Chapter 11
Neuroscience and the Future of the Self

Some day we may have a general psychology which is also a psychology of personality as a whole.
Gordon Allport

Toward the end of the first decade of the 21st century, dynamic theories of personality have been relegated largely to clinical practice in psychology and psychiatry. Experimental research in personality theory has become largely dominated by trait theory, with some call for more narrative, psychobiographical methods from the periphery. Psychoanalysis has become colonized by PhD psychologists and left by the wayside by psychiatrists, who in the medical school curriculum have integrated it into more general "psychodynamically assisted" approaches to psychotherapy. The new focus on neuroscience has barely any reference to personality and has substituted this construct for a more cognitive and behavioral definition of the self. Borrowing a phrase from Fernando Vidal, Sonu Shamdasani has referred to this new focus as the ascendancy of "brainhood." The person is equal to the brain.[1]

Meanwhile, states of consciousness have continued to proliferate in the psychotherapeutic counterculture, where meditation and psychotherapy have evolved into more sophisticated discussions of shamanism and techniques of ecstasy from the iconography of non-Western, and largely non-technological cultures. The widespread, pervasive focus on spirituality in popular culture at large has forced the cognitivists to take up the study of the spiritual sources of resilience, the role of spirituality in therapy, and how to train therapists and researchers to integrate religious beliefs into their understanding of cognition. Neuroscience itself remains hostile to these discussions because of the unscientific nature of anything having to do with religion, and discussions about the nature of consciousness are almost totally confined to reductionistic conceptions of mind. Between parallel distributive processing theories, neural plasticity, and string theory, the person has nearly disappeared off the computer screen in the current milieu, though historically this may only be a temporary state of affairs. Meanwhile, the new rubric among the cognitivists has become "the Cognitive Neuroscience of Religion."[2]

E. Taylor, *The Mystery of Personality*, Library of the History of Psychology Theories,
DOI 10.1007/978-0-387-98104-8_11,

The Fate of Classical Personality Theories

Gordon Allport characterized European and American theories of personality in 1957, right about the time that physicists and biologists first started to talk to one another, but before seeds of the neurosciences had begun to sprout. This was also the period just before the humanistic revolution in psychology of the 1960s.[3] The problem was, at that moment in time, in both academic and clinical psychology things remained somewhat backward. Two World Wars and an intervening depression had marked a dramatic change in posture between the Old and the New World, although the Wundtian brand of experimental psychology still persisted in the United States in the idea that hard science meant the only real science worth pursuing in the academy. Only now, the child had become father of the man. Prior to 1914, Americans sent their finest minds to European universities. After 1945, the Americans assumed there was nothing to learn from Europe, while Europeans began to flock to the United States and Americans forgot their French and their German.

Allport maintained that, with regard to the specific field of personality psychology, marked differences remained, however. Americans tended to believe that personality was almost infinitely malleable, shaped by life history and social forces. In places like Switzerland, there was more emphasis on the relative constancy of basic character structure; sociology was less emphasized, while genetics, characterology, and constitutional psychiatry were foremost. The Americans stressed personality, while the Europeans continued to emphasize character, a pre-World War I construct. Americans viewed personality in terms of the more superficial, outward signs of behavior and motor activity, while the Europeans sought entry into the deeper structures of the individual. But the bifurcation was not really so clear. Britain and the United States shared numerous theories in common, such as the psychoanalytic, the factorial, the positivistic, the projective, and the interpersonal, so it is also appropriate to speak of an Anglo-American trend over against the European. The Germans had remained more phenomenological than behavioral and statistical, while the British, especially Hans Eysenck, considered Anglo-Saxon psychology to be more scientific, while Continental psychology remained more philosophical.

Allport then launched into some of the more substantive similarities and differences: Anglo-Saxon psychology adhered to the Lockean tradition in its definition of mental life—that the mind is a blank slate to begin with and does what the environment tells it to do, which it processes with simple ideas linked through association. The Continental tradition in contrast was more Leibnitzian and Kantian, emphasizing the rational categories of the monad. The intellect is proactive not merely reactive; the individual person strives toward a unique destiny; and persons fall into strata depending on their level of self-actualization, which ranges from bestial and animalistic to autonomous, compassionate, and altruistic. Personality is taken as a total gestalt. The Americans have remained compulsively focused on the nature–nurture controversy, while the Europeans ascribed a larger role to inborn ability and disposition.

Further, Continental theories concentrated on the whole person, while American theories were more atomistic, focusing on parts of the whole, such as traits, attitudes, syndromes, factors, and behaviors. Stern's personalism, Wertheimer's gestalt approach, and Lewin's topological psychology were all examples of "having your whole and analyzing it too." As was Spranger's *Verstehen*—an empathic, intuitive feeling of knowing a phenomenon from the inside. Existentialism also demanded allegiance to the entire subjective world of the individual. Anglo-Americans treat all this with suspicion, being dominated by associationism in its varied forms. Americans also tend to deny any internal unity to personality.

Likewise, American theories tended to be more melioristic and optimistic, while Continental theories of personality were more fatalistic and prone to pessimism. Here, Allport contrasted Freud's Germanic emphasis on a tyrannical Id and overbearing superego with newer developments in ego psychology and neo-Freudianism more characteristic of the Americans. Certainly the pessimism of European existentialism was to be contrasted with its more optimistic counterpart in American theories coming from Humanistic psychology, such as that of Carl Rogers. Allport selected out the writings of Paul Tillich for particular emphasis on American's "resilient courage."

European and American theories also differed on their emphasis on social interaction. Continental theories emphasized the self-contained person: American ones tended toward one's openness to the world. The pragmatic philosophies of James, Mead, and Dewey went on to inspire the sociology of Talcott Parsons and the social psychology of Floyd Allport. In such examples the emphasis was on external as opposed to internal structure.

They also differed on their emphasis on brain models. David Kretch, E. C. Tolman, and D. O. Hebb reflected the typical neurological urge among the Anglo-Americans to reduce personality to physiology; Walter Cannon, Karl Lashley, Wilder Penfield were all invoked in defining neurological substrates, as were Sir Charles Sherrington and Clark Hull. Even Wolfgang Köhler had contributed to this view with his work on isomorphism.

Finally, the ideal of rigorous positivism continued to prevail in the Anglo-American arc to a greater degree than anywhere else. Hans Eysenck, on the one hand, leveled three charges against European characterology. He found it obscure, philosophical, and unscientific and addicted to knocking down straw men. European opponents of this view characterize the American psychologists as "soulless mechanists, addicted to twitching muscles, mathematics, and raw meat."[4] On the other hand, Allport pointed out, "The central bulky problems of personality will remain untouched by 'science' if we are too niggardly concerning our conceptions of admissible procedures."[5] This made Freud's theories at the time, however unscientific, the more fruitful single source of insight into human personality than all of Eysenck's scales.

In the end, Allport posed Carl Rogers's self-revelation as a possible standard. Rogers knew that all the really important data about the person comes from actual human interaction, yet the need for irreproachable, repeatable, objective methods was also called for.

> Science is a way to prevent me from deceiving myself in regard to my relatively formed subjective hunches which have developed out of the relationship between me and my material. It is in this context, and perhaps only in this context, that the vast structure of operationism, logical positivism, research design, tests of significance, etc., have had their place. They exist, not for themselves, but as servants in the attempt to check the subjective feeling or hunch or hypothesis of a person with objective fact.[6]

This view, Allport maintained, avoids the bigotry and sterility of the methodological purists and promotes the admission of fresh insights, phenomenological deliverances, and hunches, which are now more freely allowed. In sum, it is difficult to separate theories of personality from the more general theories of psychology. In this sense, Allport concluded, revealing his own prejudices, "some day we may have a general psychology which is also a psychology of personality as a whole."

Twenty years later, a half a century of personality psychology was celebrated in 1987 with publication of a commemorative volume recognizing the Allport and Stegner texts of 1937, entitled *Fifty Years of Personality Psychology*.[7] But the problem here, too, was that academic psychologists could still not bring themselves to acknowledge either the neurosciences, or the humanistic revolution that was blazing all around them. There were several venues, beginning with the Institute for Personality Assessment and Research at the University of California, culminating in a session at the annual convention of the American Psychological Association, in August of that year, sponsored by the Division of Personality and Social Psychology. The published volume highlighted the opinions of 21 authors, many of whom were direct students of Henry Murray and Gordon Allport. While representing possibly the extreme liberal wing of the scientific study of personality in the academy, the picture they painted was one of almost zero progress in the field as far as altering the stance of manipulation, prediction, and control was concerned.

Additionally, there were no women authors in the book, and issues of the historic differences between personality theorists grounded in depth psychology and social personality theorists who define the person in terms of impersonal social forces were not mentioned. Neither was there mention of post-modernism, a movement already by the 1980s in full swing—in fact, a movement by that time, which had become a wave that had already crested. Freud and also Jung got exactly two references apiece in the entire text by the many authors who contributed papers. Gardner Murphy was mentioned exactly once. The humanistic psychologists were mentioned here and there but no conception of a growth-oriented dimension to personality was anywhere broached, except to mention self-actualization as one genre of personality theory, but nothing philosophical was made of it as far as the transformation of psychology's conception of the scope of personality was concerned. Existential-humanistic concepts of the person were not broached at all.

The emphasis began on personal documents and the case study method, but quickly turned to trait theory, culminating in the five factor theory, today now dominating the experimental literature. Psychodynamics were nearly absent throughout, while the overall status of personality theory at large in psychology was depicted by the late 1980s as extraordinarily low, ever since the gradual takeover of personality

theory by the epistemology of the social learning theorists in the early 1970s. Personality measurement was at least on the rise in industry by the late 1980s, and this was presented as the concluding, allegedly most positive note of the book.

Personality theory clearly had not moved any closer to fulfilling Allport's hope for a science of the whole person and its status today remains uncertain. According to Salvatore Maddi (1989), one of Murray's students, personality continues to be seen as a stable set of tendencies and characteristics that determine commonalities and differences in people's psychological behavior. These include thoughts, feelings, and actions that have continuity in time and that may not be easily understood as the sole result of the social and biological pressures of the moment.[8] However, such a definition continues to propel psychology forward as the enduring cognitive and behavioral study of personality traits.

Daniel McAdams, another protégé in the lineage of Henry Murray, challenged this view (1995, 1996) and contended that personality is best understood on three levels. First is the level of traits and dispositions. This is the five factor theory: (1) openness to experience, (2) conscientiousness, (3) introversion and extraversion, (4) agreeableness, and (5) neuroticism or negative affectivity.[9] The second is strivings and goals (Emmons, 1999). These are regulatory mechanisms that guide behaviors toward certain outcomes.[10] In other words, traits describe what a person has and strivings express what a person is trying to achieve. The third is identity, which involves life narrative, case materials, interviews, and intensive content analysis.[11] Barenbaum and White, however, have shown in their history of personality theory the inability of mainstream reductionists in psychology to deal with the case study method, which is at the heart of an identity-oriented psychology of personality. Instead, psychologists revert back to the measurements of traits, meanwhile practicing a form of tokenism by gesturing toward those who do case study research, implying that some do that too, whatever it is.

To McAdams's list I would add two additional levels of analysis: Fourth, a psychodynamic interpretation which takes account of unconscious determinates in the formation of personality, reported by a second person in dynamic interaction with the individual, such as a therapist trained in the language of the unconscious or the neuroscientist with experience in meditation and some knowledge of the world's contemplative traditions. A didactic training analysis would also be an example, which an initiate in meditation would also usually undergo.

And fifth, I would add level of or capacity for self-knowledge, which can only be communicated by the person, himself or herself. It may be a function of rational analysis of one's thoughts, words, or actions but also gained by intuitive insight. Intuitive insight is the individual's own idiosyncratic, phenomenological, and existential language of inner experience, expressed in terms of the poetic and visionary symbols they have discovered of their own personal destiny, gleaned from their various intentional excursions into the unconscious. This is exploration of the unconscious for purposes of character development instead of recovery from neurosis. Karen Horney described it within the context of psychoanalysis in *Self Analysis* (1942). Jung defined it as a journey over a lifetime of making the unconscious conscious in the process of normal spiritual growth. Swami Akhilananda described it as

the essential process at work in Hindu psychology, which involves an awakening to a higher, deeper, and more profound state of consciousness.[12]

Attempting to accommodate the reductionists, McAdams has, meanwhile, argued for a New Big Five.[13] While trait theory has made great strides, it has yet to fulfill the historical mandate of the field envisioned by its founders, such as Allport and Murray, namely, the development of an integrative framework for understanding the whole person. McAdams proposes to marry trait theory to narrative life histories to achieve this end.[14] Five factor theorists, meanwhile, continue to ignore what they see as more qualitative methods, and are arguing instead for a marriage between the categories of the DSM-IV and the five factor theory, since the DSM has no standard of normality established by is a significant body of empirical data.[15]

But that is just the historical point. Personality psychology, particularly those models based on dynamic theories of the unconscious, was fading fast from psychology proper and replaced by a more normative concept of the self equal to traditional psychoanalytic definitions of the ego, now sanitized for the cognitivists.

The Self in Psychiatry

Thus, when we turn to the self in psychiatry, we see largely the same narrow focus as in academic psychology. Driving more nails into the coffin of the dynamic theorists, in 2002 the journal *Philosophy, Psychiatry*, *and Psychology* published a series of papers entitled "Dispensing with the Dynamic Unconscious."[16] O'Brian & Jureidini (2002), one a child psychiatrist with a new PhD in cognitive science and the other a lecturer on analytic philosophy, maintained that finally it was time to abandon altogether the concept of a dynamic unconscious. Their frame of reference, however, was confined to psychoanalysis, which they appeared to know only in a limited way. They cited Grunebaum (1984), who to this day still knows nothing about the history of the psychogenic hypothesis as it was anchored in 19th-century French neurophysiology, and Frederick Crews (1996), an English professor whose own Freudian analysis was apparently not successful, as primary sources for the strongest arguments exposing the methodological shortcomings besetting the psychoanalytic unconscious. O'Brian and Jureidini pointed out that psychoanalytic proponents counter with the new links between psychoanalysis and neural Darwinism that associate Freud's dynamic unconscious with the stronger empirical evidence for a cognitive unconscious. The counter strategy of the authors was to show the uselessness of a cognitive unconscious as a construct, thereby logically eliminating psychoanalytic conceptions about the unconscious once and for all.

In the next article, Woody (2002), a professor of philosophy at a small New England college, agreed with O'Brian and Jureidini that the dynamic unconscious must be dispensed with, arguing, in addition, that the problem was also the way psychoanalysts' understand consciousness. Consciousness, Woody quoted Freud as

saying, is dependent on language, which differentiates us from the brutes. He then invoked William James's explanation of the psychologists' fallacy to understand the psychoanalysts' point of view, namely, "The great snare of the psychologist is the confusion of his own standpoint with that of the mental fact about which he is making his support."[17] In other words, Freud had merely superimposed his own state of mind onto the patients and confused their consciousness for his own. Woody did not consider that he too was doing the same thing.

Jerome Kroll, a psychiatrist at the University of Minnesota, countered with "The nine lives of the dynamic unconscious." He began by discounting the other authors' idea that repression is incompatible with subpersonal mental states understood in computational terms. And until cognitive psychologists learn how to cure a broken heart with a paper-and-pencil test, dynamic conceptions of the unconscious will stand as more useful and more relevant to human experience than the cognitivists' mechanical models.

O'Brian and Jureidini then returned with a rejoinder they called "The last rites of the dynamic unconscious." So, the journal editors somewhat unfairly pitted three articles against psychoanalysis to Kroll's single positive one, which was not a position paper to begin with but a response to O'Brian and Jureidini, who were advocates of reductionistic science, but not distinguished philosophers of it themselves, only academics who have identified themselves with science. In any event, the entire discussion highlights the continuing pejorative opinion of the run-of-the-mill, normative scientists for dynamic theories of consciousness and, by implication, the underlying models of personality that support them.[18]

A slightly more enlightened view can be found in Kircher and David's *The Self in Neuroscience and Psychiatry*(2003).[19] The authors limit their definition to begin with, however, by saying that the self refers to commonly shared experience and the fact that we know we are the same person across time.[20] They contrast phenomenology, the essence, content, or feel of a mental state, with analytic philosophy, the systematic and logical connections of knowledge. They then state that they represent the analytic point of view. Their history of the use of the term "the self" is one-sided, equating the self with everyday identity, while their attempt to draw on the literature of philosophy, cognitive science, neuroscience, and psychiatry comes off as quite vast for the little they derive from that literature. Perspectives from phenomenology, psychiatry/psychotherapy, and neuroscience they distinguish in terms of "first person science," what the person has to say out of their own lifeworld, and "third person science," objective knowledge about the individual, each with their own contributions. But in the end the authors attempt an unsophisticated Hegelian integration. They compare only the normal to the schizophrenic. Consciousness is limited to self-awareness. They believe there is a hierarchy—prereflexive, raw feelings, and qualia, after which is self-agency, self-coherence, self-affectivity, and finally self-history. To admit to the reality of the self, however, then usually leads most authors to a futile search for its neurological correlates. In addition, they grant the reality of the phenomenal self, but never apply it to themselves, which highlights the issue of control, but only control of others, as a central limitation of their scientific epistemology.[21]

In order to bridge the gap between mind and body, they think if they just set the philosophical discussion next to the neuroscientific one, then they will come up with causal connections. To do this, they artificially separate phenomenology from philosophy of mind. They claim phenomenology has to do with essences, while the philosophy of mind "based on concepts of analytical philosophy, is for our purposes, mainly concerned with the logical connection and systematization of our knowledge of the mind."[22] In other words, they distort the phenomenon under study to fit the limits of their already preconceived model.

Turkle on the Second Self

Even so, everywhere in the era of computational science, there appears to be a slide into mediocrity. Personality has become a moribund category in the wider domain of behavior science, as any need for a concept of the autonomous person has morphed into the self, equated strictly with atomistic traits that psychology tries to shape and reshape according to external norms. As personality has become the self, the self has become almost exclusively a focus on the ego, and then even here the definitions are not consistent. The favorite metaphor is to define it in terms of man–machine interaction, supported by the idea that we are not only creatures who think and feel, but we are also conditioned by our surroundings. The self then turns out, according to this view, to be our perceptions of how we see ourselves when shaped by things, events, and other persons around us.

Those who consider themselves experts on the subject, such as Professor Sherry Turkle, founder of the Initiative of Technology and Self at the Massachusetts Institute of Technology, have extended this discussion to include an investigation of interactions between humans and computers. Turkle believes that a definition of the self becomes crucial, if we are to fathom the ethical and moral relation of humans to machines, especially where machines are coming to take over more of the life space, but her conception fails to go beyond a secondary reading of Freud and her interpretation of Lacan from a feminist viewpoint.[23]

Ms. Turkle, who works in the context of the neurosciences, is to some degree emblematic of a larger movement in the vein of Human Science. Human Science traditionally has been understood as originally a form of biblical interpretation from the 19th century which evolved through writers such as William Dilthey and then the existential-phenomenologists, but which has in our own time also become associated with European and Marxist social movements, particularly from the Frankfurt School. Politically, the voices of the Frankfurt School were generally critical of the Western rational tradition and the control of institutions of culture by the bourgeois mentality and its ruling elites, mainly men. Lately, it has come to be a vehicle for the proliferation of an ideology that fuses race, class, and gender, limited to a radical feminist interpretation of Freud. Personality is most often defined in this line of thinking, not by internal psychodynamics, but by external social forces.[24]

Ulrich Neiser and the Cognitive Self

Ulrich Neiser, a central figure in the rise of cognitive science, has detailed what he means as the self. He admits at the outset that the self is a bundle of contradictions. The concept is advanced only by its different parts in psychology, as it is just a theory. It is what is reflected to us by others; the self is established by autobiographical memory, it refers to phenomenal experience. There is no centrally agreed upon theory of the self. Whatever it is, it is not generally considered a single entity in psychology

Neiser defines his own perspective as an ecologically oriented cognitive psychology. That is, a psychology where the self is defined by what information the person is using to search for self. Neiser's own work begins with publically available information; only then does it proceed to hypothetical structures. He posits five sources of self knowledge, each with different histories and pathologies: (1) the ecological self; (2) the interpersonal self; (3) the temporal or remembered self; (4) the private self, only available to the person; and finally, (5) the conceptual self, the largest, the theory provided for us by our culture concerning what human beings are.

The ecological self is based on perceptual information. This is James Gibson's term,[25] derived from optical information and bodily feelings, available from infancy, usually free from such pathology as hemineglect, and phantom limb. It begins with perception; move your finger and the optics change the object as it moves. Gibson's opinion was that visual systems evolve to take advantage of this information. Perceptions are usually veridical in place and time. All perception, however, is co-perception of self and world. It flows at an optical nodal point. Like a car next to you moving in traffic that is wall to wall, which makes it seem like you are moving when you are not. Fast looming, coming toward you, and object will create vertigo or throw children off balance. Not adults. This is all the ecological self. Another example would be when the child covers its eyes and says "You can't see me."

There is also the interpersonal self, meaning our relations with the social environment. Smiling and eye contact means we are in some relation with that person. You may not know me or my motives but we know we are looking at each other. This exists from birth. Baby gets disturbed when a video of mother is substituted for the real mother. So the interpersonal and the ecological self are both present; usually in fact, they cohere (annoying in darkness, however, because one is absent). Focusing exclusively on the interaction, such as between lovers, or in the case of mother/baby bonding, will sometimes do the same thing.

There is the remembered self; the self extended in time. I am not just who I am in the here and now. I have a history, memories, etc., which define who I am, as well. Not all memory involves the self. Memory for procedures, skills, and places seems independent of our memories of our self. Autobiographical memory is a good example of the extended self. Memories are not usually very narrative. They are more snapshots. Three-year-olds do not reminisce. Old people do. Your experiences define you, but children have not used them to define the self yet. This begins after

age 4. We have childhood amnesia before that. Importantly, the remembered self is held together seamlessly with the ecological and the interpersonal self.

Then there is the private self. Here we have private experiences. Dreams, thoughts, pains—the realm of secrets for children. It starts after age 4.

There is then the conceptual self. Usually we define ourselves in terms of what other people have told us we are. These pieces of information include beliefs about who we are and who others are. I am American, a professor, a father, etc. I believe I have a liver. I've never seen it, but this is what I have been told. All concepts depend on theory. I simply call it myself. Beliefs about ourselves are not always true. They are moderately responsive to data but largely untrue, as when the skinny girl says, "I'm fat." Or the ugly man says "I'm handsome."

Neiser's conclusion was that private experience has to be accounted for, but too much should not be made of it, since the self is already largely defined elsewhere. We have to start with what is veridically there, what we perceive and who we are and who we are within the present. This is the cognitivists' point of view.

Seligman's Positive Psychology

More enigmatic than other expressions of reductionistic empiricism in cognitive psychology that are hostile toward dynamic conceptions of personality has been Martin Seligman's program called Positive Psychology. Seligman used his presidential address before the American Psychological Association in 1999 to launch Positive Psychology. It was a psychology of hope and optimism that he believed countered psychology's historical emphasis on suffering and the negative attributes of personality that thwarted adjustment.

There were two problems to this approach, however. The problem was that there was a distinguished lineage in psychology already laid down since the time of William James that had advocated the same kind of emphasis, so Seligman and his colleagues can claim no originality for the idea. James, Flournoy, and Myers, all advocated the growth-oriented dimension to personality. Even Théodule Ribot called his endeavors "positive psychology." Jung, Rank, Adler, and others promulgated a similar idea in the classical era of depth psychology, while Horney, Fromm, and Frankl did so among the Neo-Freudians. Goldstein and Wertheimer were similar advocates among the gestalt psychologists. Maslow, Rogers, May, Charlotte Bühler, and others did likewise among the humanistic psychologists. Maslow, in particular, focused on the concept of a positive psychology, long before Seligman.

Seligman, however, while appropriating their language, but with much less sophistication regarding the implications for a value-free science, has self-consciously divorced himself from any association with his forebears and claimed total originality for the idea of a positive psychology and himself its sole inventor.[26] His background is in cognitive psychology and attribution theory, and his major contribution has been to the literature on learned helplessness, shocking animals into complete submission until they learned to react always as victims of every

stressor. Generalizing from animals to people, Professor Seligman is a classic trait theorist whose main thrust now has turned to a classification of virtues. Positive psychology for him is happiness psychology. If we would only look at the bright side of things, they would come about. But as a cognitive strategy, one can only deal with each single behavior one at a time. Each negative thought has to be conditioned to a positive one.

Prof. Seligman's second problem comes from his own colleagues, who argue that science is conceived of as value free and he is superimposing a value-laden judgment on its results. Who, then, determines what is positive and what is negative? By what criteria? The question of meaning cannot be approached by the objectivist epistemology of experimentalism and still remain within that definition of science.

Prof. Seligman has loudly claimed that the humanistic psychologists, while they may have dealt with these issues, are unscientific and do no research, so there is no body of evidence from their claims, which is actually not the case. Nor has he sufficiently addressed the questions about his own philosophy of science that have come from his more reductionistic colleagues. His project has been well endowed financially, and he has now moved into the lucrative field of executive coaching, an area previously mined successfully by predecessors in the psychotherapeutic counterculture such as Anthony Robbins and before him, Werner Erhard, the founder of est. The philosophical implications for science of what he has proposed have not been discussed within his own circle, however. Instead, with the imprimatur of the APA, he has moved into the popular domain, claiming to be more scientific than his predecessors.

To add to the paradox, Prof. Seligman's co-partner in Positive Psychology is the Hungarian cognitivist Mihaly Csikszentmihalyi from the University of Chicago. Csikszentmihalyi started his career studying creativity in art students and in the late 1980s developed a theory around the experience of flow, a state of optimum functioning, which he has interpreted within the context of evolutionary theory.[27] We are a function of our genes, our biology, and our social environment, but at the same time live in a cognitive world of ideas and emotions that flow onward throughout the life span. Sounding very Jamesean, he has described the self who simultaneously experiences and tries to cognitively understand that experience through memes, the basic building blocks of the consciousness that flows onward, comparable to the DNA of the physical body. Although this position of psychophysical parallelism hardly addresses the mind/body problem under which the cognitivists suffer, he acknowledges the reality of transcendence and the possibility of more evolved states of consciousness. The tone is hopeful, positive, and optimistic about what kind of a future we could create as individuals. Positive motivation in children, the optimal functioning of adolescents, flow in sports, and definitions of the good life have been his subjects. His new effort is positive aging.[28] His main audience remains the educated public and the followers of Seligman in cognitive psychology, not his more reductionistic and atomistic colleagues in science. He does not consider the philosophical implications of his view of the person for science, but follows Seligman's lead, and the historic lead of the Humanistic psychologists, in skirting the reductionists by presenting a charismatic, growth-oriented psychology right to the general public.

Genomics

The ultimate and final step in the technological redefinition of personality comes when scientists and engineers are able to gain total control over one's individuality. The mapping of the human genome provides just such a possibility, as the entire genotype and phenotype of the unique individual can be worked out, including their ancestry. The accepted methodological approach, however, remains the collection of DNA samples on human populations classed according to diagnostic criteria from the Diagnostic and Statistical Manual (DSM) widely used in psychology and psychiatry. Genetic markers are then sought for specific diseases or syndromes of symptoms, which would seem to invalidate the results because empirical evidence varies on the reliability and validity of the original psychiatric classification given to any one patient in the first place.

In other words, despite the fact that a science of the whole person has been flourishing within the history of psychology and psychiatry and also out in the psychotherapeutic counterculture, scientists safe within the academy can still assure themselves that the homunculus had at last been banned from the halls of higher learning. Personality, in the form of depth psychology, had gone the way of folk psychology, which, Fodor claimed, had now been replaced by the superior models of cognitive science.[29]

Neurophenomenology, Embodiment, and Experience

The nature of the Hard Problem in the neurosciences is understanding the relation of the brain to the mind. How is it that we can have an objective understanding of a thing and an experience of it and not be able to tie these two domains together? How is it that we can have a robust third person science which objectifies the person, and phenomenology—which could be construed as a first person science in which we systematically study the structure of experience, with no correlation between the two? One answer proposed by a new generation of cognitively oriented thinkers is to reexamine the relationship between the subject and the object within the context of the mind/body problem and to challenge, in the context of neuroscience, traditional definitions of scientific objectivity. This has taken several forms, one of which is the problem of embodiment.

The idea that personality is ensconced in a body is not new. William James investigated the difference between physical sensations and our emotional feelings and later said that the stream of consciousness is probably our breathing. His theory of emotion postulated that what emotion we will experience was dependent on our perception of the situation.

Similarly, Maurice Merleau-Ponty argued for the body as an innate structure, driving cognitive skills in a cultural environment:

> The body is our general medium for having a world. Sometimes it is restricted to the actions necessary for the conservation of life, and accordingly it posits around us a biological world;

> at other times, elaborating upon these primary actions and moving from their literal to a figurative meaning, it manifests through them a core of new significance: this is true of motor habits [sic] such as dancing. Sometimes, finally, the meaning aimed at cannot be achieved by the body's natural means; it must then build itself an instrument, and it projects thereby around itself a cultural world.[30]

We have mentioned in a footnote the attempt to systematically understand personality through the form and shape of the body beginning with Kretchmer and extending to William H. Sheldon. But dynamic theories of the unconscious were not employed in those conceptualizations. Other reductionistic empiricists have attempted to look at personality and the body as well.[31] But it was Freud and Otto Weininger behind the scenes, and then, of course, Reich, and those after him such as Janov, who were steeped in the psychodynamic point of view, which they applied to consciousness of the body. This lineage, it has been recently claimed, has found its pinnacle at Esalen Institute, where psychotherapy has been fused with bodywork, and in the developing fields of health psychology called psychoneuroimmunology, the mind/body effect, and complementary and alternative therapies. Within the academy, the Women's Movement has developed its own literature on the subject.[32]

Descartes, however, had made the situation murky from the start by separating mind and body and then proceeding to develop a science of the physical without the mental, making their reconciliation impossible according to the accumulation of scientific evidence only on one side of the equation. Consequently, most experimental empiricists hold that consciousness, if it exists at all, is a mere epiphenomenon of our physiology and that there is no mental event that cannot be reduced to some biochemical process somewhere in the body. We have seen a different position, however, in the history of existential-humanistic and transpersonal psychology by investigators such as Kurt Goldstein and René DuBois and their arguments for a holistic biology.

Contemporary cardiologists, psychophysiologists, transpersonal psychologists, and neuroendocrinologists have also been trying to rectify Descartes error by establishing empirically the connection between states of consciousness, physiological control over normally unconscious bodily processes, and the growth-oriented dimension to personality. Only a few of these efforts can be recited here.

The first, established during the era of psychosomatic medicine, was that reaction to stress was a problem of personality. Selye had determined that all organisms functioned according to the General Adaptation Syndrome, that is, the body was capable of adapting to ever increasing levels of stress to the point of exhaustion and death. Trait theory prevailed in the 1950s within the psychosomatic movement with the identification of the Type A personality, the highly driven individual who succeeded in everything attempted except where power over events was thwarted. Thwarted Type A personalities were then thought to be at the highest risk for psychosomatic illness such as low back pain and irritable bowel syndrome as well as hypertension, heart attack, and stroke.

Herbert Benson, Harvard cardiologist, took the psychophysiology of the mind/body effect one step further by linking techniques in stress reduction with

contemplative methods in the world's religions, the spiritual sense of well-being, and bodily health. His psychophysiological experiments led to the articulation of the relaxation response.[33] In 1973, Benson and his student, Robert Keith Wallace, took 26 subjects who were experienced transcendental meditators who all had the same training. The subjects meditated for two 20-minute periods per day and Benson studied their physiology while maintaining the meditative state. Subjects went through a premeditation phase, a meditation phase, and a post-meditation phase of 30 minutes each to give measures before, during, and after. Wallace and Benson measured heart rate, blood pressure, blood lactate, internal core body temperature, and respiration in terms of ratio and volume of gas exchange. They found a drop in oxygen consumption and CO_2 elimination, but the ratio did not change. They found a slowing in heart rate while blood pressure remained stable. And they found a dramatic decline in blood lactate, a measure of anaerobic metabolism that persisted even into the recovery phase. This was significant because it indicated an actual alteration in basic metabolism as the subject became more and more relaxed. They were also able to differentiate the physiology of meditation from that of sleep and hypnosis, indicating that meditation precipitates its own special state of consciousness.

Benson was later able to replicate these findings in normal subjects who were not transcendental meditators, eventually identifying the underlying physiological mechanism, which he called the relaxation response.[34] He was able to show that two 20-minute periods a day practicing the relaxation response could have significant clinical effects promoting health. Blood pressure medication could be cut in half, PMS symptoms could be relieved, and visits to the HMOs could be significantly decreased. He also demonstrated that the relaxation response was elicited after 20 minutes of exercise, causing a drop in metabolism as further exercise continued.

He linked the relaxation response to both the contemplative practice of prayer and meditation as a source of healing. It seemed to be a basic physiological mechanism, comparable to, but opposite in effect from the fight–flight response, as an evolutionary reflex. The fight–flight response geared us up for battle or escape by producing the high octane fuel of blood glucose, adrenalin, and other catecholamines, while the relaxation response relaxes us and makes us peaceful and renews our sense of well-being through deep concentrated relaxation. He and his colleagues eventually called the relaxation response an antibioscenescent, an evolutionary mechanism that serves to protect life once it is established. Benson and colleagues posited that its willful elicitation was the same as the more automatic, reflexive, and nonvoluntary reaction already called the placebo effect, which is the body's first line of defense against trauma and infection and also serves as preparation for coping with long-term illness or disability.[35]

Benson's work has many implications for personality. It means that Type A personalities could be trained to change their behavior, and hence their type. In addition, one could also say that intentional relaxation represents an appeal to the growth-oriented dimension of personality, regardless of a person's type.

Benson has encountered extreme resistance to his work by the scientific reductionists at Harvard, despite the fact that he has received major sources of private and governmental grant funding and published his experimental studies in some of

the world's premier peer-reviewed journals in science. So far, there have been no book-length works in the peer-reviewed scientific literature, but he has produced some best sellers in the trade market. As a result he is more well known in the psychotherapeutic counterculture, while his body of data, meanwhile, has been appropriated by new adherents of complementary and alternative therapies, trying to show there is empirical evidence for non-traditional forms of healing that contain elements of the relaxation response. We might say in this regard that Benson's work, first and foremost, is a contribution to psychology as a science of the whole person, although his primary milieu has always been scientific medicine and cardiology. It is a contribution to the concept of embodiment, as it presents scientific evidence for a mind/body complex linking physiology with consciousness non-reductively, an assumption rejected out of hand by reductionistic science.

Another contributor to a wholistic definition of mind and body has been Elmer Green, psychophysiologist, pioneer in biofeedback research and energy medicine, and co-founder of the Biofeedback Research Society. Over his career, Green has presented empirical evidence for the voluntary control of internal states in yoga, meditation, cases of spiritual healing, and the patient's overall sense of spiritual well-being. He took a BA in physics in 1946, attended UCLA as a graduate student before joining the Naval Weapons Center in China Lake, California, working as a physicist in optics, electronics, and computing. He took a PhD in biopsychology at the University of Chicago in 1964 and with his wife and colleague Alyce established the Psychophysiology Laboratory at the Menninger Foundation in 1967. There they launched the Voluntary Controls Program in biofeedback and self-regulation and co-sponsored the Voluntary Control of Internal States conferences at Council Grove, Kansas. In addition to the intensive laboratory investigation of yoga adepts such as Swami Rama, the Green's established a successful nationwide program in biofeedback and self-control that combined Wolfgang Luthe's techniques of Autogenic Training with biofeedback techniques that could be taught to any normal, average individual.[36]

The gist of this training was to employ an electroencephalogram and a computer to give the subject feedback on alpha/theta activity from the occipital lobe. Using the Luthe's relaxation techniques, and by training the subjects to differentiate between the alpha state of waking alertness and theta states where mental imagery such as in REM sleep is generated, the Greens were able to teach subjects how to lower the threshold of consciousness and produce dream images in the state of full-waking consciousness. Their findings suggested that mental imagery might not only be the means by which consciousness communicated with normally unconscious physiological states, but also be the vehicle by which ultimately transforming states of consciousness, induced states of transcendence, and personality change occur.[37]

Another contributor to the idea of a non-reductive embodiment has been Candace Pert, a psychopharmacologist who is a former research professor at Georgetown University School of Medicine and past section chief at the National Institute of Mental Health. Pert received her undergraduate degree in biology from Bryn Mawr College and her PhD in pharmacology from Johns Hopkins School of Medicine. As a graduate student under Solomon Snyder, she discovered the receptor site for

the body's natural opiates and opened an entirely new field of research into the endorphins, for which Snyder received the credit, since it was his laboratory and she was his graduate student. At the NIH she and her colleagues undertook extensive mapping of the neuropeptide receptor sites and found that they massed in the limbic system, on the dorsal horn of the spine, and throughout the gut. They also found communication between brain cells and floating cells in the immune system through the extra ambient cellular fluid. Additionally, she went on the develop Peptide T as a treatment for AIDS.

The psychosomatic network that she and her colleagues defined seemed to be diffused throughout the body linking the newly discovered parasynaptic information network with the hard wiring of the brain and nervous system. As cognitive mental processes were mediated by the brain, emotional cascades seemed to predominate in the alternate chemical network. This led Pert to hypothesize that the neuropeptide map she had drawn was the basis for understanding the biochemistry of the emotions. Moods, for instance, appeared to be defined by the alternate chemical network, so that intentional alteration of one's mood state could have a reciprocal effect on chemical mediation of receptors and their binding cites. Moreover, it was soon discovered that chemicals that controlled the transmission of the nervous impulse at the synapse also had dual functions as messengers between brain cells and neuropeptide receptor sites in the alternate chemical network. Since both neural and chemical systems appeared to work in tandem, the old distinction between mind and body was no longer relevant, calling for a new philosophy of mind–body interaction and hence, new conceptions of the biological underpinnings of the self that would be less focused on brain activity alone and more on the total physiochemistry of the person.

One such development was an area of investigation that came to be called psychoneuroimmunology, a designation embraced by the psychotherapeutic counterculture, but soundly rejected by reductionistic empiricists at the forefront of advances in neuroendocrinology. The philosophy of biochemistry Pert was looking for was trumped by the fact that neuroendocrinology already had a philosophy – that of reductionistic empiricism.

Pert found a ready audience, however, through such organizations as the New York Academy of Medicine, the National Institute for Clinical and Behavioral Medicine, and the Institute of Noetic Sciences. Her work soon reached a wide public audience, which she followed with a best-selling popular book, *Molecules of Emotion* (1997).[38]

Intersubjectivity

Enter upon the scene a new breed of post-modern thinkers.[39] Harry Hunt (2005), who combines neuroscience with Buddhist epistemology and transpersonal psychology, has attempted to argue for a new definition of psychology, which takes into account the personality of the scientist. But he backs into it from a hermeneutic

analysis of psychology's current methods and theories a la Giambatista Vico and Wilhelm Dilthey.[40] His first concern is that to other sciences psychology looks like it is in complete disarray, with competing theories, methods, and faddish research topics. In actuality, according to him, taken as a human science, this is precisely what psychology ought to look like it if spans both the sciences and the humanities. Single, dominant theories based on cumulative evidence over generations are replaced with a pluralism of interpretations based on attitude and worldview of the researcher. Dilthey maintained that it is precisely this tension that keeps psychology together as a field. Each theory must also be judged in terms of its ecological validity, by which Hunt means its pragmatic effect in the world of application. So, what kind of a science is that?

Hunt's answer is a very forward looking one, if we accept the hypothesis that the materialistic side of the discipline has been fed inordinately while the phenomenological side starved almost to extinction. The difficulty, as Vico first pointed out, is that the phenomenological side studies itself, which seems to contradict the accepted theories of reductionism, objectification, operationism, and representation, upon which contemporary scientific psychology is based. Hunt's view, which accounts for both kinds of science, at least explains the current fragmentation.

But how does it allow us to address the so-called "Hard Problem" in the neurosciences, namely, the relation of the mind to the brain? The answer is important, because on the materialist side, personality is safely just a conglomeration of traits, but on the phenomenological side it is the individual self embedded in the experience of language, meaning, and culture. We may be able to stop the internecine war of competing epistemologies within the discipline, which is the least we should have accomplished in the past 100 years. This brings the person into the center of the equation and the problem of first, second, and third person science reappears as a central problem for psychology, which the reductionists still presently control and confine to the third person. The rest they do not have the slightest clue about how to handle. At best, they are facing what William James predicted in 1890, when he asked, "we might want psychology to become a science, but then again can we handle the psychology that it will become?" Hunt's conclusion is that rational–empirical theories about the nature of personality and consciousness are going to have to interact with the very kinds of folk psychology, that is, a psychology of immediate experience they have rejected as unscientific, in order to define themselves.

The late Francisco Varela, Chilean neuroscientist and evolutionary biologist, has carried the argument several steps further; first as the co-originator with Jose Maturana of the theory of autopoiesis, and second thorough reconstruction of our overly linear conception of evolution. Autopoiesis, the creation of consciousness out of self-referential systems,[41] abandons the black box theory of inputs and outputs and encourages us to think in terms of feedback loops, in which at all levels the organism is self-creating, always seeking to define and express itself.[42] Drawing on the non-reductive principle that personality is a total gestalt, which transcends the mere addition of its parts by always representing something greater, Varela explains

emergent systems that are self-created, meaning systems at all levels—molecular, cellular, organ, and species levels.

At the time of his death he was particularly interested in embodiment, the diffusion of consciousness through every cell of the body, particularly the immune system, with its ability to differentiate self from not-self across changing developmental stages of the organism. This also includes the problem of how we continually renew ourselves at the microphysiogical level, yet manage to remain relatively the same person across the life span. More importantly, however, is the implication that embodiment encompasses a vision of the body as something more than mechanical systems. Varela's theory is that consciousness is a product of the interaction between the organism and the environment, but in more of a Buddhist than Christian sense. This is not a Cartesian split where the two must be somehow integrated, so much as a radically different conception of the interdependence of opposites and their ongoing evolution, as in the Buddhist sense of co-dependent origination, or, I would add, as in James's understanding of radical empiricism.

Similarly, the late Eugene d'Aquili and Andrew Newberg, two cognitive neuroscientists from the clinical faculty at the University of Pennsylvania, have studied the neurophysiological correlates of religious experience. Their claim is that we have circuits in the brain that account for different experiences: one being the experience of rational causality and another being holistic experiences of transcendence. Both have had profound evolutionary significance in shaping personality. Further, they believe they have isolated a neurophysiological circuit that identifies a continuum from esthetic to transcendent experiences.[43]

The discussion, which focuses on the theme of what they call "neurotheology," is somewhat philosophically naïve about unitive experience, since they cannot account for what James called "the ever not quite" in noetic pluralism, and they conflate the experience of God with Buddhist experiences of the ultimate, which are non-theistic. Additionally, they have used as subjects in their experiments both Christian nuns and those whom they refer to as Tibetan Buddhist meditators, who actually are not Tibetans, but Caucasians who have studied Tibetan Buddhist teachings. Their primary funding source is the Templeton Foundation, which has a prior implicit commitment to applying the methods of physics to illuminating the truths of Christianity. The Foundation's definition of psychology is chiefly cognitive and behavioral, while dynamic theories of the unconscious across cultures, especially non-Western and non-theistic ones, or non-Western conceptions of personality, they shy away from.

However, we live in an unprecedented era where, in our time, we have been witness to the end of the production phase of science and the beginning of its permanent maintenance phase.[44] For the past 400 years the scientific method has marched through first, the inorganic world, and then the organic. Employing the language of mathematics and objective classification, physics, chemistry, geology, astronomy and other disciplines associated with the physical sciences set the stage for mastery of the biological domain, as science simultaneously expanded into the world of plants and animals. Botany and physiology, particularly advances in the medical sciences, brought science to the threshold of sensory and rational psychology, now

more complicated because of the simultaneous relation of psychology to theology and philosophy posed by the neurosciences.

Nevertheless, wresting psychology from a mechanical and Newtonian context has allowed a scientific psychology to develop over the past 150 years, but one that has marked the final production phase of science as a metadiscipline. After sensory and cognitive science, there is nowhere for the psychological sciences to go except, in their new maintenance phase, to encounter all that has been pushed aside to make progress as a science. Through interdisciplinary communication between physics and biology, science has now begun to confront the biology of consciousness, which, beyond the physical structures of the brain, involve the problem of the mind, the very organ that created science in the first place. Science is now confronting itself, but by so doing, its very identity is being called into question, admittedly now only by the gadflies of the culture wars. The implications are clear, however. Either science has to reconcile itself to the fact that it is now only one of many other forms of useful knowledge in culture, or else transform itself to be able to accommodate domains of human experience now excluded by its present epistemology.

This is because the old philosophical and religious questions that had been put aside and strictly banned from discussion throughout much of the 20th century are back with a vengeance. They are now eagerly pursued by the cognitive psychologists mainly in the tradition of learning theory, such as Daniel Dennett, and the analytic philosophers in the lineage of Aristotle, Kant, Hegel, and Quine, such as the Churchlands, who remain the most powerful controllers of the discussion in scientific circles. They have even coined a term for themselves—Neurophilosophers.

But now we have neurophenomenologists and neurotheology, which are natural outgrowths of this discussion by younger scientists who have newer philosophical sensibilities and a richer commitment to understanding spiritual experience. Their very ability to speak is based on the humanistic implications of the neuroscience revolution, which, in addition to accounting for the underlying biology, demand a philosophical and spiritual explanation for the problem of consciousness. The only problem is that the analytic philosophers with the microphone have had all such sensibilities winnowed out of them years ago, while most of the humanistically oriented psychologists and psychiatrists are largely unprepared to interpret these implications, because most remain oblivious to the fact that the long-awaited revolution in scientific thinking that they have been calling for is actually here.

The Phenomenology of the Science-Making Process Itself

William James had tried to understand the relation of the mind to the brain through his tripartite metaphysics of pragmatism, pluralism, and radical empiricism. Jung approached the problem through the personal equation in science, believing that the answer lay in the awakening of a dialogue between consciousness and the unconscious, allowing the unconscious access to expand the domain of the waking state. The macropersonality theorists of the 1930s and 1940s, the Jamesean lineage in

psychology, argued for a science of the whole person. They became the grandfathers and grandmothers of the Humanistic movement of the 1960s, proponents of which argued for psychology as a person-centered science—person centered meaning the intersubjective relation between subject and object, client and therapist, subject and experimenter. At this point the study of personality as a total gestalt had faded with the passing of the classical Humanistic psychology of Maslow, Rogers, and May and the subsequent overcolonization of personality theory by the trait theorists. The revolution in the neuroscience obviated the need for elaborate theories of the unconscious as old arguments even about the reality of the unseen faded in the face of artificial intelligence and information-processing models positing a cognitive unconscious, which were taken as given in the new science. Functionally, the person appears to have disappeared as an object of study. In its place, an artificial matrix has been developed at the interface between human–computer interaction. There is the individual, but now made over into Prof. Turkle's second self. This is not the unconscious of the person, but the artificial, preprogrammed world of the computer manipulating the cognitive and behavioral life of the individual, whose real and independent identity has become of little scientific consequence to the cognitive researcher.

The intersubjective emphasis in the next historical phase attempting to solve the Hard Problem could possibly be a focus on the personality of the scientist himself or herself.[45] Here, the identity and outlook of the scientist is an important factor for understanding what the phenomenology of the science-making process means. We may define it as the scientist becoming more self-conscious of his or her presence on the design, selection of subjects, procedures, and interpretation of the results of the study, all of which should be a part of the normal disclosures communicated in the peer-reviewed literature once the study is published. It may involve the relative level of self-knowledge possessed by the investigator (Tart's state-specific sciences). It may incorporate a phenomenologically oriented psychological analysis of the process involved in hypothesis formulation. It may involve the deconstruction of the scientific experiment as essentially a study in social psychology. In medicine it may involve the articulation of a peri-operative psychology, that is, a psychology surrounding every phase of the psychotherapeutic hour or every step of a surgical operation. It may involve an estimate of the degree to which the study operates solely within the parameters of the ego and waking rational consciousness, or attempts to reach beyond that boundary into non-ordinary states. It may involve the assessment of the patient's state of consciousness as well as the therapists' or the experimenter's state of consciousness in relation to the subject's.

Revelation of the Epistemological Worldview of the Scientist

If we take a more phenomenological approach to understanding the experimental situation, it becomes essential to know the *eigenwelt*, or unique interior worldview of the experimenter. This contradicts the assumptions of reductionistic positivism,

however, where the experimenter allegedly remains objective and his or her footprint is not supposed to influence the outcome of what is studied. From a phenomenological point of view, this is not only an unproven assumption, but impossible, regardless of what the objective experimentalist claims.

Rosenthal[46] has identified effects unintended by the scientist on the outcome of what he or she studies, though he has long claimed that the effect is less than 1%. Orne[47] has convincingly demonstrated that the subject is in a state of hypnotic rapport with the experimenter in the midst of the experiment, which is actually an exercise in social psychology. Kilhstrom,[48] who has conceptually separated psychoanalysis from a definition of the cognitive unconscious, acknowledges how the experimenter's viewpoint saturates every aspect of the experimental situation. Velmans[49] maintains that contemporary theories of consciousness in the neurosciences are incomplete unless they contain a reflexive element, that is, unless the scientist accounts for his or her own presence in the study. Giorgi[50] maintains that the unifying theme across experimental and clinical psychology is the phenomenological relationship between the subject and the experimenter and the therapist and the client. The centrality of the phenomenon of identity across the life span has been pointed out by Erikson, suggesting that the individual's choice of science as a vocation implicates their sense of personal identity in their judgments about what is science and what is not, while other authors have linked the personality of the scientist directly to the psychology of science.[51]

With regard to the phenomenology of the science-making process itself, one must then evaluate the experiment or the interpretation of other's work in terms of what level of experimental rhetoric is employed. What is the experimenter's preconceived attitude toward the unconscious? Is psychology pursued for its own sake as a science? Or are we focused on studying the mystery of the person, experimental science being one useful tool in that endeavor? These are questions that will help to define the intersubjective relation between the observer and the observed, which I hypothesize, brings us one step close to answering the Hard Problem in the neurosciences. That route is through not only the personality and state of consciousness of the scientist himself or herself but alsothrough a phenomenological analysis of how the experiment is conducted, and a more phenomenological approach to the subject's personality as a total gestalt. These considerations would be foundational to any depth psychology of the future.

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