multiple characteristics within the same individual. A classic ipsative measure of personality is the California Q-sort (CQS; Block 2008), described in more detail below.

California Q-Sort

The California Q-Sort (CQS) is an “intraindividual person-centered method” of

personality assessment, adapted from Stephenson's (1953) Q-Sort scaling procedure. Block created the CQS to consolidate data across a disparate set of three longitudinal studies – the Berkeley Growth Study, the Berkeley Guidance Study, and the Oakland Growth Study (Eichorn 1981), which were all started in the late 1920s. In these studies, three separate principal investigators collected different sets of materials from the study child participants and parents, although their primary goal – to describe normal child and adolescent development – was shared.

Block saw the value of combining the three samples, to increase sample size and power. In order to effectively combine the data, trained clinicians read all materials collected regarding a participant (e.g., parent interviews, child interviews, standardized surveys, projective test results) at a certain age (e.g., age 13) and then rated that participant on a set of 100 items Block created, designed to capture all important elements of personality (e.g., *Is a genuinely dependable and responsible person*, *Shows condescending behavior in relation with others*, *Tends to feel guilty*). Reflecting the ipsative nature of the CQS, clinicians were told not to compare participants with one another, but to simply focus on each participant individually, identifying those characteristics that were most and least salient or most like and least like that single participant. A forced distribution of scores was used, with ratings 1–9, such that only five characteristics could be rated “most like him/her” (9) and only five characteristics could be rated “most unlike him/her” (1). The total number of intermediate values was also forced, such that the final distribution of scores falls into a quasi-normal distribution of 5, 8, 12, 16, 18, 16, 12, 8, and 5. This procedure requires judges to make many discriminations across items, such that the CQS with 100 items and 9 categories requires 4349 discriminations (Ozer 1993).

Consider an example member of the Berkeley Guidance Study, “Jane.” Using a subset of 73 items from the 100-item California Q-sort deemed to be reliable and valid across multiple ages (Haan et al. 1986), at age 13, Jane's most salient CQS items were: *Is uncomfortable with*

uncertainty and complexities; Extrapunitive and tends to transfer or project blame; Emphasizes being with others – gregarious; Is self-defeating; and Judges self and others in conventional terms like “popularity,” “the correct thing to do,” social pressures, etc. Her least salient CQS items were: *Has high aspiration level for self; Has a wide range of interests; Is turned to for advice and reassurance; Behaves in an assertive fashion in interpersonal situations; and Genuinely values intellectual and cognitive matters.* Here we see a view of an early teen who is judgmental, conventional, and prickly, with few intellectual interests but with an uneasy immersion in the social scene.

The extraordinary nature of the Berkeley Guidance Study lies not only in its depth of assessment at various points of the life span but also the length of the life span covered. Consider Jane now at age 30. Jane is rated most salient in *Is a genuinely dependable and responsible person; Behaves in a giving way toward others; Is protective of those close to her; Behaves in a sympathetic or considerate manner; and Has warmth and is compassionate.* Jane is rated least salient in: *Is guileful and deceitful, manipulative, opportunistic; Aloof, keeps people at a distance and avoids close interpersonal relationships; Tends toward undercontrol of needs and impulses and unable to delay gratification; Tends to be rebellious and nonconforming; and Is self-indulgent.* We see an entirely different picture of Jane as a young adult. She has matured to become protective, warm, kind, and non-rebellious, although possibly a bit overcontrolled. The prickly, socially jealous teenager is gone.

And now consider Jane at age 50. She is most salient in: *Anxiety and tension find outlet in bodily symptoms; Basically submissive; Tends toward overcontrol of needs and impulses, binds tensions excessively, and delays gratification unnecessarily; Reluctant to commit self to any definite course of action and tends to delay or avoid action; and Is self-defeating.* Jane is least salient in: *Genuinely values intellectual and cognitive matters; Behaves in an assertive fashion in interpersonal situations; Tends toward undercontrol of needs and impulses and unable to delay gratification; Tends to be rebellious and nonconforming; and Is*

self-indulgent. Jane has changed again. Her over-control now involves some pathology, with somatization and a self-defeating attitude, which has returned from her early teens.

As intriguing as it is to paint portraits of individuals at different points in time and consider emergent and reemergent themes, an objective measure of change would be helpful. *Ipsative change* (or stability) may be calculated by correlating the entire set of CQS scores at one age with the entire set of CQS scores at a different age. Note these correlations are calculated for each individual separately. Unlike the classic use of the correlation, examining the connection between two variables across multiple individuals, here the correlation is used to examine the connection between multiple characteristics across two time points for a single individual.

Jane's CQS correlation between age 13 and age 30 is -0.14 , which suggests much change between those two ages. The negative correlation indicates that characteristics that were rated high at age 13 are now rated low at age 30. Jane's correlation between age 30 and 50 is 0.23 , showing modest stability. Interestingly, the correlation between age 13 and age 50 is 0.49 , indicating Jane's essential nature at age 50 is more similar to her nature in early adolescence than young adulthood.

Normative Versus Ipsative Change and Stability in Personality

There are many ways to conceptualize, capture, and model change (Jones and Peskin 2013), with a number of decisions impacted by the choice of normative or ipsative measurement. Normative change often focuses on the consistency and change of a single characteristic and how individuals' scores change over time. Common statistics to measure normative change include repeated measures ANOVA, to evaluate mean-level change (Jones and Peskin 2013; McAdams and Olson 2010). Correlation coefficients are also frequently used, to evaluate "differential continuity," or rank orderings of individuals across time (McAdams and Olson 2010). Measures of normative change

allow for generalization across many people and are a convenient way to quantify variables and make comparisons between individuals. Modifications of these common statistical methods may allow for the measurement of interindividual differences in intraindividual change (e.g., Mroczek 2007). However, normative measurements do not describe single individuals with complete detail and therefore miss identifying the "essence" of the individual.

Measures of ipsative change instead evaluate multiple attributes within an individual at multiple time points in time. Q-sort correlations measure the differences in relative saliency of many different personality characteristics across two time points within single individuals. This technique captures the complexity of single individuals by describing the relationships between intraindividual characteristics. Q-sort correlations provide more complex descriptions of an individual's characteristics over time, although correlations capture change between two time points only.

Summary

Ipsative stability is an interesting, less often used method to explore change in personality. Its multivariate, person-centered information provides helpful additional information for understanding personality and people, complimenting information obtained with normative measures and measures of normative change.

References

- Block, J. (2008). *The Q-sort in character appraisal: Encoding subjective impressions of persons quantitatively*. Washington, DC: American Psychological Association.
- Eichorn, D. H. (1981). Samples and procedures. In D. H. Eichorn, J. A. Clausen, N. Haan, M. P. Honzik, & P. H. Mussen (Eds.), *Present and past in middle life* (pp. 33–51). New York: Academic.
- Gough, H., & Bradley, P. (1996). *CPI manual*. Palo Alto: Consulting Psychologists Press.
- Haan, N., Millsap, R., & Hartka, E. (1986). As time goes by: Change and stability in personality over fifty years. *Psychology and Aging, 1*, 220–232.

- Jones, C., & Peskin, J. (2013). Conceptualizing, capturing, and modeling change: Challenges for psychology. *Social and Personality Psychology Compass*, 7(9), 626–636.
- McAdams, D. P., & Olson, B. D. (2010). Personality development: Continuity and change over the life course. *Annual Review of Psychology*, 61, 517–542.
- McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality*, 60, 175–215.
- Mroczek, D. K. (2007). The analysis of longitudinal data in personality research. In R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 543–556). New York: The Guilford Press.
- Ozer, D. J. (1993). The Q-sort method and the study of personality development. In D. C. Funder, R. D. Parke, C. Tomlinson-Keasey, & K. Widaman (Eds.), *Studying lives through time: Personality and development* (pp. 147–168). Washington, DC: American Psychological Association.
- Roberts, B. W., Caspi, A., & Moffitt, T. E. (2001). The kids are alright: Growth and stability in personality development from adolescence to adulthood. *Journal of Personality and Social Psychology*, 81, 670.
- Stephenson, W. (1953). *The study of behavior: Q-technique and its methodology*. Chicago: University of Chicago Press.

Ire

- ▶ [Rage](#)

Irrational Fear

- ▶ [Phobia](#)

Irrational Thought

- ▶ [Primary Process](#)

Irregular

- ▶ [Eccentricity](#)

Irresponsibility

Siny Tsang
Columbia University, New York, NY, USA

Synonyms

[Disloyalty](#); [Thoughtlessness](#); [Unreliability](#)

Definition

Lacking a sense of responsibility, disregard for obligations and consequences

Introduction

Irresponsibility can be characterized as a general unwillingness to take on responsibilities. Characteristics of irresponsibility are often reflected in an antisocial lifestyle, in which individuals consistently fail to meet familial, work, school, and/or financial obligations, and are unable or unwilling to follow through with promises and agreements. This attitude may manifest in various aspects of life, such as financial situations, work behavior, and relationships with family, friends, and business associates.

Irresponsibility and Psychopathology

Irresponsibility is one of the 16 defining characteristics of the psychopathy construct described by Cleckley (1941). Cleckley describes such a person as having “no sense of responsibility whatsoever (p. 368),” regardless of the urgency or importance of the issue at hand. This attitude is not affected by whether the person would be confronted or called to account for his/her failure or disloyalty. Although the irresponsibility nature of a psychopath is likely to persist, this trait is further characterized by being unpredictable, or “an inconsistency in inconsistency (p. 369).”

In the development of a clinical instrument to assess psychopathy among adults, irresponsibility is one of the criteria in the Psychopathy Checklist (PCL; Hare 1980) and the more recent Psychopathy Checklist-Revised (PCL-R; Hare 2003). The irresponsibility feature is indicated by frequent failure to honor obligations and fulfill commitment to others. Examples of irresponsible behavior include defaulting on loans, drunk driving, violates contract agreements, and unwilling to provide financial support for family. Such attitude of irresponsibility is also characterized by a lack of, or minimum, sense of duty or loyalty to other people, society, beliefs, or causes.

Accordingly to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5; American Psychiatric Association, 2013), irresponsibility is one of the seven sub-features in Criterion A for the diagnosis of antisocial personality disorder, reflecting a general disregard for and violation of others' rights since the age of 15. Irresponsibility is characterized by a number of attributes, including disregarding and failing to honor obligations or commitments (e.g., financial, work), as well as the lack of respect for, and the inability to fulfill agreements and promises.

However, it is important to acknowledge that irresponsibility is only one of the behavioral characteristics endorsed by individuals with high levels of psychopathic traits. As psychopaths make up a very small proportion (~ 1%) of the general population (Hare 1999), an individual who displays traits of irresponsibility does not necessarily also endorse other classic psychopathy features (e.g., lack of empathy, callousness).

Irresponsibility and Youth

Adolescence is the transitional phase in which children transition from being dependent on parents/guardians to autonomous and independent young adults. In addition to changes in cognitive functioning associated with brain development during this period of time, there is also an increased exposure to physical hazard (e.g., alcohol, drugs) for adolescents (Rutter 2006). Taken together, these changes are conducive to the

engagement of irresponsible behavior during adolescence. In part, irresponsibility may be identified as normative behavioral characteristics during adolescence. For instance, it is common for adolescents to fail to complete chores at home or complete assignments in school. On the other hand, irresponsible and impulsive behavior (e.g., binge drinking, antisocial behavior) is often frequently endorsed by adolescents.

Studies have suggested that irresponsibility in youth may be, in part, due to psychosocial immaturity during adolescence, which affects adolescents' judgment and decision-making capacity (Steinberg and Scott 2003). Compared to adults, teenagers are more impulsive, susceptible to peer influence, and relatively less future oriented. In addition, adolescents are more likely to engage in risk-taking behavior, as their decision is driven more by rewards than risks.

Persistence of such behavior across multiple settings and situations may be pathological, especially when in combination of other behaviors indicative of psychopathy. As with the PCL-R, irresponsibility is considered as one of the criteria in the assessment of psychopathy among adolescents in the Psychopathy Checklist: Youth Version (PCL: YV; Forth et al. 2003). Likewise, alternate measures of youth psychopathy also assess traits of irresponsibility. For example, the irresponsibility subscale in the Youth Psychopathic Traits Inventory (YPI; Andershed et al. 2002) consists of items such as "I find rules to be nothing but a nuisance" and "It has happened several times that I have borrowed something and then lost it."

Research on adolescent development suggested that the majority of adolescents follow a relatively stable and adaptive trajectory into young adulthood, although some maintained a pattern of maladaptive functioning from childhood through young adulthood. Though relatively rarer, changes in developmental trajectories have been observed among adolescents, for example, adolescents whose delinquent behavior is limited to adolescence (Moffitt 1993), youths who demonstrated increase in maladaptive functioning during adolescence, and teenagers who showed improvement from a previously negative developmental trajectory (Compas et al. 1995).

Parenting Styles and Irresponsibility

There has been extensive research examining the association between parenting styles and adolescent development. Adolescents raised by authoritative parents (responsive and demanding) are relatively more responsible, self-assured, independent, and socially and instrumentally more competent. Adolescents from permissive households (responsive but not demanding) are relatively less mature, more irresponsible, more likely to conform to their peers, and less likely to take on leadership positions (Steinberg and Silk 2002). Adolescents with authoritarian parents (demanding but not responsive) are relatively less self-assured, more irresponsible, and less motivated (Furnham and Cheng 2000). Nevertheless, it is possible that the link between parenting styles and adolescent development is bidirectional (Lewis 1981), in that adolescents' temperament may elicit different parental responses, which in turn leads to varying development of psychosocial maturity and adolescent adjustment.

Conclusion

Irresponsibility is considered a trait that is illustrated by the reluctance of taking on responsibilities and obligations across different aspects of life (e.g., family, friends, work, society). This irresponsibility trait is reflected by the lack of concern or care of consequences that may result from disregarding obligations or failing to fulfill agreements.

Cross-References

- ▶ [Hare Psychopathy Checklist](#)
- ▶ [Psychopathy](#)
- ▶ [Psychopathy Checklist-Revised \(PCL-R\)](#)
- ▶ [Psychopathy Checklist: Youth Version \(PCL: YV\)](#)

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (5th ed.). Arlington: American Psychiatric Association.

- Andershed, H., Kerr, M., Stattin, H., & Levander, S. (2002). Psychopathic traits in non-referred youths: initial test of a new assessment tool. In E. Blaauw & L. Sheridan (Eds.), *Psychopaths: current international perspectives* (pp. 131–158). The Hague: Elsevier.
- Cleckley, H. M. (1941). *The mask of sanity an attempt to reinterpret the so-called psychopathic personality*. St Louis: Mosby.
- Compas, B. E., Hinden, B. R., & Gerhardt, C. A. (1995). Adolescent development: Pathways and processes of risk and resilience. *Annual Review of Psychology*, *46*, 265–293.
- Forth, A. E., Kosson, D. S., & Hare, R. D. (2003). *The psychopathy checklist: youth version*. Toronto: Multi-Health Systems.
- Furnham, A., & Cheng, H. (2000). Perceived parental behaviour, self-esteem and happiness. *Social Psychiatry and Psychiatric Epidemiology*, *35*(10), 463–470.
- Hare, R. D. (1980). A research scale for the assessment of psychopathy in criminal populations. *Personality and Individual Differences*, *1*(2), 111–119. [https://doi.org/10.1016/0191-8869\(80\)90028-8](https://doi.org/10.1016/0191-8869(80)90028-8).
- Hare, R. D. (1999). Psychopathy as a risk factor for violence. *Psychiatric Quarterly*, *70*(3), 181–197.
- Hare, R. D. (2003). *The hare psychopathy checklist-revised PCL-R* (2nd ed.). Toronto: Multi-Health Systems.
- Lewis, C. (1981). The effects of parental firm control. *Psychological Bulletin*, *90*, 547–563.
- Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: a developmental taxonomy. *Psychological Review*, *100*, 674–701.
- Rutter, M. (2006). Psychopathological development across adolescence. *Journal of Youth and Adolescence*, *36*(1), 101–110. <https://doi.org/10.1007/s10964-006-9125-7>.
- Steinberg, L., & Scott, E. S. (2003). Less guilty by reason of adolescence: Developmental immaturity, diminished responsibility, and the Juvenile death penalty. *American Psychologist*, *58*(12), 1009–1018. <https://doi.org/10.1037/0003-066x.58.12.1009>.
- Steinberg, L., & Silk, J. (2002). Parenting adolescents. In M. Bornstein (Ed.), *Handbook of parenting: Vol. 1. Children and parenting* (2nd ed., pp. 103–133). Mahwah: Erlbaum.

Irritability

- ▶ [Anger](#)
- ▶ [Rage](#)
- ▶ [Temperament](#)

Isolation of Affect

- ▶ [Compartmentalization](#)

Item Response Theory

Aja Louise Murray¹ and Tom Booth²

¹Violence Research Centre, Institute of Criminology, University of Cambridge, Cambridge, UK

²Department of Psychology, University of Edinburgh, Edinburgh, UK

Synonyms

[Modern test theory](#)

Definition

Item response theory (IRT), sometimes referred to as modern test theory, is a branch of psychometrics which seeks to understand and statistically model how a person will respond given a certain level of an underlying characteristic (e.g., cognitive ability, depression, etc.) and the properties of a questionnaire, test, or survey item. First developed in the 1950s and 1960s, and increasing in popularity from the 1970s onwards, IRT is a set of analytic tools with a broad range of applications in the field of personality and individual differences.

Introduction

In individual differences research, attributes such as “intelligence,” “neuroticism,” or “well-being” are commonly conceptualized as latent attributes that cannot be directly observed but whose levels can be gauged using sets of questionnaire-type items. Item response theory provides a framework for linking latent attribute levels to observed questionnaire responses in a mathematically precise manner. The relations between latent attribute levels and the probability of endorsing an item or response category can be represented by item characteristic curves (ICC) for items with two response options, or category response curves (CRC) for items with more than two response options.

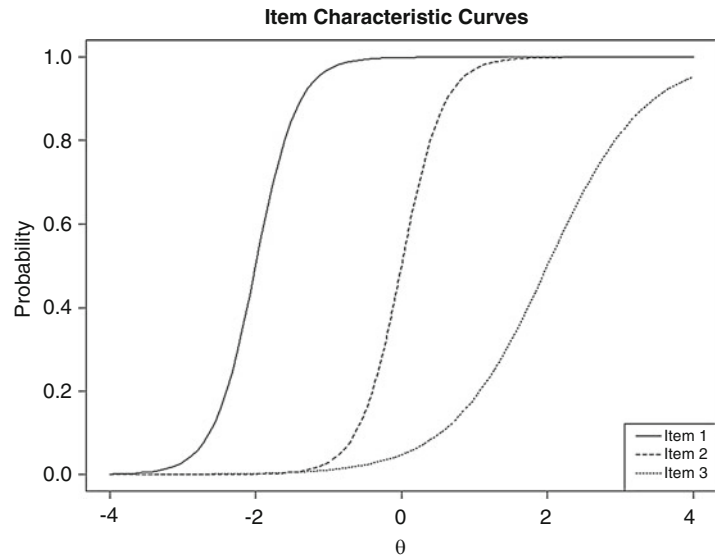
Item Response Functions

ICCs are typically displayed on a two-dimensional graph (see Fig. 1). The y-axis records the probability of endorsement of an item (for binary items) or response category (for polytomous items) and the x-axis records the latent attribute level. The latent attribute is often denoted by the Greek letter θ (“theta”). ICCs depend on the specific IRT model chosen and parameters estimated from the data. For example, in a two parameter logistic model, a mathematical function known as a logit function is used to represent the relation between latent attribute levels and the probability of endorsing an item with a binary response format. The shape of the ICC is determined by the choice of the logit function; however, items can vary in their “discrimination” and “location” parameters. Discrimination determines the steepness of the slope of the ICC and represents the extent to which responses on the item can differentiate between people differing in latent attribute level. The steeper the slope, the smaller the difference in theta levels between those who do and do not endorse the item. Location determines the position of the ICC along the latent attribute continuum and represents how “difficult” the item is to endorse, that is, how high a person’s level on the latent attribute has to be before it becomes likely they will endorse the item.

Figure 1 shows ICCs for three dichotomous items. Items 1 and 2 differ only in their location. The lines have the same discrimination (steepness) and so run parallel to each other. However, for item 2, individuals must be higher on the latent attribute in order to endorse the item – that is the ICC is further towards the higher end of the latent attribute continuum on the plot. Item 3 differs from items 1 and 2 in both its location and its discrimination. It is both further to the right along the x-axis, indicating individuals would need to be higher on theta to endorse the item, and also has a shallower slope, or lower discrimination between individuals differing in their latent attribute levels.

Key Distinctions in Classifying IRT Models

Specific classes of IRT models link latent attributes to observed responses according to different

Item Response Theory,**Fig. 1** Item characteristic curves from a 1PL model

mathematical relations. Indeed, the first task in the context of any IRT analysis is the selection and testing of an appropriate model for the response functions. Major distinctions that describe different classes of IRT models include parametric versus nonparametric, dominance versus unfolding, and binary versus polytomous item response formats (for a full accessible introduction, see Embretson and Reise 2013).

Parametric Versus Nonparametric

Parametric IRT models assume a specific form to the link function between the latent attribute and the item responses. Most commonly, IRT models assume either a logit link or a probit link between the level of the latent trait and the probability of responding in a given way to a specific item. These correspond to the cumulative distribution functions of the logistic and normal distributions, respectively.

Commonly, one may see reference to the 1, 2, 3, and rarely 4, parameter logistic models (1PL, 2PL, 3PL, and 4PL, respectively). As the names suggest, these models include an increasing number of estimated parameters, moving from the most (1PL) to least (4PL) constrained model. In the 1PL, often called the Rasch Model (Rasch 1960), all items are assumed to have equal

discriminations, and to differ only with respect to difficulty. In the 2PL, items are allowed to differ with respect to both location and discrimination (as illustrated in Fig. 1). In the 3PL, the additional parameter is included to capture guessing behavior in item responding. In the 4PL, the additional parameter is included to model the upper asymptotes of the ICCs.

Nonparametric IRT models are based on empirically derived relations between the items and the total raw scores, or rest scores (the sum of scores on all the items *except* the one for which the relation is being derived), which are not determined by a specific mathematical function and thus may take on any shape. Nonparametric models are useful when the form of relation between the latent attribute and item responses cannot be adequately described by available parametric IRT models. The most common nonparametric IRT model is known as the “Mokken” model (Mokken 1971).

Dichotomous Versus Polytomous

Different IRT models are used depending on whether items are binary (two response options) or polytomous (more than two response options). Many cognitive performance tests use binary items containing questions which are marked as

correct or incorrect (e.g., scored “correct” = 0, “incorrect” = 1) for each respondent. This can be contrasted with items which have Likert-type, multiple option response formats. Here an individual may, for example, be asked to state a degree of agreement with a statement using response options such as: “Strongly Disagree,” “Disagree,” “Agree,” and “Strongly Agree” with corresponding scores “1,” “2,” “3,” and “4.” Within the family of logistic models, a 2PL model can be used for binary items while a graded response model (GRM; Samejima 1968) can be used for polytomous.

Within polytomous IRT models, a further distinction can be made between “divide-by-total” models that include the partial credit model (Masters 1982), generalized partial credit model (Muraki 1992), nominal response models (Bock 1972), and “difference” models that include the graded response model. In difference models, “location” parameters (referring to the location along the latent trait continuum) capture the crossing of thresholds between, for example, response option 1 versus 2, 3, 4; response options 1, 2 versus 3, 4; and between response options 1, 2, 3 versus 4. In divide-by-total models, “location” parameters capture distinctions between each adjacent pair of response options independently, for example, 2 versus 1; 3 versus 2; and 4 versus 3. An important model within the divide-by-total family is the nominal response model which can be used to model items in which there is no inherent ordering of response categories.

Dominance Versus Unfolding or Ideal Point Models

Dominance models assume that the probability of endorsing an item increases as the level of the latent attribute increases. By contrast, in “unfolding” models, a person is assumed to have a high probability of endorsing an item only when their latent attribute level is close to the “location” of the item on the same continuum; when there is a good match between the “difficulty” or “location” of the item and the level of the latent attribute. These models, therefore, have “bell-shaped” item

characteristic curves with a peak (highest probability of endorsement) where difficulty and latent attribute level match and decreasing probabilities at latent attribute levels both above and below this point.

Uses of IRT Models

Within individual differences research, a major use of IRT models is in the development and validation of psychometric tests. For example, IRT can be used in item selection to ensure items cover the full (or desired) range of a latent attribute, in identifying differences in item functioning across groups (e.g., males and females) and thus assessing test bias, and in evaluating the reliability of latent attribute estimates across different levels of the latent attribute. This latter feature distinguishes it from classical test theory approaches which assume a fixed value of reliability for all latent attribute levels.

IRT is also used to estimate latent attribute scores for individual respondents and to identify particular respondents for whom the IRT model does not appear to apply (or “fit”). It is also used to functionally connect or “link” scores across tests in order to predict, compare, or equate scores across different tests. These uses of IRT have been especially popular in educational research and are growing in popularity and use in clinical research settings. For example, score linking is important for evaluating trends in a measured attribute over time when a new version of a test is developed and used. In such instances, it is important to understand as precisely as is possible, how a score on an original test relates to a score on a later variant. Score linking is also increasingly being used in order to combine data from multiple studies for collaborative research.

Finally, IRT is used in “computer adaptive testing” which uses a computerized algorithm to tailor the items administered to a respondent based on iterative estimates of their latent attribute level. The purpose is to minimize the number of items a respondent has to complete while still obtaining reliable data. It does so by removing

the need for respondents to answer items that are too far removed from their latent attribute level (e.g., a cognitive test item that is too easy for a highly intelligent respondent).

Conclusions

Item response theory models can be used to model a range of different item types and item-latent attribute relations. Their main uses in individual differences research include the development and validation of tests, the computation of test scores, and computerized adaptive testing.

Cross-References

- ▶ [Differential Item Functioning](#)
- ▶ [Latent Variable](#)
- ▶ [Latent Variable Growth Curve Models](#)
- ▶ [Modern Test Theory](#)
- ▶ [Psychometrics](#)

References

- Bock, R. D. (1972). Estimating item parameters and latent ability when responses are scored in two or more nominal categories. *Psychometrika*, 37, 29–51.
- Embretson, S. E., & Reise, S. P. (2013). *Item response theory for psychologists*. London: Lawrence Erlbaum Associate.
- Masters, G. (1982). A Rasch model for partial credit scoring. *Psychometrika*, 47, 149–174.
- Mokken, R. (1971). *A theory and procedure of scale analysis: With applications in political research*. Berlin: Walter de Gruyter.
- Muraki, E. (1992). A generalized partial credit model: Application of an EM algorithm. *ETS Research Report Series*, 1992, 1–30.
- Rasch, G. (1960). *Probabilistic models for some intelligence and attainment tests*. Copenhagen: Danish National Institute for Educational Research.
- Samejima, F. (1968). Estimation of latent ability using a response pattern of graded scores. *ETS Research Report Series*, 1968, 1–169.
- Samejima, F. (1969). Estimation of latent ability using a response pattern of graded scores. *Psychometrika monograph supplement*.