

Michael D. Robinson · Michael Eid
Editors

The Happy Mind: Cognitive Contributions to Well-Being

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Chapter 1

Introduction to the Happy Mind: Cognitive Contributions to Well-Being

Michael D. Robinson and Michael Eid

Abstract Being happy consists of more than having the right things happen to us. It also depends on what we focus on, how we interpret the events of our lives, and what we are trying to achieve. Such considerations suggest that cognitive-emotional factors should play a fairly pronounced role in our levels of happiness and in changes in well-being over time. The present volume focuses on these cognitive-emotional contributions to well-being in the form of 24 chapters organized into 5 parts. The introductory chapter explains the rationale for the book, outlines its scope and organization, and provides an overview of the chapters to follow. The book generally focuses on factors that contribute to, rather than follow from, well-being and on factors that fit within a cognitive-emotional framework. However, it adopts a broad view of cognition, thus including chapters on the self, its goals, and social relationships in addition to more traditional cognitive elements such as attention and executive control. What results is a rich and diverse volume centering on the ways in which our minds can help or hinder our aspirations for happiness.

Springer has an extensive portfolio in well-being and quality of life research, including journals (e.g., *Journal of Happiness Studies*), books (e.g., *Assessment of Well-Being, Culture and Well-Being*), and encyclopedias. The present volume expands this portfolio, meeting the need for an edited book on cognitive-emotional contributions to well-being.

The book comes at an opportune time for several reasons. Both laypeople and scientists care a great deal about happiness and the field has developed to the point that we know a fair amount about both subjective well-being (Diener, Suh, Lucas, & Smith, 1999) and positive psychological functioning (Sheldon, Kashdan, &

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Steger, 2011). Psychology in general is in the midst of an affective revolution (Watson, 2000) and doctrinaire positions concerning cognition and emotion have given rise to more sophisticated frameworks (Robinson, Watkins, & Harmon-Jones, 2013). In addition, views of well-being have broadened to the point that we now consider constructs like meaning and spirituality in addition to the more standard constructs of positive emotion and life satisfaction (Heintzelman & King, 2014). These trends are reflected in the present volume.

Our book is a psychology book and its landmarks may be somewhat familiar. In 1984, Ed Diener noted that the field of well-being was rich with philosophical theory but largely bereft of empirical facts (Diener, 1984). Such observations led many psychologists to focus on subjective well-being (high levels of positive affect, low levels of negative affect, and life satisfaction) in order to fill the many gaps of the literature. By 1995, we had actually learned a fair amount concerning happiness, so much so that we could say something about the factors that do, and do not, tend to predict how happy people are (Myers & Diener, 1995). Ryff (1989) as well as Ryan and Deci (2000) expanded the literature by arguing that we should focus not only on how happy people are, but also on whether they are living self-determined, meaningful lives (i.e., psychological or eudaimonic well-being). Keyes (2002) integrated different conceptions of well-being and positive functioning and coined the term flourishing for people living rich emotional, psychological, and social lives. Also, Seligman and Csikszentmihalyi (2000) placed well-being within a broader rubric termed “positive psychology”, which emphasizes verbs like thriving and flourishing in addition to nouns like happiness, while simultaneously focusing on character strengths and positive institutions. Finally, our book is influenced by the idea that we have the potential to self-regulate both ourselves (Carver & Scheier, 1998) and emotions (Gross, 1998) in such a way that we can experience greater well-being.

Within this context, our focus is on well-being, not ill-being or distress. That is, the book is generally focused on positive emotions and positive outcomes rather than negative emotions and negative outcomes (with some exceptions such as Chaps. 14 and 21). Within this context, also, the book generally focuses on factors that share a positive (e.g., optimism) rather than negative (e.g., depressive thoughts) relationship with well-being. Finally, we sought to focus on the antecedents of happiness rather than its consequences. As a result of these decisions, the book has a thematic unity matching the “Contributions to Well-Being” portion of the title. We should say more about the “cognitive” and “well-being” portions of the title, though.

Existing handbooks on well-being contain one or only a few chapters on cognitive-emotional factors and processes. Hence, our goal was to concentrate on these areas in developing the present handbook. It should be said, though, that we entertain a broad view of cognition. That is, cognition includes not only traditional mechanisms such as attention (Chap. 2) and memory (Chap. 15), but also ways of thinking about the self (e.g., Chap. 10), others (e.g., Chap. 19), and one’s experiences (e.g., Chap. 8). Also, we have cognitions about our goals (Chap. 13), emotions (e.g., Chap. 20), and life in general (Chap. 22) that are quite pertinent to our happiness levels. Within the present volume, then, cognition refers to outlooks and ways of thinking, generally about affect-laden things (events, others, emotions), that

can enhance or undermine well-being. These ways of thinking are process-oriented and malleable, leading to the significant possibility of well-being change (e.g., see Chaps. 6 and 8).

Some definitions of well-being can be technical (e.g., Waterman, 2008), but our definition of well-being is not. It consists largely of feeling happy and energetic much of the time while viewing one's life favorably (Diener, 1984; Watson, 2000). We supplement this view of well-being with one type of eudaimonic well-being (Ryan & Deci, 2001) – namely, a sense that one's life is meaningful (Heintzelman & King, 2014). Altogether, happy people are people who are “doing well” or “thriving” (Su, Tay, & Diener, 2014). They are happy to be alive and happy with the lives they have (Myers & Diener, 1995). It should be noted that different forms of well-being correlate highly with each other (Kashdan, Biswas-Diener, & King, 2008; Keyes, Shmotkin, & Ryff, 2002) and our book primarily focuses on these sources of overlap, though some chapters explore possible dissociations (e.g., Chaps. 21 and 25).

The book is suited for well-being scholars – students, faculty, and researchers – who want to learn more about various cognitive perspectives on well-being and relevant findings. Many chapters ground their predictions in philosophy and literature (e.g., Chaps. 7 and 8), but all of the chapters emphasize empirical facts, primarily from psychology. That is, they focus on questions such as how one can measure well-being, how well-being relates to cognitive-emotional factors, and whether manipulations of those factors can enhance well-being over shorter and longer periods of time. Most of the chapters focus on both classic studies as well as more recent research. For example, the perceived control chapter (Chap. 12) begins by considering classic research in the area (e.g., Langer & Rodin, 1976) before considering more recent developments (e.g., Chipperfield et al., 2012). Indeed, the authors did an excellent job of combining ideas and research in their chapters and in addressing both classic and contemporary knowledge. As a result, the curious reader will learn a lot about the happy mind through reading this book, though we do note that the book centers on scientific studies rather than self-help suggestions.

The editors complement each other in useful ways. Robinson is an expert on the cognition-emotion interface, the “predictor” side of the volume, and Eid is an expert on well-being, the “outcome” side of the volume. Robinson works in the United States, while Eid works in Germany, permitting a more international scope than might otherwise be the case. We invited people who are experts in their fields and there was considerable enthusiasm for the volume. The chapters almost uniformly focus on cognitive-emotional predictors of well-being (e.g., inspiration, savoring, spirituality, wisdom). Within this constraint, however, we sought a diversity of contributions, adding to the richness of the analysis. As we had hoped, the chapters are interesting, incisive concerning the human condition, and linked to sufficient bodies of research. The chapters are neither short, nor long, but of medium length. This allowed us to include more chapters while retaining some degree of economy to the overall volume.

The chapters are divided into 5 sections, respectively titled “The Mind”, “Positive Cognitions”, “Self-Regulation”, “Social Processes”, and “Meaning”. Each section has about 5 chapters and the flow is generally from more molecular (attention) to more molar (wisdom). In the sections that follow, we describe the book contents in greater detail.

Part I: “The Mind”

The mind’s habits are likely to play a significant role in how happy we are (James, 1890). Some traditional cognitive topics such as attention and executive function have been probed for their well-being significance and the first part of the book includes chapters on these topics. The section also includes a chapter on mindfulness, which can be thought of as a special way of paying attention (Kabat-Zinn, 1990), and a chapter on hedonic adaptation, which can result from the mind’s tendency to assimilate new experiences fairly quickly. Finally, a chapter discusses the benefits of dampening the ego as a way of promoting accommodation and growth.

Chapter 2: Attention

The mind is selective in what it attends to. This selectivity can extend to whether positive or negative information is attended to, which should influence well-being. Consistent with this line of thinking, people who are optimistic or happy often display greater attention toward positive stimuli, relative to people who are less optimistic or unhappy (Isaacowitz, 2005). Such patterns can potentially be trained, and there is some evidence to suggest that training attention toward positive stimuli can improve one’s well-being (Wadlinger & Isaacowitz, 2011). However, these patterns need to be considered within the larger context of the person’s goals as well as their capacities for regulating emotions in other manners (e.g., by fixing problematic situations). What might make sense for younger adults could make less sense for older adults, for example, given the different types of goals that they have (Carstensen, 1995). Kimberly Livingstone and Derek Isaacowitz review these various lines of research, both considering whether attending to positive information increases well-being as well as whether the role of attention in emotion regulation could vary across the adult lifespan.

Chapter 3: Mindfulness

Mindfulness involves bringing one’s attention to the present moment – what is currently happening to the self. This form of attention can be enhanced when it is voluntary and intentional and when paying attention is done with curiosity and acceptance (Shapiro & Carlson, 2009). Mindfulness promotes awareness, but it can also change one’s relationship to experience such that even negative experiences can be tolerated if not appreciated for what they are. Mindfulness-based interventions have long been used to treat issues of stress and pain (Kabat-Zinn, 1990), but such practices can also be used to promote well-being. In this connection, there is an increasing body of evidence to suggest that people who are more mindful are

happier and healthier, even among basically healthy populations (Brown, Ryan, & Creswell, 2007). One can increase levels of mindfulness through the use of Buddhist-derived practices such as sitting meditation or the guided body scan. However, it is also possible to infuse daily life with greater mindfulness, for example while one is eating, walking, or doing chores. In their chapter, Hooria Jazaieri and Shauna Shapiro review the empirical literature on the mindfulness/well-being connection while also considering issues of definition and practice.

Chapter 4: Executive Functions

Executive functions are mental processes responsible for sustaining goal-directed processing while overriding distraction and interference. These mental processes can be crucial not only in information processing, but also in averting unwanted outcomes like procrastination or giving in to temptation. Although circumstances can affect our levels of executive control, executive functions are primarily studied from an individual difference perspective. People who display higher levels of executive control (in tasks like the Stroop task) often study more effectively, engage in healthier behaviors, and seem to be less prone to relationship difficulties. Longitudinal research, for example, has linked delay of gratification in children to social competence in adolescence (Mischel, Shoda, & Peake, 1988). To the extent that executive functions contribute to life successes, they should contribute to happiness as well. Anna Luerksen and Ozlem Ayduk review these lines of work while also touching on the question of whether we can improve our executive functions through training.

Chapter 5: Quiet Ego

The self, or ego, can cause all sorts of problems for us, particularly when it dominates our ways of thinking about the world. Under such circumstances, it may often make sense to quiet the ego – or lessen its influence – rather than bolstering it. Doing so requires us to pay attention to what is happening outside of the self and to appreciate the thoughts and feelings of other people (Wayment & Bauer, 2008). Quieting the ego, in other words, involves reducing egocentric states of mind in favor of those that are more flexible and inclusive. Viewing the world through this mindset may not always bring us maximum happiness, but it should be conducive to psychological well-being and growth. Recent research corroborates these ideas in the form of the Quiet Ego Scale (Wayment, Bauer, & Sylaska, 2015) and what it predicts about people. For example, people with quiet ego characteristics are more compassionate and less defensive when the self is threatened. Heidi Wayment and Jack Bauer introduce us to this construct and its role in eudaimonic well-being.

Chapter 6: Hedonic Treadmill

We are remarkably skilled in adapting to new life circumstances. Although these mental processes benefit our well-being when negative events occur, they can impose a cost to well-being when positive events occur. The capacity to adapt to both positive and negative events, returning to some sort of affective baseline, is referred to as the hedonic treadmill (Frederick & Loewenstein, 1999). Classic findings in this area are being revisited. This newer research suggests that hedonic adaptation may not be inevitable. Some negative events (e.g., unemployment) can have lasting consequences and some positive events seem to produce lasting benefits. The latter seems to be particularly true when we engage in prosocial behaviors or when we use our money to buy experiences rather than goods. In addition, there are ways of pursuing positive events that seem to forestall adaptation. These include seeking variety and change in the types of positive experiences that we have. Megan Fritz, Lisa Walsh, and Sonja Lyubomirsky review recent developments in this area.

Part II: “Positive Cognitions”

Having a positive outlook is one of the primary ways that we can enhance our well-being. Although some positive thought processes are more amenable to change than others, we can also try to take advantage of the positive experiences that we do have (e.g., we can savor them). The chapters in this section focus on positive cognitive factors that increase well-being and on ways that we can capitalize on our momentary positive emotions. In general, it seems that positive cognitions enhance well-being without significant costs, though several of the chapters do consider potential tradeoffs (e.g., to overestimating one’s capacities).

Chapter 7: Inspiration

Inspiration is a cognitive-affective state conducive to creativity and well-being. Although we might wish to be inspired somewhat continuously, this does not seem to be possible, and many accounts of inspiration emphasize the manner in which it seems to visit us somewhat spontaneously. Regardless, there may be things that we can do to increase the frequency with which we feel inspired, such as by challenging ourselves or persisting with a particular set of problems for sufficient amounts of time. When inspiration occurs, it is linked to positive affect and to flow, but typically not negative affect (e.g., Thrash & Elliot, 2003). Inspiration correlates positively with both hedonic and eudaimonic forms of well-being, but may represent a third type of well-being whose nature includes transcending the self. In this sense, inspiration represents a valuable opportunity for thinking about how various types of

well-being relate to each other. Will Belzak, Todd Thrash, Yoon Young Sim, and Lena Wadsworth consider the philosophical and literary roots of inspiration and then link this variable to its everyday correlates.

Chapter 8: Savoring

We tend to live our lives in a “doing” mode in which there is nearly continuous striving. At times, however, it may be beneficial to pause and savor the good things that have, are, or will happen to us. People who are happy have presumably learned to do this – that is, learned how to savor the features of their lives that bring pleasure. Savoring consists of both cognitive and behavioral techniques that not only bring enjoyment, but also bring awareness of enjoyment. Research has revealed some 10 of these strategies termed sharing with others, memory building, self-congratulations, sensory-perceptual sharpening, comparing, absorption, behavioral expression, temporal awareness, counting blessings, and avoiding kill-joy thinking (Bryant & Veroff, 2007). People who engage in these strategies tend to experience more happiness than people who do not. In addition, manipulations and interventions that target these strategies have increased happiness in past research (e.g., Smith, Harrison, Kurtz, & Bryant, 2014). In their chapter, Jennifer Smith and Fred Bryant show how savoring can contribute to well-being.

Chapter 9: Positive Emotions

The broaden-and-build theory of positive emotions theorizes that positive emotions create mindsets that enable people to build psychological and social resources for the future (Fredrickson, 2001). In this way, positive emotions not only feel good, but can help people create beneficial niches for themselves. Consistent with this line of thinking, a number of studies have linked the induction of positive emotions to broader, more flexible mindsets. For example, positive emotional states lead people to scan wider and broader parts of a visual scene (Wadlinger & Isaacowitz, 2006). Positive emotions also seem to promote flexibility in cognition and creativity (e.g., Isen & Daubman, 1984). Through these and related mechanisms, people who experience positive emotions can develop new resources. In addition, positive emotions are useful in undoing the effects of stress (Fredrickson & Levenson, 1998) and can facilitate relationship quality (Waugh & Fredrickson, 2006). As a consequence, the frequent experience of positive emotions can promote resilience and health in somewhat general terms. Laura Kiken and Barbara Fredrickson present various sources of evidence consistent with this framework.

Chapter 10: Positive Illusions

Positive illusions include self-enhancement, the illusion of control, and unrealistic optimism. Taylor and Brown (1988) contended that most people have these illusions and that they promote well-being. More recent research has largely confirmed that people have these illusions, though there are important boundary conditions. For example, people may overestimate their control when they have very little of it, but underestimate their control when they have a lot of it (Gino, Sharek, & Moore, 2011). When we overestimate our achievements and abilities, we tend to feel better about ourselves, though there may be limits to these processes (e.g., when we are severely deluded, unrealistic optimism can backfire). Hence, there are some questions about whether positive illusions are functional or not. Some evidence suggests that confidence is attractive to others, but other evidence questions the idea that confidence (e.g., in the form of self-esteem) actually brings objective benefits (Baumeister, Campbell, Krueger, & Vohs, 2003). In their chapter, Astrid Schütz and Roy Baumeister define positive illusions and then consider these multiple questions about the costs and benefits of having them.

Chapter 11: Optimism

Generalized expectancies about the future are an important component of goal-directed striving. People who feel optimistic about the future are likely to strive harder, and with more enthusiasm, than people with pessimistic beliefs about the future. In this connection, a fairly large number of studies have assessed individual differences in optimism-pessimism using either the LOT or the LOT-R (Scheier, Carver, & Bridges, 1994). There are both genetic and environmental contributions to generalized expectancies. Consistent with the latter set of influences, one's level of generalized optimism can change over time to a greater extent than other personality traits (Segerstrom, 2007). Regardless, people who are optimistic are happier and generally more successful than people who are pessimistic. Some of these benefits follow from styles of coping, which are more approach-oriented and problem-focused among optimistic people. Interestingly, optimists do not deny or minimize problems. Rather, they are often more proactive in fixing them. Suzanne Segerstrom, Charles Carver, and Michael Scheier review these lines of evidence while also considering whether there are circumscribed areas in which generalized optimism can produce negative consequences.

Part III: “Self-Regulation”

People are goal-driven creatures and they tend to be quite a bit happier when they succeed rather than fail in accomplishing their goals. For this reason, among others, self-regulation processes are critical to well-being. The chapters in this section will focus on the interface of self-regulation and well-being, both with respect to the processes that enable goal progress and the ways in which people can effectively handle adversity when it arises. In several cases, the processes that benefit older people can be different than the processes that benefit younger people and this lifespan perspective is applied in relevant instances.

Chapter 12: Perceived Control

Perceived control can be powerful, even in predicting objective outcomes such as lifespan longevity. Relevant mechanisms are motivational, affective, and behavioral. For example, people who perceive greater control over their physical health are more likely to take care of themselves through diet and exercise (Lachman, 2006). Multiple types of perceived control can be distinguished, however. Broadly speaking, primary control refers to one’s perceived influence on the environment, whereas secondary control refers to one’s perceived abilities to accommodate to challenging circumstances. As people age, their primary control may decrease but their secondary control perceptions can compensate. Consistent with this viewpoint, several studies have shown that secondary control predicts outcomes such as life satisfaction particularly among people with low perceptions of primary control. Even among older adults, though, having a sense of primary control can be functional and researchers are developing new interventions to promote these control beliefs. In their chapter, Judith Chipperfield, Jeremy Hamm, Raymond Perry, and Joelle Ruthig update a classic theory of perceived control (Heckhausen & Schulz, 1995) with respect to more recent research.

Chapter 13: Goals

Goals are cognitive representations of desired endpoints that guide behavior (Austin & Vancouver, 1996). Having goals, pursuing them, and making progress can increase well-being, but this depends on the nature of one’s goals and how they are pursued. When a goal satisfies needs like autonomy and relatedness, it is more likely to make us happy than when it does not. A related framework contends that goal pursuit brings pleasure when the relevant goals are closely linked to our implicit motives (Brunstein, Schultheiss, & Grässmann, 1998). Irrespective of such factors, we are generally better off pursuing goals for approach-related reasons (something

is wanted) than for avoidance-related reasons (something is unwanted). And a general principle seems to be that goal conflicts undermine well-being. In other cases, though, there are tradeoffs. The pursuit of abstract, high-level goals is more meaningful than the pursuit of concrete, low-level goals, but the former goals are more difficult to satisfy. In some cases of this type, disengaging from one's goals or working on other goals can make sense. Goals are therefore linked to well-being in multiple ways and Marie Hennecke and Veronika Brandstätter expertly guide the reader through the relevant mechanisms and sources of data.

Chapter 14: Coping

Stress seems to be an inevitable component of life. This is particularly true concerning minor stressors such as having too many things to do on a given day, but people also encounter major life stressors such as disease, disability, and relationship dissolution. How people cope with stressors plays a large role in whether they have deleterious effects on well-being. Coping consists of cognitive and behavioral strategies for managing stressors (Lazarus & Folkman, 1984), and emotion regulation consists of typically shorter-term efforts to manage one's emotional reactions (Thompson, 1994). Different coping strategies can be valuable in different circumstances, but some coping strategies generally outperform others. Along these lines, research has typically highlighted the benefits of approach-oriented, relative to avoidance-oriented, forms of coping. Although traditional views of coping were relatively silent on the social consequences of coping, more recent frameworks emphasize such factors. Coping can have social consequences, and these consequences can determine whether one's coping strategies will be effective or not (e.g., Butler et al., 2003). Brett Marroquín, Howard Tennen, and Annett Stanton review both classic and modern research in this area.

Chapter 15: Autobiographical Memory

Work on autobiographical memory generally emphasizes its constructive nature. That is, the self-concept plays a central role in the life events that are encoded or recalled and what we remember about ourselves serves several self-regulation purposes. Among these is the goal of developing an identity. Pursuant of this goal, we seem to pay special attention to meaningful events as well as those that helped us create an identity in early adulthood (Fivush, 2011). Furthermore, we generally recall events that are consistent, rather than inconsistent, with our current views of the self and our memories are generally positive (Glück & Bluck, 2007). Some of these tendencies, however, vary with age, and they do so in a manner consistent with the different goals of younger versus older people (Mather & Carstensen, 2005). For example, older people are more likely to recall memories in a way that bolsters

stability rather than change in the self-concept (McLean, 2008). Dieter Ferring and Isabelle Tournier review findings of this type and link them to the broader processes through which we self-regulate our well-being.

Chapter 16: Self-Affirmation

Our motivation to view the self positively can sometimes get us into trouble. For example, a person who drinks too much alcohol might falsely assert that they are in control of their actions, creating further problems. Self-affirmation is a technology for circumventing such defensive reactions. When a person first affirms central features of the self, he or she tends to be more open-minded concerning subsequent negative feedback (Steele, 1988). Through processes of this type, people can make useful changes to their lives (Sherman & Cohen, 2006). Research has established that self-affirmation supports behavior change, but it may also support well-being. Along these lines, for example, affirming important features of the self could help one down-regulate anxiety in the context of stressors (Morgan & Harris, 2015). In their chapter, Natalie Schüz and Benjamin Schüz first review behavioral work on self-affirmation before pointing to the potential well-being benefits of this self-regulation strategy.

Part IV: “Social Processes”

The area of social cognition, like cognition, is concerned with how people think and with the mental processes that underlie feeling and behavior. Unlike cognitive psychology, though, its contents are explicitly social, including representations of self and others. The 4th section of the book applies the social cognition perspective to well-being. Included are chapters on social comparison, prosocial feeling and behavior, and social intelligence. A general theme is that our social cognitions are built on earlier relationship patterns. However, there is some degree of malleability that we may be able to capitalize on if we seek to improve our well-being.

Chapter 17: Social Comparison

A number of models of life satisfaction propose that it depends on the social comparisons we make. Generally speaking, we feel better about our life when it compares favorably to others and worse about our life when it compares unfavorably to others. Some people are more prone to these comparisons, though, either due to circumstances or habit (Gibbons & Buunk, 1999). When we do make social comparisons, we can make them in two ways – either by identifying with the target or

by contrasting the self with the target. Identifying the self with a target can raise well-being when that target is doing well, but can lower well-being when that target is doing poorly. Conversely, contrasting the self with a target can make us feel good about ourselves when that target is doing poorly, but bad about ourselves when that target is doing well (Buunk & Ybema, 1997). In their chapter, Abraham Buunk and Pieterneel Dijkstra consider both the causes and consequences of such social comparison processes.

Chapter 18: Prosocial Behavior

Prosocial behavior is voluntary behavior that is intended to help another person (Eisenberg & Fabes, 1998). There are reasons for thinking that prosocial behavior may vary positively with happiness. First, happiness can induce a broader perspective (Fredrickson, 2001), including attentiveness to the needs and wishes of others. Second, acting in a prosocial manner can actually make us happy. Developmental research has tended to confirm the idea that prosocial behavior and happiness are linked, particularly when happiness is defined in terms of states of positive emotion (e.g., Caprara et al., 2008). It is also relevant to consider emotions such as sympathy and empathy, which may vary positively with both prosocial behavior and positive affect. These feelings should be contrasted with personal distress, which may inhibit prosocial responding. Tracy Spinrad and Nancy Eisenberg guide us through this area, both considering developmental trajectories over time as well as the multiple pathways through which positive and negative feelings can be linked to prosocial behavior.

Chapter 19: Social Intelligence

Social relationships are an important contributor to happiness, but not everyone is equally blessed in this area. Some people had responsive parents, who modeled effective self-regulation skills and promoted secure attachment patterns (Feldman, Weller, Leckman, Kvint, & Eidelman, 1999). Secure attachment patterns, in turn, allow one to think about the needs of others independent of one's own needs, which should contribute to better relationships (Hazan & Shaver, 1987). Through processes of this type, securely attached people should develop better social resources and higher levels of happiness. Although an insecure attachment style is a risk factor for poor well-being, the skills that vary with attachment style can potentially be taught. That is, we might be able to increase our levels of social intelligence, which should benefit well-being as a result. In their chapter, Giulia Weyrich, Alex Zautra, and Eva Zautra document relationships between attachment style and well-being before making a case that the skills associated with a secure attachment style can be increased through training.

Part V: “Meaning”

As long ago as Aristotle, theorists have advanced a view of well-being that is more dependent on living right than experiencing pleasure. In the psychology literature, one encounters a similar distinction between subjective and eudaimonic well-being, the latter of which has meaning as a primary constituent (Baumeister, 1991). This last section of the book concentrates on topics that emphasize this meaning-related side to the well-being construct. The first three chapters consider whether meaning can follow from intuitive sources of information, including our emotions. The second three chapters focus on specific mechanisms that can promote a sense of meaning, including nostalgia, spirituality, and wisdom.

Chapter 20: Emotional Clarity

People who are clear about their emotions should be able to learn from them when they bring wisdom and resist them when they do not. People who are unclear about their emotions, by contrast, are likely to experience more of the costs of emotion with fewer of its benefits (Mayer & Gaschke, 1988). Such individual differences in emotional clarity can be assessed in several ways, including self-report, and they tend to be associated with higher levels of subjective well-being (e.g., Extremera, Salguero, & Fernández-Berrocal, 2011). There are at least three explanations for this clarity/well-being relationship, one of which focuses on the potential benefits of emotion (meaning) and one of which focuses on the potential costs (emotion regulation). Alternatively, emotional clarity might help one perceive others better, which could improve relationship functioning. Tanja Lischetzke and Michael Eid provide an in-depth analysis of emotional clarity and then examine the mechanisms through which higher levels of emotional clarity could be expected to result in higher levels of well-being.

Chapter 21: Negative Emotion

People often want to avoid negative emotions, not only because they feel bad but also because they tend to undermine well-being. However, there are at least certain types of negative situations that can benefit well-being because they benefit meaning, the focus of the Affectively Negative Need-Fulfillment Model. As an example, people need to pursue their goals to find meaning and goal-pursuit tends to benefit well-being (Ryan & Deci, 2001). However, there are certainly times that goal-pursuit is stressful, despite its proximate and ultimate benefits to the self (Robinson & Tamir, 2011). Parenthood is another intuitive example of such dynamics because parenting others is highly meaningful, but also stressful (Simon, 2008). Thus, the

pursuit of meaning is an area where negative experiences can actually benefit us from a broader, more inclusive perspective. Jacob Juhl, Clay Routledge, Joshua Hicks, and Constantine Sedikides develop this line of argument in their interesting chapter on negative emotion and meaning.

Chapter 22: Meaning

Meaning in life is an important component of well-being in that people with greater meaning are happier and healthier in a number of ways (Heintzelman & King, 2014). Although meaning has deep philosophical roots, attaining meaning does not. Thinking reflectively about one's life does not tend to increase meaning. By contrast, the use of intuition and heuristics do generally facilitate one's sense of meaning, and meaning also follows from experiences of positive affect (King, Hicks, Krull, & Del Gaiso, 2006). Also, people perceive meaning when they encounter stimuli that are easy to comprehend and orderly rather than difficult to comprehend or abstract. While intuition, positive affect, and order are proximal contributors to meaning, there are distal contributors as well. Generally speaking, people who endorse systematic worldviews perceive greater meaning than people who do not. In their chapter, Sarah Ward and Laura King review these recent lines of research on meaning perceptions and the factors that predict them.

Chapter 23: Nostalgia

Nostalgia ties people to their pasts in ways that promote meaning. When people recall nostalgic memories, they recall memories of the self, but of the self as it exists within its important relationships. These memories can include elements of loss and regret, but typically within the context of positive affect and hope (Abeyta, Routledge, & Juhl, 2015). Nostalgia is linked to well-being somewhat generally, but to meaning in more particular terms. When people recall nostalgic memories, they perceive greater meaning to their lives (Routledge et al., 2011). In addition, nostalgia seems to buffer against threats to meaning, including those engendered by thoughts about death or social exclusion. The benefits of nostalgia are not just existential, however. Nostalgia brings a sense of social connection and social confidence that may account for its well-being benefits (Routledge et al., 2011). People who engage in nostalgia want to connect with others and they want to resolve conflicts that could undermine their relationships. In this sense, the tools for facilitating social connection in the present and future already exist in those memories that we hold dear from the past. Andrew Abeyta and Clay Routledge review this burgeoning literature on nostalgia and its functional benefits.

Chapter 24: Religion

The majority of people around the world endorse some form of religion. Religion is a multi-faceted creature, however, in that it includes elements of belief, practice, and social affiliation, many of which are confounded in typical measures of religiosity. Even a single category like belief can be subdivided into multiple types of belief – belief in God, belief in an afterlife, beliefs about the characteristics of God, beliefs about the power of personal prayer, etc. People who believe in God seem to be happier than people who do not, but the magnitude of these correlations can be small (Diener & Clifton, 2002) and can vary by population. We have lesser knowledge concerning other types of belief, such as beliefs in an afterlife or beliefs in the power of personal prayer. Relations between religious beliefs and well-being may primarily implicate meaning, relative to more hedonic aspects of well-being (Nell, 2014), though this is not certain, and there is some concern that belief/well-being relationships may have more to do with epistemic certainty rather than religiosity per se (Galen & Kloet, 2011). In her chapter, Crystal Park explores these various facets of the relationship between religiosity and well-being.

Chapter 25: Wisdom

If one's experiences in life should add up to something, that something is, presumably, wisdom. Although philosophic theories of wisdom are very old, empirical research on wisdom is relatively recent (Staudinger & Glück, 2011). Perhaps not surprisingly, there are different perspectives on measurement. Some have assessed general forms of wisdom, akin to semantic knowledge (e.g., Africa is a continent), whereas others have focused on personal wisdom, or wisdom concerning one's own life. There are self-report measures of wisdom, but there are also serious questions about whether this is a reasonable measurement method. Wise people, for example, may express humility on questionnaires rather than proclaiming their elevated status. Ethnographic methods may be more promising (Glück et al., 2013). Regardless, the relationship between wisdom and well-being is likely to be complicated. Specifically, some degree of adversity may be necessary for the development of wisdom, even though adversity generally undermines rather than increases well-being, at least for most people. The development of wisdom could therefore be associated with lesser well-being in the short term, but greater well-being in the long term. In the final chapter of the volume, Nic Weststrate and Judith Glück pursue these important questions about the role of wisdom in well-being and development.

Conclusions

The volume meets the need for an edited book on cognitive-emotional contributions to well-being as part of Springer's portfolio on Well-Being and Quality of Life. The chapters are generally self-contained entities, but they are organized within larger groupings, attesting to their common themes. There are additional sources of overlap that can be highlighted as well. Many of the chapters, and not just the ones in the social processes section, highlight the importance of social relationships and social interactions. For example, positive emotions seem to benefit well-being in part because they build social resources (Chap. 9) and nostalgic memories largely focus on social relationships (Chap. 23). The chapters also highlight the importance of self-regulatory processes. Through intention and control, we can alter the way our minds work (e.g., Chap. 3), take advantage of opportunities for happiness (Chap. 8), resist pernicious forces of hedonic adaptation (Chap. 6), and achieve the outcomes that will bring well-being (Chap. 13). Indeed, even basic cognitive operations such as attention (Chap. 2) and memory (Chap. 15) seem to be intricately linked to self-regulatory processes. The importance of self-regulatory processes means that we have the potential to increase our happiness, but there are important caveats to note here. Trying to be happier can backfire (Chap. 9) and there are cases in which suffering in the short term can benefit well-being in the long-term (e.g., Chap. 25). The knowledge contained in present volume may facilitate skillful navigation in this realm.

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Part I
The Mind

Chapter 2

Attention, Emotion, and Well-Being: An Adult Lifespan Perspective

Kimberly M. Livingstone and Derek M. Isaacowitz

Abstract The mind is selective in what it attends to in the environment. In this chapter, we describe potential implications of selective attention for emotional experience and well-being across the lifespan. We review theory and evidence examining the relationship between attention and well-being, first considering descriptive research that investigates reciprocal links between attention on the one hand, and affect and emotional well-being on the other. Using a lifespan developmental approach, we review research on attentional preferences and the use of attentional deployment in emotion regulation. Much of this work has used eye tracking to index attentional preferences and deployment. We then describe a number of training studies that suggest how attentional control can causally influence emotional well-being, and outline promising directions for future research, focusing on how age may moderate attention-emotion-well-being links.

In any given moment, a person's attention is focused on a limited portion of their environment. Whether reactively captured by the most salient or motivationally relevant features in their surroundings, or consciously and actively directed toward specific elements of the situation, the focus of attention has implications for a person's conscious experience, including emotional experience, and in turn, long-term well-being. This chapter will explore links between attention on the one hand, and affect and emotional well-being on the other.

We will first describe some features of attention, then review research on the reciprocal relationship between attention and affect, including links between attentional biases and well-being, and effects of active attentional deployment for emotion regulation, as well as the reciprocal influences of affect on attention. We will then consider the extent to which reliance on the use of attention for emotion regulation changes across the adult lifespan. Finally, we will explore the role of attention in other emotion regulation strategies that may contribute to well-being, and the question of whether attention can be modified in support of well-being.

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Characteristics and Measurement of Attention

Attention is the process by which people filter internal and external information into awareness. Two properties of attention are relevant here. First, attention is limited: People can only process a subset of the possible information available to them at a given time, and as such, attention is selective by nature. Second, attention operates on both conscious and unconscious levels, and can be influenced both by “bottom-up” features of the environment as well as consciously directed “top-down” processes.

Attention is influenced by a number of external and internal factors (Egeth & Yantis, 1997). Low-level physical properties of a stimulus such as color, orientation, and contrast (Itti & Koch, 2001), as well as features such as social (e.g., Cerf, Paxon, & Koch, 2009) and affective content (e.g., Humphrey, Underwood, & Lambert, 2012) capture attention quickly and reliably. These *bottom-up* processes are typically considered involuntary. In contrast, *top-down* processes such as a person’s current cognitive (e.g., expectations), motivational (e.g., goals), or affective (e.g., emotions) states influence the voluntary control of attention. In other words, although attention often operates automatically, people can override initial tendencies to be drawn to certain stimuli and consciously direct their attention elsewhere (Gross, 1998a, 1998b). Moreover, these processes dynamically interact over time; for example, what is initially consciously controlled may eventually become automated. A chronically activated goal, therefore, may create an unconscious preference for a certain type of stimulus. Beyond this dichotomy, attentional biases may be reinforced in a way that may or may not be consistent with a person’s current goals (e.g., trait tendencies may conflict with current state goals: Awh, Belopolsky, & Theeuwes, 2012). These complex processes provide fertile ground for research on the interplay between attention and emotion.

In studies of attention to specific stimuli (images, videos, etc.), directing one’s vision (gaze) toward particular stimuli or areas of the stimuli is used as an indicator of what people are paying attention to. Therefore, eye tracking is frequently used to measure visual attention. In such studies, indicators of attention include percent of time spent fixating on a stimulus or part of a stimulus, number of fixations, or time to first fixation. Other paradigms use reaction time to assess attentional biases. These include the dot-probe (e.g., Bradley, Mogg, & Lee, 1997; Mather & Carstensen, 2003), the Stroop task, and visual search tasks (for a review, see Bar-Haim, Lamy, Pergamin, Bakermans-Kranenburg, & van IJzendoorn, 2007; for examples, see Fig. 2.1). In these tasks, relative reaction times are taken to indicate that greater attentional resources were directed toward or away from particular stimuli.

Many studies employing the methods above have examined the links between attention and emotional well-being from a clinical perspective, tying attentional biases and dysfunction to clinical disorders (especially anxiety; e.g., see Bar-Haim et al., 2007). Below, we focus on attention-affect links that could lead to positive emotional well-being. We start by describing the bidirectional relationship between attention and affect.

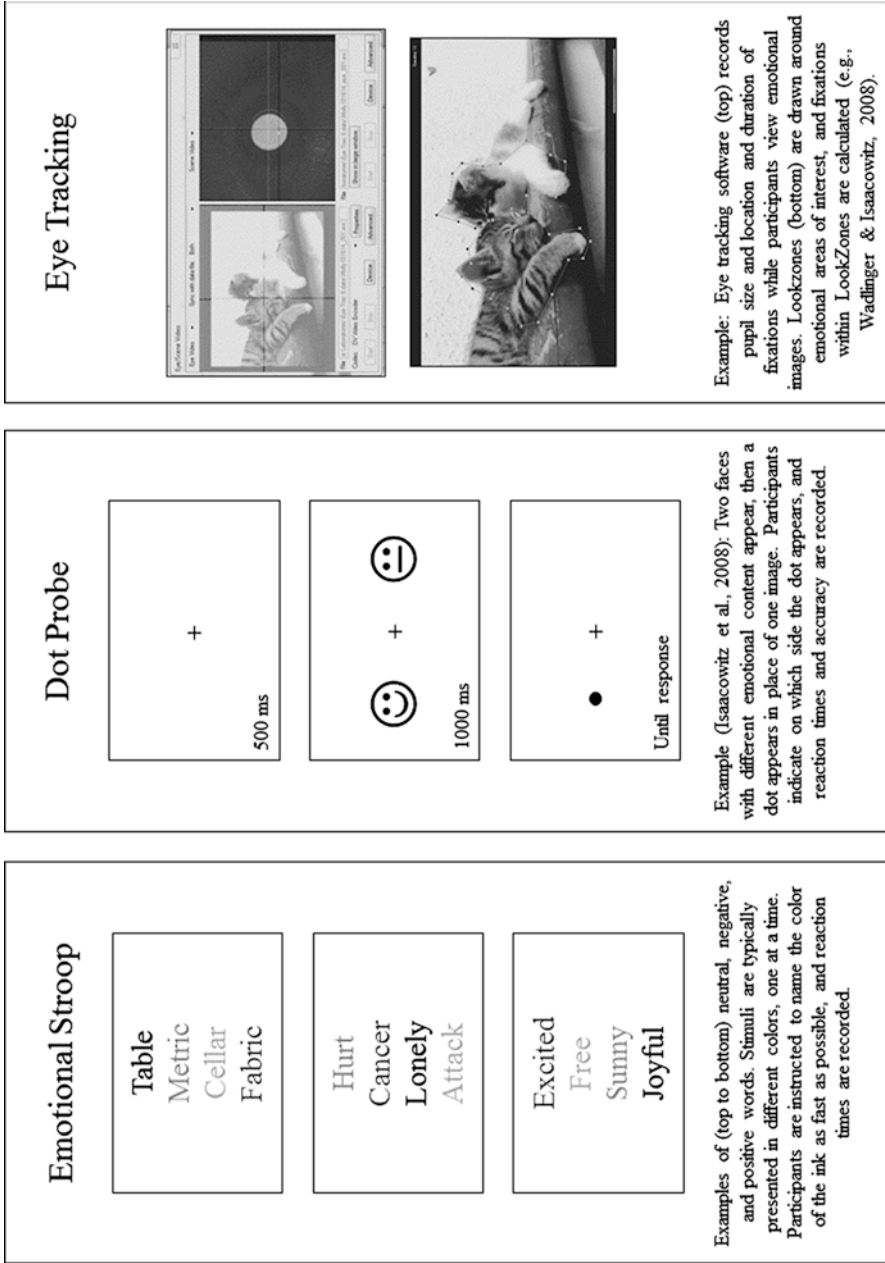


Fig. 2.1 Schematic depicting three common paradigms to assess attentional biases and preferences. The stimuli shown are approximations of those used in actual studies

The Effects of Attention and Attentional Deployment on Affect

Experimental evidence shows that what we pay attention to influences the emotions we experience. For example, training people to pay attention to negative stimuli makes people more vulnerable to negative emotion during a stress task (MacLeod, Rutherford, Campbell, Ebsworthy, & Holker, 2002). In contrast, directing attention away from an emotional stimulus reduces the duration of emotional experience (Freund & Keil, 2013).

Given the causal influence of attention on affect, controlling attention may provide an important means of influencing one's emotional state. Emotion regulation refers to attempts to influence the timing, duration, or nature of an emotional experience or expression (Gross, 1998b). Emotion regulation can serve either hedonic (maximizing positive over negative emotion) or utilitarian goals (such as goal pursuit: Tamir, 2009). Successful emotion regulation, therefore, must be defined within the context in which it occurs. In the present chapter, we focus primarily on hedonic emotion regulation.

The process model of emotion regulation proposes that people can influence their emotions at different stages in which an emotion unfolds: by selecting or modifying the emotion-eliciting situation, by directing or redirecting attention, by changing thoughts or evaluations (cognition), or by altering their physical or behavioral response (Gross, 1998b; Gross & Thompson, 2007). Once within a situation, a person can direct their attention toward or away from potentially emotion-eliciting stimuli or events. According to the theory, such *attentional deployment* can be a relatively effective strategy for down-regulating (preventing, curtailing, or minimizing the effects of) emotion because it can be employed before the full-blown emotional response occurs (Gross, 1998b).

Attentional deployment can support hedonic goals by either focusing attention toward positive stimuli or directing attention away from negative stimuli. Typical attentional deployment strategies include distraction (focusing on unrelated aspects of the situation, or shifting attention away from the situation) and concentration (drawing attention to the emotional aspects of the situation: Gross & Thompson, 2007). The causal effects of attentional deployment have often been studied in the context of comparing attention toward or away from an emotional (typically negative) event. In this context, ruminating (focusing attention on the negative event or on one's negative feelings) is a form of concentration that is often maladaptive (i.e., it increases negative affect), whereas distraction from a negative situation can be effective (i.e., it decreases negative affect), especially in the short-term (Nolen-Hoeksema & Morrow, 1993; Webb, Miles, & Sheeran, 2012). A meta-analysis of laboratory studies found that distraction was an overall successful strategy for regulating emotions (defined according to the strategy's aims within a study, e.g., to dampen emotion, increase emotion), whereas concentration was generally unsuccessful (Webb et al., 2012).

In addition to shifting attention away from negative stimuli, one can also shift attention toward positive ones to recover from a negative mood. In one eye-tracking study, younger adults who showed the largest decline after a negative mood induction looked more at happy faces (Sanchez, Vazquez, Gomez, & Joormann, 2014). Moreover, those who showed the greatest positive gaze preferences showed the greatest mood improvement by the end of the experiment (Sanchez et al., 2014). The authors suggested that those in a negative mood who showed positive looking patterns were successfully engaging attentional deployment for emotion regulation (also see Isaacowitz et al., 2008).

Attentional deployment can influence not only mood but also behavioral coping with stress. When younger adults were given a goal of attending to positive stimuli (happy vs. angry faces) in a dot-probe task, they reported less frustration after attempting to solve difficult and unsolvable anagrams, compared to a no-goal group. Moreover, the more participants in the goal group were able to deploy their attention to happy faces, the longer they persisted on the anagram task (Johnson, 2009).

Emotion regulation in general, and attentional deployment more specifically, can either be automatic (e.g., attentional biases toward certain types of stimuli or events) or conscious (e.g., actively seeking out positive stimuli in the environment; see Mauss, Bunge, & Gross, 2007). If attentional preferences reflect chronically activated motivational states, as some have proposed, a person may automatically favor some types of emotion-eliciting stimuli over others (Mogg & Bradley, 1998), even without awareness of their tendencies (Handley et al., 2004). For example, whereas an anxious person may demonstrate a tendency to seek threat-related stimuli (Bar-Haim et al., 2007), a non-anxious person who has chronically activated hedonic goals may come to privilege positive information over negative information. This is consistent with trait-level findings in which optimistic (Isaacowitz, 2005) and happy (Raila, Scholl, & Gruber, 2015) people show positive attentional preferences, though those studies did not test for chronic motivations to maximize hedonic well-being, and the causal directions are not clear.

Attentional preferences may serve emotion regulation goals especially relevant to the individual. Experience-based tuning of attentional selection mechanisms can create a predisposition to favor certain stimuli over others, and these preferences serve emotion regulation goals (Todd, Cunningham, Anderson, & Thompson, 2012). Although not typically considered as a form of affect regulation, this affect-biased attention may exist as a reflexive and proactive form of emotion regulation (Todd et al., 2012).

The Effects of Affect on Attention

The links between attention and emotion are bidirectional: Evidence suggests that as attentional processes influence downstream affective states, current affective states also influence attention. In particular, negative moods tend to draw attention to negative aspects of the environment, whereas positive moods tend to broaden attention and direct it towards possible rewards in the environment.

Effects of Negative Affect on Attention

Congruency effects reflect the phenomena whereby people in a negative mood attend more to negative information (Bradley et al., 1997) and those in a positive mood attend more to positive information (e.g., Becker & Leininger, 2011). This congruence also appears at the trait level: Trait anxiety is associated with greater attention to threat-related stimuli (Mogg & Bradley, 1998), and dysphoria is associated with greater attention to negative stimuli (e.g., Bradley et al., 1997; Koster, de Raedt, Leyman, & de Lissnyder, 2010), whereas trait happiness has been linked with greater attention toward positive (vs. neutral) stimuli (Raila et al., 2015; also see Tamir & Robinson, 2007).

Congruency effects may serve to draw attention to relevant aspects of the environment: Negative mood indicates a problem that requires attention toward aspects of the situation that need addressing, whereas positive affect indicates that attention can be freed to explore the environment (Derryberry & Tucker, 1994; Fredrickson, 1998). As affective dynamics vary across individuals, some people may have stronger tendencies to attend to positive or negative information in general, a pattern that may perpetuate itself in people high on the traits listed above. Incidentally, by drawing attention to mood-congruent aspects of the environment (as well as internal processes such as memory), mood congruence in younger adulthood may maintain a negative mood or emotion until a problem is resolved or the mood dissipates, and maintain a positive mood until a problem appears that requires a shift in attention.

Though mood congruency effects have been widely observed in typical college student samples, a notable exception was found in older adults. In an eye tracking study, younger adults showed the typical mood-congruence pattern (greater visual attention to happy faces after a positive mood induction, greater visual attention to angry and afraid faces after a negative mood induction). In contrast, older adults looked *less* at sad and angry faces after a negative mood induction (Isaacowitz, Toner, Goren, & Wilson, 2008). This finding suggests that age may, to some extent, moderate links between affect and attention, a point we will return to below in greater detail.

Effects of Positive Affect on Attention

In addition to sensitizing people to information of different valences, affect can also influence the scope of attention. The broaden-and-build theory of positive emotions proposes that whereas negative emotions promote relatively fixed programs of cognition and behavior in response to survival-related problems, positive emotions serve to broaden the scope of thoughts and behaviors in ways that build physical, cognitive, and social resources (Fredrickson, 1998). For example, interest may prompt exploration of the environment; and contentment may prompt savoring, integration, and an expanded self-concept and worldview (Fredrickson, 1998). One

study testing this hypothesis induced either amusement or contentment, which both broadened the scope of attention: People in a positive mood processed information on a more global level (e.g., identifying the overall arrangement of a number of shapes as a triangle) compared to those in a neutral mood (who may have identified the individual shapes as squares; Fredrickson & Branigan, 2005).

Other research suggests that positive affect may sensitize people specifically to potential rewards in the environment. For example, an eye-tracking study that experimentally induced a positive mood found younger adults in a positive mood fixated more on peripheral imagery (consistent with the broaden-and-build model), but only if the periphery was highly positive (Wadlinger & Isaacowitz, 2006). The specificity to highly positive stimuli suggests that positive affect may not simply broaden attention, but may incline people to seek out rewarding stimuli. Indeed, high-arousal approach-related positive affect (e.g., desire) has been found to narrow attentional scope (Harmon-Jones, Gable, & Price, 2013). Positive mood has also been linked to attentional bias toward rewarding stimuli (but not generally pleasant, low-arousal stimuli; Tamir & Robinson, 2007; also see Ford et al., 2010). In these cases, positive affect may serve to orient attention toward goal-related opportunities.

Implications of the Affect-Attention Links for Well-Being

The effects of emotion on attention may have further implications for affect and well-being. As mentioned, negative affect may draw attention to a problem that needs to be resolved. On the other hand, the effective resolution of that problem should improve long-term well-being (although dwelling on the problem without active problem-solving can decrease well-being: Nolen-Hoeksema & Morrow, 1993).

As for positive affect, there are at least two processes by which it influences attention in a way that may affect well-being. First, if certain types of positive affect draw attention toward rewarding stimuli, these attentional preferences can support successful goal pursuit. As making progress toward valued goals is associated with greater positive affect (Carver & Scheier, 1990), some forms of attention may promote short-term positive feelings, as well as contribute to the achievement of important goals. Such achievements may further long-term well-being.

Second, positive affect may serve to maintain or enhance a positive mood state (also see Handley, Lassiter, Nickell, & Herchenroeder, 2004). Savoring – the ability to enhance or prolong a positive experience – has been linked to positive emotion and long-term well-being (Bryant, 2003). A bias towards positive stimuli creates greater opportunities for the detection of additional rewarding or otherwise pleasant elements of the environment. It is possible that for some individuals, mood-congruent positive attentional preferences can serve as a relatively effortless way to maintain a positive mood state.

Attentional Preferences in Adult Development

As mentioned above, attentional preferences may develop in response to learned consequences of directing one's attention, leading to individual differences in typical attentional patterns (for example, an anxious person attending more to threats). In this section, we examine how age differences in motivation may influence attentional patterns in a way that promotes emotional well-being later in life.

Work in our lab on the role of attention and well-being did not originate to investigate attentional deployment as specified in the process model. Instead, we were primarily interested in understanding somewhat surprising findings that older adults report similar or higher levels of emotional well-being compared to younger adults (e.g., Mroczek & Kolarz, 1998). One explanation for such findings came from socioemotional selectivity theory (SST; Carstensen, Isaacowitz, & Charles, 1999). The theory suggests that in younger adulthood, people focus on goals that may provide future benefits, regardless of how they may feel in the moment. In contrast, in older adulthood, people shift their focus to more present-oriented goals and prioritize goals and activities that support current well-being over possible future rewards. Thus, SST provides a motivational account for how older adults can arrive at greater well-being.

Carstensen and colleagues proposed that one mechanism by which older adults might achieve positive emotional well-being is by using information processing to support hedonic goals. Specifically, they observed "age-related positivity effects" in attention and memory: Older adults attend to and remember relatively more positive than negative information in their environment (Mather & Carstensen, 2005). For example, a study using a dot-probe paradigm found that older adults' reaction times suggested less attention to negative faces (Mather & Carstensen, 2003).

Following work in experimental psychopathology that used eye tracking to study attentional biases in various disorders, as well as research revealing individual differences in attentional biases as a function of optimism in young adults (Isaacowitz, 2005), we then examined age differences in attention to emotionally valenced stimuli as a function of age, in line with SST. In these studies, "positive looking" (Isaacowitz, 2012) was defined as looking away from negative stimuli (e.g., a gaze preference away from sad or angry faces, or fixation outside of the most negative part of an image) and/or looking toward positive stimuli (e.g., a gaze preference toward happy faces).¹ In a number of studies using eye tracking, we found that older adults attended more to positive stimuli and less to some types of negative stimuli (Isaacowitz, Wadlinger, Goren, & Wilson, 2006a, 2006b). These studies also demonstrated that age differences in fixation to emotional stimuli are not simply side

¹"Positivity effects" are typically defined in terms of a ratio of positive to negative information processing (Reed et al., 2014). According to this definition, both increased processing of positive information and decreased processing of negative information qualify as positivity effects. It is ambiguous, therefore, whether effects are driven by one or the other. More current research (e.g., Livingstone & Isaacowitz, 2015) includes neutral stimuli in order to allow for more precise comparisons.

effects of more general age-related changes in general cognitive or perceptual functioning. In addition, though early work used pictures of emotional expressions, the findings replicated with dynamic stimuli (e.g., Isaacowitz & Choi, 2012) and in different labs (e.g., Nikitin & Freund, 2011).

These findings were consistent with SST: Attention away from negative and toward positive stimuli can be considered a “positivity effect” in support of hedonic goals and emotion regulation (Mather & Carstensen, 2005). These findings also suggest a link to the process model of emotion regulation: Positive looking seems to correspond to increased reliance on attentional deployment by older adults, at least within stimuli and environments that are experimentally controlled (cf. Isaacowitz, Livingstone, Harris, & Marcotte, 2015).

Most studies use standardized stimuli that vary in valence to examine age differences in attentional preferences, and therefore represent situations over which participants have little control. An alternative paradigm – the Affective Environment – gives participants a choice of material with which to interact (e.g., videos, articles, images that vary in emotional valence). When given such a choice, younger, middle-aged, and older participants did not differ in their attentional preferences to stimuli, as measured with eye tracking. The relationship between fixation and affect also did not differ among age groups (Isaacowitz et al., 2015). It may be that older adults use attentional deployment when they cannot control a situation, but not when stimuli are of their own choosing.

Though these descriptive findings on age differences in attention are consistent with SST and positivity effects, they do not demonstrate that older adults’ attentional patterns relate to their well-being (Isaacowitz & Blanchard-Fields, 2012). Another set of eye tracking studies in our lab examined the extent to which age differences in attention relate to age differences in affect. One study found that older adults demonstrated positive looking specifically when in negative moods (Isaacowitz et al., 2008). Older adults also looked less at the most negative parts of emotional videos about skin cancer, and felt better, than their younger counterparts (Isaacowitz & Choi, 2012). Two other studies found that older adults who showed positive looking felt best at the end of a task compared to younger adults, though only if they had good general attentional functioning (Isaacowitz et al., 2009; Noh et al., 2011). Thus, although there may be a main effect of age in attentional preferences, the effectiveness of attentional deployment in managing negative emotions may depend on the cognitive resources of the individual (also see Urry & Gross, 2010).

Recently, we have extended some of our paradigms to midlife, allowing us to examine the extent to which middle-aged individuals show a relationship between their attention and emotion regulation. Specifically, we repeated the skin cancer study described above with a sample of individuals in their 30s, 40s and 50s. Though we expected to find an intermediate pattern between the young and older adults, we actually found that middle-aged individuals looked even less at the most negative parts of the videos, and had even better moods than older individuals (Isaacowitz & Harris, 2014). Such findings need to be replicated and extended, but they suggest that positivity effects in attention that support emotion regulation may not be particular to late life.

The Role of Attention in Other Emotion Regulation Strategies

Above, we presented evidence concerning the particular emotion regulation strategy of attentional deployment. According to the process model of emotion regulation, attention to an emotion-eliciting stimulus occurs relatively early in the emotion-generative process (Gross, 1998a, 1998b). Conceptually, then, attention can be distinguished from other cognitive and behavioral processes that unfold along with the subjective experience of emotion. Attention, however, likely continues to play a role in how emotions unfold and are regulated. In this section, we examine the possible roles that attention can play in other forms of emotion regulation.

Cognitive reappraisal – changing the way you appraise or think about an eliciting event or stimulus – is generally considered an effective strategy in minimizing negative emotions (Gross, 1998a; Webb et al., 2012). According to the process model (Gross, 1998b; Gross & Thompson, 2007), attention to a stimulus precedes appraisal. If effective, attentional deployment may render cognitive reappraisal unnecessary.

Furthermore, compared to reappraisal, attentional deployment – specifically, disengagement – requires fewer cognitive resources and can be implemented quickly and relatively effortlessly. For these reasons, it is likely to be called upon when engagement with an emotional stimulus is expected to make regulation difficult (Sheppes, Scheibe, Suri, & Gross, 2011). Younger adults prefer distraction over cognitive reappraisal when confronted with intensely negative stimulus (Sheppes et al., 2011). Older adults and those with lower cognitive resources also prefer distraction over reappraisal in general (Scheibe, Sheppes, & Staudinger, 2015). Additionally, greater preferences for distraction are associated with less negative affect for older adults, but not younger adults (Scheibe et al., 2015). In sum, this research suggests that attentional deployment, and particularly distraction, can serve as an early and effective means of reducing short-term negative affect. Older adults motivated to minimize negative emotion may therefore come to rely on attentional deployment to a greater extent than reappraisal. One interesting question concerns the extent to which older adults are aware of their emotion regulation preferences, especially if attentional preferences operate automatically.

Attention may also play a direct role in other emotion regulation strategies. There has been some debate in the emotion regulation literature concerning the extent to which attentional deployment is actually the key mechanism underlying emotion regulation abilities generally (Fetterman, Bresin, & Robinson, 2013) and cognitive reappraisal specifically (Bebko Franconeri, Ochsner, & Chiao, 2011, 2014; Urry, 2010; van Reekum et al., 2007). For example, participants who scored higher on the emotion repair subscale of the Trait Meta-Mood Scale (measuring general emotion regulation via self-report) were better able to maintain attentional focus while listening to or anticipating aversive sounds, whereas those lower in the trait experienced worse performance under aversive conditions (Fetterman et al., 2013). The authors interpreted these findings as evidence for the idea that emotion regulation skills are at least partially based in being able to distract oneself from aversive events and focus on a task at hand (also see Mischel & Ayduk, 2004).

Given that appraisal of a stimulus depends on attention to it, to what extent does reappraisal depend on attention? van Reekum et al. (2007) measured both patterns of brain activation and gaze fixations in older individuals who were instructed to reappraise affective images. They found that participants changed their fixations based on reappraisal instructions, and that fixations could account for some of the instruction-related changes in neural activity. These findings suggest that attentional deployment and reappraisal may not be fully distinct, and that reappraisal may act in part by shifting attention, at least among older adults.

In a follow-up study of younger adults, Urry (2010) held gaze constant and still found effects of reappraisal instructions, suggesting that not all of reappraisal's effects can be attributed to attentional deployment and shifts in gaze (also see Bebko et al., 2014). However, the possibility remains that when individuals (especially older individuals, who are more likely to show positive gaze preferences) are instructed to use reappraisal as an emotion regulation strategy, some of the effectiveness of this strategy may be attributable to use of gaze in the context of attentional deployment.

There is evidence that attentional deployment may actually undermine the effectiveness of cognitive reappraisal, however. As distraction has been conceptualized as a disengagement strategy, and reappraisal as an engagement strategy (Sheppes et al., 2011), these dynamics may conflict. In one study that measured visual fixation during reappraisal in younger adults, participants who fixated *more* on emotional areas of interest when instructed to reappraise reported *less* negative emotion (Bebko et al., 2011). This supports the idea that reappraisal may be most effective when participants actively engage with the content, rather than trying to distract themselves. The idea also aligns with the finding that older adults with good attentional abilities felt best when looking away from negative and towards happy faces, whereas younger adults with good attentional abilities felt best when looking *toward* negative faces and away from happy ones (Isaacowitz et al., 2009). Thus, it may be the case that attention is related to other forms of emotion regulation, but not in a straightforward way (Bebko et al., 2014).

Training Attention to Support Well-Being

One important question to address is the extent to which attentional preferences reflect automatic tendencies or effortful control processes. In an eye tracking study from our lab, age-related gaze preferences emerged approximately one second after the onset of stimulus presentation, suggesting that preferences reflected relatively more controlled, rather than fully automatic, processes (Isaacowitz, Toner, & Neupert, 2009). In another study, age-related positivity effects did not emerge in a divided attention task, when cognitive control resources were constrained (Knight et al., 2007). A meta-analysis of age-related positivity effects found that effects were stronger when cognitive processing was unconstrained by instruction or cognitive demands (Reed, Chan, & Mikels, 2014). The authors interpreted this as support for

SST's premise that positivity effects reflect naturally motivated preferences and the valuing of emotional well-being goals. In contrast, a study using change in pupil dilation as a measure of effortful cognitive processing suggests that older adults showed relatively automatic positive gaze preferences (Allard, Wadlinger, & Isaacowitz, 2010). In sum, research to date is mixed, and the nature of attentional preferences may depend on the nature of the task and the state of the individual. On the other hand, the line between automatic and controlled processing may not be as clear as it would appear (Awh et al., 2012). One possibility, in line with SST, is that chronically activated goals to maintain well-being may shift from controlled processing to automatic processing with greater experience. Another question this raises is whether attentional preferences can be trained in support of emotional well-being.

A number of approaches have been developed to train attention or its components in support of well-being (see Wadlinger & Isaacowitz, 2011). Some of these involve explicitly or incidentally training gaze to orient toward more positive or less negative stimuli in the environment (for example, using a modified dot-probe task), whereas others assume attention has been trained as a part of a larger mindfulness intervention. These studies do not always directly assess changes in underlying attentional patterns or changes in well-being, however. Below, we consider examples of studies from our own lab that have attempted attentional training in the service of emotional well-being.

Borrowing paradigms from experimental psychopathology studies of depressed and anxious biases in attention, Wadlinger and Isaacowitz (2008) tested whether it is possible to train positive looking patterns in younger adults. Participants completed a modified dot-probe task in which a probe (i.e., dot) appeared primarily behind either positive words or neutral words (thus rewarding a bias towards either positive or neutral targets with greater accuracy and faster reaction times). Eye tracking results showed that participants who received positive training looked less at extremely negative parts of negative images after training, suggesting a modification of their attention in a more positive direction. This study did not directly assess affect, however, so did not directly examine the link between attentional change and well-being.

Extending the constrained dot-probe training to a sample of younger and older adults, another study trained younger adults to show looking patterns more typical of older adults, and vice versa, then assessed the training's effect on self-reported affect (Isaacowitz & Choi, 2011). Though the training did lead to changes in attention to negative images as assessed by eye tracking, it did not override the usual age difference in which older adults look less at negative images than younger adults. Moreover, mood analyses suggested that both age groups felt relatively worse when being trained on an age-typical pattern, meaning that looking relatively more positively was not associated with better moods for every age group.

One possible explanation is that age-related attentional preferences reflect adaptive patterns specific to the age group. Selective attention to positive vs. negative information is thought to support the emotional well-being goals of older adults (Carstensen et al., 1999). According to SST, however, younger adults, whose future is expansive, have future-oriented non-hedonic goals (also see Tamir, 2009). The pursuit of these goals (e.g., information seeking, personal and professional achieve-

ment) may lead younger adults to attend more to negative than positive information in cases where hedonic enjoyment is not a primary goal (see Livingstone & Isaacowitz, 2015). Though this may cost them hedonically in the short-run, it may contribute to greater life satisfaction and well-being in the long-run. However, chronic and inflexible biases toward negative information and away from positive information are associated with depression and anxiety (Koster et al., 2010; Mogg & Bradley, 1998). Therefore, for younger adults, flexibility in attentional preferences may be more important than a chronic preference for positive over negative information (see Bonanno & Burton, 2013).

Future Directions: Attention Across Contexts and Situations

In the last few years, we have attempted to broaden our study of aging and emotion regulation to even earlier strategies than attentional deployment, and how attention plays out in different situations. For example, we have created an affective environment in which we can investigate age differences in situation selection (e.g., Rovenpor, Skogsberg, & Isaacowitz, 2013) as well as a paradigm for situation modification (Livingstone & Isaacowitz, 2015). Though we recently started to use mobile eye tracking to record fixations in these types of tasks (Isaacowitz et al., 2015), so far we have not been able to fully investigate the interplay of situational choices and attention due to challenges in data processing in mobile eye tracking. We hope to soon be able to test the extent to which situational choice is distinguishable from attentional deployment, and whether this varies as a function of age. These studies will help us further refine our understanding of how attentional processes influence mood states across contexts and age groups.

As mentioned above, it will also be important when moving forward to examine adults from all stages of the lifespan to determine how attention and emotion interact and contribute to well-being. Because most studies of aging use extreme-groups designs, we do not know much, for example, about when positivity effects begin to emerge. Middle-aged adults have some benefits of younger adulthood (intact cognitive and physical resources) and older adulthood (experience with social and emotional events), and may therefore demonstrate patterns consistent with either group, or both. It may be the case, for example, that middle-aged adults are more likely to use attentional deployment than younger adults, but to use it more effectively than older adults. This hypothesis, however, has yet to be tested.

This chapter has focused on adult development, but attention has implications for well-being in childhood as well. Most of this work has focused on psychopathology or maltreatment; for example, anxious children show greater attentional bias to threat, with an effect size similar to that of adults (Bar-Haim et al., 2007). Recent research has shown that attentional training is effective for reducing biases in adolescent girls at risk for depression (LeMoult, Joormann, Kircanski, & Gotlib, 2016). Thus, future research may address how attention can contribute to well-being in childhood in a positive ways.

This chapter has focused on hedonic, or subjective, well-being. An alternative conception of well-being is eudaimonic well-being – the degree to which a person is living a meaningful life in pursuit of important goals (Ryan & Deci, 2001). We have suggested several ways in which attention-affect links might contribute to the successful pursuit of goals. Attentional control also has a role in self-regulation and long-term success (e.g., Mischel & Ayduk, 2004). Future research could thus address the extent to which attentional biases and control contribute to eudemonic concepts of psychological well-being such as personal growth, meaning in life, and positive relationships (e.g., Ryff, 1989).

Conclusions

The links between attention and emotion are complex and reciprocal. Our attentional states influence what we pay attention to, and what we pay attention to influences our emotional states. Moreover, to some extent, we have the ability to intervene in either process. If motivated, we can pay attention to the positive and ignore the negative, which may result in positive feelings. These positive feelings may in turn bias our attention toward positive or otherwise rewarding aspects of our environment, which reinforce our mood and build social and psychological resources, in an “upward spiral” of well-being (Fredrickson, 1998). Therefore, it may be advisable, in some cases, to encourage positive attentional preferences to improve mood (see Wadlinger & Isaacowitz, 2011, for a review of cognitive, clinical, and mindfulness-based training studies). Findings on attentional training in the lab have been mixed, however. It may be that development of positive attentional preferences takes years of experience to develop in a balanced and adaptive way, and this may be one positive aspect of normative aging.

At the same time, it is also important to note that it may not always be advisable to walk around with “rose-colored glasses,” paying attention only to the positive aspects of the environment and ignoring the negative aspects. Doing so could have important implications for health, social relationships, personal achievement, and so on. Well-being depends on more than feeling good all the time. When used flexibly, attentional deployment appears to have the potential to influence our emotional states, and in turn, our happiness.

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Chapter 3

Mindfulness and Well-Being

Hooria Jazaieri and Shauna Shapiro

Abstract We begin this chapter by defining mindfulness and giving a brief historical overview for contextual purposes. In defining mindfulness, we focus on three core elements – intention, attention, and attitude. In the next section of the chapter, we review the empirical literature – which highlights the link between mindfulness as a state, trait, and practice – to physical and psychological well-being in both clinical and non-clinical samples. Throughout the chapter, we invite potential opportunities for new research directions. Finally, we detail formal and informal practices for cultivating mindfulness in an effort to enhance one’s own well-being.

While the term mindfulness is often associated with the tradition of Buddhism, it is currently being applied in a manner that transcends its religious and cultural roots. With this re-contextualization of mindfulness comes different aims – among them, the contemporarily relevant aim of improving health and well-being. In Western science, mindfulness as a practice has been utilized to help alleviate existing ailments in an effort to decrease pathology (e.g., Carlson, Speca, Patel, & Goodey, 2004; Hofmann, Sawyer, Witt, & Oh, 2010; Kabat-Zinn, 1990). More recently, mindfulness as a practice has been explored as a method to promote general health and well-being – i.e., as a preventative technique (e.g., Baer, Lykins, & Peters, 2012; Brown & Ryan, 2003; Jazaieri & Shapiro, 2010; Lykins & Baer, 2009; Orzech, Shapiro, Brown, & McKay, 2009; Shapiro & Jazaieri, 2015).

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Defining Mindfulness

The word mindfulness is a translation of traditional Eastern words including *smṛti* (Sanskrit), *sati* (Pali), and *dranpa* (Tibetan). In contemporary Western psychology, mindfulness is considered to be the awareness one achieves through intentionally attending in an accepting and discerning way to one's current moment-to-moment experience (Kabat-Zinn, 2003; Shapiro & Carlson, 2009). Mindfulness is more than paying attention as it also involves an intimate knowing of what is arising as it is arising, without trying to change or control it. Thus, the process of mindfulness involves changing one's relationship to experience as opposed to changing experience itself – a way of training the mind, heart, and body to be fully present with life – relating to all experience whether positive, negative, or neutral with kindness and openness.

Mindfulness is often referred to as a consciousness practice – a training and cultivation of awareness and presence. Although associated with meditation, mindfulness is more than a meditation technique or practice. Mindfulness can be a state, or an immediate experience of being present (sometimes referred to as mindful awareness). State mindfulness, in turn, can translate into more of a trait or disposition over time, in essence a fundamental way of being. Recent empirical work supports this idea that increasing state mindfulness over repeated meditation sessions may ultimately contribute to one having a more mindful disposition or trait (Kiken, Garland, Bluth, & Gaylord, 2015).

Mindfulness is often thought of in terms of *paying attention*. Yet equally important is *why* one is paying attention (intention) and *how* (attitude). Shapiro and colleagues (2009, 2006) offer a model that integrates the why and how of attention, proposing three core elements of mindfulness: Intention, Attention, and Attitude (IAA). Below, we present the IAA model of mindfulness as a framework and consider its applications to well-being.

Three Core Elements of Mindfulness

According to the IAA model, mindfulness is comprised of three core elements (Shapiro & Carlson, 2009; Shapiro et al., 2006). *Intention* creates the context and motivation that fuels the mindfulness practice. Intention connects us to what is of greatest value – the ultimate aim, vision, and aspiration. *Attention* involves bringing awareness into focus and observing moment-to-moment internal and external experiences. *Attitude* describes the quality of our attention – kind, open, curious, and accepting. According to the IAA model, mindfulness is the ongoing cyclical interplay of these core elements as they unfold in the present moment.

Intention Intention reminds us *why* we are paying attention. Discerning our intentions involves inquiring into our hopes, desires, and aspirations. For example, explicitly reflecting on our intention helps us understand what it is that we really

want for ourselves. Intention helps bring our values into present moment awareness, allowing us to consciously decide whether these values are something to pursue. Intention is not about becoming goal oriented or attached to a specific outcome. At the deepest level, intention is simply a reflection upon why we are practicing, what we value, and what is ultimately most important to us. Intention involves setting the compass of the heart in the direction we want to head.

Attention Paying attention involves seeing clearly what is in the here and now, in this moment. Within the context of mindfulness, we learn to attend not only to the world around us, but also to the contents of our own consciousness. Mindfulness helps us cultivate attention that is sustained and concentrated, despite our mind's natural inclination to wander (e.g., Jazaieri et al., 2016; Killingsworth & Gilbert, 2010). Therefore, attention is the component of mindfulness that facilitates greater focus, discernment, and the capacity to note what arises in our field of experience without engaging in reflexive reactivity. We systematically practice bringing our mind back to the present moment when it wanders to the past or future. We cultivate attention by returning again and again to the here and now. This requires discipline. However, the attention does not need to be strained and contracted. We can choose to relate to our attention in a different way, for example with a “relaxed alertness” that involves clarity and precision rather than stress or vigilance (Wallace, 2006). This relaxed alertness is vital to cultivating the type of sustained and relaxed attention necessary for mindfulness.

Attitude How we pay attention – our attitude – is essential to mindfulness. Attention can be controlling and critical, or attention can be curious and kind. Mindfulness involves attending with the attitudinal qualities of curiosity, openness, acceptance, and love (COAL; Siegel, 2007). Our attitude influences the very core of our mindful attention because what we practice becomes stronger. When we practice a judgmental and critical attention, we strengthen that way of being and responding (to ourselves and others). When we practice compassion and acceptance, we strengthen these qualities. It is helpful to think of our attention like a warm tea enveloping our present moment experience. We can infuse it with attitudes just like we infuse warm water with mint, chamomile, or lavender. We infuse awareness with kindness, openness, and curiosity. These attitudinal qualities allow us to be present to all of our experience, even the parts that perhaps would be too shameful or frightening to see without this attitudinal context of compassion. We return to this topic of attitude later in the chapter when we present practical suggestions for cultivating mindfulness for well-being.

Self-Report Measures of Mindfulness

Mindfulness is most commonly assessed through self-report measures and inventories (for a review see Sauer et al., 2013). While many exist, some of the most common include: the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006;

Baer et al., 2008; Van Dam, Earleywine, & Danoff-Burg, 2009), the Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003; MacKillop & Anderson, 2007; Van Dam, Earleywine, & Borders, 2010), and the Toronto Mindfulness Scale (TMS; Lau et al., 2006; Davis, Lau, & Cairns, 2009). The FFMQ is a 39-item measure that examines five specific components that the authors posit are related to mindfulness: observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience. The MAAS is a 15-item measure with a single factor measuring attention and awareness across several domains of experience in daily life (e.g., cognitive, emotional, & physical). Finally, the TMS is a 13-item measure that examines two factors: curiosity, or the attitude of wanting to learn more about one's experiences, and decentering, or the shift from identifying personally with one's thoughts and feelings to relating to one's experience with a broader field of awareness. The TMS is unique in that it is intended to be used immediately following a meditation experience (state-oriented).

Mindfulness and Physical Well-Being

Scientists have theoretically and empirically linked mindfulness to improved physiological well-being in a variety of domains (e.g., Siegel, 2007). Recent research has demonstrated that meditation practices such as mindfulness can influence the structure and function of the brain (e.g., Hölzel et al., 2011). Empirical findings suggest that the adult brain is plastic and experience-dependent changes can occur at the structural, functional, and neurochemical level even in short periods of time, as brief as a few weeks (e.g., Treadway & Lazar, 2010). Mindfulness intervention results have suggested that mindfulness practice has the potential to alter neural function and that these positive effects can begin to accrue in a relatively short period of time (e.g., Goldin et al., 2012, 2013). Preliminary evidence has also demonstrated changes in cortical structure in those who practiced mindfulness meditation. For example, when examining the brains of 20 long-term mindfulness meditation practitioners with 15 matched control participants, Lazar et al. (2005) found increased cortical thickness in the anterior insula and sensory cortex in the mindfulness meditators, regions associated with observing internal and external physical sensations. Furthermore, mindfulness meditators had larger regions of the prefrontal cortex, an area implicated in decision-making and cognitive processing.

Research has demonstrated similar benefits among people who are not long-term meditators. For example, participants in an 8-week Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990; for detailed program information, see Table 3.1) program demonstrated increases in left anterior activation, an indicator of positive affect, when compared to a control group (Davidson et al., 2003). These findings are encouraging because participants demonstrated effects on brain function without prior meditation practice, suggesting that a short-term program such as MBSR can change the brain in positive ways.

Table 3.1 Structure, methods, and key program characteristics of Mindfulness Based Stress Reduction (MBSR) from Santorelli, 2014

Structure and Methods:
Eight-weekly classes, 2.5–3.5 h in duration
All day silent retreat during the sixth week (7.5 hours)
Formal mindfulness meditation practices (e.g., body scan, hatha yoga, sitting meditation, walking meditation)
Informal mindfulness meditation practices
Daily homework assignments including a minimum of 45 minutes per day of formal mindfulness practice and 5–15 min of informal practice, 6 days per week for the duration of the course
In class individual and group dialogue and inquiry oriented around weekly homework practice including an exploration of hindrances to mindfulness and development and integration of mindfulness-based self-regulatory skills and capacities
Assessment, self-evaluation, and closure during the last class (week 8)
Key Characteristics:
Intensive training in mindfulness meditation
Educational orientation
Group format – 15–40 participants per class
Individually tailored instruction
Experiential, highly participatory format
Highly challenging and strongly supportive
Collaborative relationship between participant and MBSR instructor
Array of mindfulness methods to meet individual participant needs and learning styles
Interactive and patient-initiated dialogue and inquiry intended to explore perceptions, mental and behavioral habits and patterns that may inhibit learning, growth, and healing
Short-term intervention: MBSR is relatively brief in duration (8 weeks). The structure is intended to foster participant self-regulation and self-reliance
Life-long learning: MBSR is both an immediate and deliberate shift in health orientation and a method for enhancing health and well being across the life span

Further, these results have been replicated and extended by other researchers. In an MRI study by Hölzel et al. (2010), 26 healthy individuals participated in an 8-week MBSR course. Following the intervention, participants reported reduced stress, which was positively correlated with right basolateral amygdala gray matter density. In other words, “the more participants’ stress levels decreased, the greater the decrease of gray matter density in the right amygdala” (p. 13). These structural changes may serve to mitigate automatic forms of emotional reactivity. Hölzel et al. (2011) went on to extend this research by employing a waitlist control condition (n=17) in their study design. Sixteen healthy, meditation-naïve participants took part in the 8-week MBSR program. When compared to the waitlist group, the MBSR group displayed increases in brain gray matter density. As hypothesized, the researchers found increased gray matter concentration in the left hippocampus. Exploratory analyses also identified significant increases in gray matter concentration in regions of the posterior cingulate cortex, temporo-parietal junction, and cerebellum, regions involved in learning and memory processes, emotion regulation, self-referential processing, and perspective taking (Hölzel et al., 2011).

In terms of mechanism, mindfulness meditation has the potential to alter key emotion regulation networks in the brain. Along these lines, Creswell et al. (2007) examined the relationship between self-reported trait mindfulness and the ability to identify emotions in facial stimuli. Trait mindfulness was associated with increases in neural activity in the medial prefrontal cortex (which exerts top-down control of the amygdala) and decreases in amygdala activity during an affect labeling task. The authors suggest that mindfulness may be associated with improved prefrontal regulation of limbic responses. When examining mindfulness practice, emotion regulation has been proposed to be a potential mechanism of change in mindfulness-based treatments (Gratz & Tull, 2010), and we view this as an important area for continued investigation.

Mindfulness also appears to benefit immune function. For example, in novice mediators who took part in standard MBSR, Davidson et al. (2003) found an increase in antibody titers to influenza vaccine compared to a waitlist control group. Similarly, in cancer patients, MBSR has demonstrated a number of effects on immune parameters that are consistent with a shift toward a more normal profile (Carlson, Speca, Patel, & Goodey, 2003; Carlson et al., 2004). Recent research investigating the effects of mindfulness practice on telomerase activity further enhances our understanding of the relationship between mindfulness and immune function (Schutte & Malouff, 2014). Telomere length, effected by the enzyme telomerase, is associated with cell-regeneration and improved longevity. According to a recent meta-analysis by Schutte and Malouff (2014), four randomized control trials (RCTs) with a total of 190 participants examined the effect of mindfulness meditation on telomerase. A medium effect size ($d = .46$) indicated that mindfulness meditation led to an increase in telomerase activity. Although preliminary, these results suggest a likely pathway through which mindfulness can benefit health.

Another major area of investigation amongst mindfulness researchers has been the effect of MBSR on salivary cortisol (for a review see Matousek, Dobkin, & Pruessner, 2010). Cortisol, a hormone secreted in response to stress, is accepted as an objective biological marker of stress. While there is accumulating evidence indicating that cortisol levels decrease following participation in MBSR, cortisol does not function in isolation and is one of several interconnected hormonal mediators of the stress response. Thus, as expected, not all researchers have reported beneficial effects of MBSR on salivary cortisol. Future research should consider multiple biomarkers in addition to cortisol (e.g., salivary amylase, cytokines) in developing more nuanced perspectives of the mindfulness/stress response interface.

Mindfulness and Psychological Well-Being

Since its inception in Western psychological research, the mindfulness literature has been drawing links between mindfulness practice and improved psychological well-being in a variety of domains, including attention, positive and negative affect, life satisfaction, and so forth, for both clinical and non-clinical samples (e.g., Baer,

2003; Chiesa & Serretti, 2009; Grossman, Niemann, Schmidt, & Walach, 2004; Hofmann et al., 2010; Keng, Smoski, & Robins, 2011). These studies have taken a variety of approaches, including cross-sectional and correlational, in design. Researchers have examined associations between mindfulness and various indicators of well-being in laboratory-based, experimental research examining the effects of brief mindfulness inductions (state mindfulness). In addition, other research has focused on mindfulness-based interventions and their effects on well-being.

Regardless of the approach (e.g., cross-sectional, experimental, intervention), the results have been encouraging. For example, when looking at a review of mindfulness studies, data from correlational research suggests that trait mindfulness is positively associated with a variety of indicators of well-being, including greater self-reported positive affect, life satisfaction, vitality, and adaptive emotion regulation, as well as lower levels of negative affect and psychopathological symptoms (see Keng et al., 2011). When looking at a meta-analysis of RCTs of mindfulness, the collective data from intervention research suggests that MBSR, the most commonly researched mindfulness intervention, has a medium sized effect ($d = 0.54$) on psychological well-being (when considered as a composite) (Grossman et al., 2004). MBSR has also been shown to reduce overall psychological symptomatology, increase perceptions of control, and enhance empathy in nonclinical samples (e.g., Astin, 1997; Shapiro, Schwartz, & Bonner, 1998).

More generally, optimism and well-being are linked (e.g., Carver, Scheier, & Segerstrom, 2010; Segerstrom, Carver & Scheier, Chap. 11, this volume) and mindfulness appears to promote optimism. For example, brief mindfulness inductions in the laboratory have been shown to increase optimism and positive judgments (Kiken & Shook, 2011). In addition, another study found that meditation experience (measured both by hours spent meditating as well as by state mindfulness) was associated with greater optimism in participants (as well as greater positive affect, social connectedness, and less negative affect) (Gootjets & Rassin, 2014).

Shorter mindfulness-based interventions have also reported favorable results. For example, Orzech, Shapiro, Brown, and McKay (2009) examined a one-month intensive (10–12 h of formal mindfulness practice) mindfulness intervention in a community sample of adults. In addition to increases in mindfulness, the intensive mindfulness-training program was related to reductions in anxiety as well as improvements in subjective well-being and self-compassion. Changes in trait mindfulness and acceptance were also related to improvements in psychological symptoms, well-being, and resilience. There have also been beneficial effects of mindfulness (at the trait level and also through a brief 10-minute mindfulness induction) on insight, problem solving, and creativity (Ostafin & Kassman, 2012).

Indeed, mindfulness seems to have cognitive benefits. For example, various forms of mindfulness training have been shown to buffer against the deterioration of working memory during periods of high stress (Jha, Stanley, Kiyonaga, Wong, & Gelfand, 2010), increase backward digit memory span (Chambers, Lo, & Allen, 2008), and improve visio-spatial processing, working memory, and executive functioning (Zeidan, Johnson, Diamond, David, & Goolkasian, 2010). Research has also shown that mindfulness meditation can enhance control over how attention is

distributed. For example, if too much attention is focused on one stimulus, another stimulus might be missed. Mindfulness training can help one allocate attention more efficiently, leading to more effective information processing (see Brefczynski-Lewis, Lutz, Schaefer, Levinson, & Davidson, 2007; Slagter et al., 2007).

Relatedly, mindfulness training helps individuals reduce the tendency to ruminate (Jha, Krompinger, & Baime, 2007). Mindfulness training has also been shown to reduce mind wandering (e.g., Jazaieri et al., 2016; Mrazek, Smallwood, & Schooler, 2012). For instance, a recent RCT examined the effects of a brief, 2-week mindfulness-training program on mind wandering and cognitive performance. When compared to the active control condition, mindfulness training improved reading-comprehension scores and working memory capacity while also reducing the occurrence of distracting thoughts during a standardized exam (Mrazek, Franklin, Phillips, Baird, & Schooler, 2013).

Research also suggests that meditators have a number of positive characteristics compared to non-meditators. One study by Lykins and Baer (2009) found that meditators scored significantly lower on “maladaptive characteristics” (e.g., rumination, thought suppression, difficulties regulating emotions) and higher on “adaptive characteristics” (e.g., reflection, self-compassion, psychological well-being) when compared to demographically matched non-meditators. In other studies comparing meditators and non-meditators on a variety of performance-based measures, data suggests that regular meditation practice, such as mindfulness practice, is associated with enhanced cognitive flexibility and attentional functioning (e.g., Hodgins & Adair, 2010; Moore & Malinowski, 2009), outcomes that have been linked with positive well-being.

Additionally, a number of studies have examined the impact of mindfulness training on mental health and well-being in both physicians and medical students, as well as mental health professionals and trainees. An early RCT examined the effects of MBSR on premedical and medical students’ subjective experiences compared to waitlist controls (Shapiro et al., 1998). Results indicated increases in empathy and spirituality, and reductions in state and trait anxiety, depressive symptoms, and overall psychological distress following MBSR. These results were replicated in the waitlist control group who took part in the intervention – lending further support to the role of MBSR in enhancing well-being in medical trainees.

Another RCT tested the efficacy of MBSR among a variety of health care professionals, including physicians, nurses, social workers, physical therapists, and psychologists (Shapiro, Astin, Bishop, & Cordova, 2005). Compared to the waitlist control participants, the MBSR group reported increases in self-compassion, a stress resilience trait, and reductions in perceived stress. Because this study involved an array of helping professionals, it suggests that the benefits of MBSR for stress outcomes may perhaps generalize across helping professions. However, because cohort differences were not tested, it is possible that only certain professional groups showed significant improvements. This is an interesting area for future research.

There is initial evidence that mindfulness training benefits not only medical personnel, but also psychotherapists in training. A cohort-controlled study with counseling psychology graduate students (Shapiro, Brown, & Biegel, 2007) showed that following

a standard MBSR, students demonstrated significant increases in mindfulness, positive affect, and self-compassion, as well as reductions in stress, negative affect, rumination, and both state and trait anxiety, relative to those in an active control condition. Similar results were found in a recent study, which also demonstrated improvements in moral reasoning (Shapiro, Jazaieri, & Goldin, 2012). Taken together, there is mounting evidence to suggest that mindfulness (in a variety of forms – state, trait, brief, & longer-term training) has a favorable impact on psychological health and well-being in clinical and non-clinical samples.

Cultivating Mindfulness for Well-Being

As with any new skill, developing mindfulness requires practice. The good news is that in any moment, we can choose to practice mindfulness. In this section, we will present several practices for cultivating the skill of mindfulness. These practices will include both formal and informal mindfulness exercises. *Formal* practice refers to the time we allocate to structured (guided or unguided) practices such as sitting meditation, body scan meditation, or other types of systematic training. *Informal* practice refers to efforts made to transfer the skills acquired through formal practice to the moments and events of our daily lives. For example, we can apply the mindfulness skills of intention, attention, and attitude to washing the dishes, reading a book, or having a conversation with a friend. Often, people ask whether it is “more important” to practice formal versus informal practice. While the empirical evidence has been supportive of formal and structured mindfulness practices, and little research has examined informal mindfulness practices, in our experience, formal and informal practices have a synergistic effect, each informing, augmenting, and transforming the other.

Formal Practice

Often, when people think of the term “mindfulness”, what comes to mind are the formal sitting practices. Empirically, formal mindfulness practice has been associated with a variety of positive outcomes including improved psychological functioning and lower stress (e.g., Carmody & Baer, 2008) as well as a number of intrapersonal and interpersonal outcomes (e.g., Carson, Carson, Gil, & Baucom, 2004). Below, we present the most commonly studied formal practices of awareness of breathing, body scan, and Hatha Yoga (Kabat-Zinn, 1990; Stahl & Goldstein, 2010). We will be adopting a direct way of speaking, akin to instructions given in mindfulness types of interventions (Kabat-Zinn, 1990; Stahl & Goldstein, 2010), so that direct instructions may be given to the practitioner.

Awareness of Breathing Awareness of one’s breathing is one of the most elemental mindfulness meditation practices (Kabat-Zinn, 1990). The breath is considered to be the foundation to a mindfulness practice. Awareness of breathing simply involves paying attention to each inhalation and exhalation of air without changing anything about the process. You can begin the practice by sitting in a comfortable, upright position with your hands rested in your lap. You may choose to close your eyes or perhaps you prefer to keep your eyes open, picking a spot in front of you and keeping a soft, downward gaze. Then, simply attend to the experience of breathing – making no effort to control or change your breath, just focusing kind, open attention on the breath. Feel the rhythm, the length of each in-breath and out-breath, notice how the temperature of your breath changes and transforms itself, notice how your body moves as you breathe – the nostrils, shoulders, chest, rib cage, belly. Continue to observe all of the qualities of the breath, without elaborating on its implications or creating any need for action. You may choose to practice for 2–3 min to begin with and then try extending this time subsequently. Some find it helpful to set an intention before beginning this sitting exercise by silently speaking something that resonates for them in the moment (see examples of intentions in Table 3.2).

During the awareness of breath practice, it is natural for our attention to wander off to thoughts, memories, fantasies, and feelings. When this occurs, simply notice and gently re-direct your attention back to the breath, over and over again. Notice any judgmental thoughts that arise throughout this process (e.g., “I’m not very good at this”, “There are so many important things that I could be doing with my time instead”). Steadily repeat the process of redirecting your attention back to your breath each time you notice your mind is wandering – this may happen dozens of times in the span of minutes. Continue to use your breath as an anchor, a guide back to the present moment.

Table 3.2 Mindfulness attitudes and examples of intentions

Attitude	Intention
Non-judging	“May I be nonjudgmental”
Patience	“May I be gentle with myself”
Beginner’s mind	“May I be present with this new experience”
Trust	“May I trust myself”
Non-striving	“May I be relaxed in this moment”
Acceptance	“May I be accepting of this moment”
Letting-go	“May I let go”
Nonattachment	“May I allow this moment to unfold”
Curiosity	“May I be open”
Gentleness	“May I be gentle with myself”
Nonreactivity	“May I respond from a place of clarity”
Loving-kindness	“May I be at ease”

Body Scan Another form of formal sitting practice is the body scan, where you progressively move your attention throughout your body, feeling each region (Kabat-Zinn, 1990). You can begin the practice by first comfortably lying down on your back with your legs extended, your arms by your sides with your palms facing up, and gently closing your eyes. You can also practice the body scan sitting upright in a chair with your hands rested in your lap. Again, if you choose, you may begin by setting an intention for this practice, speaking, silently, something that resonates for you in the moment. Begin by focusing your attention on the breath and observe nonjudgmentally as it moves in and out of your body. Do this for a few minutes.

Once you are in touch with your breath, begin by bringing your attention to your left foot, bringing your attention to toes of the left foot, then slowly moving up your left foot and your left leg. Notice any sensation or lack of sensation. Upon reaching the pelvis, do the same with the toes of your right foot, gradually moving up your right foot and your right leg, and then making your way up the body to the torso, lower back, abdomen, upper back, chest, and shoulders. Once you reach your shoulders, slowly and systematically bring your attention to the fingers of your left hand, moving up the left arm and returning back to your shoulders. Then, repeat by noticing the fingers of your right hand and up to your right arm. Upon reaching your shoulders again, move to the clavicle, the neck, throat, and continue to the face, bringing your attention to the lips, nose, eyes, and ears. Notice any tension that may exist. Conclude the body scan by moving your attention to the back of the head and to the top of the head. Attempt to keep focus on each part of your body for at least 1 minute and pay close attention to the sensations in that particular area. After moving through the regions of your body, return to the breath and focus your attention to whatever arises. Each time your attention wanders during this practice, just notice where it has gone and bring your attention back to the specific region of your body. If any judgment arises, notice it and re-direct your attention back to the exercise.

Hatha Yoga There are many ways of practicing being in your physical body, including Hatha yoga, a method whereby participants incorporate gentle yoga stretches and postures that are designed to enhance mindful awareness of bodily sensations while balancing and strengthening the musculoskeletal system (Hanh, 2008). Each pose and exercise is done deliberately with the intention of paying attention to the moment-to-moment sensations that arise while keeping awareness fixated on the breath. Hatha yoga is practiced in the same spirit and attitude applied to the other mindfulness practices, including non-judging, gentleness, curiosity, beginner's mind, patience, and acceptance. While a byproduct is that you may become stronger, more flexible, and improve balance, hatha yoga also helps with relaxation and stress reduction.

For your yoga practice, you may choose to use a mat or a pad and place it on the floor. Initially, it may be useful to watch a video to help guide you through the various poses. You may also choose to use a yoga pose chart to guide you through a sequence. While practicing, it is essential to bring your attention to subtle thoughts or commentary running through your mind, as these unconscious notions influence our state of being and may cause distress. This awareness and ability to continually redirect attention back to your body and practice will increase your sense of self and encourage your mindful yoga exercise.

Informal Practices

The formal practices listed above strengthen and support the informal practice of cultivating mindfulness in daily life. Informal practice involves bringing our kind, open attention to our moment-to-moment experience of any activity. For example, one can engage in mindful eating, mindful listening, or mindful driving. The informal practice does not require additional time, it simply invites the resonance of mindfulness to accompany whatever experience we are engaged in. Just as a pianist practices his or her piano, we too must fine-tune this new skill of mindfulness so that with time, this practice of paying attention to the present moment becomes natural and effortless.

As previously mentioned, any activity can be an opportunity to practice mindfulness. We can be mindful during routine activities such as making a cup of tea, writing an email, sorting laundry, or driving to work. Essentially, we can choose to intentionally bring each moment of our experience into mindful awareness. These individual moments are what eventually comprise the days, weeks, months, and years our lives, and far too often, we are not fully awake for them. For example, you may notice the moment the hot water in your cup begins to change colors when the tea makes contact. You may become aware of thoughts, feelings, or physical sensations as you type an email to someone. You may acknowledge the complex history of an article of clothing as you place it in the laundry machine (e.g., from the person who planted the cotton seeds to the truck that delivered it to the store where you made your purchase). You may choose to examine how your hands feel as they grip the steering wheel of your car during your daily commute.

Informal practice involves intentionally choosing to live your life more fully and vividly, instead of on automatic pilot. Below, we will discuss two examples of informal practice: mindful walking (Hanh, 2008) and mindful eating (Hanh & Cheung, 2010).

Mindful Walking Most of us spend at least some of our day walking, whether from the house to the car, from the desk to the bathroom, or even from the couch to the refrigerator. Typically when we are walking, we are just trying to get from one point to the next, seldom paying much attention to how we are getting from one point to the next. Walking is an everyday activity where you can practice bringing the formal practice of mindfulness into this informal realm. However, walking can only become meditative when we are *intentionally* bringing awareness to each step that we take. The essence of mindful walking is that when you are walking, just walk. Walk purely for the sake of walking instead of combining it with typical habits of planning, thinking, talking, and worrying.

To begin this practice, select a place where you can practice walking back and forth at a leisurely rate and be fairly undistracted. First become aware of yourself and your surroundings. Then, begin to walk. In this practice, it is helpful to keep a downward gaze rather than looking around at your surroundings. Make an effort to be fully and completely aware of each foot as it makes contact with the earth, notice things such as the part of your foot that comes down to the floor first. Notice how your weight shifts in your body as you lift up your foot and set it down. Notice the length of each stride. You could even mentally note to yourself each movement, for

example “lifting,” “stepping,” or “placing down”. When you reach the end of your path, briefly pause and turn around. Do this at whatever speed feels right for you and keeps your attention focused. Thoughts or judgments may arise; acknowledge their presence and gently redirect your attention back to the next step in front of you. Initially, you could try this mindful walking practice for 10 or 15 minutes.

While likely at a different pace, you could try to bring this same spirit of awareness to other walking contexts in your life. For example, when you are walking from your parked car to run errands, or when you are walking from one building to another at work. Rather than looking down at your smartphone or planning for the next thing, you could choose to bring awareness to just walking. Through practicing walking mindfully, you are teaching yourself to walk through life more wakefully.

Mindful Eating One method of practicing mindfulness in an informal fashion is through eating mindfully (Hanh & Cheung, 2010). Eating is an activity that plays a central role in our lives – physically, emotionally, and socially. Eating provides us with the nourishment and sustenance to live, and yet we still do not pay close attention to the activity of eating, how we decide what we are going to eat, and how much we want to eat. First, without changing anything, simply observe how you eat. Do you eat alone or with someone? Do you eat standing up or sitting down? Do you eat while doing something else (e.g., surfing the internet, watching TV, etc.)? Where do you eat (e.g., on a couch, in bed, at a table, in front of the computer)? How much do you eat? How long does it take you to eat? How do you feel right before, during, and right after you eat? How do you determine what to eat? What thoughts do you have while you are eating? Really try and observe your process of eating, non-judgmentally.

Mindful eating involves setting an intention before you eat, becoming aware of the process of choosing what to eat, listening to your body to determine what it needs, and then eating slowly, consciously, with your full attention on the moment-to-moment experience of eating. As a mindful eating exercise, try sitting down for a meal and before you begin to eat, pause and set an intention for the meal. For example, “May this food nourish me” “May I be present for this meal” “May I appreciate all that was involved in providing this meal”. Then, utilizing all of your senses, take note of all of the food on your plate – notice the color, size, shape, texture, and aroma. Note any sensations in your body or any anticipation of eating – perhaps you feel a bit of saliva building up in your mouth. Then, slowly take a small bite but do not begin chewing yet – continue to pay attention to anything that comes to your mind about the taste, temperature, texture, and any thoughts or sensations you experience. Then, begin to slowly chew. Notice what it feels like to chew, the movement of your jaw, any changes in the texture, or flavor of the food. When your mind inevitably wanders, continue to redirect your attention back to your food. Notice the feeling of the subtle transition from chewing to swallowing. Then take another bite and repeat the exercise. Maybe this meal brings up memories for you, for example, memories of a person, a fond vacation, or the last time you had this meal. Simply note where your attention has wandered off to and gently bring it back to your intention and the food in front of you. If impatience arises, simply notice it nonjudgmentally, and continue to chew and swallow slowly and mindfully.

After you finish your meal, observe how you feel immediately afterwards, and an hour or two later. Notice your energy level, your mood, how your belly feels. We are not suggesting that all of your meals are consumed in this meticulous of a manner; however, we are presenting another way of practicing mindfulness in your everyday life and a way of changing your relationship to food. As an alternative to practicing mindful eating with an entire meal, you may choose to practice with a raisin or strawberry, or even the first bite of a meal – something small where you are able to set an intention and direct your attention to the practice of eating mindfully, even if just for a few minutes.

Cultivation of Attitudes During Mindfulness Practice

In Kabat-Zinn’s book *Full Catastrophe Living* (1990), he describes seven attitudinal foundations of mindfulness (1) *Non-judging*, or intentionally suspending judgment and evaluation and just simply being aware of whatever arises. (2) *Patience*, whereby we allow things to unfold in their own time, not rushing one moment to get to the next. (3) *Beginner’s mind*, or a willingness to see everything in life as if it were being experienced for the first time. (4) *Trust*, acknowledging that there is innate wisdom in all of us; therefore, looking within ourselves for guidance rather than outside for clues on how to be in the world. (5) *Non-striving*, unattaching oneself from any particular outcome, letting go of how things “should” be. (6) *Acceptance*, coming to terms with reality by being receptive and open to whatever is actually here in the present moment, regardless of whether we agree with it, want or like it, or approve of it. (7) *Letting go*, letting things be and accepting them for what they are, holding onto nothing. All seven of these attitudes are interconnected, as practicing one almost always leads to practicing another.

In addition to these seven attitudes (non-judging, patience, beginner’s mind, trust, non-striving, acceptance, and letting-go), Shapiro and Carlson (2009) have included five additional attitudes: (1) *Nonattachment*, letting go of grasping or clinging to a particular outcome and allowing things to unfold. (2) *Curiosity*, a genuine interest in one’s experience, being willing to explore and investigate whatever arises. (3) *Gentleness*, a tender quality which is soft rather than rigid (though not to be confused with undisciplined or passive). (4) *Playfulness*, open, curious, joyful, exploratory. (5) *Loving-kindness*, demonstrating love, benevolence, and friendliness. All of these attitudes can be thought of as the manner in which we go about our mindfulness practice and can be a guide for how we set our intentions (Table 3.2).

Concluding Comment

The intention of this chapter is to offer an overview of the potential of mindfulness to enhance health and well-being. During the past four decades, mindfulness research has demonstrated significant psychological, neurological, and neurophysiological benefits.

We suggest mindfulness training helps cultivate essential human capacities involving the regulation of emotion, intention, attention, and healthy attitudes, which creates a synergistic way of being that leads to greater health and well-being. Research into the applications of mindfulness training to enhance well-being is no longer young, and the field is growing and evolving exponentially. The invitation to the field is to bring sensitivity, creativity, and the use of a range of methodological tools to help illuminate the richness, complexity, and potential of mindfulness to enhance health and well-being in a variety of populations.

There are many exciting avenues for the empirical study of the effects of mindfulness on health and well-being. For example, while many theories exist, empirical research could tackle the important question of mechanisms – what are the exact mechanisms through which mindfulness brings about adaptive health and well-being? Given that mindfulness practice has been associated with numerous beneficial outcomes, what is the most effective way to teach mindfulness to children and young adults in educational settings so that these positive effects may potentially be experienced earlier in life? Finally, the field must continue to study mindfulness under rigorous conditions, including utilizing an active comparison group, placebo group, assessing for demand characteristics, examining the longitudinal effects of the benefits gained through mindfulness, and so forth. It has been exciting to see the tremendous growth of mindfulness research and its application and we look forward to seeing how research and practice in this area continue to grow and evolve.

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Chapter 4

Executive Functions Promote Well-Being: Outcomes and Mediators

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Abstract The ability to control urges and impulses does more than keep us out of trouble. Over the long haul, people with strong executive functions do better in many areas of life, such as at school and in relationships. In the current chapter, we will review research that links executive functions to various facets of well-being including personal relationships, health, and academic achievement. We will explore why executive functions serve a protective role and will also consider whether enhancing executive functions has the potential to make us happier people.

Living a happy life (or obtaining well-being) is a vital and universal human goal (Diener, 2000; Myers, 2000). Psychologists, sociologists, and economists have thoughtfully evaluated what contributes to well-being (e.g., Diener, Suh, Lucas, & Smith, 1999), as have religious leaders, artists, and activists. Overtly or implicitly, nearly all people have at some point wondered, “How can I be happy?” So what makes for a happy life and, more importantly for this chapter, who are the people likely to be successful in these domains?

Without underestimating the sizable ways that people differ, we will focus on a few elements common to most happy lives. First, happy people typically spend their time with a network of close friends and loved ones (e.g., Myers & Diener, 1995). Think of the pleasure felt playing cards with friends or cozing up to a romantic partner in bed. Second, happy people tend to be healthy people (e.g., Hawkins & Booth, 2005), including those who are physically active and eat well (Maher, Pincus, Ram, & Conroy, 2015). Poor health can catalyze negative emotion and other stress reactions that undermine well-being (Lovallo, 2005), at least temporarily. Finally, achievement – moving toward personal goals and crossing them off the

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list – also contributes to happy lives (e.g., Emmons, 1986). While achievement can be career-related or even familial, for the purposes of this chapter, we will largely focus on the academic domain. Early academic success facilitates achievement in many areas of life, both by building skills and by opening doors to opportunities that are otherwise barred.

Given that quality personal relationships, healthy living, and achievement are all components of a happy life, and people want to be happy, it is important to analyze what factors predict success in these domains. The current chapter contributes to this analysis by describing research on executive functions, a body of interrelated skills that are associated with differences across people in these domains. More specifically, we will first describe executive functions. Next, we will present research linking executive functions to relationship-, health-, and achievement-related outcomes and consider the mechanisms responsible for these associations. We will conclude by evaluating the potential of interventions that strengthen executive functions to improve well-being across many life domains.

What Are Executive Functions?

Although researchers have long argued over an exact definition (e.g., Jurado & Rosselli, 2007), there is general consensus that executive functions (EFs; also referred to as executive control or cognitive control) are mental processes that support an individual's ability to move toward his or her goals. Some definitions additionally emphasize that EFs are relevant in challenging situations that involve competing demands such as those that require a person to engage in a response at odds with an automatic or habitual impulse (e.g., Banich, 2009). Executive functions are typically thought to mobilize effort or energy in the process of overcoming these more reflexive responses and are believed to have a common neuroanatomic foundation in the prefrontal cortex (e.g., Alvarez & Emory, 2006; Casey, Tottenham, & Fossella, 2002).

Skills that typically fall under the EF umbrella include updating working memory, planning, attentional-control, task-switching, delay of gratification, decision making, self-control, and emotion-regulation (Banich, 2009). In the current chapter, we will narrow in on those sub-skills that specifically involve the control of impulses and automatic responses, including behavior (i.e., self-control), attention (i.e., attentional-control), and emotion (i.e., emotion-regulation). We elected to focus on these aspects of executive functioning, rather than more cognitive sub-skills such as working memory, given that the former are well-studied in the context of well-being, and therefore have been the most reliably linked to close relationships, health, and achievement-related outcomes.

As an example of how EFs are measured in laboratory studies, consider a basic computer task that requires a participant to press a key on the left side of the keyboard when they see a picture on the right side of the screen (and vice versa). Here, the participant must maintain focus on the task instructions (i.e., attentional control),

and must override the relatively automatic and competing tendency to respond to right-oriented stimuli with the right button in order to do the opposite, which can be considered a form of self-control.

As a more everyday example, and of particular interest given our areas of expertise (e.g., Luerksen & Ayduk, 2014), consider the construct of delay of gratification (DG). This is a form of future-oriented self-control that involves refraining from a small and immediate reward in order to obtain a larger reward later (Mischel, Shoda, & Rodriguez, 1989). In both laboratory-based and real-world DG challenges, an individual is driven to obtain a desirable reward but must manage his or her behavior in order to do so. In particular, he or she must override the desire for temptations that are both immediately available and stand in the way of the bigger goal. For example, a high school student may want to ace her SATs in order to get into a good college (i.e., the large, long-term reward) but will need to control her longing to go a party on Friday night (i.e., the immediate temptation) in order to study and thus do well.

Executive Functions and Well-Being: Outcomes and Mechanisms

As described in greater detail below, the ability to perform well on EF measures has been linked to success in domains that contribute to well-being. In what follows, we will review the literature that links EFs with positive outcomes in the areas of personal relationships, health, and academic achievement (e.g., Mischel et al., 1989; Schlam, Wilson, Shoda, Mischel, & Ayduk, 2013). For each well-being domain, we will also consider mechanisms that reveal how EF ability translates into positive outcomes. That is, what specific automatic responses are short-circuited through EF engagement that would otherwise have hindered functioning? See Fig. 4.1 for a graphic rendering of the relationships outlined below.

Personal Relationships – Outcomes

There is a robust association between EF ability and success in personal relationships, including friendships and romantic relationships (e.g., Rawn & Vohs, 2006). Take work on DG as an initial example. Researchers have measured DG ability in childhood using a classic paradigm known as the “marshmallow task” (Shoda, Mischel, & Peake, 1990). Initially, the experimenter asks the child, typically 4–11 years of age, if he or she likes treats (e.g., marshmallows) and, if so, would the child rather have a small treat (e.g., one marshmallow) or a large treat (e.g., two marshmallows)? Unsurprisingly, most children prefer the larger option, and once this preference is established, the experimenter explains the rules of the game. The experimenter will leave the room, and if the child can wait until the experimenter

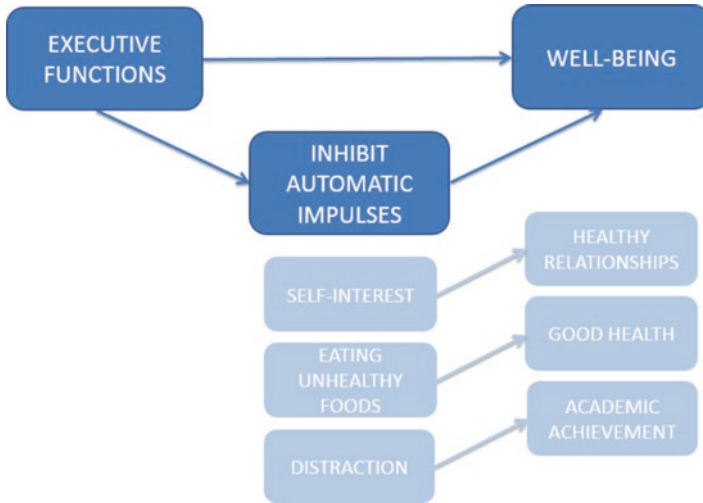


Fig. 4.1 As depicted in the darker boxes and lines, the ability to inhibit automatic responses is one mechanism that explains the relationship between executive functioning and well-being. With the lighter boxes and lines, we additionally illustrate an example of these mediating processes (inhibiting self-interest, the desire to eat unhealthy foods, and distractions) for each of the well-being domains (relationships, health, and academic achievement)

comes back, the child can have the larger, more desirable treat. If, however, the child does not want to wait for the experimenter any longer, or cannot wait, he or she can ring a bell and the experimenter will return, but if the bell is rung, the child can only have the smaller, less desirable treat. Once the rules are understood, the child is left alone in the room for an unspecified amount of time, with the reward options (e.g., the marshmallows) and bell on the table in front of him or her, serving as constant temptations. The child must wait between 15 and 25 minutes (depending on age) for the experimenter to return to get the larger option, with the amount of time the child waits serving as the main index of DG ability.

Walter Mischel and his colleagues have tracked a sample of participants who completed the marshmallow task when they were young children (in the late 1960s and early 1970s). In one follow-up assessment, parents reported on the participants' personalities when the participants were adolescents (Mischel, Shoda, & Peake, 1988). Participants who were better able to delay gratification as children were described by their parents as socially competent adolescents. Parents rated these adolescents as more social, trustworthy, and dependable and less slow to make social contacts, less likely to tease others, and less likely to be distrustful, suspicious, jealous, or envious.

Other work coming from the DG literature suggests that this ability is particularly instrumental for individuals vulnerable to social difficulties. For example, rejection sensitivity is the personality disposition to anxiously expect rejection and to readily perceive rejection in the ambiguous behaviors of others (Downey & Feldman, 1996). When rejection is perceived (be it real or imagined), highly

rejection sensitive people tend to react with hostility and aggression (e.g., Ayduk, Downey, Testa, Yen, & Shoda, 1999), behaviors that undermine their social relationships (Downey, Freitas, Michaelis, & Khouri, 1998).

These destructive impulses are less likely to emerge in highly rejection sensitive individuals who also have strong DG skills, however. For example, in one study, adolescents high in rejection sensitivity were rated by teachers as more aggressive and less liked by their peers, the typical concomitants of high rejection sensitivity – but only if they were also low in DG ability (as measured with the marshmallow task as children) (Ayduk et al., 2000). High DG participants were buffered from the negative responses and consequences typically associated with the rejection sensitive disposition. In a related study, rejection sensitive adults were vulnerable to symptoms of borderline personality disorder (characterized by unstable relationships, mood, and sense of self, as well as impetuous and harmful behavior) but, again, only if they were also poor in DG as young children (Ayduk et al., 2008).

Other aspects of EF ability have also been linked to success with personal relationships. For example, researchers have measured executive functioning with validated self-report questionnaires, including the Tangney Self-Control Scale, which asks participants to indicate the degree to which they endorse items such as, “I am good at resisting temptation,” and “People would describe me as impulsive” (Tangney, Baumeister, & Boone, 2004). Executive functioning measured with this scale correlates positively with feelings of security in attachment relationships and negatively with self-reported wallowing, anger, fractious intentions, and aggression in social relationships (Tangney et al., 2004).

In another line of research, parent- and teacher-reported emotion-regulatory ability predicted children’s social functioning, including concurrent and longitudinal measures of teacher-rated socially appropriate behavior (popularity and prosociality) (e.g., Eisenberg et al., 1995; Murphy, Shepard, Eisenberg, & Fabes, 2004). Emotion-regulation ability even predicted degree of friendliness, hostility, and physical aggression when the children were asked to re-enact responses to social conflicts (Eisenberg et al., 1997).

Personal Relationships – Mechanisms

What underlies the association between EF ability and success with personal relationships? Most people experience automatic and self-interested impulses during social situations. For example, if a friend reveals something hugely embarrassing about you in public, you may feel the urge to yell at him or her for being so thoughtless. This response is likely to satisfy short-term goals of feeling validated and vindicated (e.g., Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991). But what if you consider your long-term or big-picture goals, such as maintaining a happy and satisfying friendship? Yelling at your friend for divulging something private has the potential to undermine these goals by alienating the other person for a relatively innocent mistake. Executive functions appear to help control reactions in situations

like these, inhibiting self-interested impulses in order to behave in ways that benefit relationships in the long-term.

For example, many social situations evoke strong automatic emotional responses, such as anger, disgust, or hubristic pride. Often, regulating emotions and impulses may spare others from hurt or embarrassment and pave the way for smoother interactions. To demonstrate, in one study Caucasian American participants completed the STROOP task (Von Hippel & Gonsalkorale, 2005), which directly taxes participants' inhibitory control ability. During the task, participants were presented with a series of words and were directed to name the color of ink the word was printed in (i.e., their goal), rather than reading the word (i.e., their automatic response) (see MacLeod, 1991, for review). On particularly difficult trials, the words were colors (e.g., "red") printed in an incongruent colored ink (e.g., green ink). Participants with strong inhibitory control ability were able to get through the words faster and made fewer mistakes.

After completing the STROOP task, participants went on to the next part of the study, during which they were asked to eat a chicken foot, a traditional Chinese delicacy (Von Hippel & Gonsalkorale, 2005). Participants tended to automatically express disgust when this request was made. In one condition, however, the chicken foot was served by a Chinese-American experimenter. Here, it was particularly rude to show disgust, as the food was potentially part of the experimenter's diet and cultural traditions. Participants who were good at inhibitory control, as measured with the STROOP task, were less likely to express disgust in this condition, and therefore behaved in a more socially sensitive manner.

The ability to override self-interested impulses is especially important to long-term romantic relationships. Consider research on partner transgressions as an example. How do people respond when their romantic partner errs, such as when the partner forgets to pick up the dry cleaning or even behaves in a disloyal way? Research finds that the urge to retaliate in these circumstances is both normative and automatic (albeit destructive) (Yovetich & Rusbult, 1994). That said, accommodation – either talking about the event constructively or allowing the incident to pass quietly – is better for relationship satisfaction and longevity than impulsively fighting, breaking up, or assuming that a partner is no longer worthy of trust (e.g., Rusbult et al., 1991). In a series of studies, researchers found that people good at self-control, measured with the aforementioned Tangney Scale (Tangney et al., 2004), were likely to inhibit automatic retaliatory feelings when their partners transgressed, and, correspondingly, were more likely to effortfully and successfully behave in accommodative ways (Finkel & Campbell, 2001).

Other, even more destructive, impulses in close relationships may be circumvented through EF engagement. In one series of studies, Finkel and colleagues showed that although few people act on them, many people experience violent impulses during fights with romantic partners (Finkel, DeWall, Slotter, Oaten, & Foshee, 2009). Engaging in intimate partner violence may serve self-centered short-term needs (e.g., for revenge) but undermine broader and long-term relationship functioning. Finkel et al. (2009) found that participants with poor inhibitory control skills, measured with a four-item questionnaire (e.g., "I often act on the spur of the moment without stopping to think"), were at risk of letting violent impulses get the

best of them. Specifically, these participants were the most likely to engage in intimate partner violence, both cross-sectionally and over time.

Health – Outcomes

Each time a person goes out to dinner, attends an office party, or even shops for groceries, he or she is presented with choices and trade-offs that involve food. A slice of chocolate lava cake will certainly taste good but what if doctors recently advised limiting sugar intake because of blood pressure concerns? Many health-related choices that feel good in the moment (e.g., ordering chocolate cake, skipping yoga, engaging in excessive drug use) also have the potential to be damaging in the long-term. Here, again, EFs help to resolve these conflicts in ways consistent with one's long-term goals.

Much of this research has focused on the connection between EF skills and weight and obesity. For example, recall the longitudinal study of participants who completed the marshmallow task as children. Thirty years after the initial DG measurement, participants reported their height and weight (Schlam et al., 2013). The researchers used these values to calculate body mass index (BMI), a standardized measure of how overweight a person is. Participants who were better able to delay gratification as children had lower BMI as adults thirty years later.

This same association was found in a study of preadolescents at risk for obesity (Bruce et al., 2011). As part of an intervention program, these participants were asked to write about their goals and the progress they made in fulfilling them. Each time they completed this worksheet, they earned a point that they could spend immediately on a small reward or save across the weeks to spend on a larger reward (a naturalistic measure of DG tendencies). Participants who spent their points immediately, rather than saving them for a better (albeit delayed) reward, tended to have a higher BMI. In fact, participants classified as obese (based on BMI) were more likely to spend their points immediately than overweight (but not obese) participants, and these latter participants were more likely to spend their points immediately than healthy weight participants. In short, there was a linear relationship between people's inability to delay gratification and their BMI. People with good EF skills also appear better able to take advantage of weight loss programs. For example, in one study, participants with higher scores on the Tangney Scale lost more weight during a multi-week intervention than participants with lower scores (Crescioni et al., 2011).

Executive functioning is not only linked to food-related behaviors, but also to other aspects of healthy living, including substance use (e.g., MacKillop et al., 2011). Much of this research utilizes the delay discounting task, a measure of DG tendencies in adolescents and adults. During the task, participants are presented with a series of decisions between a small, immediate financial reward (e.g., \$2 today) and a large, delayed financial reward (e.g., \$10 in one week) (e.g., Reynolds & Schiffbauer, 2005). The participant's responses across all of the trials are com-

piled and the participant's discounting rate, also referred to as the k parameter, is computed. This is a measure of how quickly the participant devalues the larger reward if he or she must wait to receive it.

In a study with college students, discounting scores (higher values indicate greater devaluing of delayed rewards) negatively correlated with the age at which participants first drank alcohol, smoked cigarettes and pot, and positively correlated with the number of times the person passed out from substance use, as well as the number of illicit drugs used in the person's lifetime (Kollins, 2003). Similar associations have been found between delay discounting tendencies and substance use in high school students and even middle schoolers (Wulfert, Block, Santa Ana, Rodriguez, & Colman, 2002).

Strong EF abilities are particularly instrumental for individuals at-risk for excessive drug use. For example, people high in rejection sensitivity (described above) tend to use drugs at a higher rate than others (possibly as a way to escape from their social difficulties) (Ayduk et al., 2000). As was found with social outcomes, however, highly rejection sensitive individuals with good EF skills (as measured with the marshmallow task) were no more likely to use drugs than their low rejection sensitive counterparts (Ayduk et al., 2000). Executive functions served a buffering role for these vulnerable individuals.

Finally, there is a large body of research linking deficits in executive functioning to mental health, such as work by Jutta Joormann and colleagues on depression (e.g., Joormann, 2010). Joormann's research is based on prior work showing that mood states are associated with congruent memories, attention, and thoughts in working memory (Siemer, 2005). When a person is in a bad mood, for example, working memory is more likely to be saturated with thoughts about what is going wrong in the current situation and memories of prior failings. Executive function skills may be needed to inhibit this negative content and replace it with more positive material.

Joormann has found that people with depression have deficits in these inhibitory processes (e.g., Joormann, 2010). For example, in a computerized reaction time task, when non-depressed participants are asked respond to a negative word (by pressing a designated button) after having been instructed to ignore a word of the same valence on the preceding trial (vs. a neutral word), their response time is delayed. The size of the delay is assumed to reflect how strongly the previous negative word was inhibited. However, participants currently experiencing a Major Depressive Episode do not show this normative delay, suggesting that they are less able to inhibit the negative information from working memory (Joormann & Gotlib, 2010). Moreover, the more difficulty depressed participants have inhibiting negative stimuli, the more they report ruminating about negative events in their everyday life, a known risk factor for depression (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). In summary, clinically depressed people seem to have difficulty inhibiting negative information from working memory (suggesting EF deficits), which in turn plays a role in maintaining or exacerbating their depression.

Health – Mechanisms

As with personal relationships, the ability to inhibit automatic responses is an essential mechanism underlying the association between EF skills and health-related behaviors and outcomes. Here, the impulses to control are those catalyzed by the presence of unhealthy foods, substances, or even negative thoughts. Going back to an earlier example, consider the dilemma one faces when seeing a favorite dessert on a restaurant menu in the context of trying to cut down on sugar. Although it might be hard to pass up the pleasure felt from eating a favorite food, inhibiting this impulse is essential to maintaining good health, and thus well-being, over time.

In an illustrative study, adolescent female participants completed a challenging task that required them to inhibit responses to desirable foods (Batterink, Yokum, & Stice, 2010). During each trial of the task, called a food-related go-no-go, participants saw a picture of a vegetable (e.g., broccoli, eggplant) or a dessert (e.g., chocolate cake, ice cream). Whenever a vegetable appeared, participants were told to press a button as fast as possible. These were called “go” trials and there were many of them, making button-pressing the dominant response. Whenever a dessert appeared, however, participants were told to *not* press the button. These were called “no-go” trials and there were many fewer of them, making not pressing the button a less common and thus more difficult response. Not pressing the button when a dessert appeared was even more challenging, because, for most people, the dominant behavior is to respond in an affirmative way when we see something we like.

The researchers measured how fast participants completed the task and how many mistakes they made (Batterink et al., 2010). Of particular interest were mistakes during the no-go dessert trials. To what degree were participants able to inhibit the tendency to move toward the desirable desserts by withholding their response, and did this response inhibition measure relate to broader indices of health? The researchers found that participants with higher BMI scores made more mistakes during the no-go trials. These participants tended to press the button, in effect moving toward the dessert images, even when explicitly told not to. Interestingly, the researchers also measured neural activation during the challenging no-go trials (participants completed the study while lying in a functional MRI). As compared to participants with lower BMI, those with higher BMI showed less activation in prefrontal brain regions typically associated with EF engagement, and more activation in brain regions associated with reward reactivity.

The important role EFs play in overriding automatic impulses that have the potential to hurt our health is also demonstrated when EF capacity is temporarily depleted through previous use. These studies are based on the idea and findings that self-control is resource dependent and when we engage in an act of self-control we temporarily deplete ourselves of resources, thereby impeding the efficacy of subsequent acts of self-control (Baumeister, Vohs, & Tice, 2007; but see Xu et al., 2014). To illustrate, in one study, participants were asked to suppress any expression of emotion while watching an emotionally evocative film clip, a procedure that has previously been found to deplete participants of their self-control energy. These

depleted participants, as compared to a control group that let their emotions flow freely during the movie task, were more likely to succumb to snacking on high-calorie, unhealthy foods in a subsequent, ostensibly separate, taste-test study (Sellahewa & Mullan, 2015). Overall, the ability to inhibit the relatively automatic impulse to eat tasty foods when they are present requires EF engagement. Those with poor EF skills are less able to resist, as are individuals who have temporarily weakened EF capacity through prior use.

Academic Achievement – Outcomes

There are many barriers to academic success, including insufficient financial resources and inadequate familial and institutional support. However, some students with these advantages still struggle academically. As seen in the prior sections of this chapter, EFs play an important part, with students lacking in these skills at greater risk for academic failings. In an aforementioned longitudinal study on DG, participants who waited less time during the marshmallow task in childhood were not only rated as less socially competent adolescents, they were also rated as less academically competent (Mischel et al., 1988). Parents described these participants as less verbally fluent, planful, skillful, curious, eager to explore and learn, and lower in reasoning ability. They were also seen as more likely to become rigid, to become immobilized, and to disengage during stressful circumstances.

These personality correlates seem fundamental to academic success. Correspondingly, students that score higher on EF measures do indeed outperform others on objective indices of academic functioning. The same longitudinal study showed that participants better able to delay gratification in childhood also scored higher on both the verbal and quantitative sections of the scholastic aptitude test (SAT; Mischel et al., 1989). Other studies have focused on grades. For example, college students that scored higher on the Tangney Scale also had higher grade point averages (GPA; Tangney et al., 2004).

Researchers have taken great pains to isolate the role of EFs in predicting academic success above and beyond general intellectual ability. The goal is to rule out the alternative explanation that students with good EF skills also have higher IQs, and that it is really IQ that is doing the heavy lifting when it comes to academic outcomes. In a canonical series of studies conducted by Angela Duckworth and Martin Seligman (2005), participants completed measures of self-control (referred to as self-discipline) and IQ in the fall semester of their eighth-grade year. A composite measure of self-control was created by compiling scores on a series of self-, parent-, and teacher-report questionnaires, as well as delay discounting scores. These students were followed over time and the researchers measured a variety of academic outcomes at the end of the spring semester of the same school year. Self-control positively predicted final grades, scores on a standardized achievement test, and the likelihood of admittance into competitive high schools. Self-control was a stronger predictor of academic success than IQ, accounting for twice the variance in GPA, for example. Furthermore, self-control alone predicted gains in GPA over the course of the year.

Though not the focus of the current chapter, note that there is also a documented association between early EF ability and wealth and income in later life (e.g., Côté, Gyurak, & Levenson, 2010; Moffitt et al., 2011), which makes sense in light of the academic achievement findings reviewed. For example, in an impressive longitudinal study, Moffitt and colleagues tracked a sample of 1,000 participants from birth until their mid-thirties (Moffitt et al., 2011). Measures of self-control (e.g., self-, parent-, and teacher-reports, observational ratings) collected when the participants were 5, 7, 9, and 11 years of age were compiled into a single composite. This measure positively predicted socioeconomic status and amount of savings and investments, and negatively predicted money management and credit problems. These associations persisted when controlling for childhood socioeconomic status and IQ.

Academic Achievement –Mechanisms

What are the underlying mechanisms responsible for the association between EF abilities and academic success? Many temptations exist that have the potential to draw students' attention away from school-related endeavors. As an example, imagine a student studying in the living room of her home. With the press of a button she can turn on the television and watch cartoons. Just as easily she can see what her friends are posting online. Perhaps she might even step outside and play in her yard or on her block. The child with good EF skills is better positioned to inhibit these distractions and stick with her schoolwork, and these little acts of self-control have the potential to accumulate in large ways over time.

In one emblematic study, researchers measured a variety of skills when participants were in preschool and kindergarten (Blair & Razza, 2007). In addition to attention shifting, false belief understanding, and IQ, the researchers included a measure of inhibitory control. Participants were given a small wooden mallet and were instructed to tap it once each time that an experimenter tapped his or her mallet twice (and vice versa). Here, participants had to overcome the automatic tendency to mimic the experimenters' behavior and instead do the opposite. Participants were followed longitudinally and these measures were used to predict mathematics knowledge (e.g., numeracy, simple subtraction) and reading readiness (e.g., phonemic awareness, letter knowledge) at the end of their kindergarten year. While there were many significant associations between the early skills assessed and later academic outcomes, inhibitory control ability, as measured with the tapping task, was the most reliable predictor, and the only predictor to independently correlate with all indices of academic success.

Other researchers have measured more fine-grained behaviors that likely mediate the relationship between EF skills and broad indices of academic success. In the aforementioned studies by Duckworth and Seligman (2005), for example, higher self-control not only predicted objective measures of academic achievement, but also predicted behaviors that support achievement, including more time spent on homework, less time spent watching television, and getting started on homework

earlier in the day. In a separate line of work, self-control (measured with a questionnaire) predicted increases in report card grades and this association was, in fact, mediated by degree of homework completion and conduct in the classroom (Duckworth, Quinn, & Tsukayama, 2012). That is, students better at self-control were more likely to finish their homework and to behave appropriately in class and these behaviors were associated with improvements in grades over time.

Training Executive Functions

The research outlined above nicely illustrates the relationship between executive functioning and many aspects of well-being. People with stronger EFs tend to maintain happier relationships, display healthier habits, and experience more academic successes. These associations are heartening, except, of course, for people lacking in EF ability. Perhaps bolstering executive functioning in these individuals is a critical path to well-being.

Many interventions have been effective at improving executive functioning. As an example, in one study participants played a computer game that taxed working memory capacity, an EF skill that reflects the number of items remembered simultaneously (Jaeggi, Buschkuhl, Jonides, & Perrig, 2008). The game was adaptive, becoming more difficult as participants improved. Working memory capacity increased over the course of training, with the degree of improvement proportional to the number of days they practiced the game. Other interventions have successfully targeted the EF skills we focused on in this chapter, including the control of behavior, attention, and emotion (e.g., Amir & Taylor, 2012; Baumeister, Gailliot, DeWall, & Oaten, 2006; Riggs, Greenberg, Kusché, & Pentz, 2006). While some of these interventions, like the latter, bolstered executive functioning through adaptive computer games, others involved instructing participants to use EFs more readily in everyday life. As a collective, they tend to support the notion that EFs will become stronger with practice.

Given that EFs can be improved through training, it makes sense to wonder whether these improvements contribute to success in well-being domains. We review two studies with affirmative results. As we described earlier, research shows that most everyone experiences violent impulses when arguing with a romantic partner, but the tendency to act on these impulses is higher for those with poor self-control (Finkel et al., 2009). In a final study in the series, Finkel and colleagues evaluated whether improving self-control decreases the likelihood of acting on these violent impulses. There were two training conditions. In one condition, participants were instructed to use their non-dominant hand to do mundane tasks (e.g., brushing their teeth, operating a computer mouse) every other day for a period of two weeks. In the other condition, participants were instructed to modify their verbal behavior (e.g., say “yes” instead of “yeah,” use complete sentences) from 8:00 am to 6:00 pm for the same two-week period. In both conditions, participants practiced overriding automatic and habitual behaviors, presumably strengthening self-control. Before

and after the training, participants completed a questionnaire measuring the likelihood of responding in physically aggressive ways to a variety of partner provocations (e.g., if your partner ridicules you, if you catch your partner sleeping with someone else). The researchers found that participants in the training conditions responded to the provocations in less physically aggressive ways after the training than before. The same decline in aggression was not observed in a no-intervention control group that solely completed the pre- and post-measures of aggression, suggesting that self-control improvement was a causal factor in the decline.

Another demonstrative intervention focused on the health domain. Participants were obese children involved in an inpatient treatment program (Verbeken, Braet, Goossens, & van der Oord, 2013). Half of the participants were assigned to a six-week EF training program and the other half were assigned to a care-as-usual control condition which focused on teaching participants to make healthy food choices and to exercise. Participants in the EF training condition played an adaptive computer game during 25 sessions over a 6-week period. The game was tailored to children, involving a cover story that participants could improve the lead character's powers and world by playing the games. During each session, participants practiced a variety of working memory and response inhibition tasks similar to those described above. The researchers measured participants' BMI at various time-points and found that 8-weeks after the intervention finished, participants in the EF training condition kept off more weight than control participants. Presumably, the training program strengthened the ability of these participants to control impulses triggered by unhealthy foods.

Caveats

Although the latter studies suggest that improvements in EFs have great potential to enhance functioning in additional domains (e.g., well-being), we do note that some findings are mixed. For example, while Jaeggi and colleagues (Jaeggi et al., 2008) found that their working memory training was associated with gains in general intelligence (beyond just working memory), other researchers have failed to replicate this effect (Redick et al., 2013). Mixed findings like these suggest that although EF training interventions are a promising means of improving well-being, they should not be considered a panacea and should be evaluated with scientific rigor.

Throughout this review, we focused on a handful of EF sub-skills involving the control of behavior, attention, and emotion in challenging situations. While the associations between well-being and these aspects of executive functioning are well-documented, we do acknowledge that there may be distinct associations with other EF skills (e.g., working memory). In fact, research suggests that particular EF skills may be served by distinct prefrontal regions (e.g., Banich, 2009; Casey et al., 2002), and, as such, each skill may be more important to some domains and outcomes than others.

Although our review suggests that poor EF skills hurt well-being, an interesting question is whether too much executive functioning might also have negative implications. Consider anorexia as an example. Self-control is likely needed to stop food

consumption in the face of robust bodily signals indicating that sustenance is needed. Here, individuals with superior EF skills may be well-positioned to short-circuit these signals in order to pursue body-image goals. Does this mean that executive functioning is a bad thing? We do not think so.

Instead, we argue that healthy and happy people not only have strong EF skills at their disposal, but are also able to make use of these skills in flexible ways that change with situational demands. For example, research consistently shows that “discriminative facility” – being sensitive to situational cues and adjusting behavior accordingly – is a core component of social intelligence (e.g., Cheng, Chiu, Hong, & Cheung, 2001; Chiu, Hong, Mischel, & Shoda, 1995). This research finds, for example, that individuals who exhibit threat vigilance when the stressors they face are controllable, but switch to distraction when they are uncontrollable, are higher in social competence and well-being (Chiu et al., 1995). Theory and research on ego-control versus ego-resiliency illustrates the same basic idea (e.g., Block & Block, 1980). Block argued that self-constraint exerted indiscriminately (i.e., ego overcontrol) might be as maladaptive for functioning as lack of self-constraint (i.e., ego undercontrol). Instead, well-being depends on the ability to adjust one’s level of ego-control based on the particulars of each situation, an ability he referred to as ego-resiliency.

Our own point of view aligns with this perspective. Robust EF skills are not problematic in and of themselves. Rather, it is the rigid and indiscriminate use of these skills that could be damaging. For example, although an individual with anorexia may be good at self-control, he or she is also likely lower in ego-resiliency, unable to dial back this constraint when situational (bodily) cues say that eating is necessary. That is, to maximize well-being one needs to know when to engage EFs in service of pursuing goals and when to let go.

Conclusion

Well-being, in large part, depends on the degree to which a person cultivates close relationships, good health, and academic achievement (e.g., Emmons, 1986; Hawkins & Booth, 2005; Myers & Diener, 1995). Success in these three domains is enhanced by executive functioning, an array of skills that involve regulating behavior in difficult situations, such as those with opposing demands (Banich, 2009).

How do EFs, broadly construed, contribute to well-being? The ability to override automatic and destructive impulses appears to be one essential mechanism linking executive functioning to positive outcomes. For example, a person with strong EF abilities is better able to inhibit retaliatory impulses when their partner transgresses in order to enhance long-term relationship functioning (e.g., Finkel & Campbell, 2001), to overcome the temptation to order dessert in order to keep blood pressure under control (e.g., Batterink et al., 2010), and to turn off the television in order to finish a homework assignment (e.g., Duckworth & Seligman, 2005). These individual acts of inhibition have the potential to snowball in big ways over time.

Correspondingly, a variety of interventions have focused on training EF skills. Research suggest that EFs can be improved through practice (e.g., Amir & Taylor, 2012; Baumeister et al., 2006; Riggs et al., 2006), and moreover, some studies suggest that enhancing EF abilities has the potential to increase success in these well-being domains (e.g., Finkel et al., 2009; Verbeken et al., 2013). As such, improving executive functioning is one promising response to the ever-present question, “How can I be happy?”

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Chapter 5

The Quiet Ego: Concept, Measurement, and Well-Being

Heidi A. Wayment and Jack J. Bauer

Abstract This chapter shows how the qualities of a quiet ego counter the egotism of the noisy ego. Far from a squashed, deflated, or silenced ego, the quiet ego comes from a place of non-defensive strength. The quiet ego is a self-identity nurtured through deliberate reflection and endorsement of four values that promote balance and growth: detached awareness, inclusive identification, perspective-taking, and growth-mindedness. A quieter ego is a compassionate and regulated ego—a self-identity that strengthens thoughts, feelings, and behavior congruent with eudaimonic well-being. In this chapter, we describe the concept of quiet ego, its measurement, and its application to finding meaning and well-being in everyday life.

When people who are tolerably fortunate in their outward lot do not find in life sufficient enjoyment to make it valuable to them, the cause generally is caring for nobody but themselves. John Stuart Mill (1861)

The quiet ego transcends egotism. The noisy ego exudes egotism. The quiet ego balances the needs of the self and others, with a concern for the development of the self and others over time. The noisy ego tends only to the needs of the egocentric self, and then primarily as perceived in the present moment. The quiet ego, relative to the noisy ego, corresponds to various measures of happiness, well-being, and prosocial concern (Kesebir, 2014; Wayment, Bauer, & Sylaska, 2015; see the various chapters of Wayment & Bauer, 2008). Some people exhibit a quiet ego relatively more than others do, and some situations elicit a quiet ego relatively more than others do. In this chapter, we outline the multifaceted qualities of the quiet ego, how they are measured, and how they correspond to well-being. In short, the quiet ego is likely to have a happy mind, and the happy mind is likely to have a quiet ego.

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What Is a Quiet Ego?

The ideas behind a quiet ego are not new. We introduced the term *quiet ego* as an umbrella category for a range of psychological constructs that converge on the transcendence of egotism (Wayment & Bauer, 2008). These constructs have long theoretical histories in the field of psychology and span a range of psychological disciplines, including social, personality, developmental, cognitive, and clinical psychology (for an overview of historical background on a quiet ego and ego generally, see Bauer & Wayment, 2008).

When a person's ego is quiet, that person is motivated and able (1) to take others' perspectives, (2) to identify with others who are not just like oneself, (3) to attend to a situation without defensiveness, and (4) to view a situation as an opportunity for prosocial development. We summarize this list of four motives and abilities as four characteristics of a quiet ego: detached awareness, inclusive identity, perspective-taking, and growth-mindedness. We elaborate on these four characteristics in the next section. These characteristics, in combination, enable the person to promote the present and longer-term welfare of the self and others in two ways: (1) to balance the concerns of the self and others both conceptually and emotionally and (2) to foster the development of both the self and others.

The quiet ego is not a squashed, deflated, or silenced ego. Nor does a quiet ego involve a disregard for one's immediate self-interest. Instead, the transcendence of egotism involves the balancing of self-interest with concerns for others as well as the interpreting of one's immediate situation within a context of development over time. In contrast, the noisy ego is characterized by excessive self-focus and heightened sense of self-importance, often accompanied by a clamoring for attention, approval, or other such validations of one's worth. A noisy ego can increase perceptions of threat, exacerbate defensiveness, and create problems for the self and others over time (Wayment & Bauer, 2008).

As a characteristic of personality, the quiet ego is not a broad disposition like the big-five traits; it is not a supertrait that captures a range of related traits. However, if any one such supertrait corresponds to the quiet ego, it would be humility (Exline, 2008; Kesebir, 2014). Humility functions as one of the big-six traits in the HEXACO model (Ashton & Lee, 2009), where "H" stands for honesty/humility. Humility is not humiliation, just as a quiet ego is not a squashed ego. Rather, humility involves a general tendency to appraise events and the self honestly, with balanced assessments of the self and others, and not boosting one's self-image (e.g., via self-enhancement) at the expense of others.

Instead of functioning as a broad trait, the quiet ego functions as a characteristic adaptation (McAdams, 1995), a domain of personality that focuses on values and motives. Whereas broad traits can be observed in a relatively brief slice of time (e.g., Tackett, Herzhoff, Kushner, & Rule, 2016), a person's characteristic adaptations only become known upon knowing the person better, particularly by knowing the person's subjective reasons for action. Later, after introducing our measurement of the quiet ego, we show how the quiet ego corresponds to other characteristic

adaptations, such as resilience, internal (rather than external) motivation, and generativity. Like other characteristic adaptations, the quiet ego orients and motivates the person from a particular set of perspectives on the self, others, and time.

Characteristics of a Quiet Ego

We have defined and measured the quiet ego as having four characteristics: perspective-taking, inclusive identification, detached awareness, and growth-mindedness. We first posited these four characteristics (Bauer & Wayment, 2008) in order to stimulate an empirically informed dialogue about the basic components of the quiet ego. Our rationale was that these represented areas had each been studied relatively independently, were each viewed as a state, a trait, or a skill that could be intentionally cultivated, and that, either individually or collectively, could be found at the root of most topics that we believed fell under the “quiet ego” umbrella term. We posit that these four characteristics yield two broad qualities of the self in relation to others over time: balance between the concerns of the self and others and growth of the self (and others too) over time. In this section, we detail these four characteristics as operationally defined in the Quiet Ego Scale and in relation to balance and growth.

Balance Balance refers to the conceptual consideration of the concerns of both the self and others—a weighing of psychosocial concerns that keep both the problems of excessive egotism and excessive moralism, among other things, in check. All four characteristics of a quiet ego facilitate this kind of balance. As an experience, balance is a sense of comfort, equanimity, stability, or moral justification that one feels from knowing that one has considered not just the self but others as well—a feeling that is as much about hedonic satisfaction as about eudaimonic virtue. Perspective-taking and inclusive identification represent cognitive principles of differentiation and integration, respectively. Perspective-taking involves the capacity to consider other people’s points of view and has long been known to be an important facilitator of empathy (Batson, Early, & Salvarini, 1997; Davis, 1996). Inclusive identification involves a cognitive perspective that integrates the self and others. However, this integration is not merely the conformity of blindly identifying with one’s group. Rather, inclusive identification involves an interdependent view of the self and others as mutually associated (not only in appearance but also epistemologically) while simultaneously autonomous agents in that association (see interdependence as a feature of ego development – Loevinger, 1976). In tandem, perspective-taking and inclusive identification facilitate the quiet-ego feature of psychosocial balance, particularly as they increase the likelihood of cooperation and dampen self-protective motives against others (Montoya & Pittinsky, 2011).

Detached awareness shares some features with popular conceptions of mindfulness as an ability to restrict judgment of the self and others (Brown & Ryan, 2003; Siegel, 2007) except that detached awareness is neither focused on discrete sensory

experiences in the immediate moment nor tied to a meditative practice. Instead, detached awareness is a form of attention that is characterized by an engaged, less defensive orientation to present activity, focused on whatever has been chosen to be the object of thought. Detached awareness clears a space to examine the self and others dispassionately—critically yet not judgmentally—which can then further facilitate perspective-taking and interdependence (Lindsay & Creswell, 2015) as well as a sense of equanimity and balance.

Finally, growth-mindedness involves a mindset (Dweck, 1999) or motivation (Bauer, Park, Montoya, & Wayment, 2015) to view a given event as an opportunity for personal growth. This growth may be one's own or that of another person, as in a concern for generativity (Erikson, 1968). Perspective-taking and inclusive identification deal with the self and others in psychosocial space, but growth-mindedness deals with the self and others over time. Events and people are viewed from an organismic perspective, assumed not to exist permanently as they appear in the present but rather to be evolving from conditions in the past to the present and into the future. In the long tradition of organismic theory, any one developmental advance starts with disequilibrium and ends with balance or equilibration (Goldstein, 1939; Piaget, 1970).

Growth Whereas growth-mindedness refers to a subjective concern for (i.e., a personal valuing of) personal growth, “growth” here refers to the attainment of growth over time (Bauer & McAdams, 2010). Perspective-taking and inclusive identification, as processes of differentiation and integration in psychosocial space, facilitate growth. For example, in Erik Erikson's (1968) theory, identity development involves the differentiation and integration of characteristics of the self and others, resulting in one's coming to understand and identify with an increasingly wider scope of people in one's psychosocial world (Erikson, 1968).

Detached awareness, coupled with acceptance, fosters personal growth (Lindsay & Creswell, 2015). With detached awareness, one attends in a way that is not accompanied by social comparisons and other self-image-protecting thoughts, a thought process that provides some distance from the “self” which could enhance wisdom (Kross & Grossman, 2012). In addition to an ability to focus one's attention on the moment, detached awareness also allows for an individual to dispassionately review early thought and action. Such a review could allow for the opportunity to revise initial impressions or conclusions (cf. Langer, 1989), develop a wider repertoire of regulatory strategies, and monitor, accept, and evaluate feedback, consistent with regulatory flexibility (Bonanno & Burton, 2013).

Growth-mindedness views a given situation in terms of how that situation might serve as an opportunity for personal growth over time—and then not just for the self but for others as well. Personal growth here is defined not in terms of mere gain, positive outcomes, or getting whatever one wants but rather in terms of eudaimonic, humanistic, and organismic development (Bauer & McAdams, 2010). Detached awareness and growth complement each other. Both are focused on processes as they unfold, rather than evaluations of the products that any one action produces, corresponding with our organismic perspective which values the self and others not merely for their products but also for their processes.

Measurement: The Quiet Ego Scale

We theorized that a measure of “quiet ego” would be optimized if thought of as a latent construct, a relatively abstract idea that cannot be directly measured but rather inferred from what the four quiet ego characteristics have in common (see Bono & Judge, 2003 for similar rationale for measurement of core self-evaluations). The relative quietness or noisiness of the ego is a function of how the individual interprets the self and others—with mindful awareness in a psychosocially integrated, compassionate, and growth-oriented manner.

One of the benefits of a measure of quiet ego is that it ties together principles of humane psychological functioning that are found in the world’s wisdom traditions and in humanistic psychology with principles of modern psychological science, which are built on a more empirical foundation. For instance, the four quiet ego characteristics that we have described relate closely to a recently proposed humanistic model of spiritual growth (Kass, 2015), such as behavioral self-regulation through mindfulness, cognitive understanding of human suffering that supports social justice, social–emotional development of compassion toward the self and others, and a focus on maturation in the face of life’s difficulties. Although there are many existing measures that tap one or possibly two of the quiet ego characteristics, none tap all, nor the conceptual overlap that we have argued comprises a quiet ego.

Thus, we developed a brief measure called the Quiet Ego Scale (QES) that consists of 14-items that at the theoretical intersection of the four characteristics of a quiet ego. Items for the scale were drawn from four published scales: MAAS (Brown & Ryan, 2003), Allo-Inclusive Identity Scale (Leary, Tipsord, & Tate, 2008), Davis Interpersonal Reactivity Index (perspective-taking subscale – Davis, 1983) and Psychological Well-Being (personal growth subscale– Ryff, 1989). The QES yields a single score with internal reliabilities that consistently range between .76 and .80, with average inter-item correlations that typically range between .15 and .20, consistent with it being a measure of a broad, higher-order construct (Clark & Watson, 1995) (see Table 5.1 for scale items).

The QES correlates significantly with four of the Big Five traits (extraversion, openness to experience, conscientiousness, and agreeableness), and honesty/humility (Ashton & Lee, 2009, Exline, 2008; Kesebir, 2014). The QES also correlates with characteristic adaptations that reflect a eudaimonic focus on meaning and compassion (Wayment et al., 2015), including generativity (McAdams & de St. Aubin, 1992), self-compassion (Neff, 2003), the presence of meaning in life (Steger et al., 2006), resilience (Bartone, 2007), and savoring (Bryant & Smith, 2015; Bryant & Veroff, 2007).

That the QES also correlates with well-being may come as no surprise, since some of the QES items directly involve well-being. This fact reflects our understanding of a quiet ego as partly constituting fulfillments that are characteristic of a quiet ego. Like subjective well-being, the development of a quiet ego in one’s life rests on certain needs being met, whether biological and physical needs (Tay & Diener, 2011) or psychological needs like competence and relatedness (Deci & Ryan, 2000). These need fulfillments are essentially satisfactions of certain, desired

Table 5.1 Quiet ego scale items

1. I think it is important to have new experiences that challenge how you think about yourself and the world.
2. I find myself doing things without paying much attention. ^a
3. I feel a connection to all living things.
4. Before criticizing somebody, I try to imagine how I would feel if I were in their place.
5. For me, life has been a continuous process of learning, changing, and growth.
6. I do jobs or tasks automatically, without being aware of what I'm doing. ^a
7. I feel a connection with strangers.
8. When I'm upset at someone, I usually try to put myself in his or her shoes for a while.
9. I have the sense that I have developed a lot as a person over time.
10. I rush through activities without being really attentive to them. ^a
11. I sometimes find it difficult to see things from another person's point of view. ^a
12. I feel a connection to people of other races.
13. I try to look at everybody's side of a disagreement before I make a decision.
14. When I think about it, I haven't really improved much as a person over the years. ^a

Note. All items were assessed on a 5-point scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). The QES reflects a mid-level construct and score should be comprised of all 14-items (e.g., single score)

Items 2, 6, 10 (Mindful Attention and Awareness Scale, Brown & Ryan, 2003)

Items 3, 7, 12 (Allo-Inclusive Identity Scale, Leary et al., 2008)

Items 4, 8, 11, 13 (Perspective Taking, Davis, 1983)

Items 1, 5, 9, 14 (Personal Growth, Ryff, 1989)

^aReverse-coded item

For more detail, see Wayment, Bauer, and Sylaska (2015)

meanings in life and thus tantamount to well-being (Bauer, *in press*). For example, the self-reported presence of meaning in life correlates with well-being (Steger et al., 2006), even though the MIL includes what are essentially items measuring fulfillment of (i.e., well-being in) meaning (e.g., “I have discovered a satisfying life purpose”). Similarly, the QES includes items dealing with the fulfillment of (or well-being in) personal growth. So it is that the correlation between the QES and well-being seems obvious, more a matter of construct validity than predictive interest. The quiet ego is constitutive of well-being, to some degree.

As we see it, the value of the QES—as both a construct and a measure—is not its ability to predict well-being, but rather to show those facets of well-being that correspond to transcending self-interest. In turn, the importance of transcending self-interest lies in its capacity to facilitate human flourishing—which certainly involves much more than merely one’s own pleasure and satisfaction—for both the self and others. Similarly, far from being a catch-all measure of positivity, the quiet ego (and the QES) focuses more specifically on the role of transcending self-interest. One need only contrast the concepts of a quiet ego and self-enhancement to see the difference.

To further validate that the QES reflects balance and growth motives, we (Wayment & Bauer, under review) examined how the QES correlates with values from Schwartz’s (1992, 2012) circumplex value model as well as an index of growth motivation, the motivational component of growth-mindedness (Growth Motivation

Index, GMI; Bauer et al., 2015). As can be seen in Table 5.2, QES was most strongly correlated with the values of *universalism* and *benevolence*, and *self-direction*, and unrelated to *conformity*, and negatively related with *power* values (see Table 5.2 for more detail). We found that QES was positively associated with higher-order value clusters (e.g., combination of adjacent values in the circumplex model) of both *self-focused values* (self-enhancement, openness to change) and *other-focused values* (self-transcendence, conservation), evidence that the quiet ego balances self- and other concern. QES also correlated significantly with *growth values* (self-transcendence, openness to change) and was essentially unrelated with *self-protection values* (self-enhancement, conservation) (Table 5.2).

Table 5.2 Correlations between QES and values and motives (N = 1117)

Circumplex value model (Schwartz, 2012)		95% CI ^a
Power	-.12**	[-.19, -.05]
Achievement	.18**	[.12, .25]
Hedonism	.06*	[.01, .13]
Stimulation	.19***	[.13, .25]
Self-direction	.25***	[.19, .31]
Universalism	.37***	[.32, .43]
Benevolence	.36***	[.29, .41]
Tradition	.13**	[.07, .19]
Conformity	.00	[-.06, .07]
Security	.17**	[.12, .24]
1st order value clusters		
Self-enhancement values	.03	[-.04, .09]
Self-transcendence values	.40***	[.35, .46]
Openness to change values	.25***	[.19, .31]
Conservation values	.12**	[.06, .19]
2nd order value clusters		
Self-focused values	.14***	[.08, .21]
Other-focused values	.28***	[.23, .34]
2nd order value clusters		
Self-protection values	.06*	[.00, .12]
Growth values	.33***	[.27, .38]
Ego & ecosystem motives (Crocker & Canevello, 2010)		
Self-image goals	-.09*	[-.15, -.03]
Compassionate goals	.48***	[.43, .52]
Goal ratio ^b	.42***	[.36, .47]
Growth motivation (Bauer et al., 2015)		
Experiential growth motivation	.45***	[.40, .49]
Reflection growth motivation	.39***	[.33, .44]
Total score	.53***	[.48, .57]

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$

^a95% CI estimated with 1000 bootstrapped samples

^bThe ratio of compassionate to self-image goal use. Higher values reflect a greater ratio of compassionate goals relative to self-image goals

Growth motivation is more than the belief one can change (as in incremental theories – Dweck, Chiu, & Hong, 1995), but is an explicit desire to foster personal growth (Bauer et al., 2015). The GMI’s *experiential growth motivation* scale represents the social-emotional and action-oriented desire for cultivating skills for personally meaningful activities and relationships. The *reflective growth motivation* scale represents the social-cognitive (e.g., intellectual) desire for cultivating one’s capacity for thinking complexly and integratively. Both scales independently predict personality characteristics that incorporate elements of well-being and maturity, such as generative concern (Erikson, 1966; McAdams & de St. Aubin, 1992) and self-actualization (Jones & Crandall, 1986; Maslow, 1968). In our large sample of undergraduates, we found that the experiential and reflective subscales of GMI predicted QES significantly and independently, suggesting that QES taps into different paths of eudaimonic development (see Table 5.1).

Quiet Ego: A Compassionate Self-Identity

Self-absorption in all its forms kills empathy, let alone compassion. When we focus on ourselves, our world contracts as our problems and preoccupations loom large. But when we focus on others, our world expands. Our own problems drift to the periphery of the mind and so seem smaller, and we increase our capacity for connection - or compassionate action. Daniel Goleman (2006)

One of the more compelling reasons that we believe quiet ego to be relevant to eudaimonic well-being is its conceptual connection to compassion. In fact, in our study outlining the QES, we refer to the quiet ego as “a compassionate self-identity” (Wayment et al., 2015). Gilbert (2009) has written extensively about the characteristic of a compassionate mindset and its importance to well-being. According to Gilbert, the compassionate mind has an awareness of the needs of self and others without judgment, the motivation to care, nurture, and promote well-being of self and others, the ability to understand (empathy) and be moved (sympathy) by the distress and joys of self and others, the ability to tolerate distress experienced by self and others, and the ability to pursue these ideas with warmth, gentleness, and kindness (Gilbert, 2009). Further, given the linkages between expressed compassion to strengthened positive emotion and reduced stress reactivity (Jazaieri, et al., 2014; Smeets, Neff, Alberts, & Peters, 2014), we think that the close link between quiet ego and compassion is important.

One of the primary ways we have empirically examined whether QES is related to compassionate mindset is to examine its correlates with compassion-related constructs. In several of our studies to date, QES is moderately related to self-compassion (Neff, 2003), generativity (McAdams & de St. Aubin, 1992), and (as described later in this chapter) with empathy, care, and concern for others in distress (Wayment, in progress). We have also been particularly interested in the relationship between QES and what Crocker and colleagues call compassionate and self-image interpersonal goals (Canevello & Crocker, 2010, 2011, 2015). Compassionate interpersonal goals are described as collaborative and less judgmental; goals that value the

well-being of self *and* others. In several studies, Crocker and colleagues have found that increased compassionate goal use is associated with more supportive relationships and decreases in depression and anxiety (Crocker & Canevello, 2008, Crocker et al., 2010).

In contrast to compassionate goals, self-image goals are primarily concerned with defending desired self-images and prioritizing one's own needs and desires. Longitudinal studies of first-year college students find that use of self-image goals is associated with multiple negative outcomes, including negative affect (fear, confusion, depression, and anxiety) and problematic behavior. Crocker and colleagues' research (as well as our own) consistently find a modest to moderate correlation between the two interpersonal goals. We have consistently found QES to be positively associated with compassionate interpersonal goals, but unrelated or negatively related to self-image goals (Craddock & Wayment, under review; Wayment & Bauer, under review; Wayment, West, & Craddock, 2016).

Is the Quiet Ego a Happy Ego?

In a nutshell, and for the most part, the quiet ego is a happy ego. But not all features of a quiet ego necessarily correspond to happiness, particularly when viewed in a strictly hedonic sense. Happiness as hedonic well-being is essentially a matter of experiencing pleasure and being satisfied with what one has in life (Diener et al., 2006; Haybron, 2008). As we will see, the quiet ego corresponds to hedonic happiness, e.g., through identifying with others and a sense of having grown. However, other characteristics of a quiet ego, such as perspective-taking and critical self-reflection, may be less about pleasures than about virtues. In other words, the quiet ego is not only about pleasure and satisfaction but also about the kind of well-being that follows in the wake of eudaimonia, which includes concerns for others' welfare rather than just one's own (e.g., Keyes, 1998) as well as for the development of one's potentials and skills (Annas, 2011) that may or may not yield hedonic happiness in the immediate term. For instance, higher levels of ego development (Loevinger, 1976) hold strong theoretical ties to a quiet ego, particularly with regard to perspective-taking and inclusive identification, even though measures like ego development typically do not correlate with well-being (Bauer, 2008). In the following sections, we focus on some why a quiet ego may be positively related to well-being.

Quiet Ego, Self-Control, and Well-Being

The relationship between self-regulation and well-being has been explored in many contexts. Many of the chapters in this volume outline how self-regulation contributes to well-being and helps individuals handle adversity when it arises. Self-control is related to several constructs related to quiet ego characteristics: self-compassion

(Terry & Leary, 2011), mindfulness (Bowlin & Baer, 2012; Brown, Ryan, & Creswell, 2007; Feltman, Robinson & Ode, 2009; Howell & Buro, 2011; Wallace & Shapiro, 2006), and empathy and perspective taking (Tangney, Baumeister, & Boone, 2004). Because self-control arises from an ability to consider both self- and others in the context of goal pursuit (Baumeister & Vohs, 2007), we have investigated the relationship between our measure of quiet ego (QES) and self-control. In two samples of college students (607 females, 194 males), we found QES was related to self-control, largely explained by using compassionate goals (e.g., value others' well-being) more often than self-image (e.g., self-protection) goals (cf. Crocker & Canevello, 2008).

These results suggest that the ability to balance self-focused and other-focused goals is conducive to self-regulatory processes (Baumeister & Vohs, 2007), supporting other research that a reduced egoistic focus has a positive effect on self-regulation (Abelson, et al., 2014; Leary et al., 2006). In several studies, we have found that our measure of quiet ego is not only associated with greater self-reported use of compassionate goals (compared to self-image goal use), but that it is the presence of compassionate and other-focused goals that help contribute to self-control and well-being.

Well-Being During Stressful Times

In this final section, we briefly discuss our work examining whether quiet ego, a self-mode that balances self- and other-concerns and values growth, is helpful for positive adaptation to stressful life events.

Coping with the Transition to College The transition to college can be a particularly stressful time in a young person's life (Dyson & Renk, 2006; Pryor et al., 2010; Ross, Neibling, & Heckert, 1999). Between 30–55% of college students report greater than average levels of stress (ACHA, 2014; Regehr, Glancy, & Pitts, 2013), with depression and anxiety the most common reactions. We collected data from two samples during their first semester of college (N=372; 79% female, 21% male; mean age = 18.00; N = 239, 69% female, 31% male; mean age = 18.49). QES was associated with less perceived stress and greater life satisfaction, partially mediated by self-control and self-compassion. Our models accounted for 35% of the variance in perceived stress and 36% in life satisfaction. We tested the same model in our second sample (one year later) with nearly identical results, the model accounting for 27% of the variance in perceived stress and 29% in life satisfaction (Wayment, West, & Craddock, 2016).

Compassion-based interventions have been shown to protect mental and physical health (Gilbert & Procter, 2006; Klimecki, Leiberg, Lamm, & Singer, 2013; Roeser & Pinela, 2014). We developed and tested a brief intervention that reminded new college students of the four quiet ego characteristics. We identified and invited female students in their first semester (first two weeks) of college who reported using self-image goals more often than compassionate goals. Volunteers (N = 32)

were randomly assigned to one of three conditions and came to the lab three times in approximately 30 days to listen to a 15-minute audio recording based on the four quiet ego characteristics (see Wayment, Collier, Birkett, Traustadottir, & Till, 2015). The Quiet Ego Contemplation (QEC) briefly described each quiet ego characteristic followed by a few minutes of time to reflect on what that characteristic meant to them. Compared to the other two conditions, women in the QEC condition reported higher scores on QES and a measure of pluralistic thinking (Hurtato, et al., 2001; perspective-taking, tolerance, openness to having views challenged and discuss controversial issues, work cooperatively with diverse people), decreases in mind-wandering on a cognitive task, and decreases in oxidative stress, a marker of physiological stress.

While preliminary, our results are promising and suggest that a brief intervention based on the quiet ego construct may offer a simple cognitive strategy that individuals can use in their everyday lives (Wayment, Collier, Birkett, Traustadottir, and Till, 2015). We believe this brief cognitive intervention that makes growth and balance values salient could be useful and are currently engaged with several research projects, including developing a simple smartphone application and embedding its use in specific areas of research such as creativity where a reduction in self-focus could help facilitate “flow” experience (Csikszentmihalyi, 2014), as an aid to assist at-risk students transition to college, and in work environments to mitigate the effects of stress (Huffman, Irving, & Wayment, *in press*).

Coping with Unemployment The health and well-being of employed adults are often compromised during periods of unemployment (Paul & Moser, 2009; Roelfs, Shor, Davidson, & Schwartz, 2011). Agency theory (Fryer, 1986) characterizes loss of employment as an evaluative threat associated with a loss of personal control, self-esteem, sense of value, and security which then impact physical and psychological well-being (Price, Choi, & Vinokur, 2002; Rantakeisu, Starrin, & Hagquist, 1999; Ullah, 1990). We surveyed 173 unemployed adults at the height of the “Great Recession” in 2010 who reported a variety of stressors that revealed challenges to their finances, living situations, and caretaking responsibilities (Wayment, Huffman, & Irving, 2017). Using an abbreviated form of the QES (4-items) QES was positively related to self-reported health (see also Wayment, Wiist, Sullivan, & Warren, 2011). Further, self-compassion partially mediated the relationship between QES and self-reported health, consistent with results from our studies with college students. QES was also positively related to posttraumatic growth (PTG; Tedeschi, Park, & Calhoun, 1998), positive changes in the face of challenge that include personal growth, sense of efficacy, meaningful relationships, compassion for others, and appreciation for life.

Thus, in the context a significant stressor, unemployed adults who endorsed quiet ego characteristics reported finding some positive meaning in their time of difficulty. Both quiet ego and self-compassion were independently related to PTG. Self-compassion is an important skill that has relevance to finding meaning in stressful circumstances (Allen & Leary, 2010). These results suggest both quiet ego and self-compassion are important resources for finding meaning in the context of a life event that is often threatening (Fryer, 1986).

Coping with a School Shooting Most recently, we examined the extent to which quiet ego characteristics were associated with empathic and collective reactions to an on-campus shooting. The shooting that took place on the Northern Arizona University college campus on October 9, 2015 led to the death of one student and injury to three others. Although the shooting did not meet the definition of mass shooting, it quickly became an international and national news story. Given that media exposure plays an immediate and critical role in the experience of collective loss, and affective reactions peak quickly after such an event (Gortner & Pennebaker, 2003), we assessed students' reactions to the event beginning just three days after the shooting. The personalized stories of victims and their families can often extend the impact of a tragedy to individuals who might not otherwise be affected (Peterson & Silver, 2015). Distress reactions arise because the unexpected nature of the violence often shatters people's sense of safety and control (Janoff-Bulman, 1992). People are more likely to cope better if they can make sense of a tragedy, and the ability to "finding meaning" is aided by feeling empathy for the victims and perpetrators of such tragic events. Peterson and Silver (2015) used a scenario lab study to experimentally demonstrate that perceived similarity (Westmaas & Silver, 2006) and perspective taking (Davis, 1996) were associated with increased empathy for both victims and perpetrators. In turn, perceived similarity and perspective taking were both related to positive community responses and being more likely to find meaning.

The questionnaire asked about general measures (such as the QES) prior to the questions regarding the shooting and reactions to the shooting. We found that not only is grief distinguishable from general and acute distress reactions, but that quiet ego was uniquely associated with grief, a reaction of concern for the victims and their loved ones, but not with the more self-focused forms of distress (e.g., depression, anxiety, somatic complaints) or acute reactions (e.g., intrusive and avoidant thoughts related to the shooting). Furthermore, QES was associated with all of the variables that predicted grief reactions: perceived similarity to the victims, fewer attributions of blame to the victims, stronger common bond with other college students (Wayment & Silver, *under review*). We also have evidence to suggest that the experience of collective loss increased QES scores (relative to comparable sample of students assessed one month before the shooting), suggesting that the contemplation of death and loss may also quiet the ego (cf., Maslow, 1968, plateau experiences).

Our results reinforce that QES reflects what Gilbert (2009) calls a compassionate mindset: in the immediate aftermath of a real-world tragedy that greatly affected the members of a close-knit college community, those who reported higher QES scores responded to the tragedy in a more compassionate way: they were less judgmental of the perpetrators of the shooting (as measured by attributions of responsibility and control), were empathic and sympathetic to the distress of others, and felt part of the collective experiencing the trauma. These compassionate qualities facilitate an ability to share emotion following a tragedy which is important and brings people closer together (Rime, 2009). Thus, quieted ego may arise from, and have important consequences for, coping with events that challenge our assumptive worlds (Janoff-Bulman, 1992).

Conclusion

Reflecting the widely desired aims of balance and growth in life, the quiet ego constructs a self-identity that is less egoistic and more compassionate, fostering adaptive self-regulation, resiliency, and well-being. The benefits of putting the “self” in perspective has long been known to be a path toward eudaimonic well-being, and there are many existing areas of research that also reflect the importance of a “putting the self in perspective”—whether through affirmations of transcendent values (Cohen & Sherman, 2014; Critcher & Dunning, 2015), experiences with nature and “awe” (Keltner & Haidt, 2003), or wisdom (Sternberg, 2013). For example, the literature on self-affirmation processes demonstrates that when one’s perspective on the self is broadened, threat and defensiveness are reduced (Burson, Crocker, & Mischkowski, 2012; Schimel, Arndt, Banko, & Cook, 2004). Indeed, a closer look at the values associated with positive self-affirmation effects are those that are transcendent, those that emphasize social connections and being part of purposes or projects that go beyond the individualistic self in the immediate moment (Crocker, Niiya, & Mischkowski, 2008; Shnabel, et al., 2013).

The construct of the quiet ego pulls together well-established phenomena from a range of psychological disciplines that, taken together, reflect the human capacity for critical yet compassionate self-reflection. The quiet ego serves to remind ourselves of what we find important in life, how to diffuse the negative consequences of excessive self-focus, how we might understand others’ points of view, and how we might facilitate eudaimonic growth. Furthermore, this framework for the quiet ego lends itself to relatively simple interventions to make important course corrections in everyday life. And, although we have taken initial steps to create a brief scale to measure these ideas, we look forward to the further development of research methods and interventions to test, apply, and refine such models of quiet-ego functioning, as they aim ultimately toward the cultivation of a self-identity that facilitates eudaimonic well-being.

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Chapter 6

Staying Happier

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Abstract As many happiness seekers inevitably discover, human beings are remarkably susceptible to hedonic adaptation—the process of becoming accustomed to positive life changes. Even if individuals observe short-term increases in happiness, how can they avoid the natural erosion of happiness over time? Can anyone ever *stay* happier? In the present chapter, we review the mechanisms underlying hedonic adaptation to positive experiences and present evidence that sheds light on how people can deliberately prevent or slow it down. We argue that the intentional, effortful use of positive activities can produce and sustain significant increases in happiness.

Introduction

A true saying it is, ‘Desire hath no rest;’ is infinite in itself, endless; and as one calls it, a perpetual rack, or horse-mill, [...] still going round as in a ring.’ – St. Augustine

Most people want to be happy (Diener, 2000). Indeed, the pursuit of happiness is such a basic human need that the U.S. founding fathers wrote it into the Declaration of Independence on equal footing with life and liberty. Yet the right to pursue happiness, as many a happiness seeker inevitably discovers, does not guarantee its attainment. For many, happiness is a moving target that often writhes perpetually further out of reach.

Positive and negative events happen to everyone, and research shows that human beings are remarkably adept at adapting (Lyubomirsky, 2011). While adaptation to negative events, such as losing a loved one or becoming paralyzed, can be a blessing—helping individuals overcome adversity—adaptation to positive events is less so. We finally obtain that promotion at work or buy that new convertible, then months or years pass, and our initial joy loses that certain *je ne sais quoi* it once held. Our shiny, new baubles become lackluster, and our most exhilarating achievements lose their thrill. As St. Augustine prophesized, our desire is endless and has no rest; it keeps escalating. One day sooner or later, we become like Veruca Salt in

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Willy Wonka and the Chocolate Factory—the girl who wanted the golden goose, then macaroons, a million balloons, and performing baboons. We want more and we want it now.

This observed tendency of people to adapt to the emotion-relevant change catalyzed by positive or negative events has been called hedonic adaptation or the “hedonic treadmill” (Brickman & Campbell, 1971; Frederick & Lowenstein, 1999). This notion likens the pursuit of happiness to a person on a treadmill, who has to keep running at an ever-increasing pace just to stay in the same place. On the one hand, as illustrated above, hedonic adaptation is an adaptive human strategy that helps individuals recover from the slings and arrows of negative experience. On the other hand, research suggests that adaptation to positive experience is a significant impediment to happiness seekers, implying that the pursuit of happiness is ultimately doomed to failure. However, as will be elucidated in the sections that follow, there is far more to the story.

Research on Hedonic Adaptation

Adaptation to Negative Events

Negative events are a part of every life, and some are worse than others. From job losses, accidents, financial crises and illnesses to divorces, deaths of loved ones, and natural disasters, nearly half of all U.S. adults will experience at least one traumatic event in their lifetimes (Ozer & Weiss, 2004), and almost everyone will occasionally endure moderate to severe daily stress (Weinstein, 1982).

Fortunately, people show a remarkable ability to adapt even to profoundly adverse life events. However, evidence suggests that, on average, they adapt better to some negative events than others. For example, 1 to 60 months after breast cancer surgery, the majority of patients reported that their lives had been changed for the better (Taylor, Lichtman, & Wood, 1984), but 16 months after the building of a new major highway, residents were still not adjusted to the traffic noise (Weinstein, 1982). These studies, however, are limited in that they lack a pre-event baseline for researchers to determine how much adaptation actually took place.

Prospective longitudinal studies do not share this limitation. In a 19-year panel study following more than 30,000 German participants, Lucas (2007a) found that in the first year after the onset of a disability, participants experienced a decrease in happiness that was followed by little adaptation over time. Participants from the same data set who became unemployed (Lucas, Clark, Georgellis, & Diener, 2004), divorced (Lucas, 2005), or widowed (Lucas, Clark, Georgellis, & Diener, 2003) also reported significantly reduced well-being that, on average, never fully recovered.

Anusic, Yap, and Lucas (2014) replicated many of these results using the Swiss Household Panel (SHP), a longitudinal study that includes over 19,000 individuals

from 7500 households. Both unemployment and widowhood were found to be associated with long-lasting negative effects on life satisfaction, but these declines could be attributable to normative, age-related changes that would have occurred even in the absence of the event. However, disability was uniquely associated with long-term drops in life satisfaction over and above normative declines (Anusic et al., 2014). Although these longitudinal studies elucidate whether people adapt to a variety of negative events, the naturalistic study designs prohibited random assignment to an experimental or control condition. Thus, causal inferences cannot be drawn, and confounding or spurious relationships may partially explain some of the findings.

Adaptation to Positive Events

Positive events play a unique function in the pursuit of happiness, because many people believe that the secret to happiness is to experience as many positive events as possible and to achieve certain personal goals (Lyubomirsky, 2013). Robert J. Hasting's essay "The Station" encapsulates this idea expertly:

"When we get to the station that will be it!" we cry. [...] "When I buy a new 450 SL Mercedes Benz that will be it! When I win a promotion that will be it! [...] I shall live happily ever after!"

In other words, people often try to change their life circumstances to achieve greater happiness. Unfortunately, this is a rather ineffective strategy because people adapt to positive events much like they adapt to negative ones. Few published cross-sectional and longitudinal studies have focused on adaptation to positive events, and thus the empirical literature in this area is relatively limited. Yet remarkably, the research that does exist suggests that individuals adapt to positive events fairly rapidly and completely.

Winning the Lottery How many people dream of winning the lottery? When considering adaptation to positive events, one of the most often cited studies found that Illinois State Lottery winners (who had won \$50,000 to \$1,000,000 in 1970s dollars from 1 to 18 months earlier) were no happier than controls (who experienced no such windfall) and took significantly less pleasure from a series of mundane events (Brickman, Coates, & Janoff-Bulman, 1978). This finding suggests that hedonic adaptation to lottery wins was relatively speedy and complete.

Getting Married Although the share of married adults has declined from 72% in 1960 to 50% in 2013 (Pew Research Center, 2014), a majority of Americans marry at least once during their lifetimes or wish to get married some day (Newport & Wilke, 2013a). To be sure, marriage continues to be a positive event that many people eagerly await. However, Lucas and his colleagues (2003) found that German residents who married during a 15-year period of a longitudinal study initially experienced a significant increase in well-being, but reverted to their baseline happiness

after an average of 2 years. Clark and Georgellis (2012) reported similar findings using 18 waves of panel data that followed 10,300 individuals drawn from 250 areas in Great Britain. The study found that people tended to undergo a boost in happiness prior to marriage as they became engaged, anticipated their wedding, and eventually got married. However, like the German sample, over time these British residents eventually fully adapted to marriage within 2 years on average (Clark & Georgellis, 2012; Clark et al., 2008). This short-term boost in well-being was replicated in Swiss household panel data, suggesting that people's life satisfaction levels after marriage are not much different from pre-marriage baselines (Anusic et al., 2014). However, in taking normative changes into account, married participants may have been happier than they would have been if they remained single (due to age-related declines in life satisfaction in the sample over time). In sum, these findings indicate that adaptation to marriage may be fairly complete, but married people may still be happier than single people.

Starting a New Job Many people are deeply dissatisfied with their present jobs, and dream of switching careers. However, a longitudinal study found complete adaptation to a new professional position (Boswell, Boudreau, & Tichy, 2005). Boswell et al. (2005) followed high-level managers for 5 years before and after making a voluntary job change, and found that managers experienced an increase in job satisfaction immediately after switching jobs (termed the honeymoon effect), followed by a decline in job satisfaction within a year (the so-called hangover effect). By contrast, high-level managers who chose not to switch jobs during the same time period showed relatively stable levels of job satisfaction.

Birth of a Child More than 9 in 10 adults report that they already have children, are planning to have children, or wish they had children (Newport & Wilke, 2013b). Given the ubiquity of this goal, it is not surprising that many individuals believe they will finally attain happiness with the birth of their first child. However, Clark and Georgellis (2012) found evidence for adaptation to this positive event in the British panel data. Here, they discovered a sharp contrast between men and women. Female life satisfaction remained high 3 years before and leading up to the birth of a child, perhaps in part due to the happy anticipation of motherhood. However, after the birth of a child, female life satisfaction quickly reverted to its baseline level. In contrast, the life satisfaction of men was not affected by the newborn.

Other research has reported that although women experience a greater initial boost in well-being upon becoming a parent, males and females show comparable patterns of anticipation and adaptation (Clark et al., 2008). In the Swiss panel data, life satisfaction was found to increase in the years prior to childbirth and decline in the years that follow, ultimately decreasing to below the original baseline (Anusic et al., 2014). Yet in comparing parents to non-parents in normative comparison groups, people who went on to have children were no more or less happy than participants who did not. These findings suggest that adaptation to the birth of a child is relatively rapid and complete.

Cosmetic Surgery Many people seek to improve some aspect of their physical appearance through cosmetic surgery, as evidenced by the nearly 6.5 million aesthetic surgeries performed annually worldwide (International Society of Aesthetic Plastic Surgery, 2014). One study asked 360 women receiving breast augmentation with silicone gel-filled implants to rate their satisfaction with the procedure after 6, 12, and 24 months (Cash, Duel, & Perkins, 2002). The women reported high levels of satisfaction with the surgery and its psychosocial outcomes, which, interestingly, did not change over time throughout the 2-year period. Over 90% of the female participants were satisfied with the surgery, and most (75% to 85%) reported that the benefits of the procedure exceeded its risks. Another study that followed 540 people about to undergo aesthetic surgery and 260 people who were interested in surgery but decided not to have it found that the surgery group reported more positive outcomes 1 year postsurgery, such as increased well-being, life satisfaction, and body image satisfaction (Margraf, Meyer, & Lavalle, 2013). Although these studies did not find evidence of adaptation, it is possible that the duration of the post-surgery period was not long enough to reveal adaptation effects. Perhaps cosmetic surgery has a longer well-being boost timeframe than other types of positive experiences. Alternatively, cosmetic surgery may continue to produce happiness dividends into the future via upward spirals of positive emotions that accumulate and compound (Fredrickson & Joiner, 2002). Experiences of positive emotion may broaden attention and cognition and, in turn, predict future experiences of positive emotion. As this cycle continues, it may result in enhanced psychological resilience and emotional well-being. In the case of cosmetic surgery, such upward spirals could lead to sustained increases in self-esteem and improved romantic opportunities.

Obstacles to Sustaining Happiness: Can Adaptation Be Overcome?

Happiness and positive emotions have been found to be associated with, and promote, numerous desirable life outcomes. These outcomes include superior physical and mental health, enhanced creativity and productivity, higher income, greater prosocial behavior, and stronger interpersonal relationships, with average effect size r s ranging from .18 to .51 (Lyubomirsky, King, & Diener, 2005). Additionally, positive emotions like joy, contentment, interest, and vitality also advantage individuals recovering from negative experiences (Fredrickson, 2001; Fredrickson & Cohn, 2008). Therefore, in order to increase individual well-being, researchers would do well to find ways to prevent, slow down, or reduce adaptation to positive events.

If people cannot overcome hedonic adaptation to positive events, then lasting and sustainable increases in happiness may not be possible. Empirical evidence, however, indicates that happiness can and does change over time. Mzorcsek and Spiro's (2005) 22-year study modeled change in life satisfaction in almost 2000 men, and found that life satisfaction increased over these men's lives, peaked at age 65 and

then declined through age 75. A cross-sectional study of adults aged 17 to 82 found a positive correlation between age and subjective well-being (Sheldon & Kasser, 2001), and a 23-year longitudinal study of four generations of families found a negative correlation between age and negative affect (Charles, Reynolds, & Gatz, 2001). Additionally, in a longitudinal study that lasted from 1984 to 2000, 24% of respondents reported shifts in their well-being (unfortunately, mostly for the worse) (Fujita & Diener, 2005).

Researchers have also observed a great degree of variation in individual adaptation rates—that is, in the extent to which people’s happiness levels change following important life events. The Mzorczeck and Spiro (2005) study that tracked life satisfaction over men’s lifetimes found significant individual differences in rates of change. Also, in his 15-year investigation of marital transitions, Lucas (2007b) found that some individuals became much happier after getting married and then stayed happier, while others’ happiness began declining even before their wedding day. Similarly, whereas some widows’ and widowers’ well-being plummeted (and never recovered) after their spouses’ deaths, others actually became happier and remained that way (Lucas, 2003). The mechanisms underlying this individual variability are surely complex. To some extent, these variations are likely dependent on the differences in the individuals’ objective situations—e.g., good or bad marriages, more or less compatible spouses, etc. However, Lyubomirsky (2011) proposes that the main source of individual differences in adaptation rates is variation in the intentional efforts that people undertake to slow adaptation to positive events and accelerate adaptation to negative ones.

In sum, recent research provides support for the changeability of individual happiness levels, and thus people’s capacity to control the speed and extent of hedonic adaptation via intentional, effortful activities. As such, positive activities that prevent, slow down, or impede the adaptation process are likely to hold the key to achieving increased and sustainable well-being. What are such positive activities and how do they work? Lyubomirsky and Layous (2013) theorize that engaging in positive activities—for example, expressing gratitude or savoring positive events—lead people to experience more positive emotions, positive thoughts, positive behaviors, and greater psychological need satisfaction (Deci & Ryan, 2000; Sheldon, Elliot, Kim, & Kasser, 2001), which results in increased well-being. This process—as it applies specifically to hedonic adaptation—is described in the Hedonic Adaptation Prevention model.

The Hedonic Adaptation Prevention Model

Positive life changes may contain the seeds of their own undoing. – Sheldon & Lyubomirsky (2012)

The Hedonic Adaptation Prevention (HAP) model (see Fig. 6.1; Lyubomirsky, 2011; Sheldon & Lyubomirsky 2012) focuses on how hedonic adaptation unfolds in

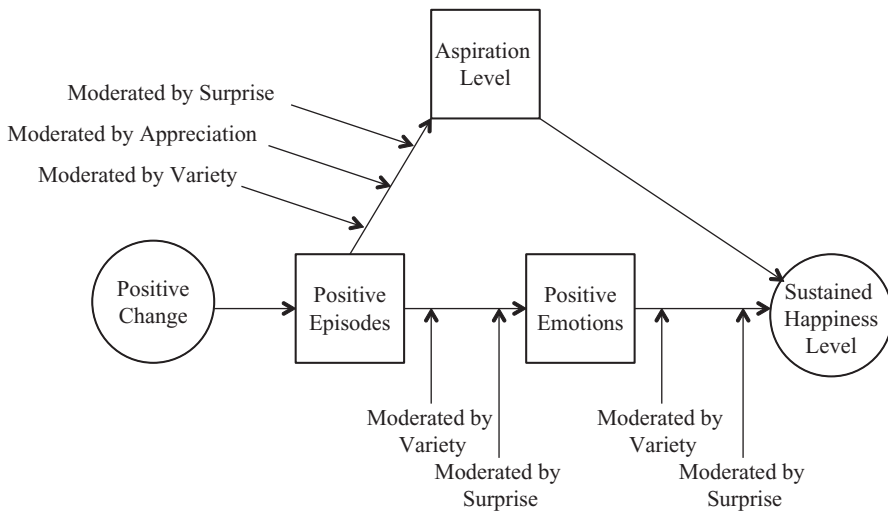


Fig. 6.1 Hedonic adaptation prevention model

response to both positive and negative events and suggests how to prevent adaptation from occurring in positive domains. The model begins with a seminal positive event, such as a major positive life change. This seminal positive event (e.g., adopting one's first dog) leads to increased downstream, discrete positive episodes, which can occur as internal cognitive events or as external events (Sheldon & Lyubomirsky, 2012). These positive external events (e.g., playing fetch with the dog, purchasing new toys, or meeting people at the dog park), in conjunction with subsequent increases in internal cognitive events, such as positive emotions (e.g., joy, appreciation, love, gratitude), lead to increases in well-being. (Importantly, we discuss two critical moderators, variety and appreciation, later in this chapter.)

After the initial boosts in well-being derived from the seminal positive event, adaptation occurs over time via two parallel paths: through decreases in positive episodes and emotions (bottom path) and through increases in aspiration (top path). Together, these paths explain emotional and cognitive processes that contribute to the natural erosion of the happiness gained from positive events.

In the first (bottom) path, individuals gradually adapt to the seminal positive event, as the positive episodes become less novel and less numerous, thus decreasing the amount and intensity of resultant positive emotions. In our example, the new dog owner has fewer novel experiences, as the dog park becomes familiar territory, playing fetch becomes another chore, and the toys are no longer new. In turn, the owner experiences fewer positive emotions. As this process occurs, individuals revert or approach their baseline levels of happiness.

A second route by which hedonic adaptation occurs is through increased aspirations regarding the individual's own expectations about his or her quality of life (top path). Even if the positive episodes and emotions that result from the positive seminal event continue to occur, they become predictable and expected; the dog owner

begins to see pet ownership as simply “the new normal” and craves even more gains in happiness. The new dog owner may require more positive episodes in order to maintain boosts in his or her happiness. Thus, the boosts in happiness from the seminal positive event become the individual’s new baseline, and this individual requires even more positive events in order to experience future increases in well-being (Kesebir & Diener, 2008).

As the discussion so far elucidates, hedonic adaptation occurs as a result of less frequent positive episodes and emotions, and increased aspirations. Fortunately, as previously mentioned, individuals who wish to mitigate the speed and extent of adaptation can do so by incorporating the following intentional, effortful positive activities into their daily lives.

Staying Happier: Positive Activities

In this section, we discuss a number of positive constructs that combat hedonic adaptation after a positive life change. For each construct, we describe mechanisms by which hedonic adaptation is thwarted, as well as relevant activities or processes that can be incorporated into daily life. Notably, each of these activities is designed to direct attention to positive aspects and away from the negative. These positive activities aim to keep positive experiences “fresh” in the individual’s mind and to produce a stream of positive emotions, thoughts, and downstream events.

Spice It Up: Integrating Variety

No pleasure endures, unseasoned by variety. – Publilius Syrus, 1st century BC

Given that adaptation, by definition, can only occur in the context of recurrent or static stimuli, one clear approach to thwarting hedonic adaptation involves incorporating variety into one’s experiences (see Fig. 6.1). Fostering variety in one’s activities, whether with regard to material possessions or broad life changes, allows these experiences to stay fresh, satisfying, and meaningful over time, thus preventing or significantly slowing hedonic adaptation (Lyubomirsky, 2011).

Empirical evidence supports the notion that variety moderates the relationship between seminal positive events and subsequent hedonic adaptation. In one study, among participants who described enacting a positive life change, those who reported higher variety in this change demonstrated increased boosts in well-being compared to those who reported lower variety (Sheldon, Boehm, & Lyubomirsky, 2012; Study 1). Furthermore, over a 10-week intervention, students who were assigned to do varied acts of kindness, rather than to repeat the same acts of kindness, showed stronger increases in well-being (Sheldon et al., 2012; Study 2). In more naturalistic settings, happiness seekers report using a wide variety of strategies—eight on average—to boost well-being (Parks et al., 2012; Study 2). When

asked how they responded after adapting to positive activities, most participants reported that they “kept practicing the same activity in a new way” (Parks et al., 2012; Study 2). These findings suggest that those who are actively seeking happiness intuitively incorporate variety—whether in type of activity or in ways of completing the same activity—into their routines. Finally, given that increases in the number of different types of concurrent positive activities in which one is engaged predicts increases in happiness, it is likely that combining positive activities may further thwart hedonic adaptation (Parks et al., 2012; Study 3).

Beyond variety in behavior, emotional variety can impede hedonic adaptation. Single positive events can trigger variation in subsequent positive emotions, such as pride, contentment, satisfaction, excitement, and love. Variety in positive emotions has been linked with increased relationship satisfaction and closeness in romantic and social relationships, suggesting that emotional variety is critical to inhibiting hedonic adaptation in relationship domains (Jacobs Bao & Lyubomirsky, 2013). Indeed, new theory touts the benefits of variety, rather than limited range, of positive emotions for positive outcomes such as mental health (e.g., emodiversity; Quoidbach et al., 2014).

In other life domains, scholars suggest that one concrete way to incorporate more variety is by spending discretionary income on experiences, as opposed to materialistic purchases. Advertising and conventional wisdom advise that buying a new smartphone or expensive clothing (e.g., “having it all”) will make consumers happy. Empirical evidence, however, supports the notion that experiential purchases, such as getting a massage or taking a day trip, generate more lasting hedonic benefits (Dunn, Gilbert, & Wilson, 2011; Van Boven & Gilovich, 2003). Indeed, one study tested this hypothesis by randomly assigning participants to spend several dollars on either a material possession (e.g., keychain, picture frame) or an experience (e.g., video game, song). Those in the experiential purchase condition showed less adaptation across a 2-week follow-up period than did those in the material purchase condition (Nicolao, Irwin, & Goodman, 2009).

One reason that people are so quick to adapt to material goods is likely due to such goods’ inherent lack of variety. Purchasing an expensive painting of Paris is a far more static experience than actually going to Paris. While the painting may look fantastic hanging on the living room wall and will initially impress one’s friends, the once-new piece of artwork is eventually going to fade into the standard home décor, and the owner will quickly find the painting no longer brings the same happiness it initially did. On the other hand, a trip to Paris is a dynamic and varied experience, both in terms of behavior and emotion. The traveler will excitedly plan for the trip well in advance, sharing her anticipated joy with loved ones and purchasing new clothes to wear. Upon arriving in the city of light, the traveler will feel curiosity and interest as she tries novel foods, attends legendary museums, and meets fascinating people. After the trip, she can reminisce fondly about her experience, share stories and photos on social media, and feel wonderfully nostalgic when she remembers her time there.

Interestingly, empirical work from marketing researchers has elucidated a novel way to incorporate variety within a positive experience itself—namely, interruption.

Nelson and Meyvis (2008) tested the relationship between interruption and hedonic adaptation across three different studies in which participants were randomly assigned to experience a positive activity (e.g., 3-minute massage, Study 2; a novel but pleasant song, Study 4; a mix of participant-selected songs, Study 6) either continuously or with an interruption. Participants in all three studies consistently reported feeling more enjoyment of the pleasant activity when it was interrupted, rather than when it was experienced continuously. Moreover, these results cannot be explained by contrast effects, as they held true regardless of whether the valence of the interruption was positive (e.g., a short clip from a popular, well-liked song), negative (e.g., a short clip of irritating guitar feedback), or neutral (e.g., silence).

Nelson and Meyvis (2008) propose that an interruption provides the variety necessary to disrupt adaptation to a hedonically pleasant event. Adaptation can occur in a relatively brief span of time, such as that of a 3-minute massage, but a quick break is sufficient to break the uniformity and disrupt the process of hedonic adaptation. Consequently, when the massage resumes, the individual has “reset” their affective experience to their previous baseline and can begin enjoying the massage anew.

We contend that individuals should actively seek to “spice it up” when it comes to maintaining boosts in well-being. Consider the example of a recently married couple settling in to their married life together. The newlyweds can thwart adaptation by intentionally engaging in varied behaviors and activities together, which are likely to engender a number of distinct positive emotions. The couple may feel excited to try a new restaurant, proud after hiking a new trail together, or curious and challenged when attending a couples’ cooking class. Introducing a broad and varied array of emotions and behaviors is likely to produce a stream of novel, engaging downstream episodes, further impeding the progression of adaptation. Following the cooking class, for example, the couple may recreate the dish at home or incorporate new foods into their diet, creating further successive positive episodes and emotions. Additionally, the couple should strive to choose more experiential purchases in their relationship, such as group fitness classes or weekend getaways, rather than materialistic ones, like expensive jewelry or a new flat-screen TV. Finally, given that interruptions can hinder adaptation to married life, the couple may choose to regularly spend some evenings out apart, in order to further disrupt and reset the process of hedonic adaptation.

Relish Happy Surprises

The moments of happiness we enjoy take us by surprise. It is not that we seize them, but that they seize us. – Ashley Montagu

Surprise is similar to variety, but it is distinguished by its unpredictability. Where variety can be planned and prepared for, surprise is unforeseen and inconsistent. It is within this randomness that researchers find an additional useful mechanism for forestalling hedonic adaptation.

Human beings are exceptional in their need to search for meaning. When life events occur, whether positive or negative, the first question is often “Why?” This search for meaning in life is linked to a number of positive psychological and cognitive functions (e.g., DeZutter, Luyckx, & Wachholtz, 2015; Heintzelman, Trent, & King, 2013; King et al., 2006), but it may also speed adaptation to hedonically pleasing events. Wilson and Gilbert’s (2008) AREA (e.g., Attend, React, Explain, Adapt) model elucidates the ways in which the search for meaning and reason ultimately erodes emotional experience. People attend more closely and react more strongly to events that are self-relevant and surprising, and this intensified affective response is likely due in part to the increased difficulty in explaining the surprising event (Wilson & Gilbert, 2008). Empirical work supports this “pleasure paradox”—the notion that our search for meaning in positive events actually diminishes the duration and intensity of the positive emotions (Wilson, Centerbar, Kermer, & Gilbert, 2005). For a real-world example, consider a company employee who has just been given a bonus at work—a scenario that would undoubtedly boost happiness in many individuals. If this bonus were expected or anticipated based on length of employment or time of year (e.g., a small holiday bonus), that initial surge in happiness may fade as the employee looks ahead toward her next periodic bonus. However, the employee’s level of happiness would be more intense and longer lasting if this bonus were given as an unexpected surprise. She would have more difficulty explaining the raise, attend to it for a longer time, experience more intense and long-lasting positive emotions, and ultimately adapt more slowly.

Obviously, individuals cannot purposefully plan more surprises into their lives, as this would remove the crucial characteristic of unpredictability, but they can plan to engage in adventures and experiences—for example, meeting new people, traveling, or taking up new challenges—that naturally hold surprises. Furthermore, when surprising positive events do occur, we suggest that those who wish to delay the effects of hedonic adaptation resist the urge to explain or rationalize them. By focusing their efforts on appreciating the pleasant surprise, rather than on finding reasons for its occurrence, individuals can prolong the pleasure of life’s happy surprises.

Appreciate the Small Things

We tend to forget that happiness doesn’t come as a result of getting something we don’t have, but rather of recognizing and appreciating what we do have. – Frederick Koenig

“Stop and smell the roses.”

“The grass is always greener on the other side.”

“Count your blessings.”

Such platitudes have been repeated ad nauseam in media and popular culture, but research suggests their directive—to be appreciative of one’s current circumstances—may be critical for delaying hedonic adaptation. Theoretical and empirical

work supports the notion that appreciation is a significant moderator of the effects of hedonic adaptation (see Armenta, Jacobs Bao, Lyubomirsky, & Sheldon, 2014; Sheldon & Lyubomirsky, 2012). Specifically, appreciation of a seminal positive event is associated with reduced likelihood for higher aspirations, thwarting one of the critical pathways specified by the HAP model (Sheldon & Lyubomirsky, 2012). When individuals intentionally appreciate the positive changes in their lives, they are more attuned to nuances and find more aspects to enjoy. Consider the positive life change of purchasing a new, luxurious diamond necklace. This acquisition is already prone to hedonic adaptation, given that it is a materialistic purchase with limited inherent opportunities for variety, and that increasing aspirations for a larger or more desirable diamond can easily arise. However, the purchaser can thwart hedonic adaptation by spending some time appreciating her current necklace. She can reflect on how the jewelry glistens in soft lighting, and how it makes her feel glamorous. She can also spend some time considering how hard she worked to earn the necklace, and how fortunate she is to have the means to afford such a fine piece of jewelry. By spending a few moments considering the positive qualities of her diamond necklace, the individual can slow her rising aspirations and, ultimately, forestall adaptation.

A sizeable body of research suggests that inducing gratitude and appreciation for things, events, or people can generate significant benefits for happiness and well-being (e.g., Emmons & McCullough, 2003; Layous, Lee, Choi, & Lyubomirsky, 2013; Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011; Lyubomirsky, Sheldon, & Schkade, 2005; Seligman, Steen, Park, & Peterson, 2005). Indeed, gratitude interventions necessarily involve sustained attention to the positive aspects of a life change, which is arguably one of the most critical pathways for obstructing hedonic adaptation (Kahneman & Thaler, 2006). Lyubomirsky and colleagues (2005) suggest that when people are truly grateful and appreciative of their positive life experiences, they are able to gain the maximum amount of enjoyment from these experiences and are thereby prevented from taking them for granted.

A recent study sought to increase savoring by inducing scarcity (Quoidbach & Dunn, 2013). Compared to baseline, participants showed significant increases in savoring the hedonically pleasant experience of eating chocolate when they had been randomly assigned to a restricted access condition (e.g., avoid all chocolate) during the week prior, as compared to an abundant access (e.g., eat as much chocolate as possible) or neutral (e.g., no instruction) conditions. Importantly, those in the abundant access condition showed reduced savoring over time. These data support two important and related notions—that abundance of a pleasant experience *reduces* savoring and that periods of paucity can boost savoring and, ultimately, prevent adaptation to positive events. After all, one may really enjoy a popular new song on the radio, but after hearing it numerous times per day on multiple stations, it begins to feel stale and irritating. Avoiding the song altogether for a period of time may help one to sincerely enjoy it again when it is played in a department store or at a party. Absence truly does make the heart grow fonder.

The above evidence suggests that promoting savoring, appreciation, and gratitude can play a powerful role in forestalling adaptation. By effortfully directing

attention toward appreciation of a positive life change, people can increase and prolong their hedonic experiences. One can also use the more ascetic approach of scarcity and deprivation in order to boost savoring and appreciation and, ultimately, prevent adapting to hedonically pleasant life changes. As Sheldon and Lyubomirsky (2012) aptly summarize, “Appreciation is the psychological opposite of adaptation” (p. 672).

Be Kind to Others

No act of kindness, no matter how small, is ever wasted. – Aesop

Prosocial behavior has been broadly defined as any act intended to benefit another person, including specific acts of kindness such as purchasing coffee for a stranger or helping a significant other with a chore (Penner, Dovidio, Piliavin, & Shroeder, 2005). Much research expounds the benefits of prosocial behavior for well-being and happiness (Crick, 1996; Layous, Nelson, Oberle, Schoenert-Reichl, & Lyubomirsky, 2012; Nelson, Layous, Cole, & Lyubomirsky, 2016).

We suggest that performing acts of kindness for others can serve as a highly impactful intervention to forestall hedonic adaptation in one of life’s most important domains: social relationships. Performing a kind act for another person may foster an increased awareness of one’s own good fortune or positive circumstances in life (Lyubomirsky et al., 2005). Helping others is also likely to produce a wide variety of positive episodes and emotions. For example, a recent study assigned employees to perform acts of kindness for coworkers, like buying a coffee for a coworker, sending a thank you note, or leaving a flower on a coworker’s desk (Chancellor, Margolis, Jacobs Bao, & Lyubomirsky, in press). Consistent with previous studies, kindness givers experienced increases in well-being, as well as in satisfaction with life and work. Notably, however, the authors also assessed the experience of the kindness recipients in this study, and found that kindness recipients subsequently reported nearly three times more acts of prosocial behavior than did controls (for similar findings, see Pressman, Kraft, & Cross, 2015). These findings lend important evidence to the notion that performing relatively small acts of kindness may have powerful indirect effects for thwarting hedonic adaptation in social relationships and beyond by generating increased positive behaviors and positive emotions.

Imagine an individual who has recently adapted to moving in with her best friend in a new city. Her initial boosts in excitement about her new living arrangement have dwindled, and she is feeling a little bored with her roommate. In this scenario, the woman’s adaptation can potentially be ameliorated with a few small kind acts directed at her friend. As she surprises her roommate with a cup of coffee or makes her a nice lunch, the woman may potentially feel an increased sense of closeness in the friendship, awareness of her good fortune in her new living arrangement, and pride in herself for being so thoughtful. Downstream positive episodes are also likely to follow, as the woman’s roommate thanks her for the initial kind act and

reciprocates with a kind act in return. The upward spiral generated by the single initial act of kindness may potentially yield important positive outcomes in revitalizing the roommate relationship.

Guidelines and Best Practices

The above positive strategies bear significant potential for forestalling adaptation to the positive aspects of one's life. Indeed, several meta-analyses have reported medium effect sizes for positive activity interventions (i.e., Cohen's $d = 0.34$ in Boiler et al., 2013; $r = .29$ in Sin & Lyubomirsky, 2009), suggesting that individuals who choose to engage in these activities may experience noticeable increases in happiness. However, our intention is not to advocate a one-size-fits-all approach when it comes to preventing hedonic adaptation, as a number of factors can impact the effectiveness of these positive activities. To be sure, a number of recent findings suggest specific ways that the potential benefits of positive activities may be maximized.

First, the features of the positive activities themselves—such as timing, dosage, and variety—can influence their efficacy. For example, happiness seekers might optimize so-called dosage and timing. Layous and Lyubomirsky (2014) liken this approach to a pharmacist explaining a prescription regimen to a patient and saying: “Take three pills immediately, and one per day for a week after that.” Perhaps one of the best examples of dosage and timing in regards to positive activities is a study in which participants were asked to count their blessings either once a week or three times a week. Those who counted their blessings once a week experienced greater boosts in well-being than those who performed the activity three times a week (Lyubomirsky, Sheldon, et al., 2005). This finding suggests that the packaging of positive activities may be particularly important (Layous & Lyubomirsky, 2014). Variety is another element to be taken into account when packaging. Just as variety can stave off adaptation to positive events (e.g., trying a new dish at a favorite restaurant), so might it prevent adaptation to the positive activities themselves (e.g., alternating between performing small acts of kindness and expressing gratitude to others). Happiness seekers may wish to vary the types of intentional activities they typically use to maintain their happiness, as opposed to performing the same activity on repeat.

Second, it is important to take into account the features of the person. The individual's motivation, beliefs, effort, social support, culture, and baseline levels of well-being are all characteristics that may influence the extent to which he or she benefits from performing any particular positive activity (see Layous & Lyubomirsky, 2014; Lyubomirsky & Layous, 2013, for reviews). For example, people who are more motivated, believe the activity can work, exert more effort, have social support, come from a culture that values happiness, or are relatively unhappy to begin with may benefit more.

Additionally, the overall person-activity fit is important to consider when implementing positive activities. This fit is best conceptualized as an overlap between features of activities and features of persons (Layous & Lyubomirsky, 2014). Every individual has a unique background and distinct preferences, such that some types of positive activities will likely work better for some types of people. For example, a creative person may benefit more from increasing flow experiences, and an introverted person may benefit more from activities that require less social interaction, such as keeping a gratitude journal. Proyer and colleagues (2015) found empirical evidence that boosts in well-being last longer when certain person-activity fit principles are met. Over a 3.5-year follow-up, individuals who were most likely to maintain higher levels of well-being were those who had performed positive activities that they found enjoyable and beneficial, effortfully followed the activity instructions, voluntarily continued practicing the activity after the study had ended, and demonstrated the earliest reactivity in happiness. In short, individuals should not persist or force their way through activities that are not working for them. To curb the maximum amount of hedonic adaptation, people must pursue activities that they do well, that they enjoy doing, and from which they reap early benefits. In sum, happiness can be sustainably increased via positive activities if the individual engaging in such activities has both a “will” and a proper “way” (Lyubomirsky, Dickerhoof et al., 2011).

Future Directions

For well over a decade, our laboratory has been exploring how to lastingly boost happiness, and thus thwart the hedonic adaptation process. Yet much future work remains. One key future direction that has emerged includes addressing the question of “optimal negativity.” Are there instances when one *should* focus on negative experiences and suffer a temporary well-being setback in order to reap increased well-being dividends in the future? For example, feeling remorse for shouting at a friend can lead an individual to apologize, repairing and strengthening the relationship (thus, boosting long-term happiness). It can also lead that individual to reflect on what she did wrong and make better choices in the future so as to avoid repeating the same mistake. Indeed, mild negative experiences interspersed with positive ones can de-escalate rising aspirations and reset the hedonic adaptation process.

On a broader scale, is there an ideal ratio of positive to negative events that promotes sustainable happiness? Fredrickson and Losada (2005) found that a ratio of positive to negative affect at or above 2.9 was associated with both optimal individual and team flourishing, but more recent work has disputed this finding (e.g., Brown, Sokal, & Friedman, 2013). Future research should continue to examine this question.

More longitudinal studies on adaptation to positive events are also needed. As mentioned earlier, the literature in this area remains relatively scarce. More information about the impact to people’s well-being before, during, and after a positive

event would better inform future experimental studies designing interventions to slow adaptation. Ideally, such future studies would not only elucidate the cognitive, behavioral, motivational, and psychological mechanisms by which positive adaptation operates, but also investigate a wider array of positive events. Previous studies have focused on adaptation to events such as marriage and the birth of a new child, but it would be instructional to study adaptation to other previously uninvestigated positive life events, such as moving to a bigger house, being admitted to college, or winning a Grammy.

Other future studies would be well served by utilizing relatively more objective measures of affect and well-being. For example, most of the longitudinal studies on adaptation to positive and negative events focus solely on self-report measures, and in some cases do so using only a single Likert-type question (e.g., “How satisfied are you with your life in general?”), raising concerns with reliability, social desirability, and other self-report biases (e.g., the acquiescence and self-serving biases; Fiske & Taylor, 1991; Messick & Jackson, 1961). In addition to using multi-item scales of happiness and satisfaction, researchers could also employ measures of daily and momentary affect (e.g., the Experience Sampling Method and Day Reconstruction Method; Csizscentmihalyi & Larson, 1987; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004), behavioral indicators (e.g., peer reports and Duchenne smiles; Harker & Keltner, 2001), and physiological and neural markers (e.g., structural magnetic resonance imaging; Sato et al., 2015).

Other compelling future research questions could address how and why adaptation rates vary across individuals and cultures (e.g., individualist vs. collectivist) and establish the so-called half-life of positive events (e.g., how long the happiness boost of certain positive events can be “milked” before returning to baseline). Further areas of inquiry might also focus on how, when, and why aspirations could or should rise after adaptation, and whether the type of life change (e.g., intrinsically vs. extrinsically motivated) moderates the effects of positive events on emotions and aspirations. The more psychological scientists learn about the positive hedonic adaptation process, the better positioned they will be to offer guidelines for steps that individuals can take to reduce and slow adaptation to positive changes in their lives and, ultimately, not only to become happier, but to stay happier.

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Part II

Positive Cognitions

Chapter 7

Beyond Hedonic and Eudaimonic Well-Being: Inspiration and the Self-Transcendence Tradition

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Abstract In this chapter, we examine the role of inspiration in the promotion of well-being. We begin by reviewing conceptualizations of inspiration and theory concerning the two most prominent well-being traditions: hedonic well-being and eudaimonic well-being. We then present theoretical arguments for a role of inspiration in promoting hedonic and eudaimonic well-being, and we present empirical evidence in support of such effects. In the final section, we argue that inspiration may be regarded as an indicator of hedonic and eudaimonic well-being in its own right. However, the two-tradition hedonic-eudaimonic perspective fails to provide an adequate historical-intellectual foundation for the type of well-being that inspiration represents. We conclude that inspiration is a paradigmatic exemplar of a third type of well-being—*self-transcendent well-being*—that has deep historical roots but that has been neglected by psychologists to date.

Introduction

Elizabeth Gilbert, author of the memoir, *Eat, Pray, Love*, offered the following description of the creative moment experienced by American poet Ruth Stone (Gilbert, 2009):

As she was growing up in rural Virginia, she would be out, working in the fields, and she would feel and hear a poem coming at her from over the landscape. It was like a thunderous train of air, and it would come barreling down at her over the landscape. And when she felt it coming, because it would shake the earth under her feet, she knew she had only one thing to do at that point. That was to, in her words, “run like hell” to the house, as she would be chased by this poem. The whole deal was that she had to get to a piece of paper fast enough so that when it thundered through her, she could collect it and grab it on the page.

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Running like hell signals an event of existential significance. In Ruth Stone's case, the existentially significant event was not a risk of death, but rather the birth of a creative work. Researchers have only recently begun to study this momentous union of receptivity, transcendence, and motivation called *inspiration*. Although prototypical, the poetic process is only one of many contexts in which inspiration occurs. For instance, inspiration also plays an important role in interpersonal influence and in individuals' spiritual lives.

The Ruth Stone anecdote reveals a paradox. Inspiration involves not only an agentic or "active" process in which possibilities are brought into fruition, but also a receptive or "passive" process through which this agency is awakened and enhanced. This juxtaposition of activity and passivity, also discussed by Bradley (1929), suggests that inspiration plays an important role in the promotion of well-being. Indeed, life would be lackluster if our active strivings were never interrupted, informed, and vitalized by inspiration experiences. In the following sections, we (a) review conceptualizations of inspiration; (b) review the two major well-being traditions, hedonic and eudaimonic; (c) present theoretical arguments that inspiration promotes hedonic and eudaimonic well-being; (d) present empirical evidence in support of such effects; and (e) argue that inspiration is itself indicative of well-being. Inspiration, we argue, exemplifies not only hedonic and eudaimonic well-being, but also a neglected type of well-being that we call *self-transcendent well-being*.

Conceptualization of Inspiration

Inspiration as a State and Trait

Research on the affective lexicon, which includes the word *inspired*, provided an early descriptive sketch of the inspired state (Averill, 1975; Dahl & Stengel, 1978; Davitz, 1969; Watson, Clark, & Tellegen, 1988). These studies suggest that the state of inspiration is characterized by high activation, pleasant affect, clarity, openness, enhancement, and attraction emanating from an object. In their work on the lexicon of personality, Allport and Odbert (1936) identified inspiration not only as a state, but also as a trait. They identified *inspired* as an ephemeral state and *inspirable* as a trait descriptor.

Extending these early treatments, Thrash and Elliot (2003, 2004) conceptualized inspiration as an episode that unfolds across time. This episode involves heightened levels of an inspired state, and individuals may differ in the frequency and intensity of inspired states. Thus, although inspiration *per se* is an episode, researchers may usefully operationalize inspiration in terms of state and trait variability. In the following, we discuss three complementary ways of conceptualizing inspiration focused on its defining characteristics, its component processes, and its function, respectively.

Tripartite Conceptualization

The tripartite conceptualization was developed by Thrash and Elliot (2003) to provide a domain-general description of inspiration that applies regardless of the type of inspiration (e.g., creative, spiritual, interpersonal). Thrash and Elliot argued that inspiration has three defining characteristics: evocation, transcendence, and approach motivation. By *evocation*, we mean that inspiration is experienced as a reaction to a stimulus that is encountered in the external environment or that arises from an intrapsychic source (e.g., memory, unconscious processes). Accordingly, the inspired individual does not feel directly responsible for becoming inspired, although he or she may feel responsible for creating conditions conducive to the occurrence of inspiration. By *transcendence*, we mean that the evocative object reveals new or better possibilities; the individual gains a new epistemic awareness of possibility. By *approach motivation*, we mean that the individual is motivated to pursue a positive outcome (rather than avoid a negative outcome). Specifically, the inspired individual feels compelled to bring the new or better ideas into fruition.

Component Processes

Whereas the tripartite conceptualization is descriptive in nature, Thrash and Elliot's (2004) component process conceptualization identifies two underlying processes that compose episodes of inspiration—being inspired *by* and being inspired *to*. Being inspired *by* refers to a realization of the perceived intrinsic value in an evocative object. Being inspired *to* refers to the motivational impetus that an inspired individual feels to transmit, extend, or express the intrinsically valued idea in the form of a tangible product (e.g., words, paintings, right action). Thrash and Elliot (2004) showed that the *by* and *to* component processes map onto the core characteristics of the tripartite conceptualization, such that being inspired *by* corresponds to evocation and transcendence, whereas being inspired *to* corresponds to approach motivation.

A benefit of conceptualizing inspiration in terms of component processes is that it allows for the possibility of dissociations between the epistemic (inspired *by*) and motivational (inspired *to*) components of the inspiration process. For instance, whereas a composer may have the skills needed to translate his or her response to a sublime sunset into a sublime piece of music (i.e., he or she is inspired *by* and *to*), a non-composer may feel inspired by the sight but may not know how to channel this feeling toward a worthwhile end (i.e., inspired *by* without *to*). Although *by-to* dissociation is an important topic in its own right, we note that the term *inspiration* is formally applied only to those episodes in which both processes are present.

Transmission Function

A final way to conceptualize inspiration is in terms of the function it serves. Thrash and Elliot (2004) and Thrash, Maruskin, Cassidy, Fryer, and Ryan (2010) proposed that inspiration serves a particular approach function—it motivates *transmission* of a newly apprehended source of intrinsic value. Upon catching a glimpse of something better, the individual feels compelled to bring that glimpse of possibility into fruition. From a statistical modeling standpoint, the transmission function implies that inspiration functions as a mediator (intervening variable); it is a response to (perceived) intrinsic value in an elicitor object, and it leads to a tangible product in which this intrinsic value is expressed, actualized, or extended.

A benefit of conceptualizing inspiration in terms of its function is that it offers a way to understand the distinction between inspiration and so-called self-transcendent emotions, such as awe, admiration, and elevation. Because these emotions are generally defined in terms of their elicitors (e.g., awe is theorized to be elicited by vast stimuli that cannot be readily accommodated; Keltner & Haidt, 2003) and not in terms of a single motivational function, they more closely resemble the elicitor-oriented process of being inspired *by* than inspiration *per se*. To the extent that a self-transcendent emotion sparks an impetus toward transmission, as when awe-like feelings inspire a musician to compose, the emotion and its motivational impetus together compose an episode of inspiration. On the other hand, when a self-transcendent emotion gives rise to a different motivational impetus, such as reverence or submission, then the emotion is present but inspiration is absent.

Transmission represents one of several possible approach functions. Transmission may be contrasted with other approach functions, such as the *acquisition* function of appetitive positive affect (Cacioppo, Gardner, & Berntson, 1999). Both acquisition and transmission involve moving toward a desired end state (i.e., approach) rather than moving away from an undesired end state (i.e., avoidance). However, they differ in that acquisition overcomes absence of a good, whereas transmission involves expression of an epistemic good (e.g., a creative idea) that has already been “received” cognitively but that has not yet been brought into fruition (Thrash & Elliot, 2004).

Types of Inspiration

Whereas past efforts to distinguish types of inspiration have relied on crude content-based distinctions (e.g., creative, religious, interpersonal; Kris, 1952) or have relied on exploratory factor analyses of items relevant to bipolar disorder (Jones, Dodd, & Gruber, 2014), we follow Thrash, Moldovan, Fuller, and Dombrowski (2014) in making theory-based distinctions based on the different forms that the transmission process may take: extension, actualization, or expression.

Extension occurs when one is inspired by the example offered by a pre-existing object (e.g., person, thing) in the external environment (or by a memory thereof), and one is compelled to extend the exemplified qualities to an object in one’s own life (e.g., a future self, artistic product). For instance, Dr. Martin Luther King, Jr. was inspired by Mahatma Gandhi’s use of nonviolent resistance and extended this strategy to the American Civil Rights Movement (see Fig. 7.1). “While the Montgomery boycott was going on,” King (1959) stated, “India’s Gandhi was the guiding light of our technique of non-violent social change.”

Actualization occurs when one is inspired by the possibility represented by an idea or vision that arises from nonconscious processes and enters awareness during a moment of insight. Whereas the extension impulse is prompted by a pre-existing *example*, the actualization impulse is prompted by the cognitive *blueprint* provided by an idea or vision.

As an example of actualization, Charles Darwin described a series of insights that guided and invigorated the development of his theory of natural selection (see Fig. 7.2). He recounts one of these insights in the following passage from his autobiography (Darwin, 1887, p. 83):

In October 1838, that is, fifteen months after I had begun my systematic inquiry, I happened to read for amusement ‘Malthus on Population,’ and being well prepared to appreciate the struggle for existence which everywhere goes on from long-continued observation of the habits of animals and plants, it at once struck me that under these circumstances favourable variations would tend to be preserved, and unfavourable ones to be destroyed. The result of this would be the formation of new species. Here then I had at last got a theory by which to work.

Although there is a close theoretical connection between insight and the actualization form of transmission, we note that insights do not inevitably spark actualiza-

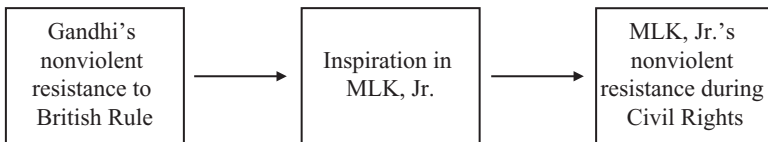


Fig. 7.1 The extension form of transmission (Note: The lengths of the arrows correspond to the typical temporal spans between events relative to other forms of transmission. Compare to Figs. 7.2 and 7.3)

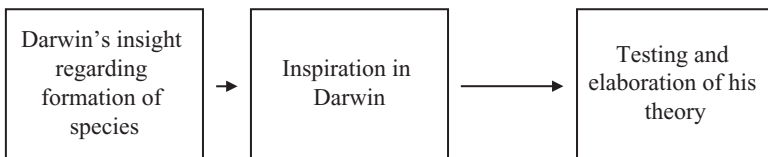


Fig. 7.2 The actualization form of transmission (Note: The lengths of the arrows correspond to the typical temporal spans between events relative to other forms of transmission. Compare to Figs. 7.1 and 7.3)

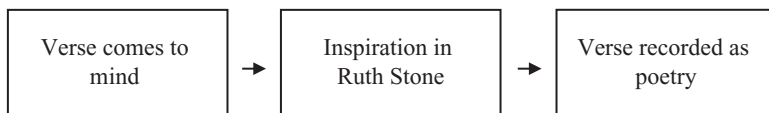


Fig. 7.3 The expression form of transmission (Note: The lengths of the arrows correspond to the typical temporal spans between events relative to other forms of transmission. Compare to Figs. 7.1 and 7.2)

tion processes. Some insights (e.g., suddenly understanding a joke) bring closure and therefore do not call for action, inspired or otherwise. Moreover, even creative insights, which call for action, fail to inspire individuals who have a weak approach temperament (Oleynick, Thrash, LeFev, Moldovan, & Kieffaber, 2014; Thrash, Maruskin, et al., 2010).

Expression, like actualization, tends to arise through nonconscious processes; however, in this case, the idea enters awareness in a well-developed, actionable form and therefore may be expressed immediately and spontaneously. Whereas extension and actualization sometimes require planning or sub-goal pursuit in order to channel the inspired *to* impulse in a particular direction, expression requires no such intervening processes. In fact, such processes may interfere with veridical expression. Of course, planning and revision processes may be usefully employed before or after the expression process.

The story of Ruth Stone’s creative pursuit at the beginning of this chapter is an example of the expression form of transmission (see Fig. 7.3). Elizabeth Gilbert further described Ruth Stone’s encounter with the poem: “She grabs a pencil just as it’s going through her and she would reach out with her other hand and she would catch it. She would catch the poem by its tail and she would pull it backwards into her body as she was transcribing on the page” (Gilbert, 2009).

Together, these three types of transmission cover considerable ground. We note that they also cut across content domains (e.g., creativity, spirituality), such that all three types of transmission are relevant to all content domains. Thus, inspiration is not a rare experience for poets only; it is relevant across virtually all aspects of life—any aspect of life in which it is possible to become aware of a more worthy concern. Before discussing the implications of inspiration for well-being, we first provide an introduction to the well-being literature.

Well-Being

Well-being has been conceptualized in a variety of ways throughout time, as philosophers, and more recently, psychologists, have weighed in on what constitutes well-being. Some approach the question of what is good *for* an individual, while others address the question of what *is*, or what *causes* well-being.

Unfortunately, the diversity of approaches and perspectives makes it difficult to discern a consensual definition of well-being, and therefore we offer our own. We define *well-being* as the presence of psychological health—that is, as *being well* from a psychological standpoint. This definition has the virtue not only of identity with its label, but also of specifying one of the most important ends investigated within the psychological sciences. Admittedly, our definition does not specify what constitutes psychological health, but we see this lack of specificity as desirable at present given the diversity of opinion among researchers. In the following, we discuss the two theoretical traditions that have been the most prominent to date in the psychology literature—the hedonia and eudaimonia traditions.

Hedonia Tradition

Hedonia has intellectual roots in *hedonism*, which posits that what is good for the individual is the balance of pleasure and pain. The philosopher Jeremy Bentham proclaimed hedonism as the answer to what is good for humans: “Nature has placed mankind under the governance of two sovereign masters, pain and pleasure” (Bentham, Burns, & Hart, 1982). Contemporary conceptualizations of well-being from the hedonic perspective tend to maintain a focus on pleasure and pain (or more generally, hedonics), although the moral prescriptions of Bentham’s philosophy are not necessarily retained. In short, the hedonia tradition frames *being well* in terms of *feeling good*.

The subjective well-being (SWB) construct is a popular operationalization of hedonic well-being. SWB is a composite variable or higher-order factor involving high positive affect (PA), low negative affect (NA), and high life satisfaction (Diener, 1984). PA and NA reflect one’s emotional well-being, whereas life satisfaction is a cognitive evaluation of one’s life. For present purposes, we use the term hedonic well-being to refer to the conceptual space that encompasses the concepts of PA, NA, and life satisfaction (i.e., SWB) and closely related constructs (e.g., discrete emotions). We caution that these variables are only moderately inter-related and have distinguishable patterns of relations to other variables. For these reasons, we have described hedonic well-being as a conceptual space rather than a construct or variable.

Some have argued that the hedonic account does not do justice to the question of well-being (Norton, 1972; Ryan & Deci, 2001). Not experiencing negative emotion in response to danger or injustice, or being satisfied with abusive relationships, may be regarded as pathological rather than as indicative of health. Moreover, healthy individuals voluntarily pursue activities that are not always pleasant, such as undertaking frustrating but meaningful work. John Stuart Mill (1861/1998) contrasted a happy pig with an unhappy Socrates, making clear that feeling good is, at best, only part of what being well implies. The eudaimonia tradition, discussed next, sticks closer to the concept of well-being as we have defined it.

Eudaimonia Tradition

Eudaimonia has been variously defined as functioning well (Keyes & Annas, 2009), being true to oneself (Norton, 1969), and living a life focused on what is intrinsically worthwhile (Ryan, Huta, & Deci, 2008). Aristotle (2001), often cited as the pioneer of the eudaimonia tradition, emphasized excellence of character as the foundation of true happiness. Modern eudaimonic accounts of well-being are theoretically based in the contemporary philosophy literature, as well as psychodynamic and humanistic psychology literatures.

Examples of eudaimonic theories include Maslow's theory of self-actualization, Deci and Ryan's self-determination theory, and Ryff's theory of psychological well-being. Maslow (1943) argued that satisfying basic needs opens up the possibility of self-actualization, in which one's full potential is brought into fruition. Deci and Ryan (1985) developed a theory of self-determination that identified three psychological needs: competence, autonomy, and relatedness. An individual is posited to live with vitality and integrity—as well as greater hedonic well-being—if these needs are satisfied (Ryan & Deci, 2001). Ryff and Keyes (1995) conceptualized psychological well-being as healthy functioning and identified six aspects: autonomy, positive relations, personal growth, purpose in life, environmental mastery, and self-acceptance. We note that the eudaimonia tradition is a federation of loosely inter-related theories, each of which would ideally be treated in its own terms. For present purposes, however, we use the term eudaimonic well-being to refer to the broad conceptual space that encompasses the well-being outcomes emphasized by eudaimonia theorists (e.g., self-actualization, vitality, purpose in life).

Measures of hedonic well-being and eudaimonic well-being tend to be positively correlated. Convergence is particularly strong when higher-order factors are examined. Keyes, Shmotkin, and Ryff (2002), for instance, found that latent factors underlying hedonic measures (e.g., PA) and eudaimonic measures (e.g., meaning) of well-being were correlated at $r = .84$. Although the interpretability of such higher-order factors (and hence the correlation between them) is questionable in our view, such findings have nevertheless led to a worthwhile debate about the utility of the hedonic-eudaimonic distinction (Kashdan, Biswas-Diener, & King, 2008; Waterman, 2008). Until this debate is resolved, we find it useful to consider a diverse set of well-being variables, including those traditionally considered indicative of hedonic well-being, as well as those traditionally considered indicative of eudaimonic well-being.

Theoretical Arguments That Inspiration Promotes Well-Being

In the following, we present reasons that, in theory, inspiration may be expected to promote well-being, including its hedonic and eudaimonic aspects. We discuss these arguments in an order relevant to the way that inspiration unfolds across time.

Consistent with the broad relevance of the inspiration construct, we draw on diverse theoretical frameworks in laying out our arguments.

Meaningful Encounter

As discussed above, elicitors of inspiration are appreciated for their intrinsic value. Nozick (1989) has argued that meaning in life is derived from relating to a source of intrinsic value. It follows that being inspired may be expected to instill a sense of meaning in life.

The inspired individual may be viewed as entering into a relation not only with the intrinsically valued stimulus, but also with the agent (or implied agent) responsible for it. When inspired by a surprising act of kindness, one resonates not only with the *kindness* but perhaps more so with the *act*—indeed, it is the act of kindness, not kindness *per se*, that one could choose to emulate in one's own actions. Even in instances of spontaneous inspiration arising from within, the inspired individual perceives an implied agent—one sees the hand of God, or hears the whisper of the muse. Indeed, feeling inspired has been found to promote belief in God (Critchler & Lee, 2016). At a minimum, one perceives an impersonal but beneficent agency—an “unseen collaborator”—deep within the unconscious mind.

From the perspective offered by existential theorists (Buber, 1996; May, 1983), this relation between the inspiring and the inspired is an *encounter*, in which one's existence is affirmed—as if one had been dead but is now alive. The term *exist* literally means “to stand out, to emerge” (May, 1983). The inspired individual may be viewed as emerging from the background haze of an uninspired life in this same dynamic sense (Thrash, Maruskin, Moldovan, Oleynick, & Belzak, 2016).

We theorize that such encounters are also characteristic of some instances of awe and other self-transcendent emotions. In contrast, the processes discussed below are theorized to be present in inspiration but not awe, because awesome stimuli defy understanding and hence are not amenable to transmission processes, at least not immediately. However, if successful accommodation ensues, awe may give way to inspiration, and the processes below may apply.

Epistemic Illumination

An encounter with an inspiring stimulus is an encounter of a particular sort. The intrinsically valuable stimulus is not merely appreciated. Because the encountered source of intrinsic value stands in contrast to the status quo, where it ought to exist but does not, it creates a sense of *oughtness* or *requiredness* (Köhler, 1966; Maslow, 1993). What one witnesses is experienced as good, right, or true, and one senses that the world ought to have more of this particular brand of goodness or truth.

We refer to this new awareness of possibility as *epistemic illumination*. Given the concreteness of the encounter, the individual describes this experience using vivid language, often using metaphors of light or vision. As portrayed in the hymn *Amazing Grace*, “I...was blind, but now I see.” Thus we theorize that inspiration instills not only meaning but also a new and better—and more compelling and vivid—purpose in life.

Generally one does not awaken oneself to possibility through an act of volition or assertion of the self (e.g., grit, goal pursuit, control, choice). Rather, one is awoken. Hence it is no coincidence that transcendence and evocation are complementary aspects of the process of being inspired *by*. Inspiration is theorized to play a pivotal role in resolution of epistemic predicaments for which purely agentic striving is poorly suited. Such epistemic predicaments include feelings of emptiness, writer’s block, psychosocial moratoria, and, more generally, the difficulty of exercising self-determination at will because one struggles to find one’s authentic voice, much less express it (Thrash & Elliot, 2004; Thrash et al., 2016).

Benefits of the Transmission Process

Epistemic illumination sets the stage for instigation of a motivational impetus directed at transmission in one form or another (extension, actualization, or expression). Transmission involves approach (rather than avoidance) motivation, which has been found to facilitate well-being and other positive outcomes (Elliot, Thrash, & Murayama, 2011). Whereas this benefit is shared with other forms of approach motivation, other benefits are unique to inspiration.

Most important, the transmission process allows the individual to participate in the transcendent rather than witness it as a spectator. Although epistemic illumination—“seeing the light”—is itself a meaningful event, being a transmitter of light is a profoundly impactful experience that involves not only thoughts and feelings but also the awakening of a motivational impulse. Invoking the metaphor of light to describe truth, beauty, goodness, and holiness, the philosopher Nozick (1989) observed, “The ethic of light calls for a being to be its vessel. To be a being of light is to be its transmitter” (p. 214). When inspired, the self is not diminished, as it is in awe (Piff, Dietze, Feinberg, Stancato, & Keltner, 2015), but rather is awakened and recruited as a participant (Thrash & Elliot, 2004). The inspired individual, we posit, senses that no pursuit is more worthy of investment than participation in the transmission process.

Beyond the profound significance of participating in the transcendent, the transmission process offers a variety of further benefits. Because inspiration involves vivid imagination of the desired outcome, one’s approach motivation is guided by specific and concrete goals, which are known to facilitate action and goal attainment (Locke & Latham, 1990). Indeed, inspiration has also been found to predict goal attainment (Milyavskaya, Ianakieva, Foxen-Craft, Colantuoni, & Koestner, 2012), which is likely to enhance well-being, particularly given the meaningfulness of the

pursuits. The transmission process renders the inspired individual a participant in the sweep of history, connecting the individual to her sources of inspiration and to others who she may inspire in turn (Plato, 1936). Indeed, the function of poets, noted Williams (1997), is to obey “the dictates of their internal Muse, to mediate on behalf of the rest of society and draw the culture forward towards more complex and thoughtful values” (p. 34). We theorize that this embeddedness in the cultural milieu instills gratitude (McCullough, Emmons, & Tsang, 2002), generativity (Erikson, 1950/1963), and protection from mortality threats (Greenberg, Solomon, & Pyszczynski, 1997). Finally, in many instances of inspiration, particularly those involving the expression form of transmission, the individual experiences absorption or flow, a state that has itself been regarded as indicative of well-being (Peterson, Park, & Seligman, 2005).

Empirical Studies of the Relation Between Inspiration and Well-Being

The theoretical issues discussed above suggest that inspiration promotes diverse aspects of hedonic and eudaimonic well-being. We now turn to evidence from the empirical research literature. We begin by reviewing correlational studies of the relation between inspiration and well-being, including studies of between-person and within-person correlations. At the *between-person level*, a correlation between inspiration and a given well-being variable would indicate that individuals who experience inspiration more frequently and intensely also tend to experience higher levels of well-being. At the *within-person level*, a correlation would indicate that, for the average individual, inspiration and well-being vary together across time or across events. That is, peaks and troughs in inspiration tend to be accompanied by peaks and troughs in well-being.

Between-Person Relations Between Inspiration and Well-Being Variables

Using trait measures, Thrash and Elliot (2003) found that inspiration was positively correlated with several well-being (and related) variables, including PA, self-esteem, optimism, and self-determination. Inspiration was not significantly correlated with NA. Thrash and Elliot (2003) then replicated the positive effects and found that they emerged regardless of whether trait measures or aggregated daily measures are used. Extending these findings, Thrash, Elliot, Maruskin, and Cassidy (2010) found that trait inspiration correlated positively with PA, life satisfaction, vitality, and self-actualization. In this study, too, inspiration was unrelated to NA.

Huta and Ryan (2010) reported a principal components analysis of seven well-being scales: PA, NA, life satisfaction, vitality, carefreeness, meaning, and elevating experience. “Elevating experience” was a composite of items identified as inspiration, awe, or transcendence. Life satisfaction, NA, and carefreeness were found to load on the first component. Meaning and elevating experience were found to load on the second component. PA and vitality were found to cross-load on both components. This pattern of findings suggests that individuals prone to inspiration and related experiences tend to have high levels of meaning, PA, and vitality. We note that the elevating experience measure consisted primarily of items similar to what we have called being inspired *by* rather than inspiration *per se*.

Schindler (2014) reported that trait inspiration was positively correlated with life satisfaction and all six indicators of Ryff’s psychological well-being construct: autonomy, positive relations, personal growth, purpose in life, environmental mastery, and self-acceptance. Schindler also found that inspiration was positively related to the emotions of admiration, joy, pride, love, gratitude, and fascination, negatively related to sadness and envy, and unrelated to adoration, awe, fear, and shame. Finally, in a multilevel analysis of work episodes, Straume and Vittersø (2012) reported that inspiration and happiness were positively related at the between-person level. These researchers also found that a trait measure of personal growth was positively and significantly related to work inspiration when trait life satisfaction and other variables were controlled. In contrast, life satisfaction was positively but nonsignificantly related to inspiration when personal growth and other variables were controlled.

Together, these findings provide consistent evidence that individuals who are prone to inspiration tend to experience higher levels of diverse types of hedonic and eudaimonic well-being. A notable exception is that inspiration is often unrelated, rather than negatively related, to NA and negative emotions.¹ Next we consider studies of the within-person relation between inspiration and well-being.

Within-Person Relations Between Inspiration and Well-Being Variables

Using daily diary data, Thrash and Elliot (2003) reported positive within-person associations between inspiration and several well-being (and related) variables, including PA, self-esteem, optimism, and self-determination. In a twice-daily diary study, Thrash, Elliot, et al. (2010) found that elevations of inspiration during the first

¹Although clinical disorders are often treated as falling outside the scope of well-being, for thoroughness we note that Jones et al. (2014) documented positive correlations between trait measures of inspiration and bipolar-related manic symptoms. This finding might reflect an inherent elevation of inspiration during manic episodes (Jamison, 1993; Thrash, Elliot, et al., 2010). This finding might also be explained by use of an inspiration measure that includes content that is pathological in our view (e.g., “I am inspired by myself”). These possibilities are not mutually exclusive.

half of a given day were followed by elevated levels of PA, life satisfaction, vitality, and self-actualization during the second half of the day. These effects were found to be mediated by gratitude and purpose, which were theorized to capture much of the benefits of being inspired *by* and being inspired *to*, respectively. Inspiration did not predict NA. Straume and Vittersø (2012) reported that inspiration and happiness were positively related not only between persons but also across work episodes. These studies provide consistent evidence that, for the average individual, inspiration and well-being variables tend to vary together across time or across events.

Studies of Particular Experiences of Inspiration

In other studies, researchers have compared individuals' well-being during particular inspiration experiences with their well-being during baseline assessments or control conditions. Based on a narrative recall design, Thrash and Elliot (2004) found that, relative to individuals' own baseline states, inspiration experiences involve elevated levels of PA, spirituality, meaning, and insight, and modestly lower levels of NA. Based on an event-contingent diary design, Thrash and Elliot (2004) found that inspiration involves elevated levels of interest, motivation strength, meaning, and spirituality. These findings indicate that well-being is enhanced during particular instances of inspiration.

The three types of studies discussed above establish associations between inspiration and well-being variables but do not address the question of whether these associations are due to causal effects of inspiration on well-being. In the following, we review findings from two types of studies that afford inferences about causality: experiments and lagged longitudinal designs.

Experimental Evidence

Experimental designs are lauded for their capacity to support causal inference. However, not always acknowledged is the fact that many variables of interest to psychologists are not subject to experimental manipulation (Thrash, Elliot, et al., 2010; Thrash, Moldovan, Oleynick, & Maruskin, 2014). Inspiration and well-being, unfortunately, are among these variables. Although the experimenter is in control of manipulated *stimuli* or situations that are intended to elicit inspiration or well-being, the experimenter is not in control of these *responses*. In an experimental study of inspiration and well-being, both inspiration and well-being are necessarily dependent variables, and therefore the experimental method is limited in its ability to support inferences about causal relations between them.

Acknowledging that inspiration is not subject to manipulation, Thrash, Elliot, et al. (2010) framed their experiment as a manipulation of an elicitor of inspiration: video clips of Michael Jordan's masterful basketball performances. Watching

Jordan was found to increase PA and (modestly) reduce NA. Inspiration fully mediated the effect on PA but did not mediate the decrement in NA. Other statistical models, including a model in which PA rather than inspiration functioned as the mediator, were found to have poor fit to the data. Consistent with a causal effect of inspiration on PA, these findings indicate that the inspiring video clip enhanced PA and that inspiration explained the enhancement effect.

Lagged Longitudinal Designs

Lagged longitudinal designs also help to build a case for causality, because they allow for tests of temporal precedence, while accommodating statistical control of covariates. They also maintain greater ecological validity than is possible with experimental designs. Thrash, Elliot, et al. (2010) utilized a three-month lagged longitudinal design to determine whether inspiration promoted aspects of hedonic and eudaimonic well-being over time. Time 1 inspiration was used to predict Time 2 well-being variables, while Time 1 levels of well-being variables were controlled. Time 1 levels of the Big 5 personality traits and self-report biases were also controlled. Inspiration was found to uniquely predict subsequent PA, life satisfaction, vitality, and self-actualization, but not NA. A second 3-month longitudinal study (Thrash, Elliot, et al., 2010) provided additional evidence of longitudinal effects of inspiration on well-being. In contrast, none of the well-being variables had significant effects on inspiration over time. These findings are consistent with causal effects of inspiration on well-being. An earlier diary study by Thrash and Elliot (2003) provided some evidence of bi-directional effects at shorter time spans.

Neither the experimental design nor the cross-lagged design is capable of yielding definitive conclusions about causal effects. However, in combination they provide compelling, complementary evidence that inspiration exerts a causal impact on well-being variables.

Other Findings

Because the well-being benefits of inspiration are theorized to occur in the context of substantively meaningful transmission processes, we comment on additional findings concerning such processes. Most notably, inspiration has been found to predict diverse indicators of creativity, including receipt of U.S. patents (Thrash & Elliot, 2003), longitudinal increases in self-reported creativity (Thrash & Elliot, 2003), and expert evaluations of the creativity of scientific writing, poetry, and fiction (Thrash, Maruskin, et al., 2010). Consistent with the theorized transmission function, inspiration has been found to be a response to, rather than a cause of, creative ideation (Thrash, Maruskin, et al., 2010). Inspiration mediates between a writer's perception of the creativity of an idea and expert raters' evaluations of the

creativity of the product (Thrash, Maruskin, et al., 2010). Writers who are more inspired report that their ideas came to them more fully formed, and they write more efficiently (i.e., they retain more of the words that they type) and productively (i.e., they generate more text relative to how long they work; Thrash, Maruskin, et al., 2010).

A study by Thrash et al. (2016) showed that the consequences of a writer's inspiration go beyond the completed work itself. Writer inspiration was found to predict reader inspiration, mediated by the insightfulness and pleasantness of the text. Inspiration contagion was moderated by reader openness to experience, such that contagion occurred only for readers moderate or high in openness. Readers low in openness were not prone to contagion because they were not comfortable with the originality or sublimity of inspired writing. Thrash et al. found that writers' inspiration was not only infectious but also enthralling. Consistent with prior reports that inspirational experiences are among the elicitors of "the chills" (Maruskin, Thrash, & Elliot, 2012), inspiration in writers was found to evoke chills and awe in readers (Thrash et al., 2016).

Finally, Stephan et al. (2015) demonstrated that inspiration is facilitated by nostalgia. We see this finding as corroborating a bit of ancient wisdom encoded in Greek mythology. According to Hesiod's *Theogony*, the muses were the daughters of Mnemosyne, goddess of memory. This lineage suggests that inspiration was viewed as drawing upon wisdom of the past. Nostalgic remembrance strikes us as a particularly important type of memory in that it provides the kind of poignant stimulation needed to vividly imagine a future worthy of vigorous pursuit.

Beyond Hedonic and Eudaimonic Well-Being

In our view, inspiration has a significance for well-being that goes beyond its role in enhancing hedonic and eudaimonic well-being. Indeed, most types of hedonic and eudaimonic well-being seem to lack the weightiness and cultural significance of the transmission process itself. In this final section, we step back, reconsider what constitutes well-being, and situate the inspiration concept within a broader historical-intellectual context.

What Sort of Thing Is Well-Being?

As we see it, well-being is not a construct comparable in status to other theoretical constructs, such as inspiration, purpose in life, or PA. Rather, we see well-being as a meta-theoretical classification that theorists apply to those theoretical constructs that they regard as indicative of healthy functioning. This perspective accommodates differences in meta-theoretical perspectives about what constitutes healthy functioning, without requiring that core theoretical models hinge on such

judgments. For instance, researchers might agree regarding the theoretical plausibility of a mediation model (e.g., inspiration → purpose → PA), regardless of whether they agree about which of the variables in the model warrant the designation “well-being.”

Another benefit of this perspective is that it helps guard against the tendency to treat diverse well-being variables as merely indicators of a smaller number of higher-order well-being factors, to the neglect of the distinct nomological networks of particular well-being variables. Although there are theoretically sound reasons to use higher-order factor models, using such models simply to aggregate variables based on a meta-theoretical “well-being” designation runs the risks of hypostatization, model misspecification, and spurious inference regarding how many types of well-being exist.

Failure to distinguish theoretical constructs from meta-theoretical designations can lead to Catch-22 situations. As an example, consider a (paraphrased) critique posed by an anonymous reviewer of the Thrash, Elliot, et al. (2010) manuscript: “How can inspiration be a cause of well-being given that inspiration is itself a measure of well-being?” The answer is that the reviewer’s decision to apply the label “well-being” not only to outcomes such as PA, but also to inspiration itself, has no bearing on the question of whether inspiration is a cause of those outcomes. Whether inspiration indeed warrants the metatheoretical label “well-being” is an important question, to which we now turn.

In our view, inspiration is indeed indicative of healthy functioning in its own right (i.e., not because it causes better well-being, as discussed above), because the individual transcends epistemic barriers to his or her fullest expression of human agency. What type of well-being this represents is a difficult question given the current state of the well-being literature. In the following, we consider the two “received” traditions that have been emphasized by well-being researchers, plus a third tradition that well-being researchers have neglected to date.

Inspiration as Hedonic Well-Being

Notably, the word *inspired* is an item on the most widely used measure of PA (Watson et al., 1988). In addition, PA has been found to be centrally implicated in the inspired *to* component process (Thrash & Elliot, 2004). These two facts, respectively, suggest that one could view inspiration as a lower-order facet of a higher-order PA construct, and one could view PA as an aspect of one of two components of the inspiration process. From either perspective, it is clear that inspiration overlaps with the PA construct and hence has a pleasant affective tone. Accordingly, we conclude that inspiration is indicative of hedonic well-being. This conclusion does not preclude the possibility that inspiration is also indicative of eudaimonic well-being, because hedonic and eudaimonic well-being are not mutually exclusive (Ryan et al., 2008; Waterman, 2008).

Inspiration as Eudaimonic Well-Being

Straume and Vittersø (2012) offered inspiration as a prototypical indicator of eudaimonic well-being and contrasted inspiration with happiness, a widely accepted indicator of hedonic well-being. Consistent with their proposal, these researchers found that inspiration accompanies challenging work, whereas happiness accompanies easy work. This finding is also consistent with a previous study showing that inspiration is more likely to occur on weekdays than weekends, whereas PA is as likely to occur on weekends as weekdays (Thrash, 2007). The factor analytic results of Huta and Ryan (2010) discussed above, in which inspiration converged with meaning as a factor distinct from a factor defined by life satisfaction and low NA, could also be viewed as evidence that inspiration is indicative of eudaimonic well-being.

On the other hand, the inspiration construct is seemingly at odds with some perspectives on eudaimonia. In particular, Ryan et al. (2008, p. 145) stated:

We cannot deem a person eudaimonic except insofar as we attribute his or her seeking of excellence and virtues to the person's own volition. As Aristotle put it, the excellences 'depend on us and are voluntary' (p. 145). Their pursuit is actively chosen... Waterman (1993) highlighted this in his characterization of eudaimonia as *personal expressiveness*.

Inspiration involves one's own volition in one sense but not in another. Inspiration involves full endorsement of one's actions but, as reflected in the inspired *by* component process, does not involve voluntary instigation or personal causation. Construct validation research confirms that individuals do not feel volitionally responsible for inspiration experiences (Thrash & Elliot, 2004). Absence of voluntary instigation notwithstanding, we see inspiration as broadly compatible with, if not critical to, eudaimonic thriving. As Bradley (1929) put it, inspiration "is something which we cannot attribute to ourself, it is given to us, and in it we lose ourself; that is the one aspect. It is something in which we find ourself, and are at last our true self; that is the other aspect" (p. 231). We conclude that inspiration is indicative of eudaimonic thriving.

Although the second aspect of Bradley's paradox suggests that inspiration is fundamentally compatible with eudaimonia, the first aspect nevertheless points to the limitations of the eudaimonic approach, which fails to shine light on the paradox itself. What is needed is a complementary theoretical framework that speaks to the processes through which the self comes to transcend its own epistemic limitations.

Inspiration as Self-Transcendent Well-Being

Deciding whether inspiration falls into the category of hedonic or eudaimonic well-being presents a false choice not only because these traditions are not mutually exclusive, but also because they are not exhaustive. Neither tradition is the historical-intellectual foundation of the type of well-being that inspiration represents. Inspiration exemplifies a tradition that we call *self-transcendent well-being*, which

has its Western roots in the revelatory tradition of archaic Greek poetry and Hebraic prophecy (Leavitt, 1997). This venerable tradition also found expression in Platonic philosophy (Plato, 2005), the theology of the major world religions (e.g., Buber, 1996), literary theory (Clark, 1997), psychology of religion (James, 1999), psychoanalysis (Kris, 1952), and the post-humanist transpersonal psychology movement (Maslow, 1993). Further reverberations are apparent in the contemporary empirical literatures on psychedelic states (MacLean, Johnson, & Griffiths, 2011) and self-transcendent traits (Cloninger, Svrakic, & Przybeck, 1993), emotions (Keltner & Haidt, 2003), and bodily states (Maruskin et al., 2012), as well as in the literatures on insight (Kounios & Beeman, 2014) and inspiration (Thrash, Moldovan, et al., 2014), which may be regarded as self-transcendent cognition and motivation, respectively.

Despite heterogeneity within this broad tradition, a core theme is evident: human agency is enhanced through the epistemic revelation or illumination that occurs in transaction with agencies, influences, and traditions beyond (antecedent to, greater than) the conscious self. The fact that such influences have sometimes been framed in religious or spiritual terms should not distract the scientist from recognizing the scientific, cultural, and personal significance of the revelatory encounter. On the contrary, this fact speaks to the significance of these encounters in individuals' lives. Moreover, such experiences may be understood in secular terms. Consider the invocation that begins Homer's *Odyssey*, "Tell me, muse..." Although contemporary scientists may be tempted to dismiss these words as an appeal to supernatural guidance, scholars in the humanities tend to read the muse as a stand-in for the accumulated cultural knowledge available within the oral tradition of archaic Greece (Clark, 1997). Indeed, Homer may himself be a reification or culmination of a lineage of bards who contributed to the famous epic poems. In this sense, the concept of *muse* is similar to the concept of *Homer*, the latter being more proximal to us. Inspiration is a paradigmatic instance of effective functioning within the self-transcendence tradition, capturing the noetic quality and passivity of the mystical state (James, 1999), as well as an enhanced appetitive agency informed by the encounter with the transcendent. The revelatory stimulation afforded by a self-transcendent encounter complements the epistemic limitations of an internal self that seeks ever-greater adaptation to its environment.

There is precedent for distinguishing self-transcendent processes from eudaimonic processes. In his classic text on the psychology of religion, James (1999) stated, "Starbuck seemed to put his finger on the root of the matter when he says that to exercise the personal will is still to live in the region where the imperfect self is the thing most emphasized" (p. 232). After studying peak experiences, Maslow (1993) found that his eudaimonic concept of self-actualization no longer provided an adequate account of the farthest reaches of human nature. He therefore distinguished two types of self-actualized individuals: transcendents, and those who are "merely healthy." Consistent with the transmission function we have described, he observed that the transcendents "are more apt to regard themselves as *carriers* of talent, *instruments* of the transpersonal, temporary custodians so to speak of a greater intelligence or skill or leadership or efficiency" (p. 282, italics in the original). More

recently, Huta and Ryan (2010) described inspiration, awe, and transcendence as representing a “much-neglected ‘higher’ range of well-being experiences” (p. 739).

Empirical research supports a role of inspiration in self-transcendent processes. Whereas PA has been found to be triggered by reward salience (i.e., encountering or getting something that one wants) among individuals high in approach-temperament-related traits (extraversion, positive emotionality, behavioral activation system), inspiration has been found to be triggered by illumination among individuals high in transcendence-related traits (openness to aesthetics, absorption, self-forgetfulness; Thrash & Elliot, 2004). Approach temperament also predicts motivation intensity during inspiration experiences, suggesting that inspiration involves recruitment of evolutionarily ancient approach motivation processes for the sake of higher pursuits (see also Thrash, Maruskin, et al., 2010). In other research, self-determination has been documented as a consequence but not an antecedent of inspiration (Thrash & Elliot, 2003), suggesting that inspiration involves epistemic self-discovery more so than the kind of volitional self-expression emphasized by eudaimonia theorists.

Together, these arguments and findings suggest that inspiration does not distinctively indicate the presence of a single type of well-being. We view inspiration as indicative of both hedonic and eudaimonic well-being, as well as a neglected “higher” type of well-being that we have called self-transcendent well-being.² No other construct so paradigmatically represents this region of overlap among hedonia, eudaimonia, and self-transcendence.

Conclusions

We conclude that inspiration promotes a wide range of well-being outcomes traditionally associated with the hedonia and eudaimonia traditions. Moreover, inspiration may be regarded as indicative of well-being in its own right, exemplifying not only hedonic and eudaimonic well-being, but also self-transcendent well-being.

Some researchers use the phrase “full life” to refer to a life characterized by high levels of multiple types of well-being and “empty life” to refer to a life characterized by low levels of multiple types of well-being (e.g., Huta & Ryan, 2010; Peterson et al., 2005). We propose that the fullest life comes from one in which various types of well-being are integrated rather than summed from different compartments of life (e.g., work, play). The inspired life exemplifies such integration. The inspired individual not only feels pleased and is true to self, but also, in Nozick’s (1989) sense, *transmits light*. It is particularly through such integrated experiences that society

²By “higher” we do not mean that inspiration is rare or reserved for a minority of elite individuals. On the contrary, inspiration appears to occur in the lives of most individuals and occurs frequently in daily life, at least among college students (Thrash & Elliot, 2003). Indeed, in most studies, the inspiration variable is normally distributed, without floor effects. Also, the self-transcendent character of this state notwithstanding, one may be only slightly inspired or only slightly prone to inspiration experiences.

benefits, whether the transmission process involves a nostalgic embodiment of one's father's selfless love, actualization of creative solutions to global warming, or articulation of epiphanies in the form of poetry or scripture, recorded for posterity.

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Chapter 8

Savoring and Well-Being: Mapping the Cognitive-Emotional Terrain of the Happy Mind

Jennifer L. Smith and Fred B. Bryant

*Contentment, parent of delight...
They, whom thou deignest to inspire,
Thy science learn, to bound desire.
By happy alchemy of mind
They turn to pleasure all they find.*

—Matthew Green (1737/1804)

Abstract We assert that the happy mind has learned to use savoring to cultivate well-being. After explicating the concept of savoring and examining variables that predict savoring ability and the use of specific savoring strategies, we review theoretical and empirical support for the notion that savoring promotes positive psychological functioning. We conclude by reminding theorists and researchers that: (a) savoring is distinct from happiness and enjoyment; and (b) two commonly used measures of savoring—namely, retrospective enjoyment and time spent in pleasurable activity—fail to directly capture the conscious awareness of ongoing positive feelings that is the critical essence of savoring.

Although people tend to have three times as many positive experiences as negative (Gable & Haidt, 2005), the latter receive more of our attention (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). This attentional disparity is understandable from an evolutionary perspective. The capacity to monitor environmental

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threats has survival value in helping us prevent, alter, or avoid bad events that might otherwise hurt or destroy us. Consequently, people have become highly adept at not only identifying negative concerns, but also worrying and complaining about these bad things in attempting to control them (Kowalski, 1996).

But this highly developed ability to attend to negative experiences has a cost. Given limited attentional capacity, the tendency to focus on negative experience monopolizes our attentional resources, reducing our ability to seek out, notice, and attend to positive experience (Bryant & Veroff, 2007). As a result, people are predisposed to overlook good things and to miss the benefits they might gain from positive experience. As Russian novelist Fyodor Dostoevsky (1918) observed: “Man is fond of counting his troubles, but he does not count his joys” (p. 125).

Besides being able to avoid or cope with bad things, however, human beings also have the capacity to savor good things (Bryant, 1989)—that is, “to attend to, appreciate, and enhance the positive experiences in one’s life” (Bryant & Veroff, 2007, p. xi). The basic premise of this chapter is that savoring promotes well-being. Although there is evidence that savoring is associated with lower symptoms of depression and other forms of distress (Seligman, Steen, Park, & Peterson, 2005; Smith & Hollinger-Smith, 2015) and with physical health (Nelson & Cooper, 2005), we will focus primarily on the ways in which savoring promotes positive psychological functioning, rather than on its role in alleviating distress or fostering physical well-being.

In this chapter, we contend that the “happy mind” is one that has learned to use savoring to cultivate happiness. Other writers would disagree. Novelist Nathaniel Hawthorne (1875) claimed: “Happiness in this world, when it comes, comes incidentally. Make it the object of pursuit, and it leads us a wild-goose chase, and is never attained” (p. 191). Likewise, American writer Willa Cather (1988) observed: “One cannot divine nor forecast the conditions that will make happiness...one only stumbles upon them by chance, in a lucky hour, at the world’s end somewhere” (p. 153).

We, in contrast, wholeheartedly reject this cynical view and maintain instead that happiness is a product of adaptive skills that people can learn. As British polymath Sir John Lubbock observed in *The Use of Life* (Lubbock 1894), “Happiness is a thing to be practiced, like the violin” (p. 281). We argue that, once learned, savoring skills give individuals the same happy mind that British author C. S. Lewis (1955) described in his mother’s family: “They had the talent for happiness in a high degree—went straight for it as experienced travelers go for the best seat in a train” (p. 3). The happy mind is one that has discovered how to savor positive experience.

In this chapter, we first explicate the concept of savoring, highlighting and distinguishing its conceptual components. We then review theoretical and empirical links between savoring and well-being in mapping the cognitive-emotional terrain of the happy mind.

Conceptual Foundations of Savoring

Paralleling the process of coping through which people regulate the impact of negative outcomes on distress, savoring is a process through which people attend to positive experiences and engage in thoughts and behaviors that regulate positive feelings that arise from these experiences (Bryant, 1989, 2003; Bryant, Chadwick, & Kluwe, 2011; Bryant, Ericksen, & DeHoek, 2008; Bryant & Veroff, 2007). While savoring, people become aware of ongoing positive feelings, and the intensity and duration of these feelings change. Savoring processes typically amplify or prolong positive emotions. Thus, it is not positive events themselves, but the ways individuals savor them, that affect well-being. As Greek philosopher Epictetus (55–135 A.D.) noted, “Men are not influenced by things, but by their thoughts about things” (Schopenhauer, 1897, p. 19).

Savoring processes encompass different time orientations. Besides savoring the moment as it unfolds, one can also savor positive experiences from the past (reminiscence) or future (anticipation). Savoring the moment, reminiscence, and anticipation all serve to generate or regulate positive feelings in the present. Savoring processes may be focused internally, as when basking in pride after a graduation, or externally, as when marveling at a rainbow (Bryant & Veroff, 2007). Although many savoring processes are cognitive (e.g., comparing the present to the past, memory building), savoring can also incorporate behavioral and interpersonal elements (e.g., cheering or applauding, sharing good news with others).

Stress can impact savoring, and vice versa. Threat, distress, or distraction can inhibit people’s ability to savor positive experiences (Bryant & Veroff, 2007). When people are overwhelmed by negative events, they may be unable to notice or appreciate positive things. However, overcoming hardships and difficulties in life may improve the ability to savor positive experiences (Croft, Dunn, & Quoidbach, 2014). The experience of hardship can serve as a point of comparison that accentuates the pleasures of current positive experiences. The ability to recognize and appreciate positive moments can also be a source of strength and resilience while dealing with difficulties (Bryant & Smith, 2015). To paraphrase Ralph Waldo Emerson’s 1883 poem *Music*: “Even in the mud and scum of things, something always, always sings.” During stressful situations, positive emotions can help offset the experience of negative emotions (Zautra, Affleck, Tennen, Reich, & Davis, 2005). In fact, savoring positive experiences may be most beneficial for people who experience fewer daily positive events (Hurley & Kwon, 2013; Jose, Lim, & Bryant, 2012).

Savoring and Well-Being

There is strong theoretical and empirical support for the connection between savoring and well-being. Subjective well-being is a combination of people’s overall evaluation of how satisfied they are with their life and their affective responses to everyday events (Diener, Emmons, Larsen, & Griffin, 1985; Diener, Suh, Lucas, & Smith,

1999). Thus, life satisfaction, high positive affect, and low negative affect typically comprise subjective well-being. We also include measures of happiness under the umbrella of subjective well-being. Although most research on savoring and well-being has examined hedonic forms of subjective well-being, some research has also linked savoring to aspects of eudaimonic well-being. Rather than focusing on hedonic pleasure and satisfaction, eudaimonic well-being refers to experiencing a meaningful and fulfilling life (Ryan & Deci, 2001). Factors that contribute to eudaimonic well-being include personal growth, competence, self-acceptance, purpose, autonomy, and connections to others (e.g., Ryff & Keyes, 1995; Ryan & Deci, 2000).

Several theories are relevant to the relationship between savoring and subjective and eudaimonic well-being. For instance, Fredrickson's (2001) broaden-and-build theory postulates that positive emotions are beneficial because they promote more expansive patterns of thought and a greater willingness to participate in new experiences. These broadened thoughts and behaviors cultivate greater creativity, problem-solving skills, resources, and social bonds, which enable people to respond more resiliently and adaptively to challenges. Savoring has been identified as a mechanism that facilitates the link between positive emotions and expanded thoughts and actions, and thus promotes psychological resilience (Tugade & Fredrickson, 2004). Supporting this view, high-resilience people exhibit greater engagement in and savoring of positive daily events, compared to people low in trait resilience (Ong, Bergeman, & Chow, 2010).

Savoring also shares conceptual links with emotional intelligence (Bryant & Veroff, 2007), or the ability to monitor and discriminate emotions in oneself and others and to use this information to guide one's thoughts and actions effectively. In savoring, individuals actively organize, regulate, and process external stimuli in ways that maximize positive experience, reflecting emotional intelligence (Salovey, Hsee, & Mayer, 2001). Thus, the capacity to savor in emotionally intelligent ways is a hallmark of the happy mind. Indeed, the word "savor" comes from the Latin word *sapere*, which means "to taste," "to have good taste," or "to be wise." In this sense, the Greek playwright Sophocles was right in the classic tragedy *Antigone* (441 B.C.): "Wisdom is the supreme part of happiness" (Jebb, 1897, p.119).

Another theoretical framework that ties savoring to well-being is the mindfulness-to-meaning model (Garland, Farb, Goldin, & Fredrickson, 2015), which holds that mindfulness during times of adversity promotes positive reappraisals of negative experience, which contribute to a sense of meaning and personal growth. The model identifies savoring as a mechanism that enables one to attend to and appreciate positive aspects of adversity, leading to positive emotions and eudaimonic well-being. Positive mindfulness, an awareness of positive experiences, is an essential component of savoring (Bryant & Smith, 2015; Ritchie & Bryant, 2012).

Savoring Beliefs

The ability to savor positive experiences varies across people. Savoring beliefs represent individual differences in the perceived capacity to appreciate positive experiences (Bryant, 2003). Savoring beliefs can be assessed across all three time frames: the ability to savor future positive experiences prospectively (anticipation), ongoing positive experiences concurrently (savoring the moment), and past experiences retrospectively (reminiscence). People report feeling most capable of savoring through reminiscence and least capable of savoring through anticipation (Bryant, 2003). People may feel reluctant to savor future positive events for fear that the actual experience will fall short of expectations or that the anticipated event may not occur. Nevertheless, anticipation can generate a great deal of positive emotion. For instance, vacationers are happier than non-vacationers before a trip (anticipation), but the two groups are equally happy after the vacation (Nawijn, Marchand, Veenhoven, & Vingerhoets, 2010).

Happy moments often assume a different quality when viewed through the lens of time. Anticipation frequently outshines the actual experience (Mitchell, Thompson, Peterson, & Cronk, 1997). As Winnie-the-Pooh explained in *The House at Pooh Corner*, “Although eating honey was a very good thing to do, there was a moment just before you began to eat it which was better than when you were” (Milne, 1992, p. 170). Likewise, the remembered quality of a good event may exceed the actual experience (Mitchell et al., 1997). As novelist Marilynne Robinson (2005) observed, “Memory can make a thing seem to have been much more than it was” (p. 76).

Savoring beliefs are distinct from acts of savoring. Someone who feels able to savor positive experiences may choose not to savor in some situations. For instance, people may choose to forego savoring if they need to complete a project by an upcoming deadline. However, savoring beliefs correlate positively with the use of savoring strategies (Bryant & Veroff, 2007).

Marketing researchers have tied savoring beliefs to consumer reactions to advertising appeals designed to evoke positive emotions. For example, in response to an ad depicting the pleasures of a vacation resort (e.g., the relaxation to be gained, the chance to feel the warm sand between your toes), greater perceived savoring capacity predicted greater anticipation of the enjoyment of a future visit to the resort, which in turn raised participants’ appetitive desire to visit the resort (Moore, 2010).

Compared to men, women typically report greater savoring capability—a gender difference found from middle childhood to older adulthood and across culture (Bryant & Veroff, 2007). Higher perceived savoring ability correlates with a variety of personality traits, including mindfulness (Beaumont, 2011; Ritchie & Bryant, 2012), wisdom (Beaumont, 2011), extraversion, affect intensity, and optimism (Bryant, 2003). And higher levels of neuroticism, guilt, and hopelessness are associated with lower reported savoring capacity (Bryant, 2003).

Researchers have identified other personal and situational determinants of savoring. For example, data suggest that prosperity may actually undermine the ability to reap enjoyment from life’s small pleasures. Wealthier individuals report lower

savoring ability (DeVoe & House, 2012; Quoidbach, Dunn, Petrides, Mikolajczak, 2010). And participants reminded of wealth by viewing a photo of money spent less time and exhibited less enjoyment when eating a piece of chocolate, compared to participants who viewed a neutral photo (Quoidbach, Dunn et al., 2010).

A sense of personal abundance may also diminish savoring. For instance, tourists led to believe they were well-traveled spent less time visiting Boston's Old North Church, compared to those led to feel less worldly (Quoidbach, Dunn, Hansene, & Bustin, 2015). As Quoidbach et al. (2015) put it, "abundance may often come with a hidden price, by impairing our ability to savor simple, everyday joys; probably a good thing to keep in mind before going on that luxury Nile cruise or having another glass of that marvelous champagne" (p. 402).

Whereas abundance hinders savoring, scarcity may boost people's ability to savor. Over three experiments, for example, consumers who received fewer pieces of chocolates than they expected ate more slowly, paid more attention to the experience, and showed increased levels of satiation, relative to consumers who, while eating, believed they would receive a larger quantity but actually received the same number of chocolates (Areni & Black, 2015). Abstaining from a pleasurable experience can also enhance people's ability to savor it. For example, people savored a piece of chocolate more and derived more positive affect from eating it if they had given up chocolate for a week, as opposed to having received an abundant supply of it or maintaining their usual level of chocolate consumption (Quoidbach & Dunn, 2013).

Savoring Beliefs and Well-Being

The ability to savor positive experiences is positively related to subjective well-being. Evidence of the link between savoring ability and subjective well-being has been established across much of the lifespan, from children to older adults (e.g., Bryant, 2003; Bryant & Veroff, 2007; Gentzler, Morey, Palmer, & Yi, 2013; Meehan, Durlak, & Bryant, 1993). In 5th graders, greater savoring ability predicts higher positive affect and self-esteem (Bryant & Veroff, 2007). In adolescents and college students, stronger savoring ability predicts greater happiness, life satisfaction, and perceived control (Bryant, 2003; Meehan et al., 1993). Among older adults, greater savoring ability predicts greater happiness, life satisfaction, and perceived control and fewer depressive symptoms (Bryant, 2003; Smith & Hollinger-Smith, 2015).

Evidence also links savoring to less subjective distress. For example, Hou et al. (2016) found that greater perceived capacity to savor the moment predicted less anxiety and depression among a sample of 155 Chinese caregivers of recently diagnosed cancer patients. Studying psychiatric disorders in a sample of 248 American undergraduates, Eisner, Johnson, and Carver (2009) found that greater perceived capacity to savor the moment predicted lower levels of social phobia and obsessive-compulsive disorder.

The relation between savoring beliefs and well-being has also been explored using experience sampling methodology. A combination of low ability to savor the

moment and few recent positive events predicts lower life satisfaction and positive affect in college students 2 weeks later (Hurley & Kwon, 2013). Furthermore, momentary savoring both mediates and moderates the impact of daily positive events on momentary happy mood (Jose et al., 2012).

Savoring Strategies

Savoring strategies are thoughts and behaviors that people use to regulate their emotional responses to positive experiences. In developing the 60-item Ways of Savoring Checklist (WOSC), Bryant and Veroff (2007) identified the following 10 types of cognitive and behavioral savoring strategies people use to regulate good feelings during positive experiences (see Table 8.1).

Sharing with Others Individuals can amplify positive feelings by seeking out others to include in positive experiences or to hear our stories of memorable past events or exciting future plans (e.g., Gable, Reis, Impett, & Asher, 2004). The presence of other people—friends, family members, or even strangers—can enhance our appreciation and enjoyment of positive experiences in several ways. Others may mention details about the experience one would not have noticed on his or her own; and observing other people’s positive emotional reactions can amplify our own positive feelings.

Memory Building In actively constructing a memory, people identify those aspects of an experience that are most pleasurable, thereby enhancing our ability to savor the moment. In addition, taking time to form memories of positive experiences and feel-

Table 8.1 Descriptions of the ten ways of savoring strategies

Savoring Strategy	Description
<i>Sharing with others</i>	Include others in positive experiences or tell others about positive experiences and feelings
<i>Memory building</i>	Actively create and store memories of positive experiences for later recall and reminiscence
<i>Self-congratulations</i>	Acknowledge and celebrate personal successes
<i>Sensory-Perceptual sharpening</i>	Focus attention on specific stimuli to appreciate positive experiences more fully
<i>Comparing</i>	Compare positive experiences to less favorable situations
<i>Absorption</i>	Immerse oneself fully in positive experiences
<i>Behavioral expression</i>	Physically display positive feelings, such as laughing, clapping, or hugging
<i>Temporal awareness</i>	Be mindful of the present moment and aware of the fleetingness of positive experiences
<i>Counting blessings</i>	Consider and appreciate one’s good fortune in positive experiences
<i>Avoid kill-joy thinking</i>	Limit thoughts that detract from the positive experience, such as ways the experience could have been better

ings helps people reminisce about these experiences later. Individuals can memorialize positive experiences by taking “mental photographs,” collecting memorabilia from the setting, or creating journals or scrapbooks (e.g., Bryant, Smart, & King, 2005).

Self-Congratulation Basking in the pride of accomplishment and thinking about the hard work expended to reach a goal are ways to savor personal or collective success. Savoring special milestones in striving toward a goal can produce positive emotion and motivation. Although intended to amplify enjoyment, excessive boasting or bragging about personal achievements can have negative interpersonal consequences, however, if others perceive it as hubris (Kalokerinos, Greenaway, Pedder, & Margetts, 2014).

Sensory-Perceptual Sharpening Narrowing our attentional focus may help us notice positive features of an experience in greater depth or detail (e.g., Hong, Lishner, Han, & Huss, 2011). For example, while walking in the woods, you might stop, close your eyes, and intently listen to the breeze wafting through the branches. Closing your eyes also blocks out visual cues that might otherwise be distracting, thus enhancing savoring by sharpening your focus on inner feelings.

Comparing Thinking about ways in which an experience is better than it was in the past (temporal comparison), better than it might have been in alternative scenarios (counterfactual comparison), or better than what others are experiencing (social comparison) can amplify positive feelings (e.g., Wheeler & Miyake, 1992). However, comparisons in the opposite direction—thinking about ways in which an experience was better in the past, worse than it might have been, or worse than what others are experiencing—are likely to reduce people’s enjoyment of positive experiences (Strack, Schwarz, & Gschneidinger, 1985).

Absorption Individuals can also savor by being immersed or fully engaged in an experience. Although absorption is similar to flow (Csikszentmihályi, 1990) in which cognitive reflection is restricted and people lose awareness of themselves and the external world, absorptive savoring requires intermittent awareness of positive feelings. Absorption also creates a sense that time has slowed down, making positive moments seem to last longer (Flaherty, 1991).

Behavioral Expression Physical manifestations of positive feelings can amplify such feelings (e.g., Strack, Martin, & Stepper, 1988). Laughing aloud and shouting enthusiastically can enhance people’s enjoyment of positive experiences, whereas stifling behavioral expression can inhibit enjoyment. For instance, suppression of behavioral expression while watching a humorous video predicts lower self-reported amusement and higher physiological stress responses (Gross & Levenson, 1997).

Temporal Awareness Reminding oneself that a positive experience will end can catalyze savoring. An awareness of the fleetingness of time illuminates the positive qualities of a pleasurable moment and motivates us to make the most of it while it lasts. Indeed, people tend to savor positive experiences more when they perceive that the end is closer rather than further away (Kurtz, 2008). However, realizing a good time is about to end can also produce sadness, especially when the experience may never happen again (Larsen, McGraw, & Cacioppo, 2001).

Counting Blessings Another strategy for savoring a positive experience is to contemplate the specific ways in which it is a blessing. Reflecting on why one is grateful for a positive experience can help oneself attend to meaningful details of the experience and increase one's own positive feelings. Indeed, gratitude for good things in one's life is associated with greater life satisfaction and positive affect (Emmons & McCullough, 2003).

Avoid Kill-Joy Thinking Downplaying or devaluing a positive experience can dampen good feelings. Assuming one wants to maximize happiness, then, it is important to limit kill-joy thoughts in order to enhance positive emotions. These joy-killing thoughts, as when focusing on imperfections or imagining how an experience might have happened sooner or lasted longer, are often associated with depression (Beck, 1976). In East Asian cultures, however, people may intentionally use such negative thoughts to dampen enjoyment, due to social norms and cultural scripts (Miyamoto & Ma, 2011). Although dampening appears counter to savoring within a Western cultural context, dampening strategies may be culturally appropriate ways to regulate positive emotions in other settings.

In addition to the ten savoring strategies described above, there are other savoring responses that people can use to amplify or dampen their emotional reactions to positive experiences. For instance, Quoidbach, Berry, Hansenne, and Milolajczak (2010) identified four types of amplifying strategies (Behavioral Display, Capitalizing, Being Present, Positive Mental Time Travel) and four types of dampening strategies (Distraction, Fault Finding, Negative Mental Time Travel, Suppression) among a sample of 282 students and employees at a Belgian university. Behavioral Display parallels Behavioral Expression; Capitalizing parallels Sharing with Others; Being Present parallels Absorption; and Fault Finding parallels Kill-Joy Thinking.

Predictors of Savoring Strategies

The savoring strategies people use in any given situation vary depending on individual differences and perceived characteristics of the situation.

Personality Traits Analyzing responses of 280 American undergraduates, Bryant and Veroff (2007) found that positive affectivity predicted higher levels of 9 of the 10 WOSC savoring strategies (i.e., all except Kill-Joy Thinking). Further confirming hypotheses, extraversion was positively correlated with Sharing with Others, Memory Building, and Behavioral Expression. Extraversion also predicted greater Counting of Blessings and Self-Congratulation, suggesting that the more outgoing one is, the more one tends to reflect on good fortune and personal achievement in response to positive experiences. Higher optimism predicted greater Counting of Blessings, whereas higher pessimism predicted greater Kill-Joy Thinking. Pessimism also predicted greater Temporal Awareness and Comparing, suggesting that the more negatively one sees the future, the more one tends to be aware of the fleetingness of positive events, and the more one contrasts positive outcomes with comparative standards.

Other researchers have linked additional constructs to savoring responses. For instance, people with secure attachment styles tend to respond to positive experiences in ways that amplify their positive emotions (Gentzler, Kerns, & Keener, 2010). And impatience has been found to impair people's ability to savor pleasurable experiences. For example, expressing one's income as an hourly wage increases impatience, which reduces the happiness one derives from leisure activity and from listening to pleasant music (DeVoe & House, 2012).

In addition, exposure to cues that prime impatience undermines savoring. For example, viewing images of fast food—the ultimate symbol of impatience—undermines people's ability to appreciate beautiful music and pictures of natural beauty by inducing greater impatience; and a higher concentration of fast-food restaurants in one's neighborhood predicts a lower tendency to savor (House, DeVoe, & Zhong, 2014). Moreover, dispositional impatience predicts less Counting Blessings, less Memory Building, and greater Kill-Joy Thinking during ongoing vacations, which in turn predict lower levels of vacation enjoyment (Smith & Bryant, 2013). Other personality research has linked higher levels of wisdom to greater Sharing with Others, Memory Building, Absorption, and Counting Blessings, and less Comparing, Sensory-Perceptual Sharpening, Temporal Awareness, and Kill-Joy Thinking (Beaumont, 2011).

Cognitive Appraisals Cognitive appraisals of positive events may also shape the ways in which people savor these events. Along these lines, Bryant and Veroff (2007) found that: (a) the more personally responsible people feel for a positive event, the more they report savoring through Self-Congratulation; (b) the more people believe others were responsible for a positive event, the more they report Sharing with Others and Behavioral Expression; (c) the more rare people perceive a positive event to be, the more they report Memory Building and Temporal Awareness; (d) the longer a positive event lasts, the more people report engaging in Absorption and Sensory-Perceptual Sharpening; and (e) the more desirable a positive event and the more people look forward to it, the more they report Counting Blessings as a savoring response.

Savoring Strategies and Well-Being

Savoring strategies that amplify positive emotions are related to greater life satisfaction and positive affect, whereas savoring strategies that dampen positive emotions are related to less life satisfaction and positive affect (Quoidbach, Berry et al., 2010). Using a translated version of an abridged WOSC with a community sample of 596 Hungarian adults, Szondy, Martos, Szabó-Bartha, and Püskösty (2014) found that greater use of amplifying strategies predicts higher levels of happiness, life satisfaction, and vitality, whereas greater use of dampening strategies predicts lower levels of these outcomes. Cognitive dampening responses also predict higher levels of social phobia and panic disorder, over and above the prediction afforded by symptoms of depression and generalized anxiety disorder (Eisner et al., 2009).

In addition, higher levels of “maximizing” responses (which amplify positive emotions) are associated with higher positive affect in young adolescents (Gentzler et al., 2013). Greater use of amplifying strategies has also been linked to higher levels of self-enhancing and affiliative humor, and lower levels of aggressive humor (Maiolino & Kuiper, 2014). Moreover, using a wider variety of savoring strategies predicts greater happiness (Quoidbach, Berry et al., 2010).

The savoring strategy of Sharing with Others is associated with greater subjective well-being (Lambert et al., 2012; Langston, 1994). People report higher levels of positive affect and life satisfaction on days they share news about positive events with others (Gable et al., 2004). In addition, people who shared entries from a gratitude journal with a partner and wrote about the experience online twice a week for a month reported higher levels of positive affect, life satisfaction, and happiness, compared to control conditions (Lambert et al., 2012).

Savoring Interventions

Interventions that enhance awareness of positive experiences and strengthen positive emotion regulation can enhance savoring. Such savoring interventions include reminiscing about positive experiences, learning savoring strategies, attending to positive features of the environment, or imagining future positive experiences. A meta-analytic review of two-group pretest-posttest experiments on savoring interventions found that interventions had a modest, significant overall effect on both positive affect and happiness (Smith, Harrison, Kurtz, & Bryant, 2014). Savoring “treatments” that were administered more often or involved a greater intervention “dosage” (i.e., frequency of treatment x number of minutes per day people engaged in the intervention) produced larger effects.

Savoring interventions have been designed to increase reminiscence of past positive experiences, savoring the present moment, anticipation of future events, or combinations of multiple time perspectives. In a week-long randomized experiment, for example, participants who reminisced twice daily using either cognitive imagery or memorabilia showed greater increases in the reported frequency of feeling happy, compared to participants who thought about current events (Bryant et al., 2005). In another past-focused experiment, participants who wrote daily for a week about three good things that had happened reported greater increases in happiness 1, 3, and 6 months later, compared to participants who wrote about early childhood memories (Seligman et al., 2005).

One type of present-focused intervention involves savoring skills training (Hurley & Kwon, 2012; Schueller, 2010). In an intervention study conducted by Hurley and Kwon (2012), for example, participants completed a training session that provided information about strategies for savoring the moment, and then tracked their use of these savoring strategies for 2 weeks. Compared to participants in a no-intervention control group, participants in the savoring intervention group reported lower depression and negative affect after 2 weeks, although there were no

effects for positive affect. To explain these effects, the researchers suggested that it may take longer for the savoring intervention to impact positive affect or participants may have used savoring strategies that had a greater influence on negative outcomes, such as avoiding kill-joy thinking.

Mindful photography is another present-focused savoring technique in which people focus on capturing images that reflect what is beautiful or meaningful about a particular target object or setting (Bryant & Veroff, 2007; Kurtz, 2015; Kurtz & Lyubomirsky, 2013). Experimental evidence indicates that people who take mindful photographs of specific subjects, such as friends or architecture, report greater positive moods, compared to people who take neutral, factual photographs (Kurtz, 2015). Finally, a savoring exercise in which people spend several minutes each day reflecting on two pleasant experiences and trying to extend pleasure as long as possible produced a significant increase in happiness after 1 week (Schueller, 2010).

Positive mental time travel and priming temporal scarcity are two future-focused savoring techniques that can enhance subjective well-being (Kurtz, 2008; Quoidbach, Wood, & Hansenne, 2009). Engaging daily for 2 weeks in positive mental time travel, in which one imagines positive events one could experience tomorrow, increases happiness more than imagining negative or neutral events (Quoidbach et al., 2009). In addition, an awareness of temporal scarcity can enhance enjoyment of positive experiences. For instance, Kurtz (2008) primed a group of graduating college seniors to believe their graduation date was temporally near (1200 *hours* away) or temporally distant (1/10th of a *year* away). After 2 weeks, students who thought of the time until graduation as near showed a significant increase in happiness, whereas those in the temporally-distant group showed no change in happiness.

Positive psychotherapy has also incorporated interventions intended to enhance clients' ability to savor everyday positive experiences, often with powerful effects (Seligman, Rashid, & Parks, 2006). In addition, clinicians have proposed structured therapeutic interventions involving savoring exercises designed to combat the anhedonia associated with schizophrenia (Brownell, Schrank, Jakaite, Larkin, & Slade, 2015; Strauss, 2013).

Savoring and Eudaimonic Well-Being

There is also empirical support for the connection between savoring and factors that contribute to eudaimonic well-being, such as social connectedness and positive self-regard. In particular, savoring processes may play an important role in the quality of close relationships (e.g., Borelli, Rasmussen, Burkhart, & Sbarra, 2015; Gable et al., 2004). For instance, research shows that savoring influences relationship satisfaction in long-distance relationships (Borelli et al., 2015). Among participants in long-distance romantic relationships, those who wrote about a positive emotional experience with their romantic partner that made them feel cherished (relational savoring) reported higher positive affect, compared to those who wrote about a positive personal experience (personal savoring) or about their morning routine (control

condition); and this higher positive affect predicted greater relationship satisfaction following a laboratory-based stress task (Borelli et al., 2015).

Relational savoring can enhance eudaimonic well-being in other ways. For example, being more explicit in disclosing internal and external positive events to one's partner increases self-esteem and relationship quality, beyond the effects of these events and their disclosure (Paganía et al., 2015). In addition, experiencing an enthusiastic response to recounted positive events creates and sustains enjoyable interactions and helps people savor these events (Reis, Smith, Tsai, Rodriguez, & Maniaci, 2010). Summarizing results from five studies, Reis et al. (2010) concluded: "Enthusiastic responses to shared good news promote the development of trust and a prosocial orientation toward the other across both interactions with strangers and in everyday close relationships" (p. 326).

The ability to savor positive experiences also appears to help individuals balance career and family commitments more effectively. Studying a community sample of 354 employees living with a partner and at least one child, for example, Camgoz (2014) found that a higher capacity to savor the moment predicted lower levels of work-family conflict. Based on these results, Camgoz (2014) recommended that organizations "both recruit employees with savoring capabilities, and provide training programs for current employees to enhance their savoring abilities to cope with work and family demands" (p. 186).

Communicating with others about positive experiences in one's life is related to greater relationship satisfaction (Gable et al., 2004). People who report that their partners respond to good news in more active-constructive ways (i.e., supportive and engaged in the conversation) tend to display higher relationship quality, including higher levels of intimacy, trust, and relationship satisfaction (Gable et al., 2004).

Another aspect of eudaimonic well-being is self-acceptance, and previous research has found a connection between savoring and positive self-regard (Goodall, 2015; Wood, Heimpel, & Michela, 2003). For instance, individual differences in self-esteem are associated with different responses to positive affect. People with high self-esteem tend to *amplify* positive emotions more than those with low self-esteem, whereas people with low self-esteem tend to *dampen* positive emotions more than those with high self-esteem (Wood et al., 2003). These self-esteem differences in savoring were stronger for dampening positive affect than amplifying positive affect—results supported by additional research in which higher self-esteem predicted less dampening, but was unrelated to amplifying (Goodall, 2015).

Additional research is needed to examine more fully the extent to which savoring promotes eudaimonic well-being. Drawing on Fredrickson's (2001) broaden-and-build theory, we posit a causal model in which savoring increases positive emotions and subjective well-being, which in turn nurture strong relationships and instrumental skills, which over time promote resilience and meaning in life.

Conclusion

A signature strength of the happy mind is its habitual capacity to savor—to attend to, appreciate, and enhance positive experience—even in the midst of adversity. In optimal savoring, there is no Pollyannaish denial of negative experience, but rather an awareness of both positive and negative experience as well as their independence, and a deliberate choice to focus for the moment on positive experience, fully acknowledging the existence of adversity and the importance of facing it (Bryant & Smith, 2015). For, as Carl Jung observed, “Even a happy life cannot be without a measure of darkness, and the word ‘happy’ would lose its meaning if it were not balanced by sadness” (McGuire & Hull, 1977, pp. 451–452). Through the mental alchemy of savoring, the happy mind transforms positive moments into transient good feelings—joy, gratitude, pleasure, pride, awe—which ultimately bear fruit in enduring psychological well-being.

In closing, we reemphasize that savoring is distinct from happiness and enjoyment (Smith, Harrison, & Bryant, 2014). Savoring is not positive emotion *per se*, but rather a meta-cognitive process involving an awareness of good feelings while they are unfolding (Bryant & Veroff, 2007). English essayist Samuel Johnson seems to have had savoring in mind when he asserted in 1751, “No man can enjoy happiness without thinking that he enjoys it” (Johnson, 1773, p. 240); and in 1753, “Happiness is enjoyed only in proportion as it is known” (Hawkesworth, Johnson, Bathurst, & Warton, 1793, p. 216).

Nearly two centuries later, American novelist Henry Miller pinpointed the crucial essence of savoring, in describing an experience he had looking up at the night sky from the deck of a ship, in 1939: “for the first time in my life, I was happy with the full consciousness of being happy...It’s good to be just plain happy; it’s a little better to know that you’re happy; but to understand that you’re happy and to know why and how...and still be happy, be happy in the being and the knowing, well that is beyond happiness, that is bliss” (Miller, 2010, p. 14).

Research on savoring has sometimes relied on recalled enjoyment or time spent in pleasurable activity as a measure of active savoring, without directly assessing the meta-awareness of positive experience that lies at the heart of savoring. In the moment, however, people may be unaware of the enjoyment they later recall; or they may slow down simply to rest or relax, rather than to savor. Theorists and researchers should keep in mind that neither retrospective enjoyment nor momentary lingering directly captures the conscious awareness of ongoing positive feelings that is the quintessence of savoring.

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Chapter 9

Cognitive Aspects of Positive Emotions: A Broader View for Well-Being

Laura G. Kiken and Barbara L. Fredrickson

Abstract Positive emotions can do more than feel good in the moment. In this chapter, we first explain why positive emotions are not easily separable from cognition. We present the broaden-and-build theory and related evidence, which suggests that at least some positive emotions foster broadened, flexible mindsets. We then review evidence that repeated positive emotions, and their accompanying broadened mindsets, over time allow individuals to accrue more enduring personal and social resources for future well-being. We additionally explain the benefits of positive emotions in the face of life's difficulties, potential reciprocal relations between positive emotions and characteristics of broader well-being, and nuances involved in experiencing daily positive emotions. Altogether, much evidence indicates that the mindsets of positive emotions, though fleeting, offer valuable contributions toward lasting well-being.

A common notion is that positive emotions simply mark well-being but do not necessarily play a role in creating it. For example, positive emotions might occur after a job well done but don't actually help get the job done. Are such ideas true? Positive emotions do, of course, feel good in the moment and thus are a defining feature of hedonic well-being. But positive emotions do much more. They function in additional, important ways that contribute to a broader sense of well-being in the future. This chapter highlights this more complex interplay between positive emotions and well-being, with an emphasis on cognitive processes.

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What Are Positive Emotions?

Conjure a memory in which you shared a laugh with a friend. Take a moment to let yourself relive the feelings. How would you describe them? Perhaps you feel amused, enthusiastic, or satisfied. Or you might select different descriptors. Regardless, some distinct positive emotion(s) likely could characterize your experience. And if you described your experience using such words conveying different positive emotions, people typically would recognize and understand those words and their distinctions. But what are positive emotions, from a psychological standpoint?

All emotions involve multisystem responses to one's internal or external situation and include core affective properties of valence, as pleasant or unpleasant, as well as arousal or motivational tendency, in terms of being activating or deactivating (Barrett, 2006; Lindquist, 2013). Thus, positive emotions all share in common that they are pleasant affective experiences, and these experiences can vary in how arousing they are. Still, that fails to capture the differentiated and fleeting nature of emotional experience. For instance, one might label a pleasant, high arousal affective state while jogging as inspiration rather than pride, but shortly thereafter feel pride in his or her fitness level, and shortly after that feel inspired again. (Meanwhile, a more sedentary bystander might experience fluctuations of amazement and amusement at someone enjoying jogging.)

These distinctions between emotions likely stem from cognitive processes in which individuals subjectively categorize their affective experience into discrete states (Barrett, 2006), relying on information such as situational appraisals (cf. Fredrickson, 2013). Situational appraisals in emotions could include perceptions of beneficence involved in feeling gratitude, for example, or assessments of safety and fulfillment involved in contentment. Based on the nature of these distinct appraisals, emotions also influence future judgments and decisions (Lerner & Keltner, 2000, 2001) in ways that might reinforce and up-regulate the original affective tendency (Garland et al., 2010). Because emotions involve or closely relate to such cognitions, they are not easily dissociable from cognitive processes. For this reason, several researchers contend that emotions are part of cognition, broadly defined (e.g., Duncan & Barrett, 2007; Eder, Hommel, & De Houwer, 2007). Moreover, positive emotions shape cognition in ways that substantially contribute to well-being, as described in the broaden-and-build theory of positive emotions.

The Broaden-and-Build Theory

The broaden-and-build theory (Fredrickson, 1998, 2001, 2013) explains the evolved functions of positive emotions, distinct from the functions of negative emotions. In doing so, the theory underscores that positive emotions offer important cognitive contributions toward larger well-being. According to the theory and considerable supporting empirical evidence, positive emotions not only feel good or potentially

signify that one's momentary constitution or conditions seem favorable. They do more. Positive emotions foster broadened, flexible mindsets from which individuals can accrue a variety of resources for well-being. Thus, unlike negative emotions, which tend to narrow focus toward threats and problems to aid survival in the moment, positive emotions stimulate processes that may promote greater well-being over time, as depicted in Fig. 9.1.

Positive Emotions and Broadened Mindsets

The first tenet of the broaden-and-build theory concerns the mindset fostered by positive emotions. Evidence from decades of experiments suggests that at least some positive emotions, particularly positive emotions not marked by high approach motivation or desire (cf. Gable & Harmon-Jones, 2008; Harmon-Jones, Gable, & Price, 2013), generate expansive and flexible cognition. This phenomenon has been demonstrated across several domains.

To start, positive emotions can literally change the way we see things. Several studies indicate that positive emotions affect visual attention and perception. For example, Fredrickson and Branigan (2005, Study 1) randomly assigned 104 undergraduates to view one of five film clips that induced positive (amusement, contentment), neutral, or negative (anger, anxiety) emotional states. Then, all participants completed a task (Navon, 1977) assessing global versus local visual precedence. Global precedence is akin to “seeing the forest beyond the trees” whereas local processing emphasizes the trees. The actual task involves viewing shape formations, all of which are comprised of small triangles or squares arranged into a larger shape of a triangle or square. Participants view a target formation along with two others, and their task is to select the one of these latter two that most closely resembles the target. Critically, one of the two choices contains the same smaller shapes as the target (local option) whereas the other choice possesses the same superordinate shape as the target (global option). Both choices are accurate, of course; they simply reflect different perspectives. In Fredrickson and Branigan's study, participants in both positive emotion conditions chose the global option significantly more than did those in the neutral condition. These results support the hypothesis that positive emotions – distinct from the mere absence of negative emotions – enhance visual perception of larger patterns.

Evidence using objective physiological markers further suggests that positive emotions expand the purview of visual attention and perception. For example, a similar study of emotion and global-local processing in 116 undergraduates also employed facial EMG during the emotion inductions to assess physiological markers of emotion (Johnson, Waugh, & Fredrickson, 2010, Experiment 1). Frequency of Duchenne (genuine) smiles as measured by facial EMG – marking positive emotions – predicted more global processing plus greater attentional flexibility. Additionally, as described elsewhere in this volume, experiments using eye-tracking methods (e.g., Wadlinger & Isaacowitz, 2006) to assess the location and duration of

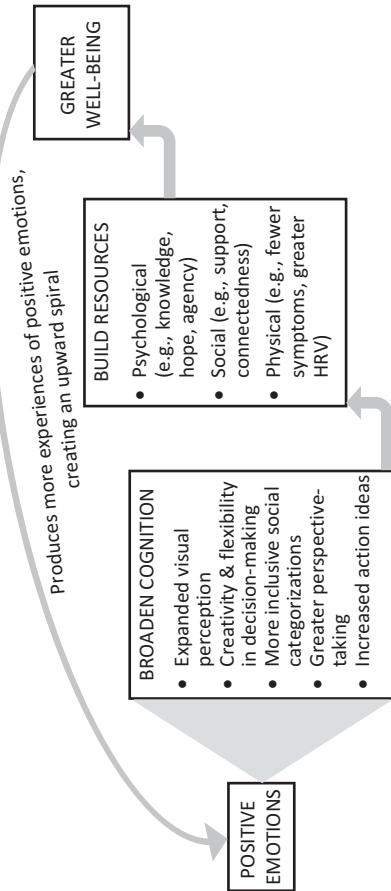


Fig. 9.1 The broaden-and-build theory of positive emotions, with examples of broadening and building effects (Adapted from Fredrickson, 2013)

visual gaze have found that certain positive emotional states, as compared to neutral control conditions, promote gaze shifts to attend to more information in a visual scene, including the broader periphery.

Positive emotions not only affect how people see the world around them but also shift how they think about it. More precisely, positive emotions appear to expand the range of information that individuals think of and extend the ways they use information. Multiple studies have experimentally induced positive emotions, using methods such as receiving success feedback or an unexpected gift, along with well-matched control conditions, and then measured aspects of thinking such as openness to information (Estrada, Isen, & Young, 1997), flexibility when categorizing material (e.g., Dovidio, Gaertner, Isen, & Lowrance, 1995; Isen & Daubman, 1984; Isen, Niedenthal, & Cantor, 1992; Murray, Sujan, Hirt, & Sujan, 1990), and creativity (Isen, Daubman, & Nowicki, 1987; Isen, Johnson, Mertz, & Robinson, 1985; Phillips, Bull, Adams, & Fraser, 2002; Rowe, Hirsh, & Anderson, 2007). Across studies, positive emotions consistently and uniquely increased these cognitive characteristics. Similarly, this broadened cognitive scope from positive emotions also may allow for more efficient – while still thorough – problem solving and decision making. For example, two classic studies randomly assigned physicians and medical students to a positive emotion induction (e.g., receiving an unexpected gift) or a neutral state and then administered a task involving diagnostic processes. Results showed that those in the positive emotion condition considered the correct diagnostic category earlier in their reasoning process, without signs of superficial processing such as relying on heuristics (Estrada et al., 1997), and were additionally quicker to reach a correct diagnosis (Isen, Rosenzweig, & Young, 1991).

These broaden effects of positive emotions also include how people think about others, in ways that lay the groundwork for more fruitful social functioning. For example, several studies on positive emotions and categorization processes have involved social stimuli. Such studies have found that positive emotions enabled more inclusive social categorization (Dovidio et al., 1995), with greater perceived similarities between social groups (Isen et al., 1992) and more willingness to see “them” as “us” (see Dovidio, Gaertner, Isen, Rust, & Guerra 1998). Considered jointly with other evidence, these inclusive categorizations likely do not stem from simply glossing over distinctions. Consider research on the ability to distinguish between individuals of other races. In the absence of emotion inductions, people generally are better at recognizing and distinguishing between individuals in their own racial category compared to other racial categories, a phenomenon known as the own-race bias (Meissner & Brigham, 2001). However, positive emotions have been found to help people distinguish between individuals within other racial groups. Across two experiments with 89 university students (Johnson & Fredrickson, 2005), positive emotion inductions, compared to neutral state and negative emotion inductions, significantly improved recognition of distinct individuals of other races and thus temporarily eliminated own-race bias. Because positive emotions have been found to promote more consideration of individual characteristics of others as well as more inclusive social categorizations, a reasonable interpretation is that positive emotions may promote flexibility and/or openness toward others. Likewise,

additional studies have found that positive emotions prospectively predict greater perspective-taking to understand roommates' actions (Waugh & Fredrickson, 2006), increase perspective-taking toward someone from a dissimilar culture (Nelson, 2009), and expand one's sense of trust (Dunn & Schweitzer, 2005).

Certain positive emotions may be especially useful for promoting kind and patient views toward others, according to emerging research. Positive emotions involving an appraisal of something or someone greater than the self – such as awe, admiration, and elevation – have been described as self-transcendent positive emotions (see Haidt, 2003; Van Cappellen, Saroglou, Iweins, Piovesana, & Fredrickson, 2013). Van Cappellen et al. (2013) conducted an experiment on self-transcendent positive emotions in which they randomly assigned 95 students to undergo one of four different emotion inductions using brief video clips: two self-transcendent positive emotions, elevation and admiration; one non-self-transcendent positive emotion, mirth/amusement; or a neutral state. The elevation-inducing video highlighted a moral exemplar, a person who founded a charity to combat racism and hunger. The admiration-inducing video featured a musical performance by a highly talented singer. After viewing their assigned video, participants completed detailed self-reports of emotion as a manipulation check, which confirmed that the videos differentially elicited the intended emotions. Participants then completed several self-reports, including an assessment of their belief in the benevolence in others. Compared to both the neutral and, importantly, the amusement condition, the self-transcendent positive emotion conditions reported greater belief in others' benevolence. Relatedly, a separate set of studies of university students (Studies 1 & 2) and a nationwide panel of adults (Study 3) found that induced awe, as compared to induced general happiness, led to an expanded sense of time and more willingness to donate time to help a charity (Rudd, Vohs, & Aaker, 2012). These findings provide preliminary evidence of some potentially unique broadening effects from positive emotions marked by a self-transcendent quality.

Additional research suggests that the broaden effects of positive emotions extend to inclinations for action. One example of this research is Frederickson and Branigan's (2005; Study 2) experiment in which 104 university students were randomly assigned to one of five emotion inductions: two were positive (amusement, contentment), two were negative (anger, fear), and one was neutral. Then, participants completed a thought-listing task aimed at capturing action urges. For the thought-listing task, participants were asked to consider the strongest emotion they felt during the induction and then instructed, "given this feeling, please list all the things you would like to do right now." Participants in the positive emotion conditions, when these were considered together and compared to negative emotions or the neutral condition, listed a greater number of actions. When the two positive emotion inductions were examined individually, amusement in particular led to a greater number of action inclinations. However, the number of actions listed did not significantly differ between the two positive emotion conditions. These results suggest that when individuals experience at least certain positive emotions, they initially think of and/or are willing to entertain more ideas of possible actions.

Another example of evidence suggesting that positive emotions may broaden behavior comes from a within-subjects study that assessed whole body kinematics, including body posture, during different emotional states (Gross, Crane, & Fredrickson, 2012; Study 3). Participants were 16 university students, who wore dozens of lightweight spherical markers taped onto tight-fitting exercise clothes. Their motions were captured by six different cameras as they walked across a room while reliving positive, negative, or neutral memories. During the two distinct positive emotions, joy and contentment, participants' torso shapes were more expanded (i.e., neck, trunk and thoracic extension), as compared to sadness. Speculatively, this more expansive body position might equip individuals to notice more information around them and convey openness to others.

Amidst the sizeable evidence base suggesting that positive emotions broaden cognition and action tendencies, a few studies suggest that there may be boundaries on these effects. For instance, effects may be larger or only occur for positive emotions characterized by lower approach motivation or desire, such as after a goal has been attained (e.g., gratitude, contentment) or when the emotion is not goal-related (e.g., amusement) (see Harmon-Jones et al., 2013). Such potential boundary conditions continue to be explored empirically, and these investigations could lead to a more precise understanding of how and when positive emotions broaden.

That said, much evidence suggests that at least some positive emotional states are marked by broadened mindsets. As these studies demonstrate, broadened mindsets may be advantageous in the moment. Moreover, these broadened mindsets create a context for potentially more enduring benefits of positive emotions.

Positive Emotional States Build Resources for Sustaining Well-Being

The second, key tenet of the broaden-and-build theory posits that accumulated experiences of positive emotions and their accompanying broadened mindsets facilitate the development of more enduring personal and social resources for overall well-being. Because this proposition involves accumulated positive emotions over time, it is best tested through research using prospective, longitudinal designs.

Several prospective studies have linked positive emotionality to future personal and social resources such as optimism (Fredrickson, Tugade, Waugh, & Larkin, 2003), mental health (Stein, Folkman, Trabasso, & Richards, 1997), resistance to the common cold (Cohen, Alper, Doyle, Treanor, & Turner, 2006), and close relationship quality (Gable, Gonzaga, & Strachman, 2006; Waugh & Fredrickson, 2006). These studies are consistent with the build hypothesis; nonetheless, only experimental designs can establish that increases in positive emotions over time *cause* increases in resources for well-being.

At least two such experiments have been conducted. In a longitudinal field experiment (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008), 139 community participants

Table 9.1 Loving-kindness meditation: a practice for boosting daily positive emotions

1.	Sit or lie down comfortably, with your eyes open or closed. Take a few moments to settle in.
2.	Begin by offering loving-kindness to yourself. Silently repeat the following phrases to yourself inwardly, taking enough space between them so that you can gather your attention toward one phrase at a time in a comfortable, pleasant way:
	May I be safe.
	May I be happy.
	May I be healthy.
	May I live with ease.
	If your attention wanders, that's okay. You can simply return your attention to repeating the statements.
3.	Next, call to mind someone who has been good and kind to you, a benefactor. Offer to this person the kindness you just wished to yourself, repeating the phrases of loving-kindness with the word <i>you</i> in place of <i>I</i> :
	May you be safe.
	May you be happy.
	May you be healthy.
	May you live with ease.
4.	Then, call to mind someone who has been struggling or facing difficulty. Offer the phrases of loving-kindness to him or her.
5.	Then, bring to mind a loose acquaintance you see on occasion. You don't even need to know the person's name. Simply be aware of the person, including his or her vulnerability to suffering and desire to be happy. Offer him or her the phrases of loving-kindness.
6.	From this background, now practice extending the phrases of loving-kindness to someone you are having difficulty with or dislike. If you find that doing so is too hard, take a moment to soothe yourself by offering loving-kindness to yourself again ^a .
7.	Finally, extend wishes of loving-kindness to all beings, everywhere:
	May all beings be safe.
	May all beings be happy.
	May all beings be healthy.
	May all beings live with ease.
8.	Conclude your practice and as you go forward in your day, take a moment here and there to reconnect with the phrases and feelings of loving-kindness.

Adapted from Salzberg (2011)

^aNote: Step #6 was not included in the LKM intervention in Fredrickson et al. (2008)

were randomly assigned to either a six-week meditation-based intervention to cultivate positive emotions or a wait-list control condition. The meditation group learned and practiced a form of meditation called “loving-kindness.” Loving-kindness meditation (LKM) is a technique that uses silently repeated statements (see Table 9.1) and visualizations to generate warm, caring feelings toward oneself and others (cf. Salzberg, 2011). As such, it inherently aims to produce positive emotions, particularly love and goodwill. The LKM intervention in this study included six weekly group classes and home meditation practice. All study participants completed self-report measures of personal and social resources at baseline and after the six weeks, as well as daily assessments of positive emotions during the six weeks. Analyses

confirmed that participants in the LKM group reported increases over time in positive emotions whereas the wait-list control group did not (i.e., there was a significant interaction between group and time). This is notable in and of itself because it suggests that learning and practicing LKM might, at least for some individuals, increase positive emotions in daily life in a way that overcomes the tendency to return to a hedonic “set point” (see Lyubomirsky, Sheldon, & Schkade, 2005). Furthermore, the results supported the build hypothesis: These increases in positive emotions over time predicted increases in many measured resources, including physical resources (e.g., fewer illness symptoms), cognitive and other psychological resources (e.g., mindfulness, agency thinking, savoring, and environmental mastery), and social resources (e.g., social support received). These increased resources further predicted improvements in life satisfaction and depressive symptoms, aspects of subjective well-being.

A follow-up study on these same participants after 15 months (Cohn & Fredrickson, 2010) provided additional evidence that participants maintained the resources they had accumulated during the period of increased positive emotions from meditation training, regardless of whether or not they continued to meditate after the intervention. That is, resources were not lost. This finding supports the premise that even though positive emotional states are ephemeral, they build more enduring resources.

A similar study (Kok et al., 2013) examined whether accruing more positive emotions might lead to social resources that promote an objective aspect of physical well-being, heart rate variability. Heart rate variability refers to the variability in heart rate with respiration rate, and it is thought to reflect flexibility and adaptability of the autonomic nervous system (i.e., the balance of sympathetic and parasympathetic activity). Generally, higher heart rate variability at rest indicates better autonomic balance (see Porges, 2007). Kok and colleagues’ study design utilized a longitudinal field experiment in which 65 university employees were randomly assigned to either a six-week LKM intervention, to increase positive emotions, or a wait-list control group. All participants completed assessments of perceived social connectedness and heart rate variability before and after the 6 week period, plus daily reports of positive emotions during the 6 weeks. As in Fredrickson et al.’s previous (2008) study, LKM increased positive emotions over time relative to those in the control condition. More importantly, these increases in positive emotions predicted increases in perceived social connectedness and, in turn, heart rate variability. This study suggests that increasing positive emotions over time can indirectly benefit a potential marker of physical well-being, through associated increases in perceived social resources.

Together, such studies highlight that positive emotions do not simply characterize hedonic well-being in the moment, but fuel mindsets and resources that promote a greater sense of well-being over time. In addition, evidence suggests that both positive emotional reactivity to everyday pleasant events (Catalino & Fredrickson, 2011) and experiencing positive emotions consistently, rather than variably, on a daily basis (Gruber, Kogan, Quoidbach, & Mauss, 2013) are most beneficial for well-being. Consistently experiencing positive emotions on a daily basis might

seem simpler when life seems unmistakably pleasant, but positive emotions also are possible and important in the wake of unpleasant experiences, as we describe next.

The Benefits of Positive Emotions During or After Unpleasant Experiences

We might readily think of positive emotions occurring in the context of pleasant experiences, but positive emotions can accompany or follow negative emotions (Folkman & Moskowitz, 2000). For example, one might feel afraid while driving in a blizzard but also feel awe at the size of the snowflakes. Or, a spouse's tardiness might provoke worry, but then relief and joy upon his/her arrival. Are such positive emotions relevant amidst life's various unpleasant or difficult experiences? Positive emotions do have bearing on unpleasant experiences both because they can offset potentially undesirable effects of negative emotions and because they can help individuals to draw on a range of options for coping.

Evidence suggests that positive emotions can essentially help to "undo" the effects of negative emotional states (Fredrickson & Levenson, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000; Ong, Bergeman, Bisconti & Wallace, 2006; Tugade & Fredrickson, 2004). Many negative emotions (e.g., fear, anger) tend to narrow one's thinking to focus on a potential threat and prompt cardiovascular reactivity to ready the body to flight or flee (see Fredrickson, 1998; Frijda, 1986; Frijda, Kuipers & ter Schure 1989; Lazarus, 1991; Levenson, 1994). Although this reaction may be useful for acting quickly in face of immediate threats or problems, such effects of negative emotions may be harmful to mental and physical health when they are prolonged (Kubzansky & Kawachi, 2000; Nolen-Hoeksema, 1991). Positive emotions that occur amidst or following negative experiences may facilitate recovery and resilience.

Several experiments suggest that positive emotions promote cardiovascular recovery from the effects of negative emotions. An initial experiment (Fredrickson & Levenson, 1998, Study 1) assessed 60 undergraduate participants' cardiovascular function during a resting baseline period and then while watching two different film clips. The first video induced fear. The second video, to which participants were randomly assigned, induced one of four emotional states: contentment, amusement, neutrality, or sadness. Participants in the positive emotion conditions showed faster cardiovascular recovery, meaning a return to baseline levels, after the fear-inducing video as compared to participants in both the neutral and sadness conditions. Two highly similar replications in independent samples of university students (Fredrickson, Mancuso, Branigan, & Tugade, 2000, Study 1) used an anxiety induction rather than a fear-inducing video, followed by the same four randomly assigned emotion inductions. In both samples, positive emotions led to faster cardiovascular recovery than the neutral and negative emotional states. An additional study of university students (Fredrickson et al., 2000, Study 2) found that positive emotions do not have a similar

cardiovascular effect in the absence of negative emotions (i.e., when induced following a neutral state), highlighting the “undoing” nature of the effect.

Additionally, because positive emotions broaden and build, they may equip individuals with more perceived options and resources for responding to negative experiences. Consistent with this notion, a study of 138 undergraduates found that those who reported more positive emotions showed greater use of broad-minded coping strategies five weeks later, accounting for baseline levels (Fredrickson & Joiner, 2002). Broad-minded coping was assessed with a subscale from a coping inventory (Moos, 1988) that pertained to creating mental space around problems and thinking of different ways to handle them. This evidence links positive emotions to broadened mindsets when handling difficulties.

Several additional studies suggest that positive emotions are important for more enduring trait resilience. Trait psychological resilience is a relatively stable characteristic that involves the ability to recuperate from negative experiences and flexibly adapt to life’s changing circumstances (J. H. Block & Block, 1980; J. Block & Kremen, 1996; Lazarus, 1993). A highly poignant example of when individuals might demonstrate resilience is in the wake of a terrorist attack such as the one on in the United States on September 11, 2001. This tragic event provided an opportunity to examine how people respond to a crisis and the role of emotions in resilience. A sample of 47 university students and recent graduates completed several questionnaires both before and after the attacks (Fredrickson et al., 2003). They reported a range of negative experiences post-9/11 but also, to varying extents, positive emotions such as love and gratitude. People were, for example, angry about the attacks and afraid of future ones, yet also drawn closer to loved ones and appreciative of safety and goodwill. Critically, trait resilience assessed prior to the attacks did not predict most negative emotions reported before and after the attack but did predict positive emotions at both time points. That is, the extent of negative emotions was similar regardless of how resilient individuals were, whereas positive emotions were greater for those who were more resilient. Further, because more trait resilient individuals experienced greater positive emotions after the attacks, they in turn showed fewer depressive symptoms and more posttraumatic growth. These and similar findings (e.g., Tugade & Fredrickson, 2004) suggest that resilient individuals may use positive emotions, and their ensuing benefits, to cope with adversity.

Might positive emotions provide building blocks for resilience, then? Prospective studies do suggest that positive emotions predict future resilience (e.g., Cohn, Fredrickson, Brown, Mikels, & Conway, 2009); moreover, in the loving-kindness meditation intervention study mentioned previously (Fredrickson et al., 2008), increases in positive emotions over time from the intervention predicted improvements in environmental mastery, a correlate of trait resilience. Positive emotions, and their broaden effects, may thus build the resource of greater resilience to deal with future difficulties.

Against this backdrop, the potential for positive emotions to prevent and perhaps treat mental health problems becomes apparent. Though a full discussion of this topic is beyond the purview of this volume, it is worth noting because depression and other mental health issues clearly detract from well-being. Several mental health

problems are characterized and perpetuated by inflexible responses to negative or stressful experiences (Fresco, Rytwinski, & Craighead, 2007; Kashdan & Rottenberg, 2010). In such cases, individuals can be plagued by a self-perpetuating downward spiral of negative emotions, narrowed thinking, and physiological reactivity – one that potentially could be prevented or interrupted by the additional presence of positive emotions and their broaden and build effects (see Garland et al., 2010).

Upward Spirals of Positive Emotions

Contrary to the aforementioned downward spirals of negative emotions, positive emotions may promote upward spirals of positive emotions and well-being. Metaphorically, the fruit of positive emotions – in terms of their broaden and build effects – essentially contain seeds for future positive emotions (see Fig. 9.1). For this reason, positive emotions and their effects may show reciprocal relations.

Fredrickson and Joiner (2002) initially tested such reciprocal relations in their study of self-reported positive emotions and broad-minded coping, assessed at two time points five weeks apart in 138 undergraduate participants. Positive emotions at time 1 predicted broad-minded coping at time 2, and broad-minded coping at time 1 predicted positive emotions at time 2. Further, mediation analyses supported the hypothesized upward spiral dynamic; time 1 positive emotions predicted time 2 positive emotions via changes in broad minded coping, and time 1 broad-minded coping predicted time 2 broad-minded coping via changes in positive emotions. This study provided preliminary support for the upward spiral hypothesis.

Follow-up studies using more rigorous methods also support an upward spiral dynamic. An example is Kok et al.'s (2013) longitudinal field experiment that tested effects of increased positive emotions on heart rate variability, a physical resource for well-being. Participants were 65 university employees who were randomly assigned to a six-week loving-kindness meditation intervention condition or a wait-list control condition. As in previous studies, daily reports of positive emotions showed increases over time in the intervention condition but not in the control condition. As noted earlier, these intervention-associated increases in positive emotions predicted increases in heart rate variability. Additionally, baseline heart rate variability moderated intervention effects. Specifically, participants who were higher in the physical resource of heart rate variability at the start of the study showed larger intervention-associated increases in positive emotions and, in turn, gains in heart rate variability. They also experienced larger increases in daily perceived social connection, which mediated the relation between positive emotions and heart rate variability. These results support an upward spiral dynamic in which those with the physical resource of greater autonomic flexibility may be especially poised to cultivate positive emotions and their broaden effects over time and, in turn, continue to bolster their physical resources for well-being.

Collectively, all of the aforementioned evidence supports that at least some positive emotions broaden cognition and build resources that promote greater well-being. A natural question, then, is how to increase positive emotions in daily life.

The Nuances of Daily Positive Emotions

Because positive emotions are a quality characterizing well-being, specific strategies that cultivate positive emotions, such as gratitude and savoring techniques, are described in more detail elsewhere in this volume. Readers are encouraged to consult those chapters for such strategies. We also emphasize that, as described several times in this chapter and in more detail in Table 9.1, practicing loving-kindness meditation may increase positive emotions over time. Here, then, we focus less on specific strategies and instead highlight some potentially surprising nuances involved in experiencing daily positive emotions.

Over-Valuing or Evaluating Positivity Versus Prioritizing Positivity

Although people universally want to be happy (Diener, Saptya, & Suh, 1998), some evidence suggests that certain ways of pursuing positivity may backfire and undermine well-being. For example, studies have found that individuals who score higher on a self-report scale described as assessing the over-valuation of happiness demonstrate *greater* depressive symptoms (Ford, Shallcross, Mauss, Floerke, & Gruber, 2014; Mauss, Tamir, Anderson, & Savino, 2011) and risk for bipolar disorder (Ford, Mauss, & Gruber 2015). The scale used in this research includes items such as “How happy I am at any given moment says a lot about how worthwhile my life is” and “I am concerned about my happiness even when I feel happy.” As conveyed by these items, the majority of the scale reflects evaluations or judgments about oneself and current experiences. Therefore, it is somewhat unclear whether strongly valuing happiness is inherently problematic or if liabilities are due to judgments of inadequacy and associated feelings of disappointment. Results from at least two experiments may be more consistent with the latter interpretation.

In these two experiments, participants who were instructed (a) to pay attention to happiness while listening to hedonically ambiguous music (Schooler, Ariely, & Loewenstein, 2003), or (b) to try to experience the “greatest amount of happiness possible” while watching a positive film clip (Mauss et al., 2011) felt worse compared to control conditions. The first experiment potentially created a situation in which participants would feel disappointed, though disappointment was not assessed; the second study did assess disappointment and self-blame and found that these mediated effects of the experimental manipulation on mood. Thus, if seeking

happiness leads to negative self-evaluations and feelings of disappointment, these may interfere with positive emotions. Further, such over-valuations of happiness or critical evaluations of one's experiences may lead to maladaptive attempts at positive emotion regulation (Ford et al., 2014) that may further interfere with a natural flow and acceptance of the actual experience of positive emotions.

Rather than evaluating whether one feels good enough in the moment and then perhaps trying to modulate emotional responses, is there a way to maximize one's chances that positive emotions will arise spontaneously in daily life? Indeed, a more effective way to increase positive emotions in daily life may be to select situations that are likely to give rise to positive emotions. That is, *prioritizing positivity* in how one decides to organize his or her days may increase the likelihood of positive emotions and overall well-being. In an initial correlational study of 233 community adults, a self-report measure of prioritizing positivity was positively associated with positive emotions and satisfaction with life and inversely associated with negative emotions and depressive symptoms (Catalino, Algoe, & Fredrickson, 2014). In line with the broaden-and-build theory, positive emotions associated with prioritizing positivity also predicted psychological and social resources. This research suggests that a better strategy for experiencing positive emotions and their larger benefits for well-being may be to structure life to prioritize situations in which one is likely to experience positive emotions.

The Potential Supporting Role of Mindfulness

If prioritizing situations in which one is likely to experience positive emotions is important, then awareness and acceptance of pleasant experiences in daily life might also matter. This raises the question of the role of dispositional mindfulness, or a nonjudgmental awareness of and attention to moment-to-moment experience (cf. Kabat-Zinn, 1990), in experiencing daily positive emotions. Mindfulness does not consistently relate to positive emotions (Jislin-Goldberg, Tanay, & Bernstein, 2012), but it may help individuals to notice and accept pleasant aspects of experiences. In an experiment using stimuli that were clearly positive and negative, participants who were randomly assigned to complete a brief mindfulness meditation, compared to a control condition, were then able to more accurately ascertain the positive valence of stimuli (Kiken & Shook, 2011). Mindfulness also involves a nonjudgmental acceptance of the changing flow of emotional experience, which can be contrasted with the critical evaluations seemingly involved in over-valuing and, ultimately, undermining happiness. For such reasons, mindfulness may complement qualities or strategies that do increase positive emotions.

An initial test of this proposition examined the unique and interactive roles of dispositional mindfulness and perceived ability to savor the moment for predicting future positive emotions in daily life, using longitudinal data collected over nine weeks from a sample of 89 community adults (Kiken, Lundberg, & Fredrickson, 2017). Savoring inherently involves strategies to up-regulate positive emotions

(e.g., thinking about how pleasurable something is, or expressing delight to a friend), so the ability to savor the moment should lead to more positive emotions. In this study, perceived savoring ability did uniquely predict daily positive emotions, but the relation depended on dispositional mindfulness. For individuals who were low in dispositional mindfulness, perceived ability to savor the moment did not predict daily positive emotions. Conceivably, low mindful individuals might not notice or accept enough pleasant experiences in daily life to profitably use the ability to savor. On the other hand, individuals who were high in both perceived ability to savor the moment and dispositional mindfulness reported the highest levels of daily positive emotions. Additionally, dispositional mindfulness only predicted positive emotions when individuals were high in the ability to savor the moment. Mindfulness might synergize with the ability to savor the moment, or other means of generating and regulating positive emotions, to promote daily positive emotions and their ensuing benefits for well-being. It should be noted that mindfulness also contributes to overall well-being in several other ways, as explained in Chapter 4 of this volume.

Concluding Comments

In conclusion, positive emotions do more than simply make us feel good in the moment. A large body of evidence suggests that they can promote broadened mindsets and build resources for future well-being. Positive emotions also help to “undo” effects of negative emotions and promote resilience in the face of life’s difficulties. Further, reciprocal relations between positive emotions and their benefits may result in upward spirals of well-being. Additional research is underway to shed light on the neuroscience of positive emotions (e.g., Farb, Chapman, & Anderson, 2013) and epigenetic aspects of well-being (e.g., Fredrickson et al., 2013, 2015), which stands to reveal nuances of how positive emotions function at a neurobiological level. Altogether, much existing and emerging research reveals that positive emotions, though fleeting, make valuable contributions to greater well-being.

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Chapter 10

Positive Illusions and the Happy Mind

Astrid Schütz and Roy F. Baumeister

Abstract This chapter addresses the controversial question of whether happy minds gain happiness by cultivating positive illusions, that is, views of self that exaggerate one's good qualities and degree of control over life and that involve unrealistically optimistic outlooks. Much evidence indicates that positive illusions contribute to well-being, but there are limits and contrary findings, and it is not viable to claim that engaging in endless rounds of self-flattering self-deception is a reliable guide to happiness. Illusions do confer benefits, including self-fulfilling prophecies and interpersonal appeal. We contrast two theories: a direct route by which self-deception makes one happy, and an indirect route by which positive illusions contribute to pragmatic, objective benefits, which in turn increase happiness. The evidence is mixed as to which route is more relevant. We note some negative effects of positive illusions, such as when they reduce effort and achievement.

Positive Illusions and the Happy Mind

When William James (1890) first articulated the view that thinking is for doing, he expressed the perennially appealing point that a major purpose of the mind is to guide action. The mind seeks to understand the social and physical environment, as well as the self, so as to know what actions can be successful for prolonging life, improving welfare, and reaching other goals. Mistaken information constitutes a poor, misleading, and possibly dangerous basis for action. It is reasonable to assume, therefore, that the human mind seeks to understand self and world as accurately as possible. To be sure, the mind is imperfect and subject to a variety of errors and biases, but in the long run its purpose of guiding action is best served by overcoming these. Or so one would think!

Against that view, however, a classic paper by Taylor and Brown (1988) proposed that mental health and optimal adjustment could be achieved not by accurate

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assessment but by the systematic cultivation of what they called *positive illusions*. They did not define illusions as outright, complete falsehoods. Rather, they understood positive illusions as beliefs that are held less on the basis of being true than on their subjective appeal. What makes the belief illusory is not falsehood but rather being believed without solid grounding in objective evidence (McKay & Dennett, 2009). Although Taylor and Brown's paper was well received and highly influential, contrary viewpoints also surfaced. Colvin, Block and Funder (1995) showed in a longitudinal study that self-enhancement was associated with long-term maladjustment, thus directly contradicting the assertion that positive illusions are good for you. A long and controversial debate started.

In this chapter, we first introduce the concept of positive illusions and review the evidence and controversies regarding whether the happy mind sees the truth or prefers positive illusions. We also address the question of whether positive illusions contribute to happiness, directly or indirectly, as opposed to being dangerous mistakes.

What Are Positive Illusions?

Based on an extensive review of evidence, Taylor and Brown (1988) proposed three main positive illusions and asserted that happy, healthy, well-adjusted people tend to hold all three. The first was self-enhancement: People tend to see themselves as better than they are, thus overestimating their good qualities, achievements, and successes, and underappreciating their bad traits and failures. Second, people tend to exaggerate the amount of control they have over their lives and outcomes. Third, people are unrealistically optimistic about their future prospects.

Positive illusions thus overlap with or perhaps are entirely subsumed under the category of self-deception. At best, positive illusions involve taking the most positive among a range of plausible views. In that sense, they would not be outright falsehoods but would reflect a best-case scenario. Self-deception research moved forward when it abandoned the older view that the self-deceiver must play both roles of deceiver and deceived and must therefore simultaneously believe and disbelieve the same things (e.g., Gur & Sackeim, 1979). In its place, a new view of self-deception based on wishful thinking (motivated reasoning) flourished, which was much more amenable to social psychology research (e.g., Goleman, 1985). The view of positive illusions as adopting a generously favorable view of oneself or one's future, moderately beyond what the data fully justify but not outrageously contrary to evidence, is clearly more compatible with regarding self-deception as wishful thinking than as simultaneously believing and not believing the same thing. All in all various terms were suggested in the literature to describe the different forms of positive illusions (see Table 10.1).

Table 10.1 Types of positive illusions mentioned in the literature

Term	Author
Illusion of control	Langer (1975)
Illusion of explanation	Pylyshyn (2004)
Illusion of invulnerability	Weinstein (1980)
Illusion of preference consistency	Wells & Iyengar (2005)
Illusion of transparency	Gilovich, Savitsky, and Medvec (1998)
Self-enhancing illusion	Taylor and Brown (1988)
Cognitive illusions (e.g. <i>correspondence bias</i> , <i>anchoring bias</i> , <i>confirmation bias</i> , <i>hindsight bias</i>)	Pohl (2004)

Evidence of Illusions

The literature review by Taylor and Brown (1988) provided extensive support for their three illusions, and even if there have been some controversies, later research has largely confirmed those views. Here we offer only a brief summary of a large literature (for a more thorough review, see Schütz & Hoge, 2007).

The first illusion, self-enhancement, involves exaggerating positive views of one's self. This seems uncontroversial. Self-enhancement is widespread, normal, and in some ways beneficial (see Sedikides, Gaertner, & Toguchi, 2003; Sedikides & Strube, 1995). The above-average effect captures the statistically dubious fact that the average person regards him or herself as above average. In an early demonstration of this, Svenson (1981) found that 90% of adults rated their driving ability as above average. Even elite sophisticates are not immune: Cross (1977) found that 94% of university professors considered themselves to be better at their jobs than the average university professor.

Self-enhancing biases are sustained by multiple processes (see below), including attributional biases. Mezulis, Abramson, Hyde, and Hankin (2004) provided meta-analytic and cross-cultural evidence that these biases are large and robust. Both collectivistic and individualistic cultures show evidence of self-enhancement (Church et al., 2014), although there is some evidence of cultural variation as to how much one enhances and on which dimensions one enhances (Sedikides et al., 2003).

The second illusion, exaggerated beliefs in control of one's life and outcomes, has also been well documented. Early evidence was provided by Alloy and Abramson (1979). They showed that healthy people overestimated their degree of control over a laboratory task, while depressed participants were fairly accurate. The fact that lack of positive illusion was linked to depression is highly relevant to this book's focus on the happy mind: The notion that positive illusions contribute to happiness gained considerable credibility from these findings. More recent work has continued to show that people overestimate their control when it is low or moderate, though they tend to underestimate their degree of control when in fact they have almost complete control (Gino, Sharek, & Moore, 2011).

The third illusion, unrealistic optimism, has also been broadly supported. Early work showed that participants thought good things were more likely and bad things less likely to happen to them than to other people similar to themselves (e.g., Weinstein, 1980). Subsequent work has continued to find such effects in many contexts. For example, individual smokers believe that their own risk of developing lung cancer is lower than the risk of the average smoker and only moderately higher than that of non-smokers (Weinstein, Marcus, & Moser, 2005). Even if it has been shown that some assumed biases are the result of sampling constraints and scale attributes (Harris & Hahn, 2011), a recent review has concluded that unrealistic optimism can be observed but part of the effect can be attributed to disparaging the average person's prospects in addition to subjectively bolstering one's own (Shepherd, Waters, Weinstein, & Klein, 2015).

Illusions are not restricted to the self but are often extended to close others. Such positive views also occur when people rate their partners, children or friends (e.g., Swami, Stieger, Haubner, Voracek, & Furnham, 2009). Such relationship biases seem unrelated to relationship quality and even single people hold illusions about future relationships (Fowers, Lyons, Montel, & Shaked, 2001). As Wenger and Fowers (2008) showed, illusions of parents about themselves and illusions about their children were related – which suggests that these illusions are more of a characteristic of the reporting person than of the target. Children and partners may serve as an extension of self and idealized views of these close others may be self-serving since relationships and close others' attributes reflect positively on the self. This argument is supported by the fact that illusions about friends and relationships are based on centrality (Martz et al., 1998) – illusions are more typical about people who are more central to one's identity. Moreover, the enhancement of a partner can usually be observed in relationship relevant traits (e.g. being loving) but not others (e.g. being reserved) (Morry, Kito, & Dunphy, 2014). Biases also extend to larger bodies that we are associated with. For example, even if there were large incentives for accurate predictions, football fans tended to be biased in the prediction of outcomes when their favorite teams were involved (Simmons & Massey, 2012).

Why Have Illusions?

Deceiving others can be socially beneficial, but deceiving oneself is harder to explain. One has to make decisions that affect one's welfare, and making decisions based on false assumptions (e.g., unrealistic optimism or overestimating one's abilities) seemingly contains serious risks of mistakes leading to costly, dangerous consequences.

Our book's theme offers a possible explanation for why people deceive themselves with positive illusions: Self-flattering illusions feel good and thus contribute to a happy mind. We assume people want and prefer to have happy minds. High self-esteem, which often includes inflated self-appraisals (e.g., Campbell, 1986) and other signs of positive illusions, contributes to happiness (Baumeister, Campbell,

Krueger, & Vohs, 2003). Optimism likewise feels good (e.g. Plomin et al., 1992). And as noted above, overestimating control is linked to feeling good rather than depressed. Depressed people are pessimistic and have low self-esteem (for a summary see Baumeister et al., 2003). In line with this view, a recent meta-analysis (Dufner, Sedikides, Gebauer, & Denissen, 2016) found positive links between various illusions and well-being.

To be sure, even if it is true that positive illusions feel good and increase happiness, this is not a full explanation for why people may have illusions. Emotions mostly reward behaviors and outcomes beneficial to the self, even if those phenomena are ultimately linked to improvements in survival and reproduction. So one must ask, why would the human mind be designed such that distorting information in a self-flattering direction would bring happy feelings? In other words, why might positive illusions feel good?

Another possible explanation for why people hold positive illusions is that the illusions contribute indirectly to happiness by improving performance or other outcomes. For example, optimistic forecasts and positive self-attributions of ability could produce self-fulfilling prophecies that actually cause the person to achieve more and otherwise attain objectively superior circumstances (cf. Bandura, 1977). Later in this chapter, where we discuss the consequences of positive illusions, we shall consider both direct and indirect contributions to happiness.

There may also be interpersonal benefits of positive illusions. There are abundant potential benefits that can be obtained by deceiving others. Von Hippel and Trivers (2011) concluded that self-deception is often in service of other-deception: One can convince others more easily if one believes what one is saying.

Also, perhaps, positive illusions create a persona that is appealing. For example, optimists are considered more attractive than others (Böhm, Schütz, Rentzsch, Körner, & Funke, 2010). Leaders, in particular, seem to gain followers by positivity: Presidential elections in the United States have usually been won by the more optimistic candidate (Zullow, Oettingen, Peterson, & Seligman, 1988). People cultivate their own beliefs in positive traits, effective control, and rosy futures in part because these are interpersonally attractive and can improve one's chances of appealing to cooperative partners and social groups. Insofar as people do not actually have these traits, they can still perhaps attract partners by faking them — and they can fake them more effectively if they can believe that they have them.

How Illusions Are Created and Sustained

Multiple processes enable people to sustain positive views of self. Early work identified the self-serving attributional bias as a prominent candidate (for review and meta-analysis, see Zuckerman, 1979). This bias attributes successes to the self but attributes failures to external factors. To the extent this bias succeeds, one's self-image can be based mainly on successes, thereby contributing to the positive illusion that one is highly competent.

Although it may not be possible to shield oneself entirely from unpleasant feedback, one can at least minimize one's exposure to it. Some evidence suggests that people prefer to speed through negative feedback but linger over and savor positive feedback (e.g., Baumeister & Cairns, 1992). Such differential exposure can contribute to greater encoding of positive than negative feedback into memory. Furthermore, there is ample evidence that people remember their successes more than their failures (Crary, 1966; Mischel, Ebbesen, & Zeiss, 1976; Schütz, 1999). Retrieval from memory is also biased, such that people search their memories for desirable rather than undesirable information, with the result that their self-assessments become biased toward favorable views of self (Kunda & Sanitioso, 1989).

When negative information cannot be avoided, motivated interpretations can defuse negative implications and elaborate positive ones (Schütz & Baumeister, 1999). People scrutinize disagreeable feedback for flaws in the evidence, whereas positive feedback is accepted uncritically (Pyszczynski, Greenberg, & Holt, 1985; Wyer & Frey, 1983; see also Kunda, 1990). Members of stigmatized groups can boost their self-esteem by dismissing negative feedback as motivated by prejudice (Crocker & Major, 1989). Many concepts such as likability, being a good father or being a good professor have multiple and shifting criteria, so people can flatter themselves by emphasizing criteria that make them look good (see Dunning, Meyerowitz, & Holzberg, 1989).

Positive illusions can also be sustained by biased perceptions of the social environment. People can shift their views of the average person in ways that make themselves seem far above average (Shepperd, Klein, Waters, & Weinstein, 2013). Many aspects of self are defined by comparison with others, and people selectively choose to compare themselves with others who are worse than themselves, a process that Wills (1981) called downward comparison. Downward comparison was found to contribute to maintaining positive illusions about one's prospects for recovery from cancer and for controlling one's fate (Taylor, 1989). People also prefer to think that their good traits are unusual (thereby increasing their value) while their bad traits are common (thereby making them seem less objectionable) (Marks, 1984; Suls & Wan, 1987). People with high self-esteem show these patterns more than those with low self-esteem, which indicates that part of high self-esteem is sustained by biased information processing (Campbell, 1986).

In short, positive illusions are created and sustained by a variety of motivated cognitive processes, including the following among others: selective attention; biased hypothesis testing; biased interpretation (including rationalization); distorted or selective memory; selective criticism. Motivated cognition in the form of wishful thinking lends itself to enabling people to think well of themselves and be confident about their future prospects.

Limits of Positive Illusions

Obviously, positive illusions do not spread and flourish without constraint. If they did, nearly everyone would regard him- or herself as a godlike paragon of competence and virtue, in full control of all events and outcomes, and destined for an unbroken series of triumphs and good fortune. Here we briefly acknowledge some factors that restrain positive illusion to manageable limits. Indeed, Baumeister (1989) proposed that there is an optimal margin of illusion, such that people exaggerate their positive traits, control, and prospects to a limited extent that will remain plausible and will not seriously compromise their ability to make effective decisions. People do overestimate their good traits - but only to a limited degree. Self-perceptions are not totally illusory. As one sign, self-rated abilities can be predicted of enhancement tendencies and actual abilities and an individual measure of enhancement (Leising, Locke, Kurzius, & Zimmermann, 2015).

People limit the degree to which they create evidence contrary to their positive illusions. For example, most people want to regard themselves as honest despite doing some dishonest things, so they manage their dishonest behavior in ways that keep it within limits. Experimentally, it has been shown that people rarely cheat or steal the maximum amount that is possible. Instead, they limit their dishonesty and can then still consider themselves honest insofar as they resisted part of the illicit temptation (Mazar, Amir, & Ariely, 2008).

Some evidence for the strategic management of illusions is that they are subject to reality checks. When objective evidence is available or soon will be, positive illusions are diminished. A review by Sweeny and Krizan (2013) found several signs of this. For one, people often make cheerfully optimistic predictions about future performances and outcomes when these are far off, but as the decisive moment draws near, they shift toward more realistic and even pessimistic predictions. Moreover, even when people overestimate their likely performances and outcomes, their predictions are somewhat tied to reality. Sweeny and Krizan also found that people show more positive illusions with vague, hard-to-disconfirm predictions than specific ones. For example, people are optimistic when predicting the likelihood that something will happen, but they show less optimistic illusion when making specific predictions about how they will perform. Here we are reminded of the conventional wisdom in advice to economic forecasters: Never give both a date and a number in the same prediction! Predicting, for example, that the stock market will hit a particular level by the end of next year is highly vulnerable to disconfirmation, whereas giving only the level or only the date and leaving the other vague is safer.

Some people are more prone than others to positive illusions. As already noted, people with high self-esteem employ more self-serving and biased strategies than people with low self-esteem (Campbell, 1986). Likewise, we noted evidence that illusions of control are more common among non-depressed than among depressed persons (Alloy & Abramson, 1979). There are also cultural differences. Chang, Asakawa, and Sanna (2001) found optimistic biases were common among

Americans of European descent, whereas Japanese exhibited some pessimistic biases.

Illusions are selective. Byrne and Worthy (2013) showed that narcissists overestimate their agentic traits more than their communal traits. We also noted that many people exhibit positive illusions for themselves and their loved ones while showing the opposite (pessimistic) bias about strangers or the average person (Shepperd et al., 2013).

Last, not all illusions are positive. There are some negative illusions. Sometimes people underestimate their abilities or their control or expect rather negative outcomes (Kruger, Chan, & Roese, 2009). For example, defensive pessimism is a strategy used by some people to motivate high effort — by convincing themselves that disaster is imminent and only herculean efforts can save the day (see Norem & Illingworth, 2003). Defensive pessimism does actually seem to improve performance, in contrast to other strategies such as self-handicapping (creating obstacles that can furnish an excuse; see Elliot & Church, 2003). Even so, defensive pessimism only works for some people, so again there are limits.

Two Routes to a Happy Mind

There is a vast literature that reports positive effects of illusions and we now turn to the core question of whether and (if so) how positive illusions contribute to happiness. Theory offers a direct and an indirect route. The direct route suggests that embracing positive illusions leads directly to increases in happiness, without any actual achievement or objective improvement in circumstances. Positive illusions enable oneself to feel good, more than would be objectively justified. In contrast, the indirect route would be more genuinely adaptive, because it produces objective benefits, so that the eventual happiness would be justified by being grounded in reality.

The direct route holds that having high self-esteem, high perceived control, and broad personal optimism directly causes people to feel good. That may seem straightforward, but it does raise the deeper question of why that should be so. From an evolutionary perspective it does not matter how happy individuals feel but traits that improve survival and reproduction are favored. How can positive illusions be understood within that framework?

The direct route suggests that the link between positive illusions and reproductive success is, well, illusory. In a sense, the system tricks itself. To illustrate, we invoke the sociometer theory of self-esteem (Leary & Baumeister, 2000). This theory proposes that self-esteem serves as an internal measure of whether one has the traits that will appeal to others and so is likely to succeed at attracting cooperative and romantic partners. The assumption is that evolution created the sociometer in order to guide people to become attractive to others. It feels good to be a good person because a good person will be socially accepted, which in turn will vastly improve chances for survival and reproduction – and in fact twin-studies provided

evidence of a strong genetic correlation between sociability and positive emotionality (Eid, Riemann, Angleitner, & Borkenau, 2003). If the meter is accurate, then one can have high self-esteem by being a good person. (That is relevant to the indirect route; see below.)

Alternately, however, one can have high self-esteem by simply deceiving oneself that one is a good person. People can get pleasure by becoming a good person, because that is advantageous — but people learn that they can get the same pleasure by merely convincing themselves they are good people, without going through the arduous work of actually becoming a better person. This can be a sort of short cut. It resembles how addictive drugs offer a short cut to intense pleasure, so that taking the drug enables one to feel really good without having to have the sort of achievement or success that normally would justify and cause such intense pleasure.

The direct route thus relies on self-deception. In contrast, the indirect route holds that positive illusions bring about pragmatic, objective benefits, and it is the enjoyment of these benefits that contributes to happiness. There are several forms this can take. People with positive illusions may appeal more to others, thereby increasing their belongingness, which in turn improves happiness. Abundant evidence indicates that people with more social ties are happier than people who are unattached or alone in the world (for reviews, see Baumeister, 1991; Haller & Hadler, 2006; Myers, 1992). Positive illusions may also bolster performance via self-fulfilling prophecies, and improved performance contributes to improvements in belongingness and social status, thereby increasing happiness, alongside any direct joy that successful performance and goal attainment bring. Imagining successful athletic performance (mental practice), for example, has been shown to cause significant improvements in actual performance in many different sports (Druckman & Swets, 1988; Kosslyn & Moulton, 2009).

The difference between the direct and indirect routes thus lies in actual, objective benefit. Do positive illusions make the person objectively better off, which in turn increases happiness? Or do they simply make the person happy, without any objective improvement? The evidence is mixed.

Positive self-views are an instructive case. Although some high self-esteem is based on actual achievements, much of self-esteem consists of positive illusions. We have already noted Campbell's (1986) evidence that people with high self-esteem engage in more cognitive strategies that contribute to positive illusion, as compared to people with low self-esteem. As reviewed by Baumeister et al. (2003), high self-esteem appears to lead to relatively few actual benefits but is associated with self-flattering illusions. For example, people with high self-esteem rate their performances, intelligence, and attractiveness as superior to other people's, but objective measures contradict those self-assessments (Diener, Wolsic, & Fujita, 1995; Gabriel, Critelli, & Ee, 1994). Nonetheless, high self-esteem does appear to increase happiness, indeed constituting a stock of good feelings that can help a person cope with unpleasant events and stresses.

We discussed self-enhancement as a form of positive illusion. In a multi-cultural study including China, Mexico, the United States, and Venezuela, Church et al. (2014) found that self-enhancement was linked to self-rated adjustment but not to

observer-related adjustment. Thus, its effects are similar to those of high self-esteem, namely one believes oneself to be better off, but seemingly that is mostly a matter of subjective illusion rather than actual superiority, and it seems to produce few objectively discernible benefits.

A similar argument can be made in the case of positive views about the future. It has long been assumed that optimism contributes to positive outcomes. Tenney, Logg, and Moore (2015) have recently questioned this, however. Optimism is a matter of expecting good things to happen, and insofar as these expectations are grounded in reality, then optimists should indeed fare better than pessimists. In other words, if all expectancies were correct, then people who expect more good things would experience more good things. The issue is whether illusory optimism brings benefits, that is, whether unwarranted positive expectations are advantageous. Tenney et al.'s experiments showed that people believed in the performance-enhancing benefits of optimism but that these beliefs were largely unfounded: Optimism had no effect on actual performance.

Longevity is a very factual outcome. Overall there is mixed evidence as to whether happy people live longer (Danner, Snowdon, & Friesen, 2001; Diener & Chan, 2011; Steptoe, Deaton, & Stone, 2015). On the whole, we are persuaded that they do live longer — but, as with optimism, it is not clear that the happiness itself causes longevity to increase. Lives filled with stress, illness, and disaster are probably less happy and shorter than lives filled with comfort, good health, and success, but that does not mean that enduring disaster cheerfully would make one live longer.

Still, it is often difficult to distinguish between positive views and illusions. Often, positivity is intertwined with illusion and while positivity may be adaptive, the case is less clear with unrealistically positive views. To approach this problem, Humberg et al. (2016) suggest a condition-based regression approach aimed at statistically disentangling effects of self-positivity from effects of self-enhancement. In an exemplary re-analysis of data on enhancement of intellectual abilities they show that some of the effects previously attributed to self-enhancement are actually based on self-positivity. While some effects of self-enhancement could be replicated (e.g. an effect on self-reported ratings of trustworthiness), other outcomes were based on the mere positivity of people's self-perceptions (e.g. effects on self-esteem and effects on self- and peer-rated leadership ability). In sum, this suggests that benefits of self-enhancement may be smaller than previously thought.

Negative Effects of Positive Illusions

Some work has documented costs and drawbacks associated with positive illusions. In an analysis of data from the 1976 entering classes of 21 US colleges, Nickerson, Diener, and Schwarz (2011) found overall positive affect (cheerfulness) to be positively related to self-rated abilities and prospects but negatively related to objective indicators of performance, such as grade point average upon graduation. These

findings suggest that unwarranted confidence led to positive illusions. Possibly as a result of this misplaced confidence, students did not work as hard, and they ended up performing worse. These findings fit the view that positive illusions feel good but can be counterproductive. In line with that view Robinson and Tamir (2011) argue that task focused information processing is more likely linked to happiness than self-focused processing.

An experimental study by Forsyth, Lawrence, Burnette, and Baumeister (2007) sought to cultivate positive illusions among students who were struggling in a course (defined as receiving a grade of C or worse on the midterm examination). By random assignment, some students received weekly messages designed to bolster their self-esteem. These students ended up performing worse than control condition participants on the final examination. The implication is that high self-esteem bolstered confidence and reduced the subjective need to work hard. In line with that, Dufner et al. (2016) meta-analytically found clear-cut positive effects of intellectual self-enhancement on self-reported well-being – but the relations with observer ratings were less clear-cut.

Some of the most compelling evidence for the detrimental effects of positive illusions comes from Oettingen's work (e.g., 2014). Holding a goal and working out pathways to reach it is associated with positive outcomes — but merely indulging in pleasant fantasies about positive outcomes can backfire by reducing effort. For example, Oettingen and Mayer (2002) showed that graduating students who enjoyed more favorable fantasies about their future employment made fewer actual applications, received fewer offers, and ended up earning lower salaries than students who held fewer illusions about getting a great job.

Finally, among survivors of the terrorist airplane attacks on the United States in 2001, self-enhancers reported fewer symptoms, which suggests that their positive illusions enabled them to feel better. However, friends and relatives of these individuals rated the self-enhancers as having relatively poor adjustment and as being somewhat dishonest about their problems (Bonanno, Rennicke, & Dekel, 2005).

Mixed Good and Bad Effects

It becomes clear that illusions can be related to well-being but with some potential costs. For example, positive biases may make us feel good but may impede performance – at least in the long run, or biases may disturb social relations. Furthermore, illusions may be adaptive in some contexts, but not in others.

Some findings suggest that positive illusions are beneficial in the short run but maladaptive in the long run (Paulhus, 1998; Robins & Beer, 2001). For example, overestimating one's abilities helps to feel good in the short run but bears the risk of feeling bad after negative outcomes. When a sample of retirees rated their future selves in physical and social domains, positive views were positively related to present well-being — but negatively related to well-being 1 year later, when symptoms

and current self-views were controlled for (Cheng, Fung, & Chan, 2009). Participants who underestimated their future outcomes reported higher well-being 1 year later than those who had overestimated it.

We suggested that positive illusions may make one attractive to others, thereby increasing belongingness. However, this possibility must be balanced against evidence that people often dislike others who express highly positive views of themselves. Dufner et al. (2013) studied people who overestimated their abilities, based on comparison of self-ratings with the results of an objective test of ability. People who overestimate their abilities as compared with an objective criterion were rated as relatively attractive, influential and emotionally stable (Dufner et al., 2013) — but if people are regarded as overestimating themselves relative to observer views, they are usually subject to negative social evaluations (see Anderson, Ames, & Gosling, 2008).

Positive illusions may help (or at least not do any harm) to adapt to situations that one cannot change (Hurt et al., 2014). However, such illusions can be costly when one does have control, insofar as they motivate people to make risky decisions, such as not engaging in preventive health care and not taking the appropriate steps to reach their goals (Dunning, Heath, & Suls, 2004). In other words, in situations of uncertainty unrealistic optimism seems helpful (Byrne & Worthy, 2013; Johnson, Blumstein, Fowler, & Haselton, 2013), but when a situation can be controlled, illusions can be dangerous. For example, extreme optimism can prevent people from taking precautions in risky situations (Schwarzer, 1993; Shepperd et al., 2013).

Not all positive illusions are the same. Among other dimensions, they differ as to the degree to which they exaggerate the positive. We noted Baumeister's (1989) hypothesis that there is an optimal margin of illusion, such that slight exaggerations may be beneficial but that larger ones can be detrimental. More recently, Grant and Schwartz (2011) provided an elaborate account of an inverted-U function of the relation between positive views and outcomes, such that moderate positivity is good but extreme illusion can backfire. A variety of evidence supports that conclusion. For example, moderate optimism has been shown to be more strongly related to more effective coping with illness (de Ridder, Schreurs, & Bensing, 2000) than high or low levels of optimism. In controlling for baseline levels of disease status and depressive symptoms, Milam, Richardson, Marks, Kemper, and McCutchan (2004) showed in a longitudinal study with HIV patients that optimism at baseline had a curvilinear relationship with CD4 T lymphocyte cell count and although optimism was associated with variables such as diet or therapy adherence these did not mediate the effect.

Conclusions

Positive views of the self have two components. One is rooted in objective positivity, including genuine achievement and virtue. The other is illusion, that is, exaggerated or unfounded beliefs about personal qualities.

Assessing the contribution of positive self-views to a happy mind is complicated by this combination of reality and illusion. It is hardly surprising that people who have good traits and palpable achievements end up happier than people who lack these things. But do positive illusions contribute to happiness? And if so, do they contribute by facilitating the achievement of success, virtue, and social acceptance — or do they merely exploit the human psyche's natural feedback system, so that (like a drug user) they enable the person to feel good without having any objective reason to justify those feelings?

On balance, we can give a tentatively affirmative answer to the first question. People with positive illusions do seem generally happier than other people. Optimism and high self-esteem have been linked to happiness, for example, and both of those consist partly of illusion. Thus, illusions have subjective benefits.

The objective benefits of positive illusions are more difficult to assess than the subjective ones, however. Evidence was mixed as to whether unfounded self-admiration, overestimated control, and unrealistic optimism produce genuine benefits or have no effect — or even, in some cases, lead to poor outcomes, such as by inducing people to ignore risks and dangers, or to reduce effort.

Future work should focus on assessing in more detail when and how positive illusions produce these beneficial effects, when they are ineffective, and when and how they are damaging and counterproductive. Positive illusions may facilitate better performance. Or positive illusions may simply be useful for attracting others, insofar as they enable a person to project a more positive view of one's attractiveness than would be objectively warranted. We noted evidence, for example, that optimism appeals to others, and people think that it improves performance, but often it does not and sometimes it may backfire. Regardless, we hope that the progress of research will eventually dispel the many illusions about positive illusions.

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Chapter 11

Optimism

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Abstract Optimism and pessimism – generalized expectancies that the future will be positive or negative – cause broad and diverse differences between people in subjective well-being and how they achieve it. People who are more optimistic cope with adversities by addressing rather than avoiding them and their feelings about them; they engage with and accomplish goals to a greater degree; and they are more likely to attend to and pre-emptively address threats to their well-being. They also have better physical health, which can both result from and contribute to well-being. Although optimism may have drawbacks, these seem to be limited in scope and do not outweigh the advantages of being optimistic.

Optimists are people who expect things to work out well for them; pessimists are people who expect things to work out badly for them. This seems a simple difference among people, but it also seems to matter a good deal. Anticipating generally good outcomes versus bad ones is related to motivational processes that influence how people approach life and can have substantial effects.

Optimism and Pessimism

Scientific definitions of optimism focus on expectancies about the future. This focus links optimism and pessimism to a long history of expectancy-value models of motivation. Expectancy-value theories assume that behavior reflects pursuit of goals: desired states or activities. The more important a goal is, the greater is its *value* (Austin & Vancouver, 1996; Carver & Scheier, 1998; Higgins, 2006). The

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other element is *expectancy*—level of confidence that the goal can be reached. People who doubt they can reach a goal withdraw effort. They may stop trying prematurely, or they may never really start. People who are confident about reaching a goal persevere even in the face of adversity.

Expectancies exist at many levels of inclusiveness. Confidence and doubt can pertain to narrow contexts (e.g., the ability to cross a street unaided), to moderately broad contexts (e.g., the ability to navigate an unfamiliar city), and to even broader contexts (e.g., the ability to develop a good reputation). Optimism, as conceptualized here, is a broad, generalized version of positive expectancies; it is confidence pertaining to life, rather than to just some specific context (Scheier & Carver, 1992). This breadth means that the expectancy should apply in many different contexts. Optimists should be more confident and persistent, whereas pessimists should be more doubtful and hesitant.

Measurement

There are at least two ways to assess optimism. One is to ask people directly whether they expect outcomes in their lives to be good or bad (Scheier & Carver, 1992). This approach underlies the Life Orientation Test (LOT) and its revision (LOT-R; Scheier, Carver, & Bridges, 1994). People indicate their degree of agreement or disagreement with statements about the future (e.g., “I’m always optimistic about my future,” “I rarely count on good things happening to me” [reverse coded]). The LOT and LOT-R correlate with related personality traits such as neuroticism, extraversion, and self-esteem in expectable ways but are not exchangeable with them (Scheier et al., 1994; Segerstrom, Evans, & Eisenlohr-Moul, 2011).

Another approach follows from the idea that expectancies stem from interpretations of the past (Peterson & Seligman, 1984). Past failures with stable causes lead to expectancies for failure in the future because the cause is likely to remain in place. Past failures with unstable causes lead to expectancies for a potentially brighter future because the cause may not be present. Optimism and pessimism under this approach are attributions about the causes of events (Peterson & Seligman, 1984). However, attributions for negative events only modestly correlate with direct measures of generalized expectancies (Ahrens & Haaga, 1993; Peterson & Vaidya, 2001). Thus, despite the conceptual similarity, the two approaches are not interchangeable. In part because the attributional style measure is more difficult to administer, researchers have come to rely more and more on assessing expectancies directly.

Whichever approach is used, the result is a continuous distribution of optimism. Although we commonly refer to optimists and pessimists as distinct, in fact most people report a blend of optimism and pessimism. In an absolute sense, though, most people are more optimistic than pessimistic: that is, they agree with optimistic scale items and disagree with pessimistic items, albeit to differing degrees. Fewer people – less than a quarter of most samples – disagree with optimistic items and

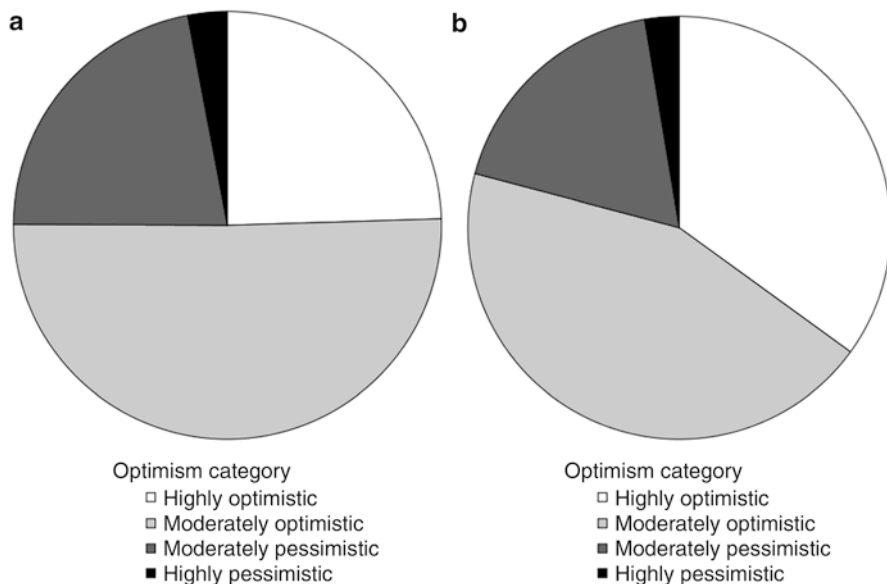


Fig. 11.1 Distribution of optimism scores in undergraduate students (Panel A, $N = 971$: Segerstrom, Stanton, Alden, & Shortridge, 2003) and an internet sample (Panel B, $N = 1221$: Segerstrom, Evans, & Eisenlohr-Moul, 2011). Across both samples, a majority of people were highly (30%) or moderately (47%) optimistic. The minority were highly (3%) or moderately (20%) pessimistic

agree with pessimistic items (Segerstrom, 2006a; see Fig. 11.1). Therefore, some of the differences attributed to optimism versus pessimism might be more accurately attributed to greater versus lesser degrees of optimism.

Another issue that bears mention is whether the trait should be seen as a bipolar dimension or whether two separable dimensions – optimism and pessimism – exist. Some items of the LOT-R refer to good outcomes, others refer to bad outcomes, and responses to the two do not correlate perfectly. The question is whether this difference reflects method or substance. In some studies, optimism and pessimism differentially predicted outcomes (Marshall, Wortman, Kusulas, Hervig, & Vickers 1992; Robinson-Whelen, Kim, MacCallum, & Kiecolt-Glaser, 1997), but not in all, and the loss of reliability associated with reducing the scale length might result in spurious differences between the two subscales (Segerstrom et al., 2011). There remain advocates both for the unidimensional view (Rauch, Schweizer, & Moosbrugger, 2007; Segerstrom et al., 2011) and for the two-dimensional view (Herzberg, Glaesmer, & Hoyer, 2006). For simplicity, we treat optimism–pessimism here as one dimension.

Whence Optimism

Where does optimism come from? There is support for both genetic and environmental influences. One project estimated heritability at approximately 25% (Plomin et al., 1992). This is lower than many traits, but still indicates a substantial genetic influence. However, genetic inheritance is not the only possible familial pathway to optimism: Childhood environment, in the form of parental warmth, financial security, and parental socioeconomic status (SES) have also predicted adult optimism (Heinonen, Rääkkönen, & Keltikangas-Järvinen, 2005; Heinonen et al., 2006).

In adults, optimism shows evidence of both stability and change. Test-retest correlations are relatively high over periods of a few weeks to 3 years, ranging from .58 to .79 (Atienza, Stephens, & Townsend, 2004; Lucas, Diener, & Suh, 1996; Scheier & Carver, 1985; Scheier et al., 1994). However, correlations over 10 years are more mixed, ranging from .35 in young adulthood (Segerstrom, 2007) to .71 in middle age (Matthews, Rääkkönen, Sutton-Tyrrell, & Kuller, 2004). These figures suggest that optimism can evolve in adulthood.

Causes and consequences of optimism may be hard to distinguish because factors that promote optimism can also follow from optimism (e.g., Segerstrom, 2007). However, prospective studies can suggest direction of causality. Much as childhood resources in the social and financial domains affect later optimism (Heinonen et al., 2005, 2006), adult resources may influence level of and change in optimism. Financial resources can be brought to bear to lessen negative events (e.g., a broken water heater) or promote positive events (e.g., a vacation). Dispositional optimism also has a strong socioeconomic gradient. Occupational class and income have particularly strong correlations with optimism (Boehm, Chen, Williams, Ryff, & Kubzansky, 2015). In another study, highly optimistic college freshman dropped out of school before their sophomore year at half the rate of their more pessimistic counterparts (Solberg Nes, Evans, & Segerstrom, 2009), and optimistic law students had higher income 10 years later (Segerstrom, 2007).

Optimism also fosters social resources, which can lessen negative events (e.g., via social support) or promote positive events (e.g., being invited to parties). For example, more optimistic college freshmen had larger increases in their social networks (Brissette, Scheier, & Carver, 2002). Optimists may build social resources both because other people perceive them as desirable social partners and because optimists perceive social desirability in others. People who voice a positive outlook are socially accepted more than those who express a negative outlook (Carver, Kus, & Scheier, 1994; Helweg-Larsen, Sadeghian, & Webb, 2002). Actual interactions with optimists are more positive (Rääkkönen, Matthews, Flory, Owens, & Gump, 1999), whereas pessimists can make close others feel burdened (Ruiz, Matthews, Scheier, & Schulz, 2006).

Optimists have higher relationship satisfaction than pessimists in part because they perceive their partners as more supportive (Srivastava, McGonigal, Richards, Butler, & Gross, 2006). Optimists also perceive greater social support than do pessimists (e.g., Abend & Williamson, 2002; Trunzo & Pinto, 2003).

Finally, optimists work more effectively at their relationships, even under stress. Pessimistic women under treatment for breast cancer were more likely to report withdrawing from social activities than were more optimistic women (Carver, Lehman, & Antoni, 2003). In married couples across a 2-year span, optimism was initially related to better relationship quality, fewer negative interactions, and more cooperative problem solving during a discussion and, at follow-up, to relationship quality and survival (Assad, Donnellan, & Conger, 2007).

In turn, social resources may foster optimism. In the 10-year follow-up of first-year law students, increases in social resources correlated with increases in optimism (Segerstrom, 2007). More research is needed to explain how and why optimism changes across the lifespan, but it appears that positive expectations about the future are fostered by the very resources that help to make those positive outcomes more likely. Therefore, change in optimism over time may result from an upward spiral of optimism and resources, in which resources promote optimism, and optimism in turn promotes resource growth (e.g., through college graduation, social network development).

Better Living Through Optimism?

The relationship of optimism to resources suggests one way in which optimism might foster well-being, particularly under challenging or stressful circumstances. In the sections that follow, we describe some direct evidence that optimism is associated with higher well-being (also see Carver & Scheier, 2014; Segerstrom, 2006a), then go on to describe three mechanisms by which optimists manage to achieve that higher well-being. We conclude by considering whether there are drawbacks to being optimistic.

A simple effect of optimism and pessimism is on how people feel when they encounter problems. When life gets difficult, emotions range from enthusiasm and eagerness to anger, anxiety, and depression (Folkman & Lazarus, 1988). Optimism affects the balance among these feelings. Optimists expect good outcomes, even when things are hard, yielding a more positive mix of feelings. Pessimists, expecting bad outcomes, have more negative feelings—anger, sadness, even despair (Carver & Scheier, 1998; Scheier & Carver, 1992).

This is a simple point, but it has been extensively studied. Optimism and distress have been linked in contexts that include students starting college (Aspinwall & Taylor, 1992; Brissette et al., 2002), survivors of missile attacks (Zeidner & Hammer, 1992), cancer caregivers (Given et al., 1993), Alzheimer's caregivers (Hooker, Monahan, Shifren, & Hutchinson, 1992; Shifren & Hooker, 1995), and people dealing with the stresses of childbirth (Carver & Gaines, 1987), coronary artery bypass surgery (Fitzgerald, Tennen, Affleck, & Pransky, 1993; Scheier et al., 1989), failed attempts at in vitro fertilization (Litt, Tennen, Affleck, & Klock, 1992), bone marrow transplantation (Curbow, Somerfield, Baker, Wingard, & Legro, 1993), cancer (Carver et al., 1993; Friedman et al., 1992), and the progression of AIDS (Taylor et al., 1992).

These studies vary in complexity. Some are cross-sectional, relating optimism to distress in some difficult situation. What these studies do *not* show is whether optimistic people were less distressed even prior to adversity. Studies assessing people at multiple time points give a better picture of how distress changes over time and circumstances and allow control for prior distress. As an example, in one study, pregnant women completed the LOT and a depression scale in their last trimester. They completed the depression scale again 3 weeks after delivery. Optimism related to lower depression symptoms both during pregnancy and during post-partum after controlling for symptoms during pregnancy. Thus, optimism appeared to confer resistance to postpartum depressive symptoms (Carver & Gaines, 1987).

Much of the longitudinal research on optimism and subjective well-being (SWB) focuses on people coping with health stressors, including cardiovascular disease and cancer. Controlling for presurgical life satisfaction, optimists had higher life satisfaction 8 months after coronary artery bypass graft (CABG), an effect occurring through specific optimism about their surgery (Fitzgerald et al., 1993). Optimists in another study retained higher quality of life even up to 5 years after CABG (Scheier et al., 1989). In the context of treatment for ischemic heart disease, lower optimism related to more symptoms of depression both after hospitalization and at a 1-year follow-up after controlling for symptoms at hospitalization (Shnek, Irvine, Stewart, & Abbey, 2001).

Another important health context is cancer. As an example of research in this domain, women diagnosed with breast cancer were interviewed at diagnosis, on the day before surgery, a few days afterward, and 3, 6, and 12 months later. Optimism predicted decreases in distress over time, conferring resilience during the full year (Carver et al., 1993). Head and neck cancer patients have shown similar results (Allison, Guichard, & Gilain, 2000).

Patients are not the only ones affected by health conditions: Caregiving for patients is also stressful, and sometimes caregivers' well-being is affected more than that of patients (Roach, Averill, Segerstrom, & Kasarskis, 2009). Higher optimism among cancer caregivers predicted less depression and less adverse impact of caregiving on their physical health (Given et al., 1993). Similar results have been found for spousal Alzheimer's caregivers (Hooker et al., 1992; Shifren & Hooker, 1995).

Optimism is important across the full range of stress, both severe stressors such as health threats and less severe stressors such as life transitions. For example, students starting college or law school, assessed when arriving on campus and later in the semester, had less distress if they were more optimistic (Aspinwall & Taylor, 1992; Brissette et al., 2002; Segerstrom, Taylor, Kemeny, & Fahey, 1998). At the other end of the adult lifespan, the simple process of aging brings challenges such as loss of mobility, minor and major illness, and bereavement. In elderly men, optimism predicted significantly lower cumulative incidence of depression symptoms across a 15-year follow-up (Giltay, Zitman, & Kromhout, 2006).

Mechanisms

The studies reviewed above are only a small subset of those demonstrating that optimists have higher well-being than pessimists in a number of domains (e.g., affect, life satisfaction, depression). But why? In general, the behaviors of optimists and pessimists differ. That is, people who are confident continue trying, even (or perhaps especially) when times are hard. People who are doubtful try to escape by wishful thinking or temporary distractions that do not solve the problem, and they sometimes even stop trying.

Coping

One potential path to differences in well-being concerns how one copes with stress, both with respect to minor hassles and major stressors such as disease. There are many ways to cope (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Folkman & Moskowitz, 2004; Skinner, Edge, Altman, & Sherwood, 2003) and many ways to categorize coping (Carver & Connor-Smith, 2010; Skinner et al., 2003). A distinction made early in the analysis of coping distinguished problem-focused coping—doing something about the stressor to blunt its impact—from emotion-focused coping—soothing distress (Lazarus & Folkman, 1984). Another distinction is between engagement or approach coping—dealing with the stressor or emotions stemming from it—and disengagement or avoidance coping—escaping the stressor or emotions stemming from it (e.g., Roth & Cohen, 1986; Skinner et al., 2003).

Early studies of situational coping responses and general coping styles (e.g., Scheier, Carver, & Bridges, 2001) found that, generally, optimists were approach copers, and pessimists were avoidant copers. Conceptually similar results have followed. A meta-analysis of optimism and coping crossed these two distinctions, fitting coping responses into the 4 resulting categories (Solberg Nes & Segerstrom, 2006). Optimism was positively associated with both problem-focused and emotion-focused subsets of engagement coping. Optimists were also responsive to the kind of stressor being confronted. They used more problem-focused coping for controllable stressors (e.g., academic demands) and more emotion-focused coping for uncontrollable stressors (e.g., trauma). Thus, optimism predicted active attempts to change stressful circumstances, as well as accommodation to those circumstances, in ways that reflect flexible engagement. Optimism, finally, is inversely related to both problem-focused and emotion-focused subsets of disengagement coping.

Some studies described earlier with respect to SWB also examined coping. Before CABG surgery, optimists reported planning for their future and setting goals for recovery. By contrast, pessimists focused less on negative aspects of the experience, such as distress and symptoms. After surgery, optimists reported seeking out information about what they would be required to do in the months ahead, and they were less likely to say they were suppressing thoughts about their symptoms (Scheier et al., 1989).

In the context of cancer, pessimistic women used more cognitive avoidance in coping with an upcoming biopsy than optimists, and cognitive avoidance before the biopsy predicted greater distress afterward (Stanton & Snider, 1993). More optimistic breast cancer patients in the first year after diagnosis were more likely to accept the situation's reality, place it in as positive a light as possible, and use humor. They were less likely to push the reality of the situation away and give up. Optimism correlated with lower distress, largely through coping (Carver et al., 1993). Finally, among women under treatment for breast cancer, more optimistic women endorsed more fighting spirit (confronting and trying to beat cancer) and less hopelessness/helplessness (sense of giving up). Again, coping accounted for the some of the relationship between higher optimism before diagnosis and quality of life a year afterward (Schou, Ekeberg, & Ruland, 2005).

In sum, optimists differ from pessimists in how they cope with stress. The contrast between acceptance, an optimistic strategy, and active denial, a pessimistic strategy, is particularly noteworthy. We stress that acceptance does not mean giving up. It is different from resignation, which may hasten death (Greer, Morris, Pettingale, & Haybittle, 1990; Reed, Kemeny, Taylor, Wang, & Visscher, 1994). Acceptance means restructuring one's perceptions and goals, which may actually serve the purpose of keeping the person goal-engaged, and indeed "life-engaged" (Scheier & Carver, 2001). In contrast, denial (refusing to accept the reality of the situation) means trying to maintain a worldview that no longer applies. Accepting that life is compromised, but not over, lets people develop adaptive parameters within which to live the time left to them.

Goals

Goals are not only pursued in the context of stressors. They are also an integral part of daily life. Goals "provide structure, meaning, identity, and a sense of purpose" (Segerstrom & Solberg Nes, 2006, p. 675). Optimists' approach orientation is evident in the way they persist at experimental goals that have been assigned to them (e.g., solving anagrams: Solberg Nes, Segerstrom, & Sephton, 2005). It is also evident in their daily lives. More optimistic women with fibromyalgia persisted at health and social goals in the face of pain and fatigue (Affleck et al., 2001). As noted above, more optimistic patients were less likely to let social activities be disrupted by breast cancer (Carver, Lehman, & Antoni, 2003). More optimistic students were more committed to their goals and made more progress toward their goals over the course of a semester (Segerstrom & Solberg Nes, 2006).

On the other hand, more optimistic students also had more goal conflict, which occurs when pursuing one goal interferes with pursuit of another. Importantly, this relationship was limited to *resource* conflict, which arises when goals compete for resources such as time and energy (e.g., *go to more parties* versus *get a second job*). Optimism was not related to *inherent* conflict, in which progress toward one goal inherently undermines progress toward another (e.g., *be personable* versus *do not*

draw attention to myself). Optimists also better balanced expectancy and value against the costs associated with goal conflict (Segerstrom & Solberg Nes, 2006). Among other undergraduates, more optimistic students were better guided by goal importance: the more important the goal, the more effort they dedicated to it and the more likely they were to achieve it. More pessimistic students did not pursue or achieve valued goals to a greater degree than less valued ones (Geers, Wellman, & Lassiter, 2009). Thus, optimism seems to predispose people toward the more efficient and effective pursuit of valued goals.

A particular challenge arises when goals become unattainable. In this case, it is arguably better to disengage from such goals and set new, attainable ones (Wrosch, Scheier, Carver, & Schulz, 2003). Optimists do not find it easier to disengage from unattainable goals than pessimists. They do report, however, that it is easier to find new goals. Optimistic older adults were more likely to replace activities lost to illness and to have higher well-being 1 year later as a consequence (Duke, Leventhal, Brownlee, & Leventhal, 2002; Rasmussen, Wrosch, Scheier, & Carver, 2006). Optimism has been related to both tenacious and flexible goal pursuit, but perhaps surprisingly, flexible goal pursuit accounted for more of optimists' superior SWB than did tenacious goal pursuit (Hanssen et al., 2015).

Healthy (and Unhealthy) Behaviors

The concept of coping has been extended to what has been called preventive or proactive coping (Aspinwall & Taylor, 1997) – processes that promote good health and well-being rather than reacting to adversity. Optimists expect positive outcomes, and take active steps to foster those outcomes while preventing stressors from arising.

One way in which optimists might promote well-being and health is by seeking knowledge about potential risk. Adults higher in optimism knew *more* about risk factors for heart attack (Radcliffe & Klein, 2002). Optimists not only knew more about risks, but also acted to decrease them. Among patients in cardiac rehabilitation, optimists were more successful in lowering saturated fat, body fat, and an index of overall coronary risk while increasing exercise (Shepperd, Maroto, & Pbert, 1996). Five years after surgery, more optimistic cardiac bypass patients were more likely to be taking vitamins, eating low-fat foods, and to be enrolled in cardiac rehabilitation (Scheier & Carver, 1992). Management of HIV risk also provides a context for proactive health-related behaviors. By avoiding certain sexual practices, people can reduce risk of infection. Among HIV-negative gay men, optimists reported fewer anonymous sexual partners than pessimists, suggesting efforts to safeguard their health (Taylor et al., 1992).

In contrast, giving up among pessimists can manifest as health-defeating behaviors. For example, excessive alcohol use is often seen as an escape from problems. Among women with a family history of alcoholism, pessimists were more likely than optimists to report drinking problems (Ohannessian, Hesselbrock, Tennen, &

Affleck, 1993). Pessimists treated for alcohol abuse were more likely to drop out of aftercare and return to drinking than optimists (Strack, Carver, & Blaney, 1987). More pessimistic women were more likely to engage in substance abuse during their pregnancies (Park, Moore, Turner, & Adler, 1997).

In sum, optimists do not stick their heads in the sand. Rather, they attend to and take action to minimize health risks. They selectively focus on risks that relate to potentially serious health problems that apply to them personally (Aspinwall & Brunhart, 1996). For example, optimists were more likely to want to learn the results of genetic testing when they felt they were at high risk, whereas pessimists were less likely (Tabor et al., 2015).

Because optimism predisposes people to engage with rather than disengage from their goals, and engagement results in better long-term outcomes than disengagement (Roth & Cohen, 1986), experience presumably teaches optimists that their own efforts play an important part in the positive futures they expect. For that reason, they are quicker to engage those efforts and to monitor a need for them. Conversely, pessimism can lead people into self-defeating patterns. The result can be less persistence, more avoidance coping, and various kinds of health-damaging behavior. Without confidence about the future, it is hard to remain engaged in life.

Optimism and Physical Health

The preceding sections on SWB and coping included frequent mention of physical health, partly because much of optimism research has been in health psychology. In addition to SWB, optimism has also been linked to physical well-being in itself. The line of thought is that optimists may be less exposed or reactive to the stresses of life than pessimists; lower physiological stress responses and less frequent stressors may in turn result in less physical wear and tear; and the end result may be better physical health.

It is important to note that physical well-being also affects SWB. Health conditions can be major life stressors. Stress responses and development of health conditions provide biological pathways by which optimism might influence SWB. For example, optimism has been linked to lower production of “stress hormones” that affect risk for developing anxiety disorders (Brunello et al., 2003; Dunn & Berridge, 1990; Jobin, Wrosch, & Scheier, 2014). As another example, having a heart attack increases risk for major depressive disorder (Lesperance, Frasura-Smith, & Talajic, 1996), so to the degree that optimism lowers risk for cardiovascular disease, it might also decrease risk for depression.

Several examples of the relationship of optimism to physical health (for a broader treatment, see Rasmussen, Scheier, & Greenhouse, 2009) come from work on cardiovascular health. Carotid intima thickness, a physical marker of the development of heart disease, was measured in middle-aged women. Pessimists had increases over 3 years in intima thickness, but optimists had almost no increase (Matthews et al., 2004). Another project examined patterns of rehospitalization, which is quite

common after CABG (Scheier et al., 1999). Optimism predicted significantly less likelihood of rehospitalization and a longer time before it occurred, independent of self-esteem, depression, and neuroticism (also see Tindle et al., 2012).

Perhaps the most striking evidence linking optimism to cardiovascular health comes from large epidemiological studies. A large sample of Women's Health Initiative participants ($N = 95,000$), all free of cancer and cardiovascular disease at study entry, was followed for 8 years. Optimists were less likely than pessimists to develop coronary heart disease (CHD), were less likely to die from CHD, and had lower total mortality (Tindle et al., 2009). Men and women aged 50 and older in the Health and Retirement Survey ($N = 6808$) were followed for 4 years. Each quartile elevation in optimism was associated with a 32% decrease in the odds of heart failure after controlling for age and sex. After controlling for demographic, behavioral, and biological factors, higher optimism was still associated with a 22% decrease in the odds of heart failure (Kim, Smith, & Kubzansky, 2014).

Healing and immunity may also be affected by optimism. Men were followed after a skin biopsy and were classified as "slow healers" or "fast healers." Fast healers were more optimistic than slow healers (Ebrecht et al., 2004). Optimism also predicted better immune response to the influenza vaccine among older adults (Kohut, Cooper, Nickolaus, Russell, & Cunnick, 2002). Immune responses are tricky to interpret, though, because they are sometimes suppressed when there are other behavioral demands, so as to conserve energy (Segerstrom, 2010). Under very high challenge, optimism has been related to lower, rather than higher, immune responses. This seems to suggest a pattern of greater engagement with demanding goals, resulting in the suppression of immune responses (Segerstrom, 2005, 2006b).

Does Optimism Have a Down Side?

Evidence thus far suggests that optimists have the keys to a happy and fulfilling life. Compared with pessimists, they are less distressed when they encounter adversity. They cope with difficulty by coping in more functional ways, using problem focused coping when there is something to do and accommodative coping when there is not. They accomplish their goals to a greater degree and acquire more resources in doing so. These properties sound quite adaptive.

But are there contexts in which optimism can lead to problems? First, engagement and persistence may not always be the best approach. Consider gambling. Gibson and Sanbonmatsu (2004) reasoned that in gambling, confidence and persistence can be counterproductive. In a slot machine study, they found that optimists had more positive expectations for making money than pessimists did and were less likely to reduce their bets when they lost. Optimists were more likely to gamble because they expected to win; they were not more likely to endorse sensation seeking or distraction as reasons for gambling.

Others ask whether optimists' persistence creates problems because they fail to recognize what they cannot accomplish. Certainly, people sometimes have to recognize

that goals are lost, and that the adaptive course is to give up on them (Wrosch et al., 2003). Does optimism prevent disengagement? As we have already pointed out, optimists did not find it easier to disengage from life goals than pessimists (although they did not find it harder), and they were more flexible in managing their goals, for example, by replacing unfruitful goals (Brandstädter & Renner, 1990; Hanssen et al., 2015; Rasmussen et al., 2006).

Another laboratory study provided experimental control over goals, examining people's willingness to quit tasks on which they were failing. Some engaged in a difficult (in fact, impossible) task for which there was no alternative task to turn to; for others, there was an alternative. With no alternative task, everyone persisted at the impossible task. Given another task, however, optimists gave up on a task they could not master in order to turn to a similar task that they *could* perhaps master. Indeed, when they had been led to think the other task measured a somewhat different skill, they outperformed the less optimistic people on it (Aspinwall & Richter, 1999). Therefore, evidence does not suggest that optimists are *worse* than pessimists at disengaging when it is appropriate.

Second, it has been suggested that optimism might set people up for disappointment when the expected positive future fails to manifest itself (Schwarzer, 1994; Tennen & Affleck, 1987). For example, this explanation has been invoked to explain optimists' lower immune function than pessimists under high stress (e.g., Cohen et al., 1999). Further exploration revealed that these optimists were not more distressed than pessimists, even though their immune function was suppressed (Segerstrom, 2006b). A few studies have explicitly assessed optimism and distress before and after bad news, including *in vitro* fertilization failure, breast cancer diagnosis, and cardiovascular disease relapse. People who were more optimistic before receiving bad news were not more emotionally vulnerable, and in one case, they were protected from increases in distress following bad news (Helgeson, 2003; Litt et al., 1992; Stanton & Snider, 1993). One possible mechanism is that after potential disappointment, optimists are more disposed to think about how things could have been worse (Barnett & Martinez, 2015).

Optimists are not Pollyannas. In addition to the evidence we provided in this section, optimists engage in more acceptance than denial (see *Coping*) and seek more risk information (see *Healthy and Unhealthy Behaviors*). However, there do appear to be very specific cases in which optimism has drawbacks. It is not clear how rare these cases are, or whether other variables limit the range of the problems. The overall evidence that optimists are healthier, wealthier, and have higher well-being suggests that the benefits of optimism outweigh the drawbacks, but this question will doubtless remain a topic for future work.

Concluding Comment

Abundant evidence shows that people with positive expectations for the future respond to difficulty and adversity more adaptively than those with negative expectations. Indeed, optimism seems to confer benefits in both intrapersonal and interpersonal domains, and in the absence and presence of stress. Expectancies influence how people approach both threats and opportunities, and they influence the success and well-being that results.

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Part III
Self-Regulation

Chapter 12

Perspectives on Studying Perceived Control in the Twenty-First Century

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and Joelle C. Ruthig

Abstract Simple beliefs about our ability to influence life events are powerful. Perceived control acts as a cognitive resource to preserve and promote resilience and goal engagement. It cultivates overall quality of life, protecting us when adversity strikes, and it plays a self-regulatory role when pursuing goals. In this chapter, we discuss key developments in the perceived control literature and review empirical findings that provide insights into what qualifies (moderates) and explains (mediates) the role of control beliefs and strategies in fostering well being and goal pursuit. We conclude by describing future applied research that aims to instill perceived control.

Society extols the virtues of control beliefs, as captured in children's bedtime stories such as *The Little Engine That Could* with its refrain "I think I can, I think I can." The folklore surrounding beliefs and strategies that emphasize personal influence permeates our language, and proverbs like "If at first you don't succeed, try, try, try again") are used to encourage a proactive approach to life. A burgeoning research literature suggests that perceived control promotes goal engagement and is central to a happy, healthy mind and body. An apt metaphor for how perceived control relates to well being is found in the *placebo effect*, wherein health benefits accrue from simply anticipating that a drug will be effective. Just as an expectation underlying the placebo effect leads to positive outcomes (e.g., feeling better), so too does an expectation of control over life events. Although much attention has been given to the protective role of perceived control when encountering precipitous crises and major life course transitions, less is known about its equally critical role as individuals navigate through seemingly incidental day-to-day life challenges.

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Then and Now: Setting a New Agenda for the Twenty-First Century

We draw on a seminal analysis by Schulz and Heckhausen (1999), who provided a snapshot of what was known about perceived control at the end of the twentieth century. This offers a historical departure point to consider recent progress in the discipline. Schulz and Heckhausen (1999) described perceived control as a scientific success story, arguing that it is “one of the few constructs that has been effectively applied to individuals of all ages, from infancy to old age” (p. 139). As part of a *new agenda*, they recommended giving the highest priority to research on the decline of perceived control at the end of life and also encouraged a shift away from examining simple correlates to studying more complex relations. They proposed a greater emphasis on studying the motivational role of control in goal striving and recommended a more nuanced perspective that distinguishes between primary and secondary control, concepts described later in more detail.

Have researchers embraced this new agenda? In answering this question, we review studies that have been conducted on older adults. This is not intended to minimize the importance of perceived control at early ages or vital developmental questions addressed elsewhere, such as how perceived control evolves from birth to late life (see Chipperfield, Perry, & Stewart, 2012; Vargas Lascano, Galambos, Lachman, & Krahn, 2015). Rather, we show how researchers have embraced this critical part of the new agenda by reviewing studies on perceived control in adults in their 8th and 9th decade of life and beyond.

The Study of Perceived Control: Concepts and Methods

Researchers have introduced many concepts to study perceived control, including internal locus of control, self-efficacy, and mastery, among others (Skinner, 1996). Multiple approaches have been taken, some that examine control beliefs and strategies used to attain a desired future goal or to prevent an undesired outcome. Others emphasize explanations (causal attributions) for past outcomes that are classified as controllable vs. uncontrollable (e.g., effort vs. ability).

The scientific literature on perceived control has grown in part due to increasingly accessible databases from large-scale field studies. Many countries support comprehensive databases derived from surveys and interviews, including, for example, the *Midlife in the United States* study (e.g., Lachman, Röcke, Rosnick, & Ryff, 2008) and the *German Socio-Economic Panel Study* (e.g., Gerstorf et al., 2014). Pivotal insights on perceived control have also come from Canadian studies such as the *National Population Health Survey of Canada (NPHS)*, the *Canadian Aging Research Network (CARNET)*, and the *Aging in Manitoba (AIM)* study and its satellite *Successful Aging Study (SAS)* (Bailis, Segall, Mahon, Chipperfield, & Dunn, 2001; Chipperfield, Perry, & Menec, 1999; Chipperfield & Segall, 1996).

The *AIM* and *SAS* studies contain well-established global (locus of control) and domain-specific (e.g., health locus of control) scales as well as simple quantitative appraisals of control (influence) over various life domains (e.g., leisure, pain) obtained during face-to-face interviews. Other novel approaches were also adopted: (a) to create a broad, inclusive perceived control index described later; (b) to examine control appraisals in highly contextualized circumstances (e.g., when managing health care or restricted by arthritis); (c) to assess causal attributions that tap into the perceived controllability of causes for setbacks in multiple contexts (e.g., social deficits, health problems, physical inactivity); and (d) to measure control strategies that foster goal engagement.

The *AIM* study has other distinguishing features beyond its inclusion of rich measures of control. It is notable for its size ($n = 8982$) and length of follow-up (six interviews over 35 years, 1971–2006), which will be extended another decade (1971–2016) with the acquisition of new data on survival status. The study has yielded high response rates and representative samples due to the use of stratified random sampling procedures, intensive recruitment procedures, and rigorous tracking methods that foster retention (Chipperfield, Havens, & Doig, 1997). Finally, the *SAS* study is unique in that it supplemented correlational data with experimental procedures in which participants responded to hypothetical scenarios (e.g., hip fracture, heart attack, hearing loss) that manipulated various aspects of the situation (e.g., controllability of causes).

Thus, the *AIM* and *SAS* studies are rare data sources for studying perceived control in large, longitudinal, and representative samples of older adults, some of whom are centenarians. Past analyses of these data have imposed rigorous controls for critical background factors (e.g., education, age, gender, prior health status) when examining a diverse range of outcomes, including psychological and subjective well being (e.g., depression, life satisfaction). Other outcomes include behavioral (e.g., physical activity), physiological (e.g., blood oxygen saturation, pulse), and objective gold-standard measures (physician visits, hospital admissions, use of home care, and mortality) obtained by linking the *AIM* and *SAS* data to provincial and national administrative registries containing reliable and comprehensive indicators.

Analyses of these large-scale databases have addressed pivotal issues such as the stability or variability in perceived control over several months (Chipperfield, Campbell, & Perry, 2004). Consistent evidence of variability has emerged from USA data on weekly changes in perceived control (Eizenman, Nesselroade, Featherman, & Rowe, 1997). German and USA data have also revealed variability in age trajectories, indicating that perceived control does not always decline with age (Infurna, Gerstorf, & Zarit, 2011), at least not in all domains (Lachman & Weaver, 1998).

The following review highlights findings that have emerged primarily, but not exclusively, from analyses of Canadian databases. Some analyses involved large representative samples, whereas others include only targeted individuals such as those who faced challenges in the domains of daily achievement (e.g., difficulties opening cans), social affiliation (e.g., loneliness), and health (e.g., chronic conditions, acute cardiovascular events).

Research on the Correlates and Consequences of Perceived Control for Well Being

Our subsequent literature review does not consider the antecedents of control beliefs, which include demographic factors such as socioeconomic status (Bailis et al., 2001), nor does it address consequences that are found across a vast array of cognitive outcomes such as memory performance (Lachman & Andreoletti, 2006). Rather, because our goal is to consider the role of perceived control in promoting a happy and healthy life, our focus is limited to studies that examine psychological and physical well being as outcomes.

At the end of the twentieth century, Schulz and Heckhausen (1999) noted it would be a formidable task to review the vast literature on the correlates and consequences of perceived control. The task is even more daunting today, as suggested by a PSYC Info search that shows the number of studies on perceived control and well being has increased nearly every year since 2000 (Fig. 12.1). Moreover, the overall count of 9575 published scholarly articles is a vast underestimate since it does not include studies incorporating less commonly used perceived control labels (e.g., autonomy) and many relevant keywords for well being (e.g., positive affect).

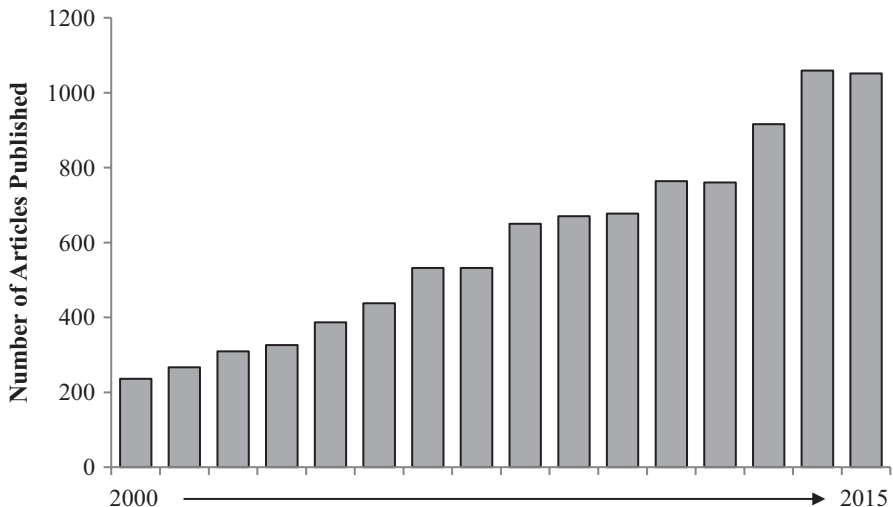


Fig. 12.1 Number of perceived control articles published between 2000 and 2015 as identified in a literature search (keywords = perceived control, self-efficacy, mastery, internal control *and* well being, health, depression, optimism, pessimism, self-esteem, happiness, emotions, survival)

Replicating and Extending Main Effects: Perceived Control → Well Being

An early classic intervention study suggested that benefits accrue from encouraging perceptions of control among nursing home residents (Langer & Rodin, 1976). This finding has been replicated in more recent innovative laboratory studies that manipulated objective control (e.g., Bollini, Walker, Hamann, & Kestler, 2004). The strong internal validity of such experimental studies allows for causal conclusions regarding the effects of perceived control on psychological and physical well being.

Experimental research has been complemented by field studies with stronger external validity. Many initial findings that emerged from the early field studies based on small convenience samples have been replicated and extended in analyses of large-scale databases. For example, the analysis of a large ($n = 11,110$) representative NPHS sample by Bailis et al. (2001) replicated negative associations between perceived control (mastery) and global measures of depression ($r = -.25$) and distress ($r = -.46$). Perceived control was a stronger correlate of these critical indicators of subjective well being than influential sociodemographic variables (e.g., age, gender), health behaviours (e.g., physical activity), and health status (e.g., chronic conditions). More recently, the range of outcomes has been extended beyond broad global measures (e.g., depression) to include daily negative discrete emotions (e.g., shame, boredom, anger, fear, frustration, irritability). High levels of perceived control have been shown to be associated with reduced frequency of such negative emotions (Ruthig, Chipperfield, Newall, Perry, & Hall, 2007; Ruthig, Chipperfield, Perry, Newall, & Swift, 2007).

Researchers also began to examine positive outcomes when studying subjective well being, augmenting the previous emphasis on measures such as depression and distress. This shift in focus was propelled by the positive psychology revolution that transformed a preoccupation with studying the dark side of life to an analysis of psychological processes that promote flourishing (Seligman & Csikszentmihalyi, 2000). Notably, not only were control beliefs shown to predict global measures of subjective well being including life satisfaction and optimism, but they predicted discrete positive emotions (e.g., pride, happiness, contentment, relief, gratitude, and hope) experienced on a day-to-day basis (Lang & Heckhausen, 2001; Menece & Chipperfield, 1997a; Ruthig, Chipperfield, Perry, et al., 2007; Ruthig, Trisko, & Chipperfield, 2014).

Research also suggests control beliefs foster subjective well being as measured by optimism and positive expectations with regard to major life events and simple daily challenges. In a scenario study that asked participants to imagine having a serious setback, perceived control predicted a unique form of optimism expressed by a low estimated risk of having a future hip fracture (Ruthig, Chipperfield, Bailis, & Perry, 2008; Ruthig, Chipperfield, Newall, Perry, et al., 2007). Similarly, in the CARNET study, it was shown that attributing routine daily difficulties with products (e.g., opening cans, reading instructions) to personal (uncontrollable) deficits was associated with less optimism and with expecting such problems to be unsolvable in the future (Chipperfield & Segall, 1996).

Control beliefs appear to be essential to subjective well being in a social context (Krause & Shaw, 2000; Ruthig, Trisko, & Stewart, 2012). For example, mastery predicted perceived social support regarding access to a confidant, suggesting it fosters social well being (Bailis et al., 2001). Moreover, viewing deficits in social affiliation as due to controllable causes (lack of effort) predicted a lower likelihood of being lonely 5 years later (Newall, Chipperfield, Clifton, et al., 2009). In fact, a change in perceived control over time was among the best discriminators of a change in loneliness. Individuals who reported increased perceived control were less likely to *become lonely* and more likely to *overcome loneliness* (Newall, Chipperfield, & Bailis, 2013). Access to multiple assessments over time provides confidence that perceived control serves as a cognitive resource when confronting social deficits or setbacks by helping to maximize the likelihood that one will overcome loneliness. This hopeful message counteracts the proposition that lonely people see themselves as “powerless to change their predicament” (Heinrich & Gullone, 2006).

In addition to fostering subjective well being, control beliefs appear to facilitate a range of adaptive behaviors. Our studies have replicated a linkage between perceived control and exercise in a large representative sample (Menec & Chipperfield, 1997a), and have shown that control beliefs relate to leisure behaviors (e.g., volunteering, attending cultural events; Menec & Chipperfield, 1997a), social activities (Newall, Chipperfield, Clifton, et al., 2009), and health behaviors (Chipperfield, Perry, Pekrun, Barchfeld, et al., 2016; Stewart, Chipperfield, Perry, & Hamm, 2016). Control beliefs may also play a role in behaviors that are essential to everyday functioning. This is suggested by their inverse relationship to ongoing activity restrictions, as well as positive relationships with functional independence (Chipperfield et al., 2004; Ruthig, Chipperfield, Newall, et al., 2007) and physical activity that occurs on a day-to-day basis, as assessed both subjectively and objectively with accelerometers (Bailis, Chipperfield, Perry, Newall, & Haynes, 2008; Ruthig, Chipperfield, Newall, et al., 2007). Together, these findings imply that perceived control enhances functional well being.

A wealth of longitudinal research suggests that perceived control promotes physical health (e.g., Infurna et al., 2011; Infurna & Okun, 2015). Control beliefs have been shown to predict better global self-rated health (e.g., Chipperfield et al., 2004; Menec, Chipperfield, & Perry, 1999) and to inversely predict illness severity, the number of chronic health problems (e.g., diabetes, cancer; Menec & Chipperfield, 1997a, 1997b), and a diverse assortment of physical symptoms such as stomach pain, headaches, and dizziness (Ruthig, Chipperfield, Newall, et al., 2007). Perceived control has also been directly linked to physiological factors. For example, an experimental study that used salivary cortisol sampling methods showed a reduced cortisol response among participants who believed they could (vs. could not) control a stressor (Bollini et al., 2004).

Related studies of causal attributions also support the linkage between control beliefs and physical well being. For example, attributing routine everyday tasks (e.g., opening containers) to uncontrollable causes (personal deficits) related to poorer physical health (Chipperfield & Segall, 1996). Similarly, the extent to which one attributed a severe chronic illness (e.g., heart disease) to an uncontrollable cause

(old age) was associated with worse subsequent health symptoms (Stewart, Chipperfield, Perry, & Weiner, 2012). This *to-be-old-is-to-be-ill* belief also predicted physician visits and hospitalizations over 3 years (Stewart et al., 2016).

Finally, in addition to fostering quality of life, perceived control relates to quantity of life. Deficits in control beliefs predict mortality, as first demonstrated nearly 25 years ago in a large sample ($n > 4000$) with a protracted 12-year follow-up period (Chipperfield, 1993). Converging evidence comes from fMRI studies showing that opportunities to exert control (choice) affected reward processes in the brain thought to be adaptive for survival (Leotti & Delgado, 2011). Findings from interview studies based on large samples have replicated those from earlier research, showing that perceived control predicts longevity over follow-up periods as long as 19 years (Chipperfield, Newall, et al., 2012; Infurna, Ram, & Gerstorf, 2013; Menec et al., 1999).

The (uncontrollable) *to-be-old-is-to-be-ill* attribution also predicts mortality (Stewart et al., 2012): Those who endorsed (vs. did not endorse) an uncontrollable cause for their illness were more than twice as likely to die within 2 years (36% vs. 14%). It is noteworthy that the size of this effect ($\beta = .24$) was stronger than that observed for health status ($\beta = .21$) and comparable to chronological age ($\beta = .25$). These findings show that older adults' beliefs about the controllability of their health may be as important to longevity as age itself. This has implications for physician-patient discourse, suggesting that physicians should avoid telling patients that their health problems are simply due to old age.

Mediators and Moderators of the Perceived Control → Well Being Relationship

Access to large-scale longitudinal databases and improved statistical approaches have enabled more powerful tests of what explains (mediates) and qualifies (moderates) the effects of perceived control. This has allowed researchers to go beyond an analysis of the main effects of perceived control on quantity and quality of life. Various mediators that help to explain the benefits of perceived control include motivational (e.g., compensatory strategies), affective (e.g., anxiety), and behavioral (e.g., exercise) variables (Lachman, 2006). For example, the effects of locus of control on perceived physical well being were found to be mediated by exercise (Menec & Chipperfield, 1997a). More recent studies have extended the study of behavioral mechanisms using a wide range of indicators. For instance, lifestyle health behaviors emerged as a mediator of the relationship between attributions and well being: The *to-be-old-is-to-be-ill* (uncontrollable) attribution predicted deficits in health behaviors, which in turn predicted more physician visits and a greater likelihood of hospitalization (Stewart et al., 2016). Attributing deficits in affiliation to a controllable cause (lack-of-effort) also appeared to foster greater social participation that

in turn predicted less loneliness 5 years later (Newall, Chipperfield, Clifton, et al., 2009).

Thus, many types of behaviors (exercise, lifestyle, social participation) mediate the effects of control beliefs on broad quality of life indicators (loneliness, subjective health, use of health care resources). This implies that treatments targeting control beliefs can have cascading effects (see Lachman, 2006). For instance, strengthening perceived control should increase exercise behaviours that in turn may trigger adaptive changes in psychological and physical well being.

The effects of control beliefs are also moderated by various factors. In our early study on 12-year mortality (Chipperfield, 1993), perceived control only predicted reduced odds of mortality for those in poor or average health. Another study of individuals who had fallen showed age acted as a moderator: It was only among the old-old (85+ years old) that perceived control predicted fewer negative emotions, better physical health, more physical activity, and less activity restriction (Ruthig, Chipperfield, Newall, et al., 2007).

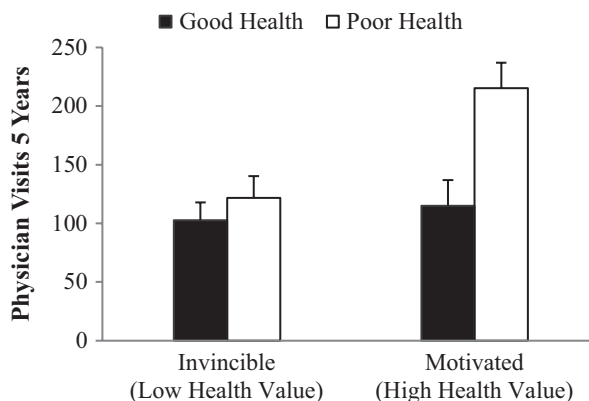
Functional status also qualified the benefits of perceived control among older adults experiencing arthritis, the most common chronic disease in old age (Chipperfield & Greenslade, 1999). Perceived control was associated with less frequent physician visits, fewer lab tests, and shorter hospital stays, but the associations were limited to those who were highly restricted by their arthritis. The estimated costs of hospital stays were double for those with low relative to high perceived control, indicating that control beliefs have implications for the costs of health care.

In another study, functional status moderated the benefits of perceived control on subjective health; the benefits were limited to those who were dependent on others for assistance with activities of daily living (Menec & Chipperfield, 1997b). Age further qualified the relationship in that perceived control predicted better health only among the oldest participants who were also dependent on others. This implies that appraisals of control are most beneficial when they are most needed—at junctures in the life course when individuals must adapt to multiple challenges that create conditions of double- or even triple-jeopardy.

Beyond the moderating role of illness, advanced age, and functional restriction, psychological factors are important in understanding the effects of perceived control. For example, studies in the social and health domains reveal that the value (importance) one ascribes to an outcome moderates the effects of control beliefs (Krause & Shaw, 2000). Motivation may be intensified by complementary appraisals involving high perceived control and high value, as implied by a recent study suggesting that this mindset fostered a strategic seeking of health care (Chipperfield, Perry, Pekrun, Barchfeld, Lang, & Hamm, 2016).

This is suggested in Fig. 12.2 that compares individuals with mindsets characterized by high control but varying in the extent to which they value good health. Individuals with a *motivated* mindset (high perceived control, high value) who had poor health visited their physicians twice as frequently over a five-year period as those who had good health. This strategic seeking of care was in contrast to the pattern found for individuals who viewed their health as controllable but ascribed little value to it. Individuals with this *invincible* mindset (high perceived control, low value) that might have fostered a mistaken sense of invulnerability, did not seek care strategically when they needed it. Even when they were in poor health they failed to

Fig. 12.2 Physician visits for individuals with invincible vs. motivated mindsets, who differed in health status (good vs. poor) (Adapted from J. G. Chipperfield et al. (2016), p. 9. Copyright 2016 by the authors)



visit their physicians more often than their healthy counterparts. Perhaps an *invincible* mindset fuels procrastination and self-neglect. To the extent that this happens repeatedly over the life course, the negative consequences of an invincible mindset may be exacerbated beyond those that befall the fearless teenager who exaggerates personal control and ignores (devalues) health and safety.

In another study, the invincible (vs. motivated) mindset predicted a higher probability of death over a 12 year period (Chipperfield, Perry, Pekrun, Hamm, & Lang, 2017). Thus, when high perceived control is paired with low health value, it may not only undermine quality of life, but also quantity of life. Although this simplified overview of findings ignores the comparisons of mindsets characterized by low perceived control (see Chipperfield et al., 2016), it illustrates the virtue of considering *complex mindsets* that are characterized by multiple cognitive factors such as appraisals of control and value (Pekrun & Perry, 2014). This broader perspective is one that we return to later in a discussion of goal engagement.

Primary Control (PC) and Secondary Control (SC) → Goal Engagement and Well Being

The conventional view of perceived control was extended with the introduction of a *two-process model of control* (Rothbaum, Weisz, & Snyder, 1982) that distinguished between primary control and secondary control. Researchers embraced Schulz and Heckhausen's (1999) recommendation to pursue this line of discovery, as illustrated by a nearly four-fold increase in the number of studies that included primary control (PC) and/or secondary control (SC) in the titles or keywords (67 in 1980–1999; 260 in 2000–2015). PC is defined as the conceptual analogue to classic notions of goal-directed perceived control (influence). The new PC label was often used interchangeably with classic labels, and traditional perceived control measures (e.g., beliefs about influence) were commonly used as proxies to assess PC.

The two-process model (Rothbaum et al., 1982) was transformative in that it offered a new perspective to separate PC from SC, which captured an accommodative psychological approach to dealing with challenge. Presumably one can soften

the blow of failure and protect a psychological sense of control by adopting accommodative SC beliefs, hopes, goals, expectations, and attributions. The two-process model states that perceived control can not only be bolstered by beliefs about proactively influencing the environment, but also by SC that allows one to “go with the flow” and “fit in” with the environment. This implies there is a desired and coveted psychological state of control that exists even in the sobering instances when goals cannot be achieved, underscoring the need to assess an overarching psychological perception of control reported both when one believes direct influence *is* and *is not* possible (Chipperfield, Newall, et al., 2012).

Different forms of SC were originally proposed (Rothbaum et al., 1982), and the concept was subsequently reconceived (fit-focused SC; Morling & Evered, 2006) and extended (compensatory and selective SC, Heckhausen & Schulz, 1995). However, we focus on commonalities rather than the various distinctions across these different forms of SC. All forms (with the exception of selective SC that is discussed later) are underpinned by accommodative, compensatory, and self-protective reconstrual processes that operate when dealing with challenge.

Researchers have often examined individual’s reconstructions of reality to assess SC beliefs. For example, a commonly used index of SC is *positive reappraisal* that reflects a process of adjusting to adversity (believing that good will come from tragedy). An optimistic social comparison (believing that one is better off than other) is also thought to capture the self-protective and self-enhancing aspect of SC (Bailis & Chipperfield, 2006). Adaptive folk beliefs involving reinterpretations of reality when approaching everyday life challenges are included in global SC scales (Chipperfield, Newall, et al., 2012). These scales capture condensed wisdom regarding adjustment (e.g., “Negative experiences can be a blessing in disguise”) and acceptance of things evolving naturally without personal intervention (e.g., “Things will all work out in the end”). Such global measures of SC are useful because these expressions are infused in everyday language and encapsulate accommodative thinking while avoiding any explicit reference to control.

Direct measures of global control strategies have also been developed, such as the Optimization in Primary and Secondary (OPS) Control scale (Heckhausen & Schulz, 1998). Included are multiple items such as optimistic social comparisons, phrased as strategies in contrast to beliefs. For example, a man diagnosed with heart disease may strategically compare himself to his worse-off neighbor who is dying of cancer. Domain-specific measures have also been created, including the Health Engagement Control Strategy (HECS) scale that focuses on the health context (Wrosch, Schulz, & Heckhausen, 2002). A task-specific control strategy (TSCS) scale (e.g., Chipperfield & Perry, 2006) has been designed using a highly contextualized approach to assess the strategies used to respond to challenges with major tasks (e.g., house work, yard work) and personal tasks (e.g., getting in/out of the bathtub). Strategies to deal with challenges arising due to various causes (aging in general, health burdens, activity limitations) are assessed in several domains relevant to daily life (achievement, leisure, affiliative).

Descriptive Findings: PC and SC Control Beliefs and Strategies

Descriptive analyses have revealed several insights into older adults' control beliefs and strategies. First, in everyday life, it is common for individuals to simultaneously hold multiple beliefs and strategies. Over one third simultaneously endorsed global SC beliefs about acceptance and adjustment (Swift & Chipperfield, 2013) and adopted a combination of SC and PC strategies (Chipperfield et al., 1999).

Second, a proactive approach to goal engagement appears to be sustained into late life. PC strategies were often used when approaching daily difficulties with personal tasks (e.g., getting in and/or out of the tub) that were due to health problems (Chipperfield & Perry, 2006; Chipperfield, Perry, Bailis, Ruthig, & Chuchmach, 2007). PC strategies were also exclusively used by a large proportion (42%) of individuals struggling with age-related task challenges (Haynes, Heckhausen, Chipperfield, Newall, & Perry, 2009). Moreover, they were used predominantly (36%) when facing challenging tasks involving house or yard work (Chipperfield et al., 1999).

Third, gender differences have emerged in the endorsement of adaptive SC folk beliefs (Swift, Bailis, Chipperfield, Ruthig, & Newall, 2008) and SC strategies to deal with challenging tasks (Chipperfield et al., 1999). Whereas the majority of men (>50%) relied exclusively on PC strategies when facing these challenges, fewer women (<30%) did so. Men also adopted PC strategies more so than women to deal with task challenges that were the result of poor health (Chipperfield et al., 2007).

There also seemed to be a tendency for women to use a blend of strategies. They combined the use of PC and SC strategies when approaching challenges with household and yard tasks (Chipperfield et al., 1999). Women also simultaneously combined PC with a variety of SC strategies (downgrading expectations, optimistic social comparisons, and positive reappraisals) when dealing with age-related task challenges (Haynes et al., 2009). They also tended to use a blend of strategies when facing task challenges caused by health problems (Chipperfield et al., 2007). For example, from a variety of SC strategies, women favored the optimistic social comparison strategy, viewing themselves as better off than others. In this study, men did not express a preferred SC strategy, but instead persisted in PC goal striving regardless of whether they *had* or *had not* experienced a health crisis (heart attack or stroke). These findings suggest that men have greater difficulty in adjusting their PC striving for daily task challenges. Instead, they seem to engage in *blind persistence*. This inflexible, *do-it-yourself* approach may become maladaptive in later life when proactive PC strategies are no longer effective.

Beneficial Consequences of Primary Control (PC) and Secondary Control (SC) for Well Being

With the introduction of the two-process model, researchers began examining the beneficial consequences of PC and SC for well being. Since the benefits of PC can be inferred from the extensive existing literature on perceived control, our focus in this section is on studies examining the benefits of SC (e.g., positive reappraisal, optimistic social comparison, adaptive folk beliefs) for various indicators of well being. To begin, SC has been shown to predict global measures of overall life satisfaction and positive emotions like happiness (Chipperfield, Newall, et al., 2012; Hall, Chipperfield, Heckhausen, & Perry, 2010; Swift & Chipperfield, 2013). It has also been shown to relate inversely to perceived stress and depressive symptoms (Stewart, Chipperfield, Ruthig, & Heckhausen, 2013) as well as to the negative emotion of regret (Newall, Chipperfield, Daniels, Hladkyj, & Perry, 2009). These findings may imply that SC protects against the escalation of negative affect, although the SC-emotion link may be bidirectional, as suggested by research showing positive affect also predicts elevated SC for individuals with high causal uncertainty (Tobin & George, 2015; Tobin & Raymundo, 2010).

SC may also be beneficial for physical well being. SC folk beliefs and SC strategies have been shown to relate to better self-reported health, lower severity of chronic conditions (Chipperfield et al., 1999; Hall et al., 2010; Swift & Chipperfield, 2013), fewer hospital admissions, and shorter hospital stays several years later (Chipperfield, Newall, et al., 2012; Chipperfield & Perry, 2006). Moreover, SC folk beliefs and SC strategies positively predicted survival up to 9 years later (Chipperfield, Newall, et al., 2012; Hall et al., 2010).

Mediators and Moderators of the Benefits of SC on Well Being

Insights into the beneficial role of SC have emerged from studies that examined mediators and moderators. As shown in Fig. 12.3, emotions have been identified as explanatory mechanisms to account for why SC enhances well being. In particular, SC beliefs (positive reappraisal) predicted less frequently experienced regret, which in turn predicted increased life satisfaction (Newall, Chipperfield, Clifton, et al., 2009).

Cognitive factors may also act as mediators, as illustrated in a recent study that measured an overarching psychological perception of control reported *both* when one believes direct influence *is* and *is not* possible. SC (folk beliefs) predicted this inclusive index of perceived control, which in turn predicted hospital admissions and five-year survival (Chipperfield, Newall, et al., 2012). This study advanced the SC literature in several important ways.

First, the findings provided support for a key premise of the two-process model: that SC should foster a psychological perception of control. Although a

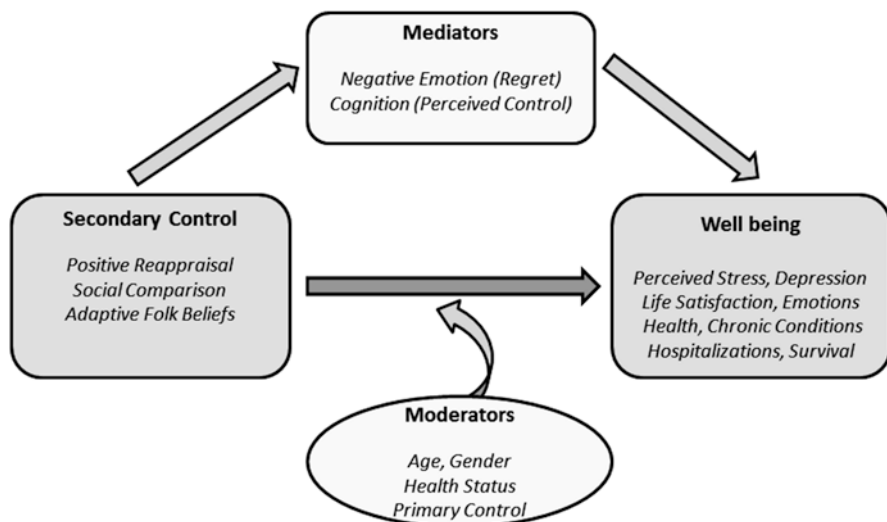


Fig. 12.3 Factors that mediate and moderate the effects of secondary control on well being

review of 13 studies conducted a decade ago had not found consistent support for a correlation between SC and perceived control (Morling & Evered, 2006), these previous studies employed traditional perceived control measures that failed to capture the psychological sense of control existing when one perceives little or no influence over outcomes. Our findings illustrate the need for further examinations of the link between SC beliefs and inclusive measures of perceived control.

Second, our use of an inclusive perceived control construct offered added conceptual value by helping to explain the *control paradox* in which older adults continue to feel they are “in control” even when they report a lack of influence (Chipperfield, Newall, et al., 2012). Those with high (inclusive) perceived control were *more than twice* as likely to survive as those with low control (36% vs. 15%). The importance of this psychological factor is further illustrated by the magnitude of the perceived control effect ($\beta = -.16$) on mortality, which was as large as the effects of other commonly accepted risk predictors such as age ($\beta = .18$) and gender ($\beta = -.17$). Moreover, the added value of our inclusive index of perceived control was further evident in that it predicted survival better than a traditional measure of perceived control (influence).

Turning to a discussion of moderators, research shows there are important boundary conditions that qualify the benefits of SC, including demographic characteristics (age, gender) as well as health status (see Fig. 12.3). Benefits appear to increase with advancing age, as suggested by a finding that SC (positive reappraisal) predicted well being 5 years later only for the oldest individuals (Hall et al., 2010). In another study, SC strategies were also associated with better perceived health, but only among older adults who were 80+ years old (Chipperfield et al., 1999).

Studies examining the moderating role of gender suggest that the benefits of SC are more likely for women than men. SC strategies predicted fewer hospitalizations

and shorter stays only for women (Chipperfield & Perry, 2006). The benefits of SC folk beliefs were also limited to women in an analysis targeting individuals with serious health problems (Swift et al., 2008).

Health status was identified as a moderator in a study showing that SC strategies (positive reappraisal) predicted subjective well being 5 years later, but only for individuals who had (vs. had not) experienced acute health events (Hall et al., 2010). Perhaps SC had no benefit for those who did not experience acute health events because SC was not needed. This logic is explicitly captured in the *back-up model* that proposes SC is only needed or adaptive when PC (influence) is low (Thompson et al., 1998).

Several studies that find an effect of SC only at low levels of PC support the back-up model and the implication that PC moderates the benefits of SC on well being. For example, SC (optimistic social comparisons) predicted more life satisfaction and less perceived stress and depression as well as a lower risk of 2-year hospitalization and 6-year mortality, but only for individuals low in PC (Bailis, Chipperfield, & Perry, 2005; Stewart et al., 2013). Moreover, SC (self-enhancement) predicted a pronounced braking effect on the development of new chronic health conditions over 6-years, but only if PC was low (Bailis & Chipperfield, 2002; Bailis et al., 2008).

Insights have also come from studies examining the consequence of more complex mindsets that are characterized by a combination of SC and PC (e.g., Chipperfield et al., 1999). In one study, psychological benefits (more positive emotions and less perceived stress) were found for individuals who simultaneously endorsed a broad mix of strategies emphasizing both PC and SC (Haynes et al., 2009). This suggests that it is adaptive to engage in multiple strategies that include modified goal pursuit and compensation for failure. Findings also showed that the benefits depended on an effective match between the control strategies and actual opportunities for control (i.e., levels of restriction), implying that the benefit of control strategies relies on their congruence with objective opportunities in the situation.

Finally, insights have emerged in several studies examining a unique form of SC strategies unlike those previously described. Selective SC strategies involve motivational-focused thinking that sustains volitional goal commitment (Heckhausen, Wrosch, & Schulz, 2010), thereby complimenting goal-directed PC strategies. When combined, these strategies form an adaptive mindset that appears to foster goal engagement and well being (e.g., Wrosch et al., 2002; Wrosch & Schulz, 2008). However, detrimental consequences may follow from a *conflicted engagement* mindset that is characterized by countervailing control strategies (high selective SC combined with low PC). This mindset predicted poorer cardiorespiratory health (lower blood oxygen saturation) over a three-year period, and the relationship was mediated by deficits in everyday physical activity (Hamm, Chipperfield, Perry, Heckhausen, & Mackenzie, 2014).

Conclusions and Recommended Directions for Future Research

Future research on the consequences of control beliefs and strategies requires a broad perspective. This is implied by the paradoxical findings that have emerged from our analysis of complex mindsets involving a simultaneous endorsement of multiple control beliefs and/or strategies. A narrower perspective that examines control beliefs and strategies in isolation may paint an incomplete picture, obscuring effects such as the compromised cardiorespiratory health we found for individuals with a *conflicted engagement* mindset as well as the insufficient seeking of health care and increased probability of death we found for individuals with an *invincible* mindset.

Although our analyses of complex mindsets suggest that control beliefs can be detrimental, this should not deflect attention away from their undeniable adaptive role. Control beliefs are protective when facing adversity such as serious and dreaded setbacks like falls and illness. More generally, they enable people to flourish, cultivating a happy and healthy mind and body and a long, prosperous life. However, a theme that has run throughout this chapter is that perceived control is not just fundamental to the big things in life, it is also profoundly important to the small things. Perceived control appears to promote discrete positive emotions (e.g., pride, gratitude, hope) and minimize negative emotions (e.g., shame, boredom, fear). It also protects against specific symptoms that erode physical daily comfort (e.g., stomach pain, headaches, dizziness), promotes simple everyday physical activity, and encourages adaptive approaches to seemingly trivial, but repetitive obstacles.

A pressing challenge for future research is to identify ways to promote control beliefs. To address this issue, we are developing a cognitive intervention based on attribution theory (Weiner, 1985, 2006). The attribution-based motivation treatment will be designed to replace older adults' uncontrollable attributions for daily challenges (e.g., old age, bad memory) with adaptive controllable attributions (e.g., insufficient effort, poor strategy). Extensive evidence shows that attribution-based treatments bolster perceived control, motivation, goal striving, and performance in young adults (Perry, Chipperfield, Hladkyj, Pekrun, & Hamm, 2014; Perry & Hamm, 2017; Perry, Stupnisky, Hall, Chipperfield, & Weiner, 2010). Thus, we anticipate that reshaping older adults' causal explanations will also have positive consequences at critical junctures in later life.

To conclude, as we move forward in the twenty-first century, researchers should use a perspective that is broad enough to incorporate both primary and secondary control and to identify complex mindsets. This will help to clarify the pivotal role of perceived control as individuals face major challenges and as they navigate through small but potentially corrosive daily challenges. Overall, this perspective will promote an understanding of how perceived control fosters engagement, independence, resiliency, and prosperity in everyday life.

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Chapter 13

Means, Ends, and Happiness: The Role of Goals for Subjective Well-Being

Marie Hennecke and Veronika Brandstätter

Abstract Through the pursuit of goals people take charge of their own lives. Unsurprisingly, personal goals also have important implications for subjective well-being. The current chapter reviews the conditions under which and the processes through which goal pursuit fosters or hinders the experience of subjective well-being. It provides answers to questions like: Does pursuing goals make people happy? And is the pursuit of all kinds of goals conducive of happiness or what is the role of goal content for happiness? Does it matter whether individuals try to avoid bad outcomes or try to approach good outcomes through their goals? Does it make people happier to pursue concrete goals and to focus on the process or to pursue abstract goals and have the desired outcome in mind? Should individuals always stick to their goals or can it be useful to disengage? And finally: Does what we know about goals and well-being hold universally across all cultures?

Introduction

Along with life and liberty, the pursuit of happiness is considered one of the “unalienable rights” of all human beings in the United States’ Declaration of Independence. How happiness may be pursued and ultimately achieved has occupied the minds of philosophers such as Aristotle, Confucius, or William James for centuries. Even the physicist Albert Einstein has spoken out about the topic. Allegedly, he once said “If you want to live a happy life, tie it to a goal, not to people or things” (Straus, 1979). Einstein was probably right most of the time when it came to physics. But what about the validity of his statement on happiness? The current chapter reviews what psychologists have found out about how and under which circumstances the selection and the pursuit of goals have positive effects on a person’s subjective well-being (SWB). (For an overview, Table 13.1 at the end of this chapter summarizes some of the most important findings in this area of this research.) But let us first introduce the main constructs in this chapter.

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A *goal* can be defined as a cognitive representation of a desired endpoint that guides behavior (e.g., Austin & Vancouver, 1996). This representation bears information about the outcomes that a person desires to attain and the means by which the person can attain these outcomes (e.g., Kruglanski et al., 2002). The concept of goals encompasses other constructs like current concerns (Klinger, 1977), personal strivings (Emmons, 1986), or personal projects (Little, 1983). As goals are generally consciously accessible, they can be assessed through self-report. Typically, a mixed approach of idiographic and nomothetic techniques for their assessment is taken: People first report which goals they currently pursue and then evaluate these goals on different dimensions in order to assess, for example, their thematic content (e.g., achievement, affiliation, power) or expectancy of success (e.g., Emmons, 1986; Little, 1983; Pöhlmann & Brunstein, 1997).

Goals determine how we attend to world around us (e.g., Vogt, De Houwer, Moors, Van Damme, & Crombez, 2010), they determine what information we keep in our memory (Goschke & Kuhl, 1993), they influence the way we think and feel about physical objects and social partners (Ferguson & Bargh, 2004; Fitzsimons & Shah, 2008), and they give structure and meaning to our lives (Klinger, 1977). Their consequences on our lives are well-documented in multiple domains of human behavior, including health (e.g., Mann, De Ridder, & Fujita, 2013), work (e.g., Lee, Locke, & Latham, 1989), relationships (e.g., Impett et al., 2010), and personality development (e.g., Hudson & Roberts, 2014).

The present chapter contends that goal pursuit is also a core determinant of SWB. In this research, usually, two major components of SWB are considered: First, there is the hedonic component of SWB. It is composed of a person's experience of positive affect and negative affect, both of which are independent at the trait level (Diener & Emmons, 1984; Lucas, Diener, & Suh, 1996). Second, there is the cognitive component of SWB, a person's judgment of his or her life satisfaction (e.g., Diener, Emmons, Larsen, & Griffin, 1985). Life satisfaction, positive affect, and negative affect can all be empirically distinguished from each other while also loading onto a single higher-order factor of SWB (Lucas et al., 1996). Most of the research that we will refer to in this chapter has used indicators of life satisfaction, and/or positive and negative affect. Note, however, that some of the studies we review have looked at other indicators, such as depression or physical symptoms.

Good Goals, Bad Goals? The Role of Goal Content

One person might strive for a better golf handicap, another for weight loss, one person might work hard to get a promotion, another to save his marriage from breaking up. As Ryan and colleagues (Ryan, Sheldon, Kasser, & Deci, 1996, p. 7) adequately put it: "All goals are not created equal." As a consequence, not all goals have the same consequences on their pursuer's SWB.

Self-determination theory and one of its sub-theories, basic needs theory (e.g., Deci & Ryan, 1985), provide one theoretical framework that deals with the role of

goal contents for SWB. According to these theories, the degree to which peoples' goals allow them to satisfy three psychological needs is crucial for their well-being (Deci & Ryan, 1985, 1991 Sheldon & Elliot, 1999). First, people need to feel autonomous when pursuing their goals, that is, experience that their behavior is self-chosen and meaningful instead of pressured and coerced (deCharms, 1968). Second, they need to feel competent, that is, experience themselves as effective and able rather than ineffective and inept (White, 1959). Third, they need to feel socially related, that is, connected to important others rather than lonely and alienated (Baumeister & Leary, 1995).

Several studies have supported the theoretical notion that, in order to have positive effects on people's well-being, goals need to be able to satisfy basic needs. In one study, Emmons (1991) asked students to generate lists of 15 personal strivings, objectives that they "are typically trying to accomplish or attain." To assess the impact of goal content on the goal pursuers' SWB in the next 21 days, four coders categorized the goals into the content classes of *achievement* (excelling oneself), *affiliation/intimacy* (bonding with others), and *power* (having impact on others), a thematic categorization proposed by McClelland (1985). Overall, power strivings were associated with higher levels of negative affect and affiliation strivings were correlated with higher levels of positive affect, a fact that supports the importance of social relatedness. A different study furthermore found that striving for financial success, a goal that might detract from need satisfaction, has a negative impact on SWB, in particular on self-actualization, vitality, symptoms of depression and anxiety. In contrast, goals related to self-acceptance, affiliation and community were related to greater well-being (Kasser & Ryan, 1993).

While beneficial effects of affiliative goals on SWB may be explained by the need for social relatedness, self-determination theory emphasizes that the need for autonomy also needs to be satisfied. According to self-determination theory, goal-directed behavior may be more or less autonomous: it may be located anywhere on a continuum ranging from high external control, when a person feels pressured and coerced, to intrinsic motivation, when a person feels self-determined or autonomous and engages in an activity because it brings fun and enjoyment (in other words, pursues a self-concordant goal, Deci & Ryan, 1985). An external locus of causality ("You pursue this striving because somebody else wants you to or because the situation demands it") reduces the effort individuals invest into their goal and ultimately, their progress. Low investment and unsuccessful goal attainment, in turn, are related to decreases in well-being over time (Sheldon & Elliot, 1999; see also Sheldon et al., 2004; Sheldon & Kasser, 1998). Overall, in an upward spiral, choosing self-concordant goals might lead to better goal attainment and better psychological adjustment at one point in time, and in turn, foster greater self-concordance for future goals. This, in turn, might promote psychological adjustment (Sheldon & Houser-Marko, 2001).

Additionally, goals that are not self-concordant also make individuals feel more ambivalent about them (Koletzko, Herrmann, & Brandstätter, 2015). Goal ambivalence is experienced if a person feels conflicted about a goal because its attainment is hoped for and feared at the same time. Being promoted at work, for example, may

imply a desirable pay rise but also undesirable effects on a person's work-life balance. Such an internal conflict may inhibit goal progress and cause feelings of depression and distress (Emmons & King, 1988). Goal ambivalence, furthermore, accounts for effects of goal self-concordance on people's life satisfaction through perceptions of goal progress (Koletzko et al., 2015). In sum, individuals feel more conflicted about less self-concordant goals, which in turn undermines their progress on these goals and their subsequent SWB.

Altogether, goals that are not self-concordant but rather extrinsically motivated and that do not support the experience of autonomy, competence, and social relatedness may be detrimental to a person's well-being. But it is not just the content that matters: Without actually experiencing progress on these goals, even the best goals will fail to make people happier.

Slow or Fast: The Role of Goal Progress

With their cybernetic feedback model, Carver and Scheier (1990) have presented a highly influential theory about the role of goal progress for SWB. Applying principles of cybernetic control systems to human self-regulation, the theory assumes that the direction and intensity of behavior are controlled by the output of two feedback loops (Miller, Galanter, & Pribram, 1960; Powers, 1973). The "action loop" compares the desired state (the goal state) to the current state. Unless the current state already matches the desired state, behavior is instigated to get closer to the desired state. At the same time, the "meta loop" monitors the rate of discrepancy reduction between the current and the desired state. If the rate of discrepancy reduction is below a necessary, desired, or expected rate of progress, the person experiences negative affect. This negative affect, in turn, signals that the person has to increase his effort. If, in contrast, the rate of discrepancy reduction is above the criterion rate, the person experiences positive affect. This positive affect, in turn, signals that the person may reduce his or her effort ("coast") to save resources (Brehm & Self, 1989; Gendolla & Richter, 2010) or to temporarily prioritize other goals (Carver, 2015).

Notably, a premise of the theory is that specific affective reactions to goal progress or the lack thereof also depend on whether goals are directed at approaching positive outcomes (e.g., pass the exam) or at avoiding negative outcomes (e.g., not fail the exam). Approach efforts in fact cause approach-related emotions such as elation, excitement or joy if progress is high and anger, frustration, or sadness if progress is low (e.g., Carver, 2004; Carver & Harmon-Jones, 2009). In contrast, avoidance goals cause avoidance-related emotions such as relief or calm if progress is high (Carver, 2009) and anxiety, guilt, or fear if progress is low (Carver, 2015).

In sum, the theory predicts that affective experiences depend on the velocity of goal progress in comparison to a desired or necessary velocity. To our knowledge, research has not yet tried to predict affective outcomes by comparing participants' expected to their actual goal progress, hence, this specific prediction has never been

tested directly. Rather, previous studies have either relied on items assessing perceived progress (e.g., “I have made a great deal of progress concerning this goal”, Brunstein, 1993) or measured goal pursuers’ satisfaction with their goal progress (e.g., Koletzko et al., 2015). These studies nevertheless converge to show that goals require progress to positively affect a person’s well-being.

The assumption that goal progress determines well-being is also in the center of Brunstein’s (1993) model of goal-dependent well-being that, in addition, also discusses the antecedent conditions of goal progress. The model predicts that individuals will progress on their goals given high commitment to the respective goals as well as high goal attainability (e.g. through sufficient opportunities to act, through social support). A longitudinal study with students supported this assumption. Students who were highly committed to a goal progressed on it, given that goal attainability was high. Goal progress, in turn, was a strong predictor of students’ well-being (here: an aggregate of positive affect, negative affect and life satisfaction). Conversely, being highly committed to goals with subjectively low goal attainability was detrimental to students’ well-being because progress on these goals was lower (Brunstein, 1993). The importance of goal attainability for SWB is furthermore supported by research showing that life satisfaction depends on the availability of goal-relevant resources, in particular social resources like family support and social skills (Diener & Fujita, 1995).

Altogether, studies converge to show that progress on important personal goals increases SWB. Still, there is a qualification to this statement – progress on goals that do not serve affective needs may even undermine subjective well-being.

Goals Have to Satisfy Affective Needs: The Role of Implicit Motives

Above, we have argued that goal progress makes people happy. However, people also differ with regard to which goals they enjoy pursuing the most. Such individual differences are captured in the concept of implicit motives. Implicit motives are defined as “enduring non-conscious needs that drive humans’ behavior toward the attainment of specific classes of incentives” (Schultheiss & Brunstein, 2010, p. 9). According to McClelland (1985), on evolutionary grounds, three implicit motives are to be distinguished: the achievement motive, the affiliation/intimacy motive, and the power motive. The achievement motive directs people towards excelling when confronting challenges, chasing the affective experience of thrill during task completion and pride after success. The affiliation motive directs people towards establishing and maintaining positive relationships with other people, chasing the affective experience of interpersonal trust, warmth, and belonging. The power motive directs people towards striving for a mental, emotional, or physical impact on other people, chasing the affective experience of feeling strong and self-efficacious (Schultheiss, 2008).

In contrast to self-determination theory which assumes happiness derives from the fulfillment of three universal psychological needs, the theory of implicit motives postulates individual differences with regard to how strongly people are implicitly motivated to achieve, affiliate with others, and be in power. It is hypothesized that individual differences in motive strength are acquired in early childhood and that their development depends on pre-verbal affective experiences (McClelland, Koestner, & Weinberger, 1989). For example, the early experience of influencing another person and the enjoyment derived from it may foster a desire to again gain pleasure from exerting power over others.

Extending Brunstein's (1993) study on goal progress and well-being, Brunstein, Schultheiss, and Grässmann (1998; see also Schultheiss, Jones, Davis, & Kley, 2008) provided evidence that well-being results from goal progress only to the extent that the respective goal is relevant for the satisfaction of implicit motives. While consciously accessible goals are considered to give direction, implicit motives are often assumed to energize and "fuel" behavior. Moreover, SWB can suffer in situations when goals and implicit motives clash. For example, there may be negative consequences for SWB if someone strives to become a manager who, at the same time (due to weak power motive), does not actually enjoy the experience of having influence over other people. In this case, goal pursuit is experienced as depleting and has negative consequences on SWB (e.g., Baumann, Kaschel, & Kuhl, 2005; Hofer & Chasiotis, 2003; Job, Oertig, Brandstätter, & Allemand, 2010; Kazén & Kuhl, 2011; Kehr, 2004; Schüler, Job, Fröhlich, & Brandstätter, 2008). This negative effect of discrepancies between goals and implicit motives on well-being is explained by stress that results from conflicting behavior tendencies (Baumann et al., 2005; Kehr, 2004).

How or Why: The Role of Level of Abstraction

Apart from content, other qualities of a goal may also affect the goal pursuer's SWB. One of these qualities is a given goal's level of abstraction: Goals are often described as forming a hierarchy, with abstract goals on higher-levels (e.g., "being a moral person") that are served by more specific goals on lower-levels (e.g., "recycling a soda can") (Carver & Scheier, 1998). Research suggests that SWB is influenced by individual differences with regard to whether people "frame their goals in concrete, specific, and more superficial terms" (lower-level goals) or in "primarily broad, abstract, and expansive ways" (higher-level goals) (Emmons, 1992, p. 292). Whereas lower-level goals are manageable, they may not be experienced as very meaningful (Little, 1989). In contrast, high-level goals are meaningful but rated as more difficult to accomplish and lower in clarity of means (Emmons, 1992). Accordingly, high-level goals may impact negatively on SWB because they are, by definition, more difficult to attain. They have longer time-lags and encompass many steps or sub-goals that need to be accomplished before the more general goal is met. That is, with the larger time frame and higher level of aspiration, a person might feel like her progress is low. Moreover, less feedback may be available to evaluate

whether one has made progress. For example, it is easier to tell whether, at the end of a week one has accomplished the goal of “recycling” than to tell whether one has been “a moral person” (Emmons, 1992). Indeed, a study supports that participants who pursue many abstract high-level strivings are vulnerable to higher levels of distress, especially depressive symptoms (Emmons, 1992).

Freund et al. (2010) extended this research by showing that within a personal goal, focusing on the more concrete (low level) means of goal pursuit (e.g., how to eat better during a diet) rather than its more abstract (high level) desired outcomes (e.g., the desired weight loss) also has positive affective consequences. Freund and Henneke (2012) showed that during a low-calorie diet, a process focus was, through its positive effect on goal progress, associated with higher affective well-being. In a different study, for both younger and older adults, a stronger process focus predicted positive goal-related development and higher affective well-being during the pursuit of an exercise goal (Freund et al., 2010).

Approach vs. Avoidance: The Role of Goal Orientation

SWB is also tied to whether goals are directed towards the approach of positive outcomes or gains (e.g., “achieving a grade of C or better”) or towards the avoidance of negative outcomes or losses (e.g., “avoiding any grade worse than a C”), notions that were previously introduced in Carver and Scheier’s cybernetic control model (e.g., 1990). Most research converges to show that avoidance goal regulation relates to several negative outcomes. Such outcomes involve lower levels of performance and intrinsic motivation (Elliot & Harackiewicz, 1994; McGregor & Elliot, 2002; Sideridis, 2005), depletion (Oertig et al., 2013) and most notably in this context, negative effects on SWB: Persons with many avoidance goals tend to evaluate themselves more negatively on measures of SWB, as well as on measures of self-esteem, optimism, and depression (Coats et al., 1996; Elliot et al., 1997), and they also perceive to suffer from more physical symptoms (Elliot & Sheldon 1998). Moreover, clients in psychotherapy who, before the therapy, had indicated pursuing avoidance goals (e.g., “to be less shy”) rather than approach goals (e.g., “to be more confident in social situations”) reported smaller increases in their SWB during the course of therapy (Elliot & Church, 2002).

Several processes may underlie the effects of avoidance goal pursuit on SWB (Roskes, Elliot, & De Dreu, 2014). Avoidance goal pursuit may be detrimental for SWB because it sensitizes the individual to negative information, and puts negative, undesired possibilities at the center-point of self-regulation (Derryberry & Reed, 2008; Urdan & Midgley, 2001). This focus on negative possibilities then leads to multiple undesirable psychological processes, such as anticipatory anxiety or the desire to escape from the critical goal-relevant situation (Derryberry & Reed, 2002; Elliot & McGregor, 1999; Öhman, Flykt, & Esteves, 2001). Moreover, by defining what to stay away from but not what to move toward, avoidance goal pursuit does not provide clear guidance or standards against which progress can be gauged (Carver & Scheier, 1998).

Note that whereas pursuing avoidance goals is detrimental to the SWB of young adults, the same is not true for older adults. As the ratio of gains and losses becomes less positive across adulthood (e.g., due to declines in cognitive or physical abilities or social status; Baltes, 1997), it becomes increasingly important to prevent resource losses. In fact, older adults' goals more often reflect the desire to prevent losses (e.g., illness) and maintain the status quo (Ebner et al., 2006; Heckhausen, 1997; Ogilvie, Rose, & Heppen, 2001). Older adults who report pursuing goals that are directed at attaining stability rather than at attaining positive changes moreover show higher levels of SWB (Ebner et al., 2006). Accordingly, by shifting one's goal orientation from promoting gains to achieving stability in the face of losses may foster adaptation to changes in opportunities and to the constraints imposed by aging (Freund, 2006).

In the goal research reported so far, the focus was on single goals with their specific characteristics. In the following, we address the fact that individuals strive for multiple goals at the same time and consider the implications for SWB.

Goals Don't Come as Singles: The Role of Intergoal Relations

Individuals do not pursue one goal at a time. In fact, it has been reported that most persons can easily list up to 15 strivings at a time (e.g., Emmons, 1992). Some goals a person pursues may be in conflict with each other, for example, because resources like time or money are limited. Other goals might facilitate each other, for example, because they are pursued with the same means (Riediger & Freund, 2004).

The degree to which goals conflict with each other or facilitate each other is related to both a person's life satisfaction (Emmons, 1986) as well as their affective well-being (Emmons & King, 1988). For example, students who reported greater amounts of conflict between their goals also experienced higher levels of negative affect, depression, and psychosomatic symptoms. Conflict even predicted health center visits and illnesses over 1 year. To some degree, these associations were mediated by the amount of progress students experienced on their goals, as individuals with conflicting goals tend to put less effort into the pursuit of these goals (Emmons & King, 1988). Riediger and Freund (2004) have furthermore shown that conflict may not simply be the opposite of facilitation and that the two have distinguishable consequences: In their studies, interference between person goals was primarily related to reductions in a person's SWB. In contrast, facilitation was more important in predicting the extent to which an individual was involved in goal pursuit. To date, the reason for this dissociation is not clear. The authors argue that when it comes to SWB the potential losses that result from interference between goals may loom larger than the potential gains from intergoal facilitation (Kahneman & Tversky, 1984). With regard to goal involvement, however, individuals may actively counteract the potential costs of goal conflict (e.g., by investing more resources), thereby reducing its impact on the goals at hand.

Stay or Go: Action Crises and Goal Disengagement

The usual theoretical emphasis on persistence in goal pursuit and goal progress obscures the fact that there are instances when it is better to disengage from a goal than to tenaciously cling to it. SWB may benefit, for example, if one disengages from an unhappy intimate relationship or from investing in an unprofitable economic endeavor (e.g., Heckhausen, Wrosch, & Fleeson, 2001; Wrosch, Scheier, Miller, Schulz, & Carver, 2003; Wrosch, Scheier, & Miller, 2013). Goal disengagement, by reducing the subjective severity of losses (e.g., in old age; Dunne, Wrosch, & Miller, 2011) and preventing repeated failure when faced with limited prospects of success, has been shown to alleviate emotional distress, and, thereby, decrease the vulnerability to physical health problems (Castonguay, Wrosch, & Sabiston, 2014; Wrosch, Miller, Scheier, & Brun de Pontet, 2007). Wrosch and colleagues conceive of goal disengagement capacities as an individual difference variable that is measured and defined as an individual's tendency to (a) withdraw *behavioral efforts* (e.g., "If I have to stop pursuing an important goal in my life, it's easy for me to reduce my effort toward the goal.") as well as to (b) reduce *psychological commitment* to goals (e.g., ". . . it's easy for me to stop thinking about the goal and let it go") (Wrosch et al., 2003).

Whereas Wrosch and colleagues focus on individual goal adjustment tendencies, Brandstätter and colleagues (e.g., Brandstätter & Schöler, 2013), with the concept of an *action crisis*, scrutinize the dynamic affective, physiological, and cognitive micro-processes in the course of goal disengagement. An action crisis denotes the critical phase in which individuals have already invested a great deal into their goal, but suffer from a substantial loss in the perceived attainability (e.g., due to setbacks) and/or desirability of the goal. An action crisis therefore occurs when the individual becomes caught between further goal pursuit and disengagement from the goal. Most relevant in the present context, an action crisis has been found to be accompanied by a decline in subjective health (e.g., sleeping disorders) and SWB. Furthermore, in a field study with marathon runners, an action crisis was predictive of a stronger cortisol secretion (a sign of stress) during the race (Brandstätter et al., 2013; Herrmann & Brandstätter, 2013).

Evidently, well-being can not only be secured by promoting but sometimes also by letting go a goal – a perspective that to a considerable extent contradicts a societal norm illustrated in famous US national football coach Vince Lombardi's saying "Winners never quit, and quitters never win."

Same, Same But Different: The Role of Cultural Differences

The data from the studies we presented so far are usually based on "WEIRD" samples: Samples from Western, Educated, Industrialized, Rich and Democratic societies (Henrich, Heine, & Norenzayan, 2010) such as the US or Germany. Many

of the presented results, e.g., that goal progress on important personal goals feels good rather than bad, may also hold across different populations. Nevertheless, intercultural generalizability should not be taken for granted.

This is suggested by Oishi and Diener's (2001) examination of the role of *independent* (here: for fun and enjoyment) and *interdependent* (here: to please parents and friends) goal pursuits in the SWB of European American college students and Asian American college students. Whereas the life satisfaction of European Americans benefitted from progress on independent goals, the same was not true for Asian Americans. Japanese students experienced increases in their affective well-being if they progressed on interdependent goals. Presumably, pursuing independent goals in an Asian culture might cause psychological conflict with the traditional cultural values of conformity and deference to authority figures (e.g., Bond, 1988; Schwartz, 1994). Conversely, the expectations of close others may be such an integral part of Asians' self-concepts (Markus & Kitayama, 1991) that progress on goals that primarily serve others also increases how satisfied Asians are with themselves.

Research on avoidance goals also suggests that the pursuit of avoidance goals negatively predicts SWB in individualistic cultures like the US but not in more collectivistic cultures like South Korea or Russia (Elliot et al., 2001). Avoidance goals – with their defensive orientation – may stand in conflict with the emphasis individualistic cultures place on “standing out,” and on distinguishing oneself based on the positive outcomes of personal accomplishments (Elliot et al., 2001). In contrast, collectivistic cultures emphasize “fitting in” and the person is successful only to the extent that fitting in succeeds in maintaining group harmony. Being able to fit in should, in turn, foster a focus on avoiding negative outcomes and, in particular, avoiding relational discord (Heine & Lehman, 1999; Markus & Kitayama, 1991).

The Pursuit of Happiness: Consequences of Wanting to Be Happy

We started this chapter with referring to the right to pursue happiness as it is formulated in the United States' Declaration of Independence. But we then turned to reviewing the consequences of all kinds of goal pursuits for happiness. Little is known about the consequences of viewing happiness as the goal itself.

On the one hand, holding a goal is usually conducive to actually moving forward toward the desired end state. As such, the goal of being happier may cause behavior that ultimately increases the person's happiness. However, goals also serve as standards against which people compare their status quo (e.g., Carver & Scheier, 1998). And as such, the goal to be happy may, on the other hand, paradoxically lead to disappointment and discontent, especially if the person cannot blame an external factor for not being very happy.

Mauss, Tamir, Anderson, and Savino (2011) tested these ideas. They found that the more individuals valued happiness, the less happy they tended to be, unless an external factor could explain their lack of happiness. In one of their experiments, the degree to which participants valued happiness was manipulated by presenting participants with a fake newspaper article emphasizing the benefits of being happy for social relationships, professional success, health, and well-being. In the control group, the same article emphasized the benefits of “making accurate judgments.” Participants were then assigned to watch either a happy or a sad film clip. As predicted, participants who had been primed to value happiness reported more negative and less positive emotions after watching the happy clip, as compared to participants who were primed to value accuracy in their judgments. These participants were also more disappointed than those who had watched the sad clip, presumably because they could not blame the film for not being as happy as they would have liked to be.

Note that in these studies the value of happiness was manipulated but participants had no opportunity to actively engage in behaviors to pursue the goal of being happy. In fact, people who are unhappy with their lives also desire to actively change their lives (Luhmann & Hennecke, 2017), a desire they could not translate into action in Mauss et al.’s study but that, under different conditions, might turn into instrumental and ultimately successful behavior.

Final Remarks

So was Einstein right? Should we, if we want to be happy, tie our lives to goals and not to people or things? First of all, goals themselves can be tied to things or to people, a fact that complicates scrutinizing Einstein’s statement. As we have reported, committing oneself to goals that concern establishing or maintaining relationships with other people is in fact conducive of happiness and the happiest people also tend to be highly social (Diener & Seligman, 2002). As suggested by Einstein, committing to material goals, however, does not seem to be beneficial for happiness (Kasser & Ryan, 1993).

On a general level, the research evidence agrees with Einstein: Pursuing personal goals can be a source of happiness, if it is successful. However, the statement requires qualifiers as the association of goals and SWB is moderated by other factors, like the goals’ concordance with needs and implicit motives, their orientation towards approaching positive or avoiding negative outcomes or their level of abstraction (see Table 13.1 for an overview). Finally, maintaining a good mood and good health may follow not just from the engagement in personal goals but also the ability to disengage from unfruitful pursuits.

Einstein was definitely onto something when he prescribed that tying one’s life to a goal can be a source of happiness. After all, goal pursuit is how people can take charge of their own lives and move them into a personally desirable direction.

Table 13.1 Overview of factors influencing the role of goals for subjective well-being

Predictors	Effects on SWB	Key article(s)
Goal content		
Consistency with basic psychological needs/ self-concordance	Pursuing goals that are consistent with the basic psychological needs for autonomy, competence, and social relatedness increases a person's SWB	Sheldon and Elliot (1999); Sheldon and Houser-Marko (2001)
Intrinsic vs. extrinsic goal content	Pursuing intrinsic goals (e.g., for self-acceptance, affiliation, community feeling) increases a person's SWB. Pursuing extrinsic goals (e.g., to achieve financial success, an appealing appearance, social recognition) decreases a person's SWB	Kasser and Ryan (1993)
Goal progress	Experiencing goal progress increases a person's SWB	Brunstein (1993); Carver and Scheier (1990)
× Consistency with basic psychological needs	Experiencing goal progress more strongly increases a person's SWB if the goals are consistent with basic psychological needs	Sheldon and Kasser (1998)
× Consistency with implicit motives	Experiencing goal progress only increases a person's SWB if the goal is consistent with that person's implicit motives for power, autonomy, and affiliation/intimacy	Brunstein et al. (1998)
Availability of goal-relevant resources	The availability of goal-relevant resources, in particular social ones, increases a person's SWB	Diener and Fujita (1995)
Level of goal abstraction	Pursuing highly abstract as opposed to more concrete goals decreases a person's SWB	Emmons (1992)
Goal focus	Focusing on the process of goal pursuit increases a person's SWB over time, in contrast to focusing on the desired outcomes of the goal	Freund, Hennecke, and Riediger (2010)
Goal orientation towards		
Approach vs. avoidance	Pursuing avoidance (relative to approach) goals decreases levels of SWB	Coats, Janoff-Bulman, and Alpert (1996); Elliot, Sheldon, and Church (1997)
Change vs. stability	In older age, pursuing stability decreases a person's SWB	Ebner, Freund, and Baltes (2006)
Intergoal relations	Experiencing goal conflict between one's goals decreases a person's SWB	Emmons and King (1988); Riediger and Freund (2004)

(continued)

Table 13.1 (continued)

Predictors	Effects on SWB	Key article(s)
Goal ambivalence	Pursuing a goal that encompasses at the same time positive as well as negative aspects decreases a person's SWB	Emmons and King (1988); Koletzko et al. (2015)
Action crisis	Dwelling doubtfully upon the question whether to continue goal striving or disengaging from the goal decreases a person's SWB	Brandstätter, Herrmann, and Schüler (2013); Herrmann and Brandstätter (2013)
Culture		
× Interdependent vs. independent goal pursuit	Experiencing progress on interdependent goals increases the SWB of Easterners, whereas the SWB of Westerners benefits from progress on independent goal	Oishi and Diener (2001)
× Approach vs. avoidance goal orientation	Pursuing avoidance goals negatively predicts SWB in individualistic cultures like the US but not in more collectivistic cultures like South Korea or Russia	Elliot, Chirkov, Kim, and Sheldon (2001)

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Chapter 14

Coping, Emotion Regulation, and Well-Being: Intrapersonal and Interpersonal Processes

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Abstract An essential component of achieving, restoring, and sustaining psychological well-being is the ability to adapt to the challenges and obstacles of life. In this chapter, we review the literature on coping and emotion regulation as processes by which individuals respond to situational demands, and in particular, negative events. We first define coping and emotion regulation in their historical and theoretical contexts. Then, we review evidence on the roles of intrapersonal coping and emotion regulation in psychological well-being, emphasizing key distinctions between avoidant and approach-oriented strategies as typically maladaptive and adaptive, respectively. Next, we examine the role of social relationships in the processes and outcomes of coping and emotion regulation, including the important roles of social support and intimate relationships in adjustment to negative events such as physical illness. We conclude with a discussion of current issues in the field, including future directions involving individual differences, culture, and biological processes. The reviewed evidence is clear: how people cope with external challenges and emotional demands—and increasingly, how coping and emotion regulation are embedded in rich, complex social contexts—play central roles in psychological well-being.

Any consideration of the psychological foundations of happiness and well-being must take into account the fact that humans universally encounter obstacles and challenges to their mental efforts, life pursuits, and ideal situations. Some of these are relatively minor hassles whereas others, such as experiencing a natural disaster, receiving a serious medical diagnosis, or losing a loved one, can profoundly affect

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well-being. Given the unavoidability of major and minor challenges in the course of life, what determines how people achieve, restore, and maintain well-being? What are the biopsychosocial processes that contribute to positive outcomes—or at least maintenance of stable functioning—in the face of adverse experiences?

In this chapter, we describe two dominant approaches to understanding the individual's well-being in the face of challenge: coping processes and emotion regulation. *Coping* has been defined as “cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p. 141). Theories and empirical investigations of coping have a rich tradition in psychology going back several decades, and emphasize the ways in which individuals appraise, engage with, and modify challenges presented by their environments (e.g., Billings & Moos, 1981; Lazarus & Folkman, 1984; Taylor & Stanton, 2007).

Within the broad framework of coping is the more circumscribed construct of *emotion regulation*, which since the 1990s has flourished in the psychological literature. Emotion regulation can be defined as the “processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals” (Thompson, 1994, pp. 27–28). Due in part to refinements in affective science, understanding how individuals regulate emotions in general, as well as in response to negative experiences, has become a central component of understanding how people handle the challenges of life. Like coping processes more generally, emotion regulation includes individuals' responses to stress, but it differs in important ways (see Gross, 1998). Unlike coping, which includes efforts to address both emotional and non-emotional goals, emotion regulation specifically involves processes that are targeted to modify emotional experience. Also unlike coping, emotion regulation is conceptualized as a continually operating system that regulates both positive and negative emotion, even outside the context of stress, and includes intentional and unintentional responses (see Smith & Bryant, 2017, regarding mood savoring as an emotion regulation strategy for positive events). Finally, the scope of emotion regulation processes is generally more circumscribed in time (e.g., downregulating anger to decrease conflict with a friend during a conversation) than the more encompassing scope of coping (e.g., adjusting to a move to a new city), although coping processes can also act in the short term. Boundaries between coping and emotion regulation remain somewhat fluid (e.g., Stanton, 2011).

In this chapter, we review the roles of coping and emotion regulation in well-being, focusing on cognitive and affective processes. The chapter consists of two primary sections: (1) intrapersonal processes of coping and emotion regulation, and (2) social and interpersonal processes and contexts. First, we review the literature on coping orientations and behaviors, including the roles of approach-oriented and avoidance-oriented coping in well-being. Second, we examine emotional approach coping and emotion regulation as more specific cognitive/affective processes of coping and well-being. Next, we review the role of social contexts in relation to intrapersonal coping and emotion regulation. And finally, we examine notable themes in current research relevant to coping, emotion regulation, and well-being.

Psychological well-being is a broad and multi-faceted construct. It can be defined variously to include the presence of positive affective states and the absence of negative affective states (i.e., hedonic well-being); the fulfillment of values, personal expression, and meaning in life (i.e., eudaimonic well-being); the union of both of these; the achievement of autonomy, competence, and social relatedness; the subjective sense of life satisfaction; functioning or quality of life; and flourishing or thriving (for reviews, see Kashdan, Biswas-Diener, & King, 2008; Ryan & Deci, 2001). The breadth of well-being as an outcome presents a challenge in synthesizing work on coping and emotion regulation, which themselves represent complex constructs applied by diverse theoretical approaches. Moreover, coping and emotion regulation are critically involved not just in well-being, but also in maladjustment (e.g., psychopathology and physical illness). Indeed, coping—and to a lesser degree, emotion regulation—are largely defined by their relations with negative experience.

Throughout this chapter, we focus on well-being, but more than most chapters in this book, we necessarily discuss maladaptive outcomes in physical and mental health. Our review is guided by major themes and findings regarding “positive” and “negative” outcomes in the coping and emotion regulation literatures, rather than adopting a particular operationalization of well-being per se. As such, it captures a range of constructs loosely organized under the well-being umbrella, reflecting the relatively imprecise superordinate construct. In our final section, we discuss conceptual and methodological limitations and future directions in this area. Here, we acknowledge that the various outcomes captured in the chapter (e.g., quality of life, positive affective experience, depressive symptomatology) are relatively diffuse and may or may not align with any single construct of well-being.

Intrapersonal Processes of Coping and Emotion Regulation in Well-Being

Table 14.1 presents a selection of specific coping and emotion regulation strategies that have been most consistently linked with psychological well-being. Coping processes are productively characterized as those oriented toward or away from aspects of the stressful experience (Roth & Cohen, 1986; Suls & Fletcher, 1985). Such an approach-avoidance continuum reflects core motivational tendencies (e.g., Carver, 2007; Davidson, Jackson, & Kalin, 2000) and readily maps onto broader theories of functioning. Coping through avoidance includes both cognitive and behavioral strategies. Approach-oriented coping includes problem solving/direct action, seeking social support, reappraising the situation positively, actively accepting the situation, and processing and expressing stressor-related emotions. Some coping attempts, such as spiritual coping, can potentially serve approach- or avoidance-oriented functions. Coping and emotion regulation processes have been conceptualized and operationalized as relatively stable personal dispositions and as more

Table 14.1 Selected coping and emotion regulation strategies broadly associated with psychological well-being

<i>Adaptive strategies (broadly associated with greater well-being)</i>	
Strategy	Definition
Problem solving/ action	Direct, active efforts aimed at solving the problem
Seeking social support	Elicitation of instrumental or emotional support from others in the social environment
Positive appraisal	Construal of a situational demand or problem as having positive qualities (e.g., a challenge)
Acceptance	Recognition of the problem as real, and/or allowing oneself to experience the associated negative affect
Emotional processing	Active attempts to acknowledge, explore, and understand one's emotional experience
Emotional expression	Verbal or nonverbal efforts to communicate one's emotional experience
Cognitive reappraisal	Mentally changing the initial response to the stressor to alter the emotion or its consequences (e.g., viewing the situation in a broader context)
<i>Maladaptive strategies (broadly associated with lesser well-being)</i>	
Strategy	Definition
Expressive suppression	Efforts to restrain or control one's verbal or nonverbal expressions of emotional experience
Thought suppression	Efforts to keep negative or intrusive thoughts from conscious awareness
Cognitive avoidance	Mental distraction or escape from the blocked goal or situational demands
Behavioral avoidance	Disengagement from the problem or stressor; giving up efforts to cope actively
Denial	Acting as if the problem/obstacle does not exist
Rumination	Passive, repetitive, abstract self-focus on the causes and consequences of negative affect
Worry	Perseverative thought about possible future negative outcomes or events, without problem solving

Note: This table depicts strategies most directly linked with psychological well-being, but “adaptive” and “maladaptive” labels should be considered heuristic only. See the text regarding important situational and contextual factors that play key roles in whether the strategies have maladaptive or adaptive consequences. For more on individual strategies, see Carver et al. (1989), Stanton (2011)

situationally responsive tendencies; supportive evidence exists for both conceptualizations (e.g., Carver, Scheier, & Weintraub, 1989; John & Gross, 2004).

Avoidance- and approach-oriented coping processes contribute to the regulation of emotions, cognition, and behaviors, with longer-term implications for well-being and health. When investigating how individuals' coping processes might influence their responses to stressful experiences, researchers have focused more on understanding the potential contribution of coping to negative outcomes, such as depressive symptoms and ill health, than to well-being and other positive outcomes.

Hence, we know more about coping processes that predict maladjustment than about those that promote well-being.

Reviews and meta-analyses converge on the general conclusion that coping through cognitive and behavioral attempts to avoid stressor-related thoughts and feelings is maladaptive with regard to affective (e.g., positive and negative mood), behavioral (e.g., medical regimen adherence), and health outcomes (e.g., CD4 count in HIV+ patients). This conclusion appears especially applicable to chronically stressful contexts, such as military deployment to war (Sharkansky et al., 2000) or living with HIV (McIntosh & Rosselli, 2012; Moskowitz, Hult, Bussolari, & Acree, 2009), diabetes (Duangdao & Roesch, 2008), or breast or prostate cancer (Kvillemo & Bränström, 2014; Roesch et al., 2005). Coping through avoidance can be useful in specific situations, however, and particularly short-term, uncontrollable stressful experiences (Suls & Fletcher, 1985). For example, upon notification of a questionable mammography result, women's use of cognitive avoidance regarding the potential outcome predicted reduced anxiety once women were told that the diagnosis was benign (Heckman et al., 2004).

Avoidance-oriented coping can contribute to detrimental outcomes via several pathways. It can preempt more effective coping efforts, such as problem-solving. Avoidance can also involve damaging behaviors, such as excessive substance use. The evidence that attempts to stifle stressor-related thoughts and feelings can in fact magnify their frequency and intrusiveness and increase physiological arousal is well established (e.g., Wegner & Pennebaker, 1992). In addition, coping through avoidance can play a stress-generating role. For example, in a decade-long study of more than 1200 adults aged 55–65 years at study entry (Holahan, Moos, Holahan, Brennan, & Schutte, 2005), avoidance-oriented coping at study entry predicted more chronic and acute life stressors 4 years later, which in turn predicted an increase in depressive symptoms at 10 years.

In contrast, coping through actively approaching aspects of the stressful experience can promote psychological and physical well-being. For example, use of such strategies as positive reappraisal of stressors, social approach, and problem-focused coping predicts an increase in positive affect (Billings, Folkman, Acree, & Moskowitz, 2000). For example, in a meta-analysis of individuals experiencing HIV/AIDS (Moskowitz et al., 2009), approach-oriented coping processes, and particularly taking direct action and reappraising the experience positively, were associated with higher positive and lower negative affective outcomes, greater engagement in healthy behaviors, and more favorable health outcomes. Longitudinal and experimental research reveals that processing and expressing stressor-related emotions also contributes to positive outcomes, depending on personal and contextual factors (for reviews, see Moreno, Wiley, & Stanton, *in press*; Stanton & Low, 2012). This subcategory of approach coping is known as *emotional approach coping*, as it involves approaching (i.e., engaging with and expressing) emotions specifically, as opposed to other approach-oriented coping like problem solving. As such, it begins to reflect the functions and processes of emotion regulation.

Several factors can condition the utility of approach-oriented coping processes. Such attempts can be more useful during some phases of the stressful experience

than others. Taking direct action to cope with HIV/AIDS appears most effective early in the disease experience, for example (Moskowitz et al., 2009). The utility of emotional approach coping depends on the social milieu, such that emotional expression related to the cancer experience, for example, predicts improved quality of life when the affected individual has close others who support such expression (Stanton et al., 2000).

Avoidance- and approach-oriented coping processes do not anchor the endpoints of a single continuum in that individuals in stressful contexts are likely to engage in both approach- and avoidance-oriented coping. Indeed, neural and behavioral data demonstrate that when one is confronted with prominent discrepancies (e.g., violations of meaning systems, goal conflicts), the accompanying threat can motivate both avoidance- and approach-oriented cognitions, emotions, and behaviors to resolve or palliate the discrepancy (e.g., Carver & Scheier, 1998; Jonas et al., 2014; Slegers & Proulx, 2015). The responsiveness of coping processes to contextual parameters, as well as flexibility in their use, are important determinants of their success in restoring well-being (Cheng, Lau, & Chan, 2014; Sinha, Lacadie, Constable, & Seo, 2016). Along these lines, a meta-analysis revealed a positive relationship between coping flexibility, variously conceptualized, and favorable psychological adjustment (Cheng et al., 2014). Evidence from randomized, controlled clinical trials also suggests the utility of coping strategy-situation fit bolstering adjustment in HIV+ men and other groups (e.g., Chesney et al., 2003).

Social and Interpersonal Processes and Contexts

Theory and research on coping and emotion regulation in psychological well-being have focused squarely on intrapersonal processes—in other words, how individuals' responses to stress, challenges, or emotional distress affect their well-being. In recent years, however, the field has taken an increasingly social and integrative approach to coping and emotion regulation. In this section, we review the components of the social world—including social relationships—that can influence how coping and emotion regulation factor into well-being.

Seminal conceptualizations of coping acknowledged the social context, even while emphasizing intrapersonal processes (e.g., Lazarus & Folkman, 1984). The influential emphasis on person-situation interactions (i.e., a person's appraisal of his or her own capabilities and situational demands) implicitly assumed a role of external factors, including social demands and resources. Indeed, social support is generally considered an important coping resource that is relevant to well-being (e.g., Cohen & Wills, 1985). Similarly, Gross' (1998) influential work on emotion regulation acknowledged that the regulatory situations individuals find themselves in are frequently social in nature.

In empirical research, however, intrapersonal processes have been emphasized over social contexts and processes. For example, in much early coping research, social support was operationalized as an individual coping behavior (e.g., efforts to

seek social support) rather than a truly interpersonal phenomenon (e.g., Carver et al., 1989). Modern approaches to coping (e.g., Badr, Carmack, Kashy, Cristofanilli, & Revenson, 2010; DeLongis & Holtzman, 2005; Revenson, Kayser, & Bodenmann, 2005), as well as developments in affective science and relationship science, have stimulated interest in mechanisms of social support transactions—rather than the availability of social support per se.

Individuals draw on social resources in coping, and how these resources are used—and whether they are effective—depends on complex social and interpersonal features. Moreover, in many cases, two or more individuals face a stressor together. Recently, theory and research on emotion regulation have therefore emphasized how individuals' emotional states and regulatory processes are affected by close others. In this section, we first discuss overarching social and interpersonal factors most relevant to coping, emotion regulation, and well-being. We then more thoroughly review the literatures on social support and dyadic coping in well-being and ill health. Finally, we review the literature on interpersonal factors in emotion regulation as related to well-being and mental health.

Social Factors in Coping: Social Support and Dyadic Coping

Social relationships are strongly linked to physical health, mental health, and psychological well-being. Larger and stronger social networks, the presence and quality of close relationships, and greater perceived social support have beneficial effects (for reviews, see Cohen, 2004; Marroquín, 2011; Robles, Slatcher, Trombello, & McGinn, 2014; Uchino, 2009). It is useful for our purposes to note the distinction between structural aspects of social relationships (e.g., being embedded in a social network) and functional aspects (e.g., instrumental or emotional support). Social support is defined as “a social network's provision of psychological and material resources intended to benefit an individual's ability to cope with stress” (Cohen, 2004, p. 676), and it is this functional aspect of the social world that is most relevant to how coping and emotion regulation affect well-being.

Social support researchers have long considered that one route through which social support affects well-being is through coping—that is, help sought from and provided by supporters decreases demands and provides resources to meet challenges (Cutrona & Russell, 1990; Holahan, Moos, Holahan, & Brennan, 1997; Thoits, 1986). Subsequent research has focused on processes through which (a) one individual helps another individual respond to his/her own stressor, or (b) two individuals, typically in a close relationship, confront stressors together. Both of these processes have been well-investigated among individuals or couples coping with physical illness.

With respect to one individual supporting another, laboratory evidence indicates that how supporters respond to support recipients, for example by cognitively reframing situations, can reduce the recipient's distress (Lepore, Fernandez-Berrocal, Ragan, & Ramos, 2004). Such a reframing approach also promotes effective coping

under stress, including among people with chronic health conditions (e.g., DeLongis, Holtzman, Puterman, & Lam, 2010; Holtzman, Newth, & DeLongis, 2004), although it should be noted that reframing can backfire if it happens to invalidate the individual's experience (e.g., responding to a friend's infertility by framing it as God's will). In fact, support can be almost as often unhelpful as it is helpful, depending on relationship characteristics (e.g., Gleason, Iida, Shrout, & Bolger, 2008).

Coping appears to be implicated in this process. Social supporters' positive, open, and active responses to support needs can contribute to recipients' more effective coping and adjustment to major stressors, whereas negative or dismissive responses can increase distress (e.g., Marin, Holtzman, & DeLongis, 2007; Lepore, Silver, Wortman, & Wayment, 1996). In addition to contextualizing individuals' coping effectiveness (see Berg & Upchurch, 2007), social factors can also affect coping strategies that individuals select. Among cardiac patients, positive social contexts (i.e., more social support and fewer social stressors) prospectively predicted approach-oriented coping—and, in turn, lower depressive symptoms—over 4 years (Holahan et al., 1997). Feeney and Collins (2014) assert that social support goes well beyond the amelioration of negative outcomes such that the involvement of others in coping with adversity—and in pursuing meaningful growth opportunities—can lead to personal growth and thriving.

The second, related approach to social factors in coping considers how two individuals in a close relationship respond to stressors jointly, a construct known as *dyadic coping*. Bodenmann, Meuwly, and Kayser (2011) identify two core assumptions of dyadic coping. First, partners' coping efforts are not independent of one another; rather, they are part of a relational system. Second, dyadic coping can involve a couple's responses to both individual stressors (e.g., one partner's bad day) and shared stressors (e.g., a child's misbehavior). Beyond these core components, approaches to dyadic coping vary from examining how congruence or incongruence in partners' individual coping affects outcomes; partners jointly involved in coping; partners supporting one another's coping; and one partner "outsourcing" coping tasks to the other (Bodenmann, 1995, 1997; Bodenmann et al., 2011).

Initial investigations of dyadic congruency versus incongruency (i.e., partners using similar versus "opposing" or complementary strategies) showed a potential benefit of congruency for relationship outcomes and well-being (e.g., Barbarin, Hughes, & Chesler, 1985). However, more recent studies suggest that congruence/incongruence is less relevant than the adaptiveness of the strategies on which partners are congruent. For example, Badr (2004) found that congruence in active engagement coping with one partner's chronic disease positively influences marital adjustment, whereas when one partner copes avoidantly, complementarity is more beneficial. Bodenmann et al. (2011), directly contrasting the congruency hypothesis against their "systemic" model (in which partners play more active roles as influences on and contexts of one another's coping), found that the systemic model better explained relationship outcomes and individual physical and psychological well-being.

Dyadic coping with chronic stressors—and especially with physical illness—has emerged as a major area of interest (see Berg & Upchurch, 2007; Revenson et al., 2005). Close relationships and social support predict illness severity, mortality, and

quality of life among people coping with a wide range of health conditions, including cancer and heart disease (e.g., Coyne et al., 2001; Helgeson, Snyder, & Seltman, 2004; Kroenke et al., 2012). Examining dyadic coping is especially important if it can account for compelling findings that relationships affect not only quality of life, but also disease progression and mortality (e.g., marital quality prospectively predicts mortality after congestive heart failure as well as illness severity does: Coyne et al., 2001; also see meta-analysis by Holt-Lunstad, Smith, & Layton, 2010). Dyadic coping is implicated in individual partners' physical and psychological well-being among couples dealing with one partner's cancer (Badr et al., 2010), heart disease (Rohrbaugh, Mehl, Shoham, Reilly, & Ewy, 2008), rheumatoid arthritis (Holtzman & DeLongis, 2007), chronic obstructive pulmonary disease (Meier, Bodenmann, Mörgeli, & Jenewein, 2011) and infertility (Berghuis & Stanton, 2002), among other conditions. Active, collaborative dyadic coping is also implicated in *relationship* outcomes, such as relationship satisfaction in couples coping with cancer (Traa, De Vries, Bodenmann, & Den Oudsten, 2015). Although relationship satisfaction is an important contributor to individual psychological well-being, such relationship outcomes are beyond the scope of the present review (the interested reader is directed to a relevant meta-analysis by Falconier, Jackson, Hilpert, & Bodenmann, 2015).

One central question posed by the dyadic coping approach is whether each partner's coping efforts directly affect the other partner's well-being. In a study of women and their male partners soon after breast cancer treatment, each partner's own coping strategies—and notably, men's emotional approach-oriented coping—prospectively predicted women's adjustment over 10 months (Kraemer, Stanton, Meyerowitz, Rowland, & Ganz, 2011). Similarly, among men in treatment for prostate cancer and their partners, coping strategies of each partner, such as problem solving and support-seeking, were linked with the other partner's quality of life and psychological well-being over time (Lafaye et al., 2014). In a study of infertile couples following an unsuccessful alternate insemination attempt, partners showed correspondence in coping strategies, and each individual's depressive symptoms were predicted by their partner's coping, above and beyond their own coping (Berghuis & Stanton, 2002). Moreover, women low in emotional approach coping benefitted if their partners employed higher emotional approach coping, consistent with the idea that in a dyadic system, partners' coping forms a context for individual coping. One coping behavior unique to the relationship context is *protective buffering*, a pattern in which one member of a relationship hides distress, concerns, or worries, ostensibly to protect the other member. In couples coping with illness, protective buffering is (in general) associated with maladaptive psychological outcomes (e.g., higher emotional distress and lower perceived efficacy) in both partners (e.g., Langer, Brown, & Syrjala, 2009; Suls, Green, Rose, Lounsbury, & Gordon, 1997).

Another question is whether coping *collaboratively* or *communal coping*—that is, adopting a “we” or “our problem” approach to a stressor—is implicated in well-being (e.g., Lyons, Mickelson, Sullivan, & Coyne, 1998). In a qualitative study of women coping with breast cancer and their partners, couples adopting a “we” approach when discussing their shared experience (versus an “I” approach) tended to coordinate coping strategies and find benefits in the cancer experience

(Kayser, Watson, & Andrade, 2007). Still, dyadic coping is not inherently adaptive. Badr et al. (2010) tracked patients with metastatic breast cancer and their partners for 6 months. Couples who reported engaging in more negative dyadic coping (e.g., collaborating in avoidance) experienced more psychological distress. Moreover, couples' use of positive dyadic coping—joint efforts to cope together actively—predicted less distress among partners but *higher* distress among patients. The fact that couples can collaborate in either negative or positive coping, with similar or divergent consequences between partners, highlights the complexity of dyadic coping as a transactional process.

An important caveat in the research on dyadic coping with cancer is that in most studies, gender is confounded with patient status (Hagedoorn, Sanderman, Bolks, Tuinstra, & Coyne, 2008). The cancers most frequently studied—breast and prostate—are sex-linked, and couples are almost exclusively heterosexual. Therefore, the extent to which the findings of any particular study can be generalized to couples coping with other chronic illnesses (or even other cancers), to dyadic coping with non-health-related stressors, or to same-sex couples, is qualified. It is also important to note that stressors affect the relationship itself, complicating the interpretation of dyadic coping processes as fully distinct from the external stressor. Cancer can affect close relationships for better or for worse (Drabe, Wittman, Zwahlen, Büchi, & Jenewein, 2013), and the direction can depend on dyadic coping processes (Traa et al., 2015). For example, evidence indicates that relationship intimacy plays a key role in couples' well-being and adjustment to a number of cancers (e.g., Manne & Badr, 2008; Manne, Badr, & Kashy, 2012). To the extent that dyadic coping is facilitated by overarching relational features like intimacy, insults to the relationship in this domain may “trickle down” to dyadic coping behaviors, either improving or impairing them.

Social and Interpersonal Processes in Emotion Regulation

Models of emotion regulation, emergent in the late 1980s and 1990s, emphasized internal processes of monitoring and modifying emotions. However, a prominent line of theory and research in emotion regulation—the developmental perspective—clearly acknowledged social influences from the beginning (e.g., Campos, Campos, & Barrett, 1989; Thompson, 1994). Once the fundamental skills of emotion regulation develop over childhood and adolescence, do other people continue to play a role in our responses to distress? Surprisingly, this is a relatively new area of inquiry. Only since the 2000s have researchers emphasized even the social *consequences* of emotion regulation—particularly the adaptive consequences of cognitive reappraisal and maladaptive consequences of expressive suppression. Such research indicates that these strategies have differential consequences for social support availability, relationship closeness and satisfaction, quality of interactions with others, and social evaluations by others (Butler et al., 2003; Lopes, Salovey, Côte, & Beers, 2005; Richards, Butler, & Gross, 2003; Srivastava, Tamir, McGonigal, John, & Gross, 2009).

However, this role of emotion regulation in social functioning does not speak to whether the role of emotion regulation in psychological well-being involves social mechanisms. Investigations of emotion dysregulation in poor mental health have begun to incorporate the social context. Recent research shows that people influence one another's emotional states, synchronize or co-regulate emotions, influence emotion regulation strategy use, and determine outcomes of individuals' regulatory efforts for mental health and well-being (Butler & Randall, 2013; Marroquín & Nolen-Hoeksema, 2015; Zaki & Williams, 2013). Marroquín (2011) and Hofmann (2014) have offered theoretical models emphasizing how core emotional disturbance and dysregulation in mental disorders can be influenced by others in the social environment.

Evidence for social effects on emotion regulation and well-being is rapidly accumulating. When individuals in the laboratory are presented with negative emotional stimuli, a most basic level of support—holding hands—decreases emotional reactivity (Coan, Schaefer, & Davidson, 2006). Sharing negative emotions with others decreases emotional distress, at least in the short term, although the longer-term influence on well-being is less clear (Lepore et al., 2004; Lepore, Ragan, & Jones, 2000). Sharing positive experiences with others, however, appears to have clear benefits for well-being by helping the individual “capitalize” on positive events (Gable & Reis, 2010). Coan and colleagues argue that the availability of social resources is essential for optimal regulation and that cognitive and neural components of regulation have evolved to depend on social resources (Coan & Maresh, 2014). In the context of stress or challenge, however, how do social resources themselves affect well-being through emotion regulation?

The most informative research in this area with respect to psychological well-being comes from clinical science on psychopathology. Within couples, emotion regulation as a dyadic phenomenon (e.g., one partner expressing emotion accurately, and the other partner responding in a validating way) is linked with alleviation of negative affect and protection against psychopathology (e.g., Fruzzetti & Worrall, 2010). Even at more distal levels (e.g., perceived social connectedness, intimate relationship status), close relationships buffer associations between individuals' emotion regulation attempts (particularly maladaptive, avoidant strategies) and depressive symptoms, and within romantic relationships, characteristics of high-quality relationships, such as intimacy and trust, do the same (Marroquín & Nolen-Hoeksema, 2015). Social support can attenuate the harmful effects of rumination, a key emotion regulatory strategy with negative consequences for well-being in adjustment to negative events, from daily family stressors (Puterman, DeLongis, & Pomaki, 2010) to bereavement (Nolen-Hoeksema & Davis, 1999).

Among women diagnosed with breast cancer, associations of emotional approach coping strategies (specifically, emotional expression) with improved quality of life depend on receptive social contexts (Stanton et al., 2000). Similarly, Hoyt (2009) found that among men with prostate cancer, emotional expression was associated with lower distress only when men perceived their social environments as low in constraint (i.e., supportive of expression). Within couples in a 14-day diary study, when partners of women with metastatic breast cancer imposed more social

constraints (i.e., avoiding cancer-related discussion), women experienced increases in negative affect the following day (Badr, Pasipanodya, & Laurenceau, 2013). Indeed, the association between coping with cancer through emotional approach and depressive symptoms has been shown to be moderated by implicit loneliness, suggesting that even outside of awareness, social-cognitive factors affect emotion regulation outcomes (Marroquín, Czamanski-Cohen, Weihs, & Stanton, 2016). In sum, there is sufficient indication that social relationships serve as contexts that help shape *outcomes* of our regulatory efforts, and that close others also affect the regulatory strategies we *use* and, in turn, mental health and well-being.

Current Directions and Themes in Coping and Emotion Regulation

This review has emphasized the roles of intrapersonal processes of coping and emotion regulation in well-being, and the social contexts in which these processes occur. Newer directions in this area include the (re)consideration of person-situation fit; cultural and sociodemographic factors; and the biological pathways implicated in well-being. Before addressing these directions, however, we discuss some major conceptual and methodological limitations in the field.

Conceptual and Methodological Limitations and Controversies

A complication in the literature reviewed here is the very definition of psychological well-being. As noted earlier, well-being is conceptualized and operationalized in several ways. These approaches most typically emphasize a diverse set of “positive” outcomes (e.g., personal growth), but also include the lack or amelioration of “negative” outcomes (e.g., anxiety). Because coping and emotion regulation are themselves broad constructs, the present review takes a wide-angle approach. Interested readers are advised to consider the specific psychological outcomes of interest, and to consider theoretically how findings on, for example, positive mood in couples facing chronic illness do or do not align with those on amelioration of negative affect among healthy individuals in the lab.

A related methodological challenge regards the theoretical and empirical distinctions among predictors, mediators, mechanisms, and moderators. Beyond the question of whether specific well-being outcomes cluster under an overarching “well-being” construct, research in this area lacks clarity with respect to what leads to what, when, and for whom. In many cases, for example, coping is treated as a moderator, as in findings that how stress affects well-being depends on the individual’s coping style. In other cases, coping is treated as a mediator, as in findings that relationship quality affects dyadic coping, and in turn, well-being. Both sorts of models are highly plausible, and even compatible, depending on the question at hand.

The conceptual relations among these various constructs become especially complicated when taking the social world into account. Relationships can function as predictors of well-being mediated by coping or emotion regulation, as contextual moderators of individual coping or emotion regulation effects, and as dyadic mechanisms through which individual-level factors affect well-being. Distinct roles of coping and emotion regulation as moderated by social contexts and as mediators of social effects are not mutually exclusive, but it is important to note that different investigators—even when focusing on the same constructs—operate within different theoretical structures. Figure 14.1 depicts three alternative (but not necessarily competing) models for the relations among social factors, coping/emotion regulation, and psychological well-being, each with distinct implications for research and application, including treatment (see Marroquín & Nolen-Hoeksema, 2015; Stanton, Luecken, MacKinnon, & Thompson, 2013).

Finally, coping and emotion regulation can both be approached as either state or trait constructs. In some of the studies reviewed, both constructs are measured by retrospective self-report and capture trait approaches to responding to challenges or emotional distress. By contrast, laboratory models and intensive longitudinal (e.g., daily diary) studies emphasize state effects. Retrospective self-report measures show modest concordance with more contemporaneous reports and reports that do not depend on introspection (e.g., Robinson & Clore, 2002; Todd, Tennen, Carney, Armeli, & Affleck, 2004). Improved research on how dispositional styles of coping and emotion regulation align with behavior and affective reactivity in the moment is important to understanding their direct roles in well-being. Such issues are increasingly addressed by the multimethod integration of experimental and daily-diary and similar methods.

The Role of Person-Situation Fit

Foundational theories of coping (and to a lesser extent, emotion regulation) emphasize that the most adaptive strategies are those that meet the specific challenge posed by the appraised external situation (e.g., Lazarus & Folkman, 1984). A promising research focus in this area is integrating intrapersonal coping and emotion regulation with the social context, as discussed above. An additional component is the person-situation or person-environment fit. DeLongis and Holtzman (2005) assert that differences in coping associated with personality traits may shape whether an individual's coping approach appropriately fits the situation. For example, people high in extraversion engage in more active coping behaviors (Lee-Baggeley, Preece, & DeLongis, 2005), which may be effective in some situations but not others. Correspondingly, an essential next step in emotion regulation research is to identify contextual variables that determine the effects of emotion regulation (Aldao, 2013).

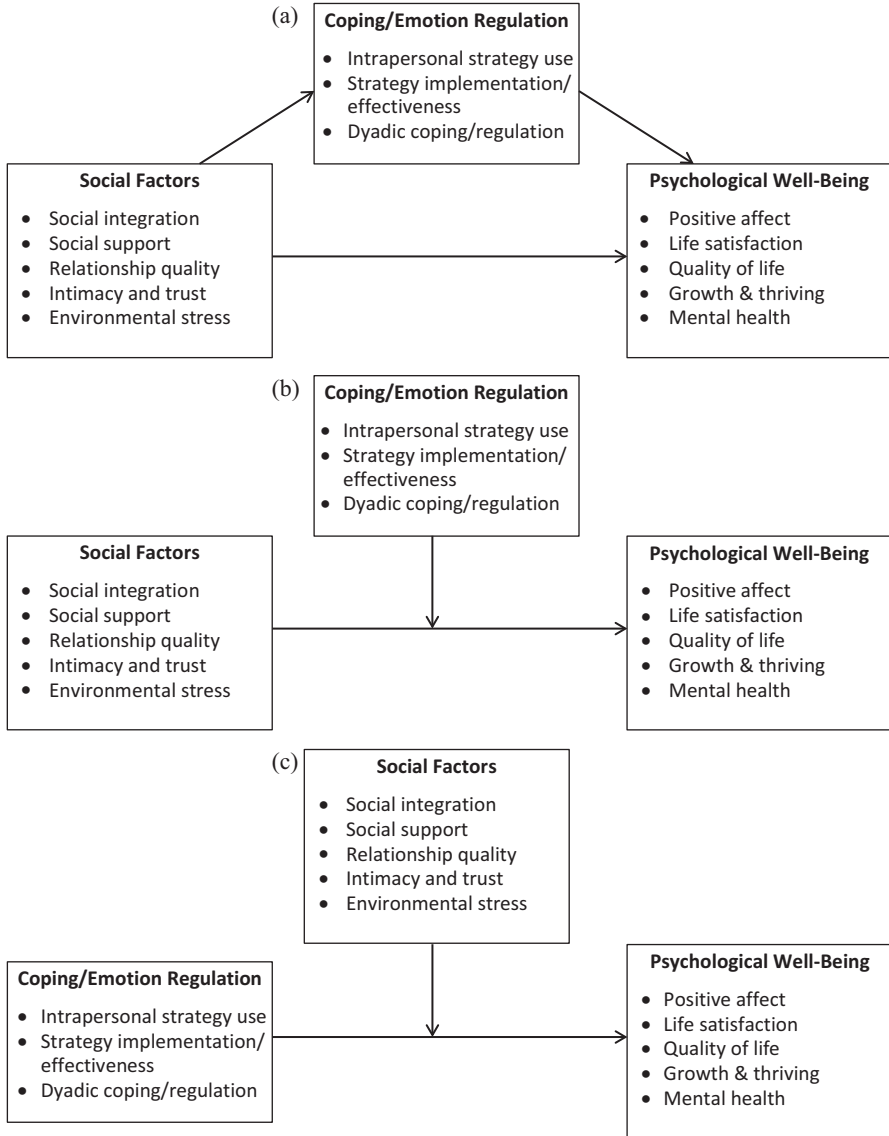


Fig. 14.1 Alternative models for causal and contextual relations among social factors, coping and emotion regulation, and psychological well-being. **(a)** Coping and emotion regulation as *mediators* of social effects on psychological well-being. **(b)** Coping and emotion regulation as *moderators* of social effects on psychological well-being. **(c)** Social factors as moderators of *coping and emotion regulation effects* on well-being. Note that analytical models of **(b)** and **(c)** would be identical (involving a statistical interaction), but they reflect quite distinct conceptual approaches to questions in this field

Cultural and Sociodemographic Differences

Evidence that both personality characteristics and emotion regulation vary cross-culturally (Matsumoto, Yoo, & Nakagawa, 2008) suggests that a broader social context should be taken into account. Culture can affect how and when people regulate emotions, as well as determine whether regulatory efforts are positively or negatively associated with well-being (Ford & Mauss, 2015). Socially-influenced factors such as gender, race/ethnicity, and socioeconomic status are linked with physical health and well-being (see Hoyt & Stanton, 2012). Some evidence suggests these effects are due not only to stress levels associated with social differences, but also to effects on emotion, coping, and psychobiological stress pathways (e.g., Matthews & Gallo, 2011). Dyadic coping also occurs within a broader context. Berg and Upchurch (2007) note that in addition to intrapersonal and interpersonal processes within a couple coping with illness, both individuals and the dyad are embedded within cultural contexts. An important area for future research is to identify whether and how coping and emotion regulation influence well-being differently among diverse sociodemographic and cultural groups.

Biopsychosocial Mechanisms of Coping and Emotion Regulation

With improved technology and understanding of the biological correlates of psychological processes and health, researchers increasingly examine the biological correlates of coping and emotion regulation, including neural substrates, neuroendocrine responses to stress, and immune system functioning. Regarding neural substrates, one of the most consistent findings regards cognitive reappraisal. Tasks that require people to engage in cognitive reappraisal of negative affect during brain imaging show that emotional reactivity, represented in subcortical regions including the amygdala and ventral striatum, is regulated by prefrontal, temporal, and parietal cortical regions responsible for executive control (e.g., Buhle et al., 2014; Diekhof, Geier, Falkai, & Gruber, 2011).

Other specific strategies are less well-understood at the neural level, but it is clear that the ways in which humans cope with stress and emotion involve distinctive patterns in the brain. Prominent goals of ongoing work include a more complete understanding of common neural circuitry implicated in regulatory processes across individuals, individual differences, and development (Gross, 2015). Mirroring increasing interest in psychological processes of coping and emotion regulation in their social contexts, it is hoped that understanding neural substrates of regulation, together with substrates of social processes such as empathy, can elucidate how emotion regulation plays out in the context of social relationships (e.g., Reeck, Ames, & Ochsner, 2016).

Other biological systems implicated in stress and emotional responses include the hypothalamic-pituitary-adrenal (HPA) axis and the immune system. The HPA axis—a key component of the body's stress response system—links the central nervous system and peripheral physiology through a neuroendocrine feedback loop (involving the hormone cortisol) that maintains homeostasis and facilitates behavioral and physiological responses to stressors (e.g., attention and respiration; see Smith & Vale, 2006). Short-term HPA reactivity is considered adaptive, whereas chronic activation is linked with maladaptive physical and psychological outcomes, including effects on brain regions involved in emotion regulation (e.g., McEwen, 2004). Coping is linked with HPA axis activity. Broadly, avoidant or disengaged coping is associated with elevated HPA responses to stress, and active coping is associated with a better-regulated HPA response (e.g., Olf, Langeland, & Gersons, 2005). Moreover, consistent with a meaningful role of social contexts, cortisol levels covary day-to-day between romantic partners (Saxbe, Repetti, & Nishina, 2008) and are affected by interactions with relationship partners (e.g., Kiecolt-Glaser, Glaser, Cacioppo, & Malarkey, 1998), including those related to dyadic coping (Meuwly et al., 2012).

A closely related area of biopsychosocial research involves inflammation, the body's immune response to physical injury and infection, which also involves the HPA axis. Like endocrine responses to stress, chronic inflammation becomes maladaptive, and it is linked with physical and mental health problems including cancer and depression (see Slavich & Irwin, 2014; Steptoe, Hamer, & Chida, 2007). Recent research indicates that coping and emotion regulation are linked with inflammation. Hoyt et al. (2013) found that among men with prostate cancer, emotional approach coping predicted lower levels of inflammation 4 months later. This is consistent with the finding in healthy samples that emotional approach coping is associated with less-pronounced inflammatory response to acute stress in the laboratory (Master et al., 2009). Similarly, tendencies to engage in distinct emotion regulation strategies are differentially associated with inflammation: reappraisal and expressive suppression are respectively associated with lower and higher inflammatory activity (Appleton, Buka, Loucks, Gilman, & Kubzansky, 2013). Immunologic processes are sensitive to social context as well, including social stressors, social support, and intimate relationship characteristics (Robles et al., 2014; Slavich & Irwin, 2014; Uchino, 2009). Given the relevance of neural, neuroendocrine, and immunologic processes to physical and psychological well-being, it is clear that the next generation of research on coping and emotion regulation in well-being will emphasize their roles within biopsychosocial systems.

Conclusion

The historical emphasis on coping and emotion regulation has been of a decidedly intrapersonal nature. In this chapter, we have placed additional emphasis on social contexts, reflecting current directions in the area and highlighting what we believe

are fertile areas for theory, empirical research, and application. A growing interest in how individuals' coping and emotion regulation are influenced and contextualized by their social support resources and close relationships holds great promise for elucidating the routes through which individuals, couples, and larger groups adjust to the inevitable stressors of life. The question of how to achieve and maintain psychological well-being is dauntingly complex. Certainly, coping and regulating emotions during adverse experiences deserve attention as fundamental aspects of the human experience and central contributors to well-being.

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Chapter 15

Autobiographical Memory, Self-Regulation, and Well-Being

Dieter Ferring and Isabelle Tournier

Abstract The aim of this chapter is to highlight how autobiographical memory (AM) is related to well-being—how it is selectively used for adaptive self-regulation and how it serves different goals in different life phases. A structural view of AM is presented in a first section, with a description of theories related to the self-regulation aspects of AM. These aspects are illustrated in a second section by phenomena related to AM: The reminiscence bump, negativity/positivity effects, and the self-enhancement function linked to positive memories. The third and last section deals with AM-related therapeutic interventions that serve to improve or maintain personal meaning and SWB.

In this chapter, we will develop a functional view of autobiographical memory (AM) as a flexible “tool” allowing people to maintain subjective well-being (SWB), and in such a perspective, the use of AM always represents a “motivated” use steered by and serving self-regulation. The goals of such maneuvers primarily aim at self-coherence and—linked to this—the regulation of subjective well-being. In line with several authors of this volume, we consider SWB to include a cognitive-evaluative component comprising both global as well as domain-specific life satisfaction as well as an affective component including positive and negative affect (Diener, Suh, Lucas, & Smith, 1999). We consider the relation between AM and SWB a reciprocal one, where a self-serving use of AM affects specific SWB components and SWB affects the use of AM as well. This mutual influence is illustrated in the present chapter by concrete examples of how AM helps to adapt to environmental challenges across the life course, resulting in the preservation and/or enhancement of SWB.

This chapter is divided into three sections. The first one presents a structural view of AM that highlights its close links with subjective well-being. In the second section, we will elaborate the dynamic view of AM and SWB across the individual life

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span. A third section presents selected theoretical models about functional aspects of AM, highlighting its role in self-regulation and SWB regulation.

Autobiographical Memory – A Definition and a Systemic-Developmental Approach

In their definition of autobiographical memory, De Saint Laurent and Zittoun (2016) begin with the statement that there are as many definitions of AM as there are authors. This apparent diversity may reflect the complexity of phenomena as well as the processing character underlying AM, which leads investigators to adopt different perspectives and levels of analysis. We take the position here that AM is not a separate entity of human memory but a part of interacting memory systems and that AM is subject to individual development, changing in structure and contents across time.

Among the several postulated memory subsystems, AM is the system devoted to the self, more precisely, to the recollection of past events experienced by a person. As Fivush (2011) states in her paper on the development of AM, “autobiographical memory is a gradually developing system across childhood and adolescence that depends on the development of a sense of subjective self as continuous in time” (p. 559). Two aspects are crucial here: First, the notion of a gradually developing system, underlining that we acquire more and more self-related knowledge in the wake of development that is integrated in a given self-related knowledge structure. The second notion underlines the need of experiencing continuity of the self, indicating that AM is always information processing, motivated by and thus serving the self.

Continuity is one need that is important here but certainly not the only one. In addition to continuity, consensus as well as distinctiveness information also play a role in the biographical construction of the self (see Brandtstädter & Greve, 1994). It can be self-serving to feel the same (e.g., as normal as other people), just as it may be important to feel unique – that is, distinct from other people. Information about continuity, uniqueness, and consensus are derived from the adaptation to specific life events that happen throughout life. We take the position here that people generally process and store only those events that are important for individual adaptation in a given context.

First, let us briefly consider the term “event” in this context. The term does or should not imply that one can cut the stream of experience into well-separated entities or units of behavior. First, there are no clear markers of its start and end—one may say “my problems started with the diagnosis of the disease” but there is always a story before this singular event that will be used in the aftermath. A person may thus state “getting the diagnosis was the result of my lifestyle” and arrive at several other “events” that are due to other “events” in his/her life. Second, an event leads or “causes” other events. The statement “the disease changed my life” may be part of the individual narrative that our fictive person uses here. As we already stated above, the whole is more than the sum of its parts, and in this, AM constitutes a

reservoir of experiences that is used in the construction of the self and in the production of self-narratives.

Self-narrative, as a term, relates to the nearly rhetorical question of whether AM contents represent exact recollections of facts from events in one's life. As Bartlett (1932) stated more than 80 years ago, "... remembering appears to be far more decisively an affair of construction rather than one of mere reproduction" (see also Wagoner, 2013). Building on this, Neisser (1988) holds that memory is not an exact recollection of the facts, and remembered facts belong on a continuum from a *verity* aspect (i.e., accuracy of the memorized fact) to a *utility* aspect (i.e., using the past to accomplish some present end). A similar conception that distinguishes *correspondence* and *coherence* was proposed more recently by Conway (2005; see also Conway & Loveday, 2015) with the distinction of a memory representation true to the event (i.e., correspondence) or true to the self (i.e., coherence). Memories are—in such a view—considered as transient constructions that are all "false" or deviate, all biased to some degree in comparison with the "true" facts, but working for the maintenance of a coherent, confident, and positive self (Conway & Loveday, 2015).

Moreover, when describing memories as transient, it becomes evident that memories about "events" do not stay the same; they change together with the developing self and are object to reinterpretation from the perspective of the present self (Habermas, 2012). Habermas and Bluck (2000), for instance, underline the manner in which autobiographical memories are linked to the emergence of an identity. Life stories first appear with adolescence both because the necessary cognitive skills are developed and the construction of such stories becomes an "age-specific requirement" to define and communicate one's identity (Habermas & Bluck, 2000, p. 753; see also DeSaint Laurent & Zittoun, 2016). This matches the notion of a gradually developing story system across childhood and adolescence, as suggested by Fivush (2011). This author also underlines the importance of specific social and cultural contexts for AM "that relate to individual, gendered, and cultural differences in adults' autobiographical memories" (p. 559). Autobiographical memory is therefore a dynamic system reflecting different needs of the developing self as well as the different socioecological and cultural contexts the self is embedded in.

In this section, we conceptualize AM as being part of an interacting dynamic system that serves individual adaptation in a given socioecological and cultural background. AM feeds from events within the personal history that are of crucial importance for the individual, be it those related to individual uniqueness or those that serve the needs of consensus or continuity. In this respect, AM sets the frame for personal narratives that serve these functions and that differ across individual development. We will elaborate on these points in the following section.

A Functional View on Autobiographical Memory

We take a functional view on AM, primarily focusing on its role in self-regulation, which in turn serves goals related to the regulation of subjective well-being. Bluck, Alea, Habermas, and Rubin (2005) propose three ways in which AM serves self-regulation. They argue that recall and sharing of past personal experiences is motivated by directive, social, and self-related functions. The *directive* function is oriented toward current problem solving and the guidance of future action: Remembering past events can thus recruit knowledge that is necessary for adaptation to the current life situation as well as in the prediction of future events. This function should also allow for the reinterpretation of facts by refining the causes and meaning of past events. The *social* function refers to sharing personal memories for developing and maintaining social bonds, and – through such mechanisms – AM facilitates social interaction by increasing empathic levels between interacting people (Bluck et al., 2005). The *self-function* of AM serves the notion of self-continuity. Memories are, thus, reorganized to preserve a sense of coherence over time, especially when “the self is in adverse conditions that required self-change” (Bluck et al., 2005, p. 94).

The use of these three functions varies across the life course since different needs of the self underlie different life phases (Bluck & Alea, 2009). Compared to older adults, younger adults report a more frequent use of AM to create self-continuity and orient future actions. According to the authors, a higher self-concept clarity in older adults (Campbell et al., 1996) due to the accumulation of life experience and having a less extended time perspective (see Carstensen, Isaacowitz, & Charles, 1999), may explain these age differences. All this highlights the adaptive use of memory that is in line with different needs of the individual across the lifespan. We will address related points in the following section.

Memory and the Self Across the Life Course

The construction of AM starts in early human ontogenesis given its eminent importance for individual adaptation and survival (Ferring, 2017). Babies and infants develop internal neural representations in the interaction with the external world, and self-awareness appears between the ages of 15 and 24 months (Lewis & Brooks-Gunn, 1979). Self-related information processing starts at this age and continues throughout the course of cognitive development in childhood and adolescence.

To conceptualize these processes, we refer here to the work of Jean Piaget given that the core assumptions of his model render a comprehensive description of self-development in a life span view. Piaget (1955) maintains that cognitive structures provide schematic representations or mental structures of the self and the world. These schemas are subject to assimilation – that is, integration of information and growing differentiation across the course of development. Schemas become subject to change if information does not or no longer fits with the internal representation.

Piaget describes this experience as a cognitive conflict that motivates the building of new representations, and he describes this process as accommodation. A child, thus, does assimilate new events or information to his or her understanding until there is a cognitive conflict, resulting in the accommodation of the cognitive structure (see Zittoun et al., 2013).

This principle of balancing information between the inside and outside world is the motor of individual cognitive and self-development, and we consider this to be the basic dynamic of self-development and self-regulation across the human life span. The memory store that contains autobiographical information thus grows, and incoming information is assimilated or leads to accommodation of mental structures across the life span. The general motor behind this information processing is individual adaptation. The demands, however, underlying adaptation are different across the life course, reflecting different developmental tasks. As a result, motives underlying self-related information processing differ across the life span as well.

Carstensen's work on socio-emotional selectivity represents a theory describing these life course dynamics in the use of self-related knowledge (Carstensen et al., 1999). The authors elaborate that getting information about the self is a predominant motive during adolescence and early adulthood, underlying the construction of social networks. Following this logic, adolescents in the process of elaborating their self-view are in need of information via social interactions and thus have a comparatively high number of social contacts. In contrast to this, the conservation of the self becomes important in adulthood given that a permanent change in mental structures underlying the self is not adaptive (i.e. too "cost-expensive"). Individuals thus start to have smaller social networks and they selectively choose members of their networks to fit with their self-view. Especially with limited time perspectives, which is the case in advancing age, individuals are motivated to have emotionally meaningful social contacts and thus select persons into their networks that fit the need of emotion regulation.

This preference for emotion regulation is also related to *autobiographical reasoning*, which—according to Habermas and Bluck (2000)—corresponds to processes underlying narrative identity that develop by thinking or talking about the past and linking these contents to the current self. Consistent with this framework, older adults emphasize memories linked to identity stability (e.g., "This event shows what a nice person I am") whereas younger adults emphasize memories representing change (e.g., "It sort of helped me become a more open person") when interviewed about self-defining memories (McLean, 2008). This result overlaps with studies showing that older adults use more assimilation whereas younger adults show more accommodation when connecting events to their self (Sneed & Whitbourne, 2001). As highlighted by McLean (2008), old age is not a period without changes (e.g., physical, cognitive, and social changes), but a sense of stability may help older adults to adapt and maintain a coherent and continuous sense of self despite sometimes dramatic changes.

In our view, AM and the self constitute a system, operating through processes such as elaboration, consolidation, and change. An important point here is that the exchange process (between AM and the self) is bidirectional, following a top-down

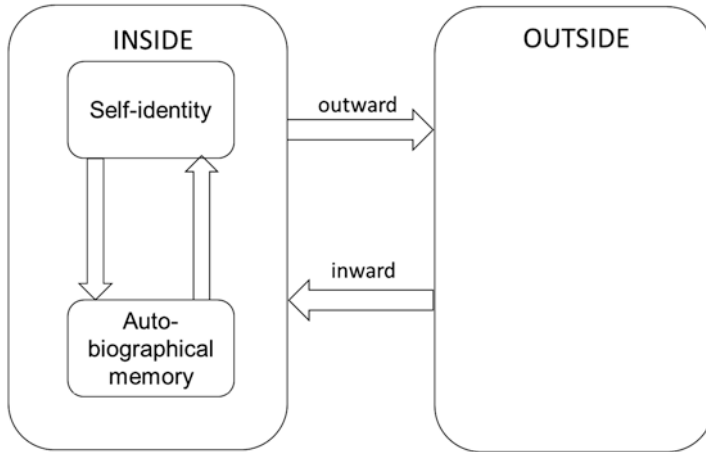


Fig. 15.1 Bidirectional exchanges between autobiographical memory and self-identity

as well as a bottom-up logic (see Fig. 15.1). New experiences may challenge autobiographically acquired concepts of the self and require accommodation, leading to changes in the mental structures of the AM and to differing narratives. Conversely, self-conceptions may direct attention to prominent features of AM, thus initiating top-down processing serving various self-related goals. Information processing by AM thus engages in a permanent exchange process between the inside and the outside, and this holds for all ages of development from early childhood to old age.

Key Phenomena Within Autobiographical Memory

Several specific phenomena linked to autobiographical memory are reported in the literature, all of which are consistent with the idea that some personal memories are more accessible than others. We start here with the notion that remembering is closely intertwined with motivational processes as well as the socioecological and cultural context in which the person is embedded. Studying AM thus implicates not only *how* people remember but also *why* they remember what they do (Bruce, 1989, cited in Alea & Wang, 2015). This section will develop these specific aspects and link the accessibility of memories to the notions of temporality and emotional valence.

The Reminiscence Bump

A repeatedly shown phenomenon in the individual recollection of the past is the reminiscence bump, by which middle-aged and older adults report more autobiographical memories dating from adolescence and early adulthood, particularly

involving the age span of 10–20 years (Rubin, Wetzler, & Nebes, 1986). This phenomenon is even reported in the contents of older adults' dreams (Grenier et al., 2005). Further evidence suggests that the reminiscence bump mostly includes events with a positive valence and high perceived control (Bernsten & Rubin, 2002; Glück & Bluck, 2007; Leist, Ferring, & Filipp, 2010). Recollections of the personal past also reflect the individual importance of historical cohort – specific events that occurred in history, be they positive or not. Glück and Bluck (2007) demonstrated the cohort effect by identifying an overrepresentation of negative memories concerning World War II among older adults.

Several theories try to explain why autobiographical memories of the period between ages 10 and 20 years are apparently so much easier to access. The identity theory (Koppel & Berntsen, 2015) postulates that memories of adolescence and young adulthood are more easily recalled because they correspond to important facts about identity formation. In this line of reasoning, Conway (2005, p. 604) states:

The novelty of reminiscence bump experiences lies in their newness and uniqueness for the self and they may play a crucial role in the final formation of a stable self-system and identity formation during late adolescence and early adulthood. The raised accessibility of these memories might then serve processes relating to coherence and the duration of a coherent self through time.

Consequently, memories during this time span benefit from better encoding in memory and this gives them better accessibility in later phases of life. Interestingly, Conway, Wang, Hanyu, and Haque (2006) showed that the reminiscence bump is relatively stable across different cultures and thus shows no variation due to different cultural grading of identity-forming events. This may indicate a universal bio-neurological process underlying this phenomenon.

Proposed more recently, the life story theory offers another interesting approach to explain the reminiscence bump and its link with identity. According to this theory, “the reminiscence consists largely of normative age-graded events in which the individual made consequential life choices in keeping with the developmental tasks of the transition to adulthood” (Glück & Bluck, 2007, p. 1935). These two theories highlight the mutual influence of AM and identity formation and transitions: AM aids identity construction and identity construction shapes the content and accessibility of events in AM. In one theory as in the other, the reminiscence bump appears closely linked to identity construction across the life course, highlighting the influence of AM on SWB. This last relation is also revealed by the fact that the accessibility of autobiographical memories varies according to their emotional valence.

Negativity and Positivity Effects in Autobiographical Memory

The emotional valence of specific memories clearly influences their accessibility and recollection. In various memory and attentional tasks, older adults tend to focus more on and recall more positive information than negative information whereas the reverse pattern is observed in younger adults (Mather & Carstensen, 2005; Tournier, Jordan, & Ferring, 2016). When asked to retrieve autobiographical memories, older adults recall memories classified by themselves as more positive than negative or neutral, whereas younger adults produce more negative and positive memories than neutral memories (Tomaszczyk & Fernandes, 2012). Starting with the notion that such a described “positivity effect” is not systematically observed, Reed, Chan, and Mikels (2014) conducted a meta-analysis of 100 empirical studies on this phenomenon. On the basis of their findings, they characterize the occurrence of the positivity effect as reliable. Moreover, they conclude that methodological and sample characteristics exert a moderating effect on this phenomenon. One of their interesting findings was that the positivity appears to a greater extent in tasks that do not constrain cognitive processing and that respect the “older adults’ natural information processing preferences” (Reed et al., 2014; p. 1). This is in line with the desideratum of ecological validity highlighting that there are differing ways of information processing across age groups leading to similar but not uniform outcomes (Tournier et al., 2016).

The emotional valence of recollected facts is also reflected in the topic and content of memories. In young adults, memories of positive self-worth are mostly associated with achievement- or mastery-related themes whereas memories of negative self-worth are far more likely than positive memories to contain an interpersonal or affiliation theme when compared to middle-aged adults (Pillemer, Ivcevic, Gooze, & Collins, 2007; see also Pillemer, Thomsen, Kuwabara, & Ivcevic, 2013). Moreover, young adults with a high level of subjective happiness have been shown to recall a higher percentage of positive emotional events during the last years than other participants (Otake, 2015).

As we have already highlighted, socioemotional selectivity theory (SST; Carstensen, 1992) can offer a motivational explanation for these age-related differences. According to SST, a motivational switch occurs during the life span as one’s life span shortens. Given a limited time horizon and the high probability of loss events as well as the need to come to terms with one’s life with what Erikson (1963) called ego integrity, older adults select social partners and process information in a way that this will serve the goal of emotion regulation. In this respect, they show a tendency to focus more on positive than negative aspects of their life, which likely represents an adaptive mechanism of aging. Younger adults normally face larger time horizons and the need to build up personal identity. In order to achieve this goal, self-validation via social information is predominant, leading to larger social networks to profit from different sources of social feedback. In line with these goals, focusing on negative stimuli can be more critical for future development than focusing on positive stimuli, since negative outcomes must be overcome in order to develop well-being in the long term.

Among older adults, the adaptive goal is different, and there is no longer a pronounced need to focus on negative stimuli given the thesaurus of life knowledge already present. Emotional balance and SWB are then preserved by focusing on the positive features of one's life. This does not mean, however, that information processing is blind to negative stimuli in old age. Reed and Carstensen (2012) suggest that positivity does not appear in those situations where the adequate treatment of negative information is adaptive and necessary to long term well-being (among older adults).

The Self-Enhancement Function Linked to the Emotional Valence of Memories

Emotional valence also influences the temporal location of specific memories across an individual's biography. Under the subtitle "getting better all the time," Wilson and Ross (2003) start with the assumption that there is a general tendency to feel oneself improving over time. Following from this set of motivations, positive autobiographical events are placed closer to the present. What matters is sometimes not the actual recency of the events, but rather their subjective fit with respect to "favorable or damaging implications for evaluations of the current self" (Wilson & Ross, 2003, p. 352). Within this framework, the impact of an event depends on its perceived closeness: An achievement-related event may consequently have a different (i.e., a positive or no) effect depending on the close or remote placement within one's biography. Distancing negative aspects from the present may thus help to protect or enhance the current self-evaluation.

Whereas this self-enhancement strategy does not seem to increase with aging (Demiray & Janssen, 2015; Grysman, Prabhakar, Anglin, & Hudson, 2015), it is linked to self-esteem given that individuals with high self-esteem show this phenomenon more frequently than individuals with low self-esteem (Demiray & Janssen, 2015; Ross & Wilson, 2002). A self-enhancing strategy is also observed when participants are asked to predict their future: The valence of imagined future events seems more positive than the valence of recalled past events (Grysman et al., 2015). This again indicates that recalled autobiographical memories may more often serve the function of utility than verity, playing a role in fostering or preserving SWB. AM contents can be used to face future challenges or difficulties by constructing a contrast between the negative past and the positive future.

Recent findings also implicate the recall of positive events in everyday mood regulation. Most people seem to benefit from recalling positive events from the past. Dysphoric persons, however, seem not to benefit from this strategy and recalling positive events from the past can even exacerbate their sad mood states (Chen, Takahashi, & Yang, 2015). Several explanations for this phenomenon have been proposed, including the idea that people with a depressive state focus more on negative than positive memories, which feeds negative mood and initiates temporal upwards comparisons as well as other ruminative thoughts (see also Lotterman and Bonanno, 2014).

All phenomena described thus far show that the use of AM has motivated purposes, some of which can enhance SWB. In the following section, we cover therapeutic approaches that have sought to use AM as a strategy of intervention.

Autobiographical Memory and Its Role in Interventions to Improve Well-Being

As detailed in the previous sections, AM content and access to these contents serve self-regulation and, through such processes, influence subjective well-being. Moreover, these relations differ across the life span, reflecting different developmental needs as well as tasks. There are several approaches aiming at the improvement of individual well-being by the use of AM content, and we will first focus on the use of self-narratives in psychotherapy as a general approach, and then focus on intervention approaches explicitly using AM in old age.

Self-Narratives in Psychotherapy

We take the position here that psychotherapy is about exchanging views on individual models of the self and the world. By this logic, people selectively use specific information stored in AM to describe themselves and their worldview following a specific theme of the self, predominant at a given point in time. Thus, people may present themselves as the “neglected child” and construct memories in a way that fits this picture. Similarly, one may present oneself as “a family man” dedicated to the well-being of one’s family and present specific information that serves to convey this picture. This self-presentation takes up the central theme, and the narrative elaborates on this theme by providing evidence. Making meaning of personal experiences may be considered the central motive behind these narratives (Singer, Blagov, Berry, & Oost, 2013).

In general, a person seeks therapy to get help in coping with difficult life situations such as the experience of an irreversible loss, going through a divorce, worrying about a child, and coping with anxiety or depression. Janoff-Bulman (1992) described the shattering of fundamental assumptions about the functioning of the self and the world as the main source of distress for victims of life crises and loss experiences. Therapy may help to restore lost control by “re-storying” – that is, developing “alternative” life stories that enable a person to achieve new meanings that benefit adaptation (White & Epston, 1990).

In this line of reasoning, working with narrative identities can offer insights concerning how to deal with negative experiences. A two-step process seems to be involved in this form of meaning-making (McAdams & McLean, 2013, p. 234):

In the first step, the person explores the negative experience in depth, thinking long and hard about what the experience felt like, how it came to be, what it may lead to, and what role the negative event may play in the person's overall life story. In the second step, the person articulates and commits the self to a positive resolution of the event. Research suggests that the first step is associated with personal growth—the second, with happiness.

A large part of a therapist's work is to support patients in this narrative process. Consistent with these ideas, results show that the patient's reemergence as an "agentic" individual is central to mental health improvements over the course of treatment. As Adler (2012) states:

...it seems as though individuals doing well after psychotherapy narrate the experience of treatment as being marked by an evolution in their own ability to affect their circumstances, as opposed to being passive and at the whims of fate (p. 381).

The constructivist approach has become prominent in psychotherapy, where theorists highlight the process of co-constructing knowledge and meaning about a given subject as the essential principle of psychotherapy (see Neimeyer & Raskin, 2000). In this understanding, meaning making is a process of knowledge construction that involves the communicative co-construction of meaning between client and therapist. As an often-used technique, the genogram allows the reconstruction of one's family history, and this approach builds on the assumption that knowledge about oneself and one's family origin is always selective, focusing on specific aspects in family history that have been shared collectively in a given family setting. The genogram tries to enlarge available information about one's family background and thus tries to establish a changed perception and meaning in the exchange between client and therapist (e.g., Chrzastowski, 2011). Such an approach uses information stored in AM and encourages people to further probe into their personal past.

Reminiscence, Life Review, and Life Reflection

When it comes to the therapeutic use of reminiscence, Westerhof, Bohlmeijer, and Webster (2010) elaborate on three types of reminiscence that are used: simple reminiscence, life review, and life review therapy. The authors propose:

...that in interventions the three types are addressed differently: simple reminiscence stimulates social reminiscence and bonding and promotes positive feelings; life review uses the positive functions to enhance personal wellbeing; and life-review therapy seeks to reduce the negative uses [of self-related information] and thereby alleviate symptoms of mental illness. Studies of the effectiveness of interventions have provided some evidence that interventions are effective in relation to their goals. (Westerhof et al., 2010, p. 697).

Training data offer further information. Interventions based on integrative and instrumental reminiscences have been effective in reducing symptoms among depressed older adults (Watt & Cappelliez, 2000). Nevertheless and despite promising outcomes, reminiscence and life review also bear some risks of negative outcomes since recollections of the past could lead to negative temporal comparisons

and the experience of loss. Moreover, in line with Westerhof et al. (2010), past memories can do other things as well. They can reduce boredom, revive bitterness (in form of obsessive reminiscence: Wong & Watt, 1991), or increase felt intimacy with deceased persons. In total, then, reminiscing can induce both positive and negative affect as well as increase or reduce life satisfaction depending on the specific person and context of memory retrieval.

Another important concept is life reflection. The concept was introduced by Staudinger (2001), who starts with the notion that reminiscence and life review—although often treated synonymously—actually represent different phenomena that use different social-cognitive processes. Life reflection, in her understanding, combines remembering experiences and an explanatory and evaluative analysis of these experiences involving emotional, motivational, and cognitive processes. Moreover, life reflection can focus on specific themes or periods, as it may involve the present, the future, and the personal past. The process of life reflection starts in adolescence and it continues and serves different functions across the life course. Staudinger contends that life reflection serves the aims of self-insight as well as self-criticism at all ages. Here, life reflection is considered as a prerequisite to personal wisdom (Glück & Bluck, 2013). Reflection of one's life represents, in this view, a volitional act that a person uses to increase self-insight. Staudinger believes that life reflection can be facilitated with a trusted person, thus underlining its therapeutic importance.

Conclusion

What is positive about autobiographical memory? We described the reminiscence bump, the positivity and negativity effect, and the temporal location of memories with different emotional valence as phenomena describing particularities of AM. All of these phenomena show a link with human development since they differ quite evidently between age groups and may thus represent different developmental phenomena as well. The amount of information stored in AM clearly increases across the life span, and some contents differ with respect to their importance for currently predominant developmental tasks and crises. Achievement-related events and experiences may be more important for adolescents and young adults when building up one's career, for instance, than for older persons. Interpersonal relations and experiences of friendship and intimacy may also be very important during this life period and it comes as no surprise that reminiscences often focus on this life period. The other important notion that all the phenomena underline is that the use of AM has motivational properties that can serve self-regulation as well as the regulation of SWB.

In all of these functions, AM is a positive and flexible "tool" that people use following and pursuing their predominant goals at a given point within the life course. AM thus contributes to personal meaning and one's life orientation. We will not go so far and say that some uses of AM may be better or more "successful" than others since this would lead to a normative discourse postulating standards of limited inter-individual validity and reducing the diversity of phenomena associated with AM. We

rather state that AM is a “treasure box” whose contents are selectively used to establish personal meaning. The individual can use this treasure box to redefine and reframe his or her biography and to identify resources and “treasures” that have not been used before. It is evident that this has a significant effect on the individual’s subjective well-being.

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Chapter 16

Self-Affirmation: Protecting the Self and Protecting Subjective Well-Being

Natalie Schüz and Benjamin Schüz

Abstract In this chapter, we will outline the basic tenets of self-affirmation theory and how self-affirmation has been shown to affect different contexts of human functioning. We will address commonly studied psychological benefits of self-affirmation as potential pathways of increasing well-being, discuss ways to induce self-affirmation, and detail how people may spontaneously choose to self-affirm. We will also discuss whether or not self-affirmation can truly be considered a self-regulation strategy or whether people need to be largely unaware of self-affirmation in order for it to produce beneficial effects. We will conclude the chapter by addressing boundary conditions and potential mechanisms of self-affirmation while discussing its role as a potential resource to increase well-being—after all, self-affirmation is an area of research and theorizing that has only recently been considered and picked up in the literature on subjective well-being.

Overview

We bald men don't spend all our time shampooing and rinsing our hair. It's one of the many selfless acts we bald men perform every day to make our world a better place. The bald also don't have use for plastic combs, or no hair dryers either so that's gotta save on electricity. Come on. We have got to go bald—all of us. Walking around with a full head of hair is like driving an SUV or dumping toxic sludge into a river. It's irresponsible. Hey, you hair people, shame on you! —Larry David¹

Constructing and maintaining a positive self-image is a viable strategy to improve one's well-being (Nelson, Fuller, Choi, & Lyubomirsky, 2014). In order to achieve this, external information that threatens the positive image we have of ourselves often needs to be disregarded or restructured. Just like Larry David has found his

¹One of the authors of this chapter is a hair person, whereas the other author is a balding person.

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own good reasons why it may be desirable to be bald, thus immunizing himself against threats to his self-image, a smoker may react to an anti-tobacco warning by conjuring up the image of his cheerful 90 year-old chain-smoking grandmother, thus refuting the implied message that smoking is dangerous and irresponsible (therefore painting the smoker as an irresponsible person). Defensive processes such as avoidance or derogation of messages, harm minimization, denial or rejection of available information are often used as regulatory strategies when facing potential threats to the self-image. However, research has suggested that individuals can also make use of an alternative—and arguably more adaptive—strategy to deal with such threats: By affirming our most important values, actions, and qualities, we can achieve a sense of self-worth and adeptness that helps buffer against potential threats to our self-image—be it unwanted messages that question us as sensible and responsible persons or commonly expressed stereotypes against a specific social group we belong to. This strategy, known as self-affirmation, has been studied in various contexts ranging from health risk communication and behavior change, academic performance and social situations to information processing in general. While the effects of self-affirmation are usually studied in the context of averting potential threats to the self-image, recent studies also show that self-affirmation can be used as a strategy to improve well-being (Nelson et al., 2014).

Self-Affirmation Theory

The basic assumption of self-affirmation theory (Sherman & Cohen, 2006; Steele, 1988) is that we are fundamentally motivated to see ourselves as morally adequate persons who are able to control important outcomes in life. However, external information, be it in the form of well-meant advice from our mothers, stereotypes against bald people, or health warnings on cigarette packages, may constantly challenge our positive self-image. This makes self-affirmation theory essentially a theory about responding to threats, although not necessarily about affective reactions to threats, as we shall see later.

According to self-affirmation theory, there are different ways we can react to threats to our self-image. We may just accept the challenge and try to incorporate the implicated changes in our behavior straightaway, e.g., by quitting smoking. However, if being a smoker forms an integral part of our self-system or identity (see Fig. 16.1 for an example of a set of domains that may make up a person's self-system), attitudinal or behavior change becomes unlikely. An alternative—and arguably more likely—way of dealing with the threat to the self-system is by defending one's current behavior. Defensive reactions can take multiple forms, and McQueen, Vernon, and Swank (2013) conceptualize different defensive strategies for different stages of information processing from a pre-attentional phase (e.g., avoiding certain information by not looking at it) to an elaborated information processing phase (e.g., reactance: rejecting a message and behaving in opposition to it). Ultimately, a positive self-image is maintained if threatening messages are rejected,

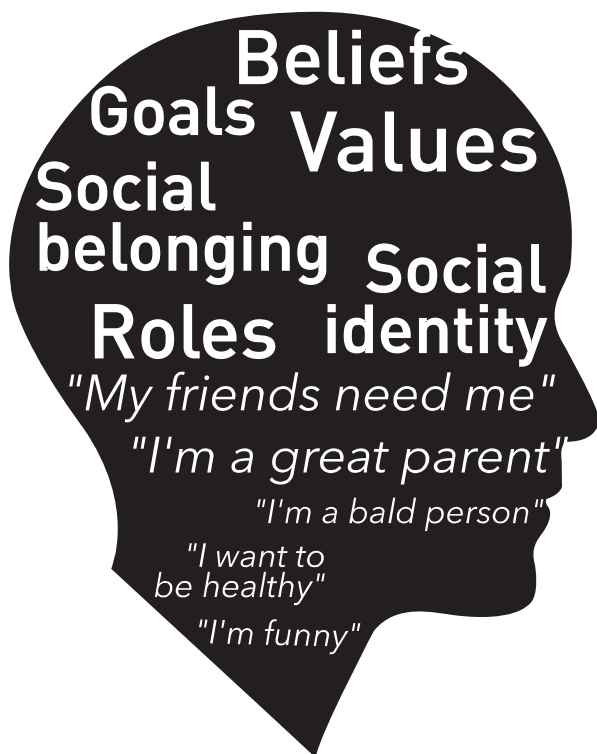


Fig. 16.1 Examples for cognitions and domains within the self-system

downplayed, or ignored. It has to be noted that affect regulation is not at the core of self-affirmation effects, despite earlier notions favoring this idea (Tesser, 2000).

The integral tenet of self-affirmation theory is that there is an alternative way of dealing with threats to the self-system other than “simply” accepting them or reacting defensively. The self-system that lies at the core of self-affirmation theory is assumed to be a flexible construct defined by idiosyncratic domains (see Fig. 16.1). Flexibility here means that the system is not tied to one specific configuration of traits, behaviors, or values that determine the system, but that this configuration might change and that the overall integrity of the system is key. Accordingly, self-affirmation theory proposes that if one of the domains defining the self-system is threatened, this threat might be compensated for if we manage to affirm an important domain that is not directly addressed by the threat. This could result in a stabilization of the system and maintenance of a positive self-image.

Importantly, this means that in responding to a threat, we are not restricted to challenging the threat itself, but that we are flexible in affirming different domains of the self-system. Affirming our core values, even (or especially) if they are unrelated to the threatened domain helps in reminding us of who we really are, what is

important to us, and how well we are doing in other domains of our lives. Most importantly, by self-affirming, we gain a broader, larger view of ourselves that is not so easily threatened. This also makes it more likely that we are able to direct our attention to the threatening message and think about incorporating the implied recommendations. For example, a study on sun exposure has shown that participants are less likely to react defensively to health risk feedback on skin cancer if they get a chance to self-affirm important values before receiving the risk feedback (Schüz, Schüz, & Eid, 2013). Likewise, heavy smokers are more likely to reduce their smoking after viewing an anti-smoking advertisement if they have been given the chance to self-affirm (Memish et al., 2016).

There are similarities in these processes to other theories on self, such as those emphasizing cognitive dissonance, the psychological immune system, or self-complexity. In fact, Steele outlined self-affirmation as a process to explain or reinterpret cognitive dissonance effects (Steele & Liu, 1983). Previously, cognitive dissonance responses had been interpreted as a result of individuals attempting to reduce the inconsistency between their attitudes and action. However, self-affirmation theory allowed us to understand these processes as a response motivated by deflecting threats to the integrity of a person's self-system. Accordingly, self-affirmed participants are more tolerant of situations eliciting typical cognitive dissonance responses such as rationalizations, and they are more likely to tolerate disagreeing information (e.g., Matz & Wood, 2005). Some of the theorized effects of self-affirmation are also similar to the effects of self-complexity on well-being, by which individuals with higher self-complexity (i.e., more accessible differential aspects of their self) experience a buffer against external threats to well-being (e.g., Rafaeli-Mor & Steinberg, 2002). In fact, it has been shown that the buffering effects of self-affirmation appear similar to those of self-complexity (McConnell & Brown, 2010). However, while self-complexity focuses on the range of different self-aspects that might be accessible to a person, self-affirmation focuses on the content of these self-representations rather than their number, structure, or complexity.

Inducing Self-Affirmation

There are a number of techniques and manipulations that induce self-affirmation, and they range from systematically developed procedures such as the values affirmation task (Reed & Aspinwall, 1998) to observations that self-affirmation can also be enhanced by self-relevant activities such as updating one's facebook status (Toma & Hancock, 2013). A (dated) overview of self-affirmation manipulations is provided by McQueen and Klein (2006). What most of these manipulations have in common is that they encourage participants to elaborate on an aspect of the self-system with the idea that this elaboration process affirms a core aspect of the self-system. For example, in the value affirmation task, participants are required to select from a list the value that is most important to them (e.g., religion) and then write a page about why this value is important to them. Participants in the control group are

usually asked to write about why their least-ranked value might be of importance to someone else. The notion that most self-affirmation manipulations are based on affirming values rather than personal attributes (e.g., being smart, beautiful, or honest) could be an important one because it theoretically implies that self-affirmation operates independent of self-esteem: Affirming values allows one to reflect on important aspects of the self that are not dependent on performance or standing (such as being smart, beautiful, or honest) and are therefore accessible to individuals that do not always evaluate themselves favorably (Harris, Griffin, Napper, Schütz, & Bond, 2017).

The idea that the optimal content of affirmation exercises might differ between people has also been supported by a study that examined differential effects of value affirmation vs. affirmations related to social belonging (Shnabel, Purdie-Vaughns, Cook, Garcia, & Cohen, 2013): Here, black students (Experiment 1) and female students (Experiment 2) profited from affirmations related to the social groups they affiliated with, whereas white students (Experiment 1) and males (Experiment 2) did not. This is in line with the accessibility hypothesis mentioned above—members of minorities or groups subject to stereotypes and prejudice such as black and/or female students might find attribute-related affirming thoughts more difficult to retrieve than value-related thoughts, whereas in privileged groups such as male or white students, such differences should be less consequential. These findings suggest that people differ with regard to which aspects of the self-system are the most effective buffers against threatening information, though more research is needed to find out which self-affirmation tasks are most effective for which people.

A similar plurality of approaches can be observed if we look at the means or formats of self-affirmation manipulations. Apart from the writing exercises mentioned above, these manipulations include questionnaire-based manipulations (Napper, Harris, & Epton, 2009), in which participants are asked to apply a range of value-related statements (e.g., “never too busy to help a friend”) to either themselves or a publicly well-known figure (ranging from Oprah Winfrey to more colorful characters such as Australian cricketer Shane Warne). Shorter self-affirmation tasks (e.g., Armitage, Harris, & Arden, 2011) ask participants to formulate if-then plans with self-affirming cognitions, such as “If I feel threatened or uneasy by something, I will think about what I really stand for”. This example employs a values paradigm, but also makes use of the if-then structure of implementation intentions (Gollwitzer, 1999). This structure is assumed to make self-affirming cognitions accessible once the self-system is threatened. Less explicit affirmation manipulations include sentence unscrambling tasks that involve value-affirming content (Sherman, Cohen, et al., 2009) or viewing a website banner designed to affirm collective values within an organization (Arpan, Lee, & Wang, 2016).

There are differing findings regarding the role of awareness of self-affirmation. On the one hand, it seems that being aware of a task being designed to affirm the self attenuates self-affirmation effects (Sherman, Cohen, et al., 2009). On the other hand, it has been argued that if the use of self-affirming cognitions is intrinsically motivated—i.e., people use self-affirming cognitions out of their own choice rather than being instructed to do so by an experimenter—these cognitions might still

buffer threats, at least in the academic domain (Silverman, Logel, & Cohen, 2013). The key mechanism here seems to be the combination of affirmation and autonomy; that is, if people freely chose to self-affirm, or which values to affirm, they might still profit from self-affirmation despite expectancy or correction attenuation (Sherman, Cohen, et al., 2009). As such, providing people with a repertoire of self-affirming cognitions might be an inoculation strategy that could be used as a ‘deliberative coping strategy’ (Silverman et al., 2013) when threatened.

Spontaneous Self-Affirmation

Most research to date looks at self-affirmation from an experimental perspective and compares participants who have been instructed or given the opportunity to self-affirm with a control group without self-affirmation. However, people also seem to be able to spontaneously self-affirm without being instructed to do so. For example, looking at the essays that women with breast cancer wrote in an expressive writing study, Creswell and colleagues (2007) found that only those women whose essays had been categorized as containing self-affirmation, as opposed to meaning-finding or cognitive elaboration, benefited from this exercise. Findings such as these suggest that people have access to a repertoire of self-affirming cognitions, and might strategically make use of these cognitions. This idea is also in line with Silverman et al.’s (2013) finding that if people autonomously choose to employ self-affirming cognitions, these cognitions still buffer against psychological threat despite people being aware of these potential benefits.

Spontaneous self-affirmation therefore describes the degree to which people access affirming cognitions when faced with self-referent threat. Such affirmations might be related to personal attributes (e.g., positive attributes such as being friendly), previous episodes of successfully coping with threat, or important values. Existing individual difference measures of the tendency to spontaneously self-affirm accordingly contain items such as “I think about the things that I have successfully accomplished” in the Cognitive Self-Affirmation Inclination scale (CSAI; Pietersma & Dijkstra, 2012), or “When I feel threatened by something, I find myself thinking about the things I believe in” in the Spontaneous Self-Affirmation Measure (SSAM; Harris et al., 2017). Both instruments assume that people differ with regard to the intensity or frequency they have access to self-affirming cognitions. Research using the CSAI and SSAM suggests that the individual differences in spontaneous self-affirmation assessed with these instruments correspond with results found in laboratory-based experimental self-affirmation research. For example, people scoring higher on the SSAM were more likely than those scoring lower to be willing to obtain feedback from genetic sequencing for illness risk (Taber et al., 2015) or positively interact with healthcare providers and seek out more medical information (Taber, Howell, et al., 2016). Likewise, participants with higher scores on the CSAI responded similarly to health warnings as participants in other studies who had undergone a self-affirmation manipulation (Pietersma & Dijkstra, 2012).

Self-Affirmation and Self-Esteem

The notion that spontaneous self-affirmation is a disposition towards accessing positive self-relevant thoughts when threatened suggests a conceptual relation to self-esteem as a summative evaluation of one's positive self-images. Consequently, people high in self-esteem should be better able to self-affirm. In fact, however, the opposite might be true: Düring and Jessop (2015), for example, showed that a value-based self-affirmation manipulation reduced defensive responses to self-threats among individuals low in trait self-esteem only, while there were no effects of affirmation among participants high in trait self-esteem. This suggests that self-esteem and self-affirmation might tap into or replenish a similar resource of positive self-referent thought. Individuals higher in trait self-esteem might have easier access to positive self-referent thoughts that buffer threats posed to the integrity of the self-system than those lower in trait self-esteem, who might have to resort to defensive responses instead. Related research shows that people high in trait self-esteem respond to self-threats in a similar manner as self-affirmed participants (Sivanathan, Molden, Galinsky, & Ku, 2008).

Sherman and Cohen (2006) accordingly suggest that self-esteem may affect how people respond to self-affirmation, but that self-affirmation changes the accessibility of alternative positive aspects of the self rather than enhancing self-esteem. Thus, people with higher self-esteem might have better access to more of these alternative positive aspects. On the other hand, and as outlined above, affirming values might not require access to positive self-referent thoughts, as values are accessible independent of self-esteem resources. There is thus a key dimensional or hierarchical difference between self-affirmation and self-esteem: Self-esteem might be a resource of positive self-referent thoughts that could facilitate self-affirmation, but it is not the only potential source. These considerations also point to one main route via which self-affirmation might be an important contributor to well-being—as a process and resource that could compensate for low levels of accessibility in the domain of positive self-relevant thought. In one of the few studies that examined the role of self-affirmation within the complex of positive self-referent cognitions, dispositional self-affirmation assessed with the SSAM was associated with higher levels of subjective well-being, hopefulness, and cancer information seeking in a sample of cancer survivors, even if dispositional optimism was controlled for (Taber, Klein, Ferrer, Kent, & Harris, 2016). Thus, there are conceptual differences and differential mechanisms in the operation of optimism versus self-affirmation.

Self-Affirmation Effects on Determinants of Well-Being

The effects of self-affirmation on defensive responses have been shown for a variety of contexts that are relevant for subjective well-being. However, there is a dearth of research that has explicitly examined whether and how self-affirmation can affect

subjective well-being directly (for two notable exceptions, see Nelson et al., 2014, and Armitage, 2016). Thus, instead of an extensive and redundant review of these two papers (which are highly recommended to the interested reader), we will discuss how self-affirmation relates to known determinants of subjective well-being and outline how it might function as an indirect mechanism to maintain or even increase one's happiness.

Information Processing

Information processing covers the effects of self-affirmation on all processes that are involved with the perception, encoding, and cognitive processing of information. As outlined above, and central to the theory, self-affirmation is assumed to reduce rationalization and defensiveness when people encounter discordant information (Steele, 1988). This conceptualization is basically one that defines the mechanisms by which self-affirmation operates as it relates to how we process threatening information. The mechanism has been supported at both a cognitive and an implicit level. For example, Critcher and Dunning (2015) demonstrated that self-affirmed individuals had a broader self-concept—that is, used more terms and domains to define their working self. If one of these domains is threatened, this broader, more inclusive perspective allowed participants in the study to decrease the centrality of this domain to their self-concept, which in turn mediated the effects of self-affirmation on a reduction in defensiveness. Put simply, self-affirmation seems to broaden our self-concept in that we are able to increase the number of domains and aspects we base our self-representations on.

On a less explicit level, self-affirmation has been shown to increase levels of mental construal (Schmeichel & Vohs, 2009)—that is, the degree to which participants view issues as broader concepts (e.g., an election) or at a very concrete and micro level (e.g., putting a piece of paper in a ballot box), which has been linked to better self-control. Similarly, it has been shown that after viewing a health warning, threat-related words were more accessible in self-affirmed as opposed to non-affirmed participants, suggesting an increased accessibility of the threatened domain, which facilitates less defensive and adaptive behavioral responses (van Koningsbruggen, Das, & Roskos-Ewoldsen, 2009). Accordingly, self-affirmation can be seen as a source of objectivity in that it allows for the less biased processing of counter-attitudinal information. Similarly, it has been shown that self-affirmed participants show attentional bias towards the threatening components of health messages, which also suggests less biased information processing (Klein & Harris, 2009). Although we need more research on the mechanisms involved in self-affirmation (Cohen & Sherman, 2014; Harris, 2011), these mechanisms are at least implicit in some of the research reviewed below.

Academic Performance

In the academic domain, self-affirmation effects have been found in the stereotype threat and academic performance areas. Stereotype threat refers to situations in which members of stereotyped minority groups feel at risk of conforming to negative stereotypes about their group. The general idea is that in situations in which negative performance stereotypes (such as African American students being less intelligent than other students) are activated, members of this negatively stereotyped group become more anxious about their performance, which in turn hinders them from performing at their maximum level (Steele, Spencer, & Aronson, 2002). Based on the idea that stereotype threat is a self-relevant threat (that is, a threat to a potentially important aspect of a person's self-system), a series of studies have examined whether self-affirmation might alleviate stereotype threat by affirming an unrelated domain of the self-system. It has been found that the academic performance of African American students, a negatively stereotyped group, improved up to 40% when students were given the possibility to self-affirm, consequences that lasted several years (Borman, Grigg, & Hanselman, 2016; Cohen, Garcia, Apfel, & Master, 2006).

The mechanisms underlying the effects of self-affirmation on stereotype threat are probably reductions in anxiety-associated impairments in working memory. What we do know is that self-affirmed participants have displayed improved problem-solving under both chronic and induced acute stress conditions (Creswell, Dutcher, Klein, Harris, & Levine, 2013). Self-affirmed participants also display increased perspective taking—that is, they attend to negative feedback and attempt to correct the errors that they have made (Critcher & Dunning, 2015). However, the degree to which stereotype threat contributes to racial and gender disparities in educational attainment is a matter of ongoing debate (Sackett, Hardison, & Cullen, 2004).

Health

Two recent systematic reviews (Epton, Harris, Kane, van Koningsbruggen, & Sheeran, 2015; Sweeney & Moyer, 2015) report small to medium effects of self-affirmation used in conjunction with health risk messages on health behaviors, and small effects on behavioral intentions. In addition, Epton et al. (2015) report small effects of self-affirmation on health message acceptance.

Typical studies in this domain combine health risk communication (for example, information about the negative consequences of caffeine consumption: Reed & Aspinwall, 1998) with a self-affirmation exercise. When self-affirmed, participants are typically more open-minded towards the information in the risk communication. They also engage in less defensive cognitions and have been shown to engage in adaptive behavior changes (though with small effect sizes). In particular, people who engage in risky behaviors (such as smoking, drinking alcohol beyond safe limits, or deliberately exposing themselves to unhealthy doses of UV radiation) have been shown to respond defensively to messages that provide them with feedback

about the negative consequences of their behavior (e.g., “Smoking increases your risk of lung cancer”). These defensive responses range from active attention avoidance to parts of the message (Kessels, Ruiters, & Jansma, 2010; Kessels, Ruiters, Wouters, & Jansma, 2014) to direct behavioral reactance—that is, increased levels of risk behavior as a result of receiving personalized feedback about the negative consequences of exactly this behavior (Schüz et al., 2013). However, if people are given the opportunity to self-affirm prior to receiving such feedback, many studies show that defensive responses decrease (Klein & Harris, 2009) while intentions for healthier behavior increase (Epton et al., 2015; Schüz, Cooke, Schüz, & Koningsbruggen, 2016; Sweeney & Moyer, 2015). There is still considerable debate whether these adaptive changes are due to a deliberative process, particularly because the effects are typically slightly larger than those on intentions. To illustrate, one study among smokers found that smokers who self-affirmed before viewing material from an Australian Government issued non-smoking campaign actually had both lower intentions to quit and expected lower success in quitting. At the same time, however, these people were more likely to cut down on cigarette smoking, relative to the control condition (Memish, Schüz, Frandsen, Ferguson, & Schüz, 2016). By contrast, another study found that intentions (which followed anticipated regret) mediated the effects of self-affirmation on healthier eating (van Koningsbruggen et al., 2014).

Stress and Anxiety

Given the link between self-affirmation and threat buffering, it is reasonable to think that self-affirmation may reduce stress and anxiety. And indeed, studies show that self-affirmation can modify individual responses to health-related stressors (Creswell et al., 2007), anxiety about one’s workplace in downsizing organizations (Morgan & Harris, 2015), or real-life academic stressors (Sherman, Bunyan, Creswell, & Jaremka, 2009). In the latter study, students were examined 2 weeks prior to an exam and immediately before the exam. Students in the control condition experienced pronounced increases in stress-related hormones in the 14 days prior to the exam, whereas self-affirmed students did not. This effect was strongest in those who were most afraid of negative evaluations resulting from exam marks. These results suggest that self-affirmation has the potential to modify the sympathetic nervous system response to an acute stressor, probably by altering appraisals of the stressful situation.

The potentially stress-buffering effects of self-affirmation have also been demonstrated in people suffering from chronic stress (Creswell et al., 2013), where self-affirmed participants showed less pronounced declines in problem-solving compared to non-affirmed participants. One study (Spicer et al., 2016) also points to potential benefits of self-affirmation for preventing how both acute and chronic stress might impair health: Self-affirmed participants put under stress in a public speaking task showed less endothelial damage (a process ultimately leading to cardiovascular disease). Together, this line of research suggests that self-affirmation has the potential

to inoculate against some of the cognitive and physiological consequences of experiencing acute stress, though it is not entirely clear via which pathways these responses are mediated. A key mechanism, however, seems to be that self-affirmation buffers against evaluative threat, which lies at the core of many stress-inducing experiences.

Interpersonal Relations

Self-affirmation has also been shown to affect interpersonal relationships, an important contributor to subjective well-being. One study along these lines suggests that feelings of connectedness and positive feelings toward others seem to be key (Crocker, Niiya, & Mischkowski, 2008). In this study, self-affirmed participants showed substantially higher scores on feelings of connectedness and other-directed feeling. The authors argue that such value affirmations increase feelings of self-transcendence—that is, things beyond oneself, which would include increased attention toward others. The effects of self-affirmation on reduced defensive responses to counter-attitudinal information discussed above might also promote interpersonal negotiation, in particular with regard to conflict resolution. And indeed, there is some research to suggest that self-affirmed participants are more willing to make concessions and engage in constructive conflict resolution strategies such as not derogating concessions offered by a conflict partner (Ward, Atkins, Lepper, & Ross, 2011). In a more applied setting, Bendersky (2014) demonstrated that receiving status affirmation (i.e., respect for one's standing up for principles) from a political opponent led to greater acceptance and higher conciliatory attitudes towards a highly contentious and polarizing political issue at the time (Obamacare), in part by decreasing perceptions of enmity toward the conflict partner. These findings point to a potential role of self-affirmation in improving or modifying interpersonal relations. In close personal relationships and marriages, which are especially threatened by a defensive conflict style (Carstensen, Gottman, & Levenson, 2004), self-affirmation might play a role in improving how couples discuss and negotiate problems. Two studies provide some preliminary evidence of this type, with affirmed participants (elaborating on a compliment they received from their partner) experiencing greater relational security (Marigold, Holmes, & Ross, 2007), and contemplating less sabotaging behaviors such as self-distancing or picking fights (Jaremka, Bunyan, Collins, & Sherman, 2011).

A potential pathway for these effects of self-affirmation on interpersonal relationships was offered by Lindsay and Creswell (2014), who suggest that self-affirmation increases self-compassion—that is, being compassionate towards oneself in the face of being inadequate or failing, and that increased self-compassion in turn increases prosocial behavior. As interpersonal relationships and the conflicts resulting from relationships are a major influence on subjective well-being, the effects of self-affirmation on improved conflict resolution behavior, increased prosocial behavior, and increased feelings of connectedness point to the potential of self-affirmation to improve well-being via improved interpersonal relations.

Self-Evaluative Threat

Based on the idea that self-affirmation shifts the salience of self-relevant thought domains, it could also be possible that self-affirmation modifies the perceived evaluation of others, which might be particularly relevant for well-being. The effects of self-affirmation on stereotype threat seem to suggest such a pathway in which the expected negative evaluations by others becomes less relevant, and thus stereotype-conforming behavior decreases in likelihood. While the majority of studies have examined effects of this type in an academic setting, von Hippel et al. (von Hippel, Wiryakusuma, Bowden, & Shochet, 2011) showed that the reduction of stereotype threat through self-affirmation also applies to gender stereotypes—women who self-affirmed experienced and displayed less stereotype threat. Demonstrating a general underlying principle, Armitage (2012) argued that self-affirmation could allow an individual to base their positive self-evaluations on domains other than those that might be potentially threatened by evaluations from others. This study showed that self-affirmed girls were both more satisfied with their body self-image and were less likely to base it on highly evaluative criteria such as body weight and shape compared to non-affirmed girls in the control condition. Self-affirmation might also modify the immediate response to such self-relevant threats: Self-affirmed participants experienced less heart rate increase and quicker recovery from blood pressure increases following interpersonal evaluation, relative to non-affirmed participants (Tang & Schmeichel, 2015), indicating that evaluations from others might be less threatening to the self if one is given the opportunity to self-affirm. These latter findings are particularly interesting, as they suggest that at least some aspects of expected or actual negative evaluation by others are potentially modifiable via the modification of self-relevant cognition.

Boundary Conditions and Potential Mechanisms of Self-Affirmation

Some of the research reviewed so far suggests that self-affirmation manipulations do not have the same effects for everyone. Going back to the theoretical model, this only makes sense—after all, whether information is threatening to the self-system depends on whether the content of the potential threat is relevant to the self-system in the first place. As a consequence, self-affirmation effects are often found to be stronger among participants for whom the threatened domain is of particular importance, such as people who engage in risky behaviors or for whom engaging in the risky behavior is of particular relevance and who are at the same time at the highest risk of engaging in defensive responses (e.g., Schüz et al., 2013).

Similarly, self-esteem can be a moderator of self-affirmation effects. As discussed above, people high in trait or state self-esteem might have easier access to self-affirming or positive self-referent thought, which renders self-affirmation

manipulations less effective due to ceiling effects—there are no additional threat management resources that could be accessed among these individuals (Düring & Jessop, 2015; Van Dijk, Van Koningsbruggen, Ouwerkerk, & Wesseling, 2011). Some further boundary conditions are discussed in the section on self-affirmation manipulations above and in overview chapters (e.g., Cohen & Sherman, 2014; Schütz et al., 2016; Sherman & Cohen, 2006).

While there is an increasing amount of research on the boundary conditions of self-affirmation (with relevant variables being level of threat, personal relevance of threat, availability or access to threat management resources such as self-esteem), much less is known about the processes underlying or causing self-affirmation effects. With regard to defensive responses to counter-attitudinal or threatening information, message acceptance (Armitage, Harris, Hepton, & Napper, 2008) or message derogation (van Koningsbruggen & Das, 2009) have been discussed as potential mediators, but the degree to which these mediators overlap with the actual criterion can be debated. Above, we discuss how interpersonal factors might be related to self-affirmation effects, with one study showing that self-compassion mediates self-affirmation effects (Lindsay & Creswell, 2014), and one study suggesting that positive other-directed feelings mediate self-affirmation effects (Crocker et al., 2008). Both of these processes, however, might be related to a buffering of evaluative threats, with these putative mediators mainly specifying the source of evaluation. Another perspective has been provided by examining the level at which self-affirmed individuals process information. It has been suggested that self-affirmation leads to a higher level of construal (Wakslak & Trope, 2009), which would suggest that self-affirmed participants shift their level of thinking from concrete issues towards more superordinate goals and structures. In a recent integrative paper, Critcher and Dunning (2015) suggest that self-affirmation might provide the means for an individual to place a threat within a broader context, which in turn limits the threat's detrimental effects on the self-system. According to this approach, self-affirmation mainly provides broader self-views and enables one to place information within context. This broader perspective will lead both to a more thorough assessment of the potentially threatening information, but in a broader context, which might render threats more controllable or manageable.

One major limitation in examining these cognitive mediators is that it is unclear to which degree people might be aware of these processes and there are further unclear temporal contingencies. There is some research on the neural correlates of self-affirmation effects, but this line of research is arguably in its infancy. There is some evidence that self-affirmation leads to greater activation in areas in the ventromedial prefrontal cortex that have been associated with processing information about the self and positive valuation (Cascio et al., 2016; Falk et al., 2015). A related study found additional activation in the ventral striatum, an area associated with neural reward circuitry, which suggests that participants might experience self-affirmation as rewarding, and that this might mediate some of self-affirmation's effects (Dutcher et al., 2016).

However, research both on boundary conditions and on potential mediators of self-affirmation effects is only an emerging area, and there is probably more that we do not know about how and when self-affirmation works than we do know.

Conclusion: Self-Affirmation as a Resource to Increase Well-Being?

The majority of this chapter has focused on how self-affirmation might affect some of the key determinants of or key threats to subjective well-being. A much more limited literature has examined whether self-affirmation is directly related to subjective well-being, and much of this research has focused on ruling out the idea that self-affirmation effects on various outcomes are due to increases in positive affect (e.g., Creswell et al., 2013). This line of research demonstrates that self-affirmation is unlikely to result in short-term increases in acute positive affect. However, given the demonstrable effects of self-affirmation on determinants of subjective well-being, might there be effects on more enduring components of happiness?

One key issue in this domain seems to be that most studies on self-affirmation have examined how the individual responds to induced threats to the self (be that health messages, stereotype threat, evaluative threat, or incompatible threats: Armitage, 2016). To our knowledge, only two studies so far have examined whether self-affirmation might lead to increases in subjective well-being in populations in absence of external threats. One study (Nelson et al., 2014) showed that value-based affirmations lead to improvements in both eudaimonic and hedonic well-being (the latter in only one of two studies reported in the paper), and that participants low in baseline (i.e., pre-affirmation) well-being particularly profited from self-affirmation. This suggests that in the absence of acute threats to the self-system, self-affirmation could have restorative effects among those low in well-being, such as populations under constant self-evaluative threat. In line with this idea, Armitage (2016) demonstrated that women from severely deprived neighborhoods improved in subjective well-being measures after completing an implementation intention-based self-affirmation manipulation.

What the research reviewed in this chapter suggests is that self-affirmation might indeed be a process more related to the “Psychology of Defense” (Sherman & Cohen, 2006) than optimizing well-being in the absence of threat. However, the current state of self-affirmation research also shows that reflecting on personally relevant issues, be they values or social relations or attributes, might buffer the self against otherwise detrimental impacts of threatening information in various domains. The idea that self-affirmation might indeed be an inoculation process to protect the self from negative effects from external stressors (Dutcher et al., 2016) certainly deserves increased attention.

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Part IV
Social Processes

Chapter 17

Social Comparisons and Well-Being

Abraham P. Buunk and Pieterneel Dijkstra

Abstract Social comparison processes may have vital consequences for perceptions of well-being among both healthy individuals as well those struggling with medical or psychological problems. According to the identification-contrast model, when individuals are confronted with a stressful event, they will try to re-establish or maintain well-being and self-esteem by identifying themselves with others doing better (upward identification) and contrast themselves with others worse-off (downward contrast). The present chapter describes both correlational and experimental research in different settings, such as education, health care, personal relationships and organizations, that shows when and how individuals rely on upward identification and downward contrasts, what consequences these comparisons have on affect, mood, well-being and self-esteem, and how these comparisons interact with contextual and individual difference variables. Finally, several practical implications of social comparison research are discussed.

It seems quite obvious that one's well-being is to an important extent dependent on how one evaluates one's own situation in comparison to that of others. Theorizing and research on social comparison can be traced to some of the classic contributions to Western philosophy (Suls & Wheeler, 2000). Nevertheless, it was not until Festinger's (1954) classic paper that the term *social comparison* was proposed, and a detailed theory on social comparison was outlined. While Festinger's original theory on social comparison had a restricted focus on the comparison of abilities and opinions, over the past decades work on social comparison has undergone numerous transitions and reformulations, and has developed into a lively, varied, and complex area of research encompassing many different paradigms, approaches, and applications (e.g., Buunk & Gibbons, 2006; Suls & Wheeler, 2000). An important aspect of this development is the focus of many social comparison studies on

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issues directly related to well-being – the quality of life among cancer patients, marital satisfaction, and occupational burnout for example – that no researcher would have considered during the early years of the theory.

Although the focus on social comparison and well-being is relatively recent, this focus can in part be traced back to the pioneering work by Schachter (1959), who was probably the first to suggest that stress enhances the need for social comparison, owing particularly to the uncertainty inherent in many stressful situations. According to Schachter (1959), “the emotions or feelings, like the opinions and abilities, require social evaluation when the emotion producing situation is ambiguous or uninterpretable in terms of past experience” (p. 129). A series of studies in the field have indeed shown that uncertainty and negative emotions may foster social comparisons. The first of these was that by Buunk, Van Yperen, Taylor, and Collins (1991), who showed that social comparison tendencies were enhanced in individuals, particularly women, facing a combination of uncertainty and dissatisfaction in their marriages (Buunk et al., 1991, Study 1). In a quite different context – i.e., nursing – similar results were obtained. Nursing is a profession in which uncertainty is rather common (e.g., Tummers, Landeweerd, & Van Merode, 2002). Nurses may, for instance, wonder if they are too involved with patients or not involved enough; they may feel uncertain how to deal with patients’ varying problems, including appeals for help and expressions of anxiety; and they may experience uncertainties about whether they are doing things correctly. Buunk, Schaufeli, and Ybema (1994) showed that, among nurses, uncertainty and emotional exhaustion – the central component of burnout – made additive and independent contributions to the desire for social comparison.

In a similar vein, Buunk (1995) conducted a study among individuals receiving disability payments in a period when a new Disablement Insurance Act in The Netherlands was proposed that created a lot of uncertainty among aforementioned individuals. The results of this study clearly showed that uncertainty and negative emotions such as frustration were related to the desire for social comparison information, i.e., information about the feelings and opinions of other individuals receiving disability payments. Also in other contexts, an enhanced need for social comparison information has been found among individuals facing insecurity and stress. For instance, Blanchard, Blalock, DeVellis, DeVellis, and Johnson (1999) found that mothers of premature infants made more social comparisons than mothers of full-term infants, suggesting an enhanced need for information about how others in a similar situation are coping.

In the remaining part of this chapter, we describe how the nature of social comparison processes may both depend on one’s well-being and contribute to perceptions of well-being. We take the identification-contrast model developed by Buunk and Ybema (1997) as a starting point and outline the way stress may activate a coping process through which positive emotions are generated and self-esteem is restored by identifying with others better-off and by finding ways to feel that one is – at least in some ways – better-off than others. We focus on a variety of settings, including work, close relationships, serious diseases, and aging, and pay attention to depression. First, we describe the model in general. Second, we present

correlational studies on how the perceived positive and negative emotions evoked by social comparison are related to indices of well-being – or lack thereof – including burnout, positive emotions, and perceived quality of life. Third, we describe a series of experimental studies on the effects of exposure to social comparison targets on affect and well-being. Fourth, we discuss how individuals may construct an image of themselves and their close others that enhances their well-being. Finally, some practical implications of social comparison research are discussed.

The Identification-Contrast Model

Social comparisons may be related to well-being in very different ways, depending on, first, the *direction* in which individuals compare themselves with others. Individuals may compare themselves with others who are better-off (so-called upward comparisons), or with others who are worse-off (so-called downward comparisons). Second, the *interpretation* of social comparison is relevant when considering its relation with well-being. According to the *identification-contrast model* proposed by Buunk and Ybema (1997), individuals may *contrast* themselves with a comparison target (i.e., evaluate themselves by focusing on the differences between themselves and the target), or they may *identify* themselves with a comparison target (i.e., recognize features of themselves in the other, and regard the other's position as similar to their own position or as attainable for themselves). As a consequence, individuals may follow – not necessarily exclusively – four strategies: *upward identification*, *upward contrast*, *downward contrast*, and *downward identification* (Van der Zee, Bakker, & Buunk, 2001). In general, when individuals identify themselves with a comparison target, their self-image and affect are enhanced by upward comparisons and lowered by downward comparisons. Conversely, when individuals contrast themselves with a comparison target, their self-image and affect are enhanced by downward comparisons and lowered by upward comparisons. The identification-contrast model holds that people are in general motivated to identify themselves with others doing better and to contrast themselves with others doing worse. Contrast with better-off others may evoke negative feelings such as envy. For instance, among patients with a spinal cord injury, Buunk, Zurriaga, and Gonzalez (2006) found that upward contrast was quite strongly related to negative emotions. Similar findings were obtained among 444 community-dwelling elderly for whom this type of social comparison was accompanied by lower life satisfaction (Frieswijk, Buunk, Steverink, & Slaets, 2004) and among 588 teachers for whom this type of social comparison was related to more burnout (Carmona, Buunk, Peiro, Rodriguez, & Bravo, 2006).

The identification-contrast model links such findings to evolutionary psychology and assumes that human beings compete with each other for status and prestige in groups. Individuals have a deeply rooted tendency to try to reach a state in which they feel that they are in some respects more attractive and talented or otherwise better-off than other group members. From an evolutionary perspective, this search

for symbolic dominance over others is the translation of the physical struggle among primates for social dominance in a group. As noted by Barkow (1989), such a group need not actually exist and may be cognitively constructed: “With human self-esteem others not only need not be physically present, they need not have physical existence” (p. 191). When individuals are confronted with a stressful event, their sense of relative superiority is violated, and they have a need to re-establish such a self-perception. They will try to identify themselves with others doing better and see these others as similar to themselves, and regard the lot of the others as their own future. On the other hand, they will try to contrast themselves with others worse-off, regarding the other’s position as a standard for themselves that may make them look better. By identifying with others doing better, individuals attain a number of things, for example the feeling of belonging to the best in their reference group, the vicarious or actual attention that is bestowed upon the high status others, the alliance of such others, and the potential of self-improvement by learning from others who are doing better (*cf.* Gilbert, Price, & Allan, 1995).

Social Comparisons and Well-Being: Correlational Evidence

According to the broaden-and-build theory of positive emotions (Fredrickson, 2006), positive emotions may momentarily broaden people’s attention and thinking, enabling them to draw flexibly on higher level connections and wider-than-usual ranges of percepts and ideas. In turn, these broadened and flexible outlooks help people to discover and build survival-promoting personal resources, such as self-esteem and improved relations with others, that may be especially relevant for well-being. Especially upward identification as opposed to downward identification may help in evoking positive emotions. For example, a study among nurses showed that nurses who responded with more positive affect to upward comparisons, and with less negative affect to downward comparisons, showed a decrease in burnout one year later (Buunk, Zurriaga, & Peiro, 2010). In a related vein, a study by Buunk, Kuyper, and Van der Zee (2005) among 609 secondary school students showed that the most frequent type of comparison was upward identification, leading to feelings of hope that in the future one may receive a good grade similar to that of the target one was identifying oneself with. Although upward identification tends to be more common than downward contrast (e.g., Buunk, Ybema, Van der Zee, Schaufeli, & Gibbons, 2001), downward contrast and upward identification may jointly induce positive effects on well-being. For example, in a classroom study with fourth and fifth graders, Boissicat, Pansu, Bouffard, and Cottin (2012) found that the more pupils reported using upward identification and downward contrast, the higher their perceived scholastic competence was, whereas the use of downward identification and upward contrast was associated with lower perceived scholastic competence. Indeed, especially in school and classroom settings, the combination of downward contrast and upward identification seems adaptive. Downward contrasts may help

students maintain high self-esteem while upward identification may help them improve themselves in terms of academic achievements (Dijkstra et al., 2008).

The important role of downward contrast in educational settings is corroborated by research on the *big-fish–little-pond effect* – the phenomenon that equally able students have lower academic self-esteem in schools or classes where the average achievement level is higher than in schools or classes where the average achievement level is low (BFLPE; see Marsh et al., 2008, for a review). Thus, in line with the identification-contrast model, academic self-esteem is improved in classes or schools that provide students with ample opportunities for downward contrast, whereas it is lowered in classes or schools that hold little opportunities for such contrast. This may shed a new light on special education classes, for instance, for the gifted or students with learning disorders. Although intellectually gifted students may benefit from special classes, their self-esteem may suffer because of the reduced opportunities that these special classes offer in terms of downward contrast. Also, those with learning problems may benefit from special classes since these classes enable them to make more downward contrasts while minimizing upward contrasts. In a quite different context, a similar effect of downward contrasts was found by Boyce, Brown, and Moore (2010), who showed that life satisfaction is related not to absolute income or the position of one's income relative to some wage standard, but to the ranked position of one's income within one's own comparison group in terms of, among other things, age and educational level. As individuals perceive that they have a higher income than others in their reference group – implying downward contrast – they are more satisfied with their lives.

Especially for individuals whose well-being is under threat, upward identification may not always be possible, and downward contrast may be a more adaptive strategy to experience positive affect that may help these people build the resources they need to cope with stressful circumstances. For instance, Buunk et al. (2001) showed that while nurses high in burnout reported higher levels of negative affect from upward comparisons, they also reported higher levels of positive affect from downward comparisons than nurses low in burnout. Especially in times of economic downturn, downward contrast may become important to remain satisfied about one's income. As a consequence, as individuals make more downward comparisons with workers in lower social groups who earn less, they may feel their earnings are fairer. In contrast, an unfair feeling, i.e. that of relative deprivation, is evoked when workers make upward comparisons, especially in times of economic downturn. Furthermore, for workers at the lowest pay levels, it may be hard to engage in downward contrast, since these individuals are already at the bottom of the pay scale. This may evoke feelings of relative deprivation and envy among such workers (Tao, 2015).

The relevance of downward contrast for individuals under stress is well illustrated by studies among individuals suffering from chronic diseases. For instance, Van der Zee et al. (1996) showed that, compared to healthy individuals, cancer patients made more frequent downward comparisons, a strategy that, according to the authors, helped cancer patients through contrasting themselves with others worse-off to maintain a similar level of subjective well-being as their healthy counterparts. Blanchard, Blalock, DeVellis, DeVellis, and Johnson (1999) showed

that, compared to mothers of full-term infants, mothers of premature infants made more downward social comparisons, and made, as a consequence, more favorable evaluations of their infants relative to the typical premature baby. Indeed, in a review of 23 studies, Tennen et al. (2000) concluded that downward social comparisons are prominent in populations with serious medical problems, such as those with rheumatoid arthritis, cancer and chronic pain, and that these comparisons are generally associated with positive adjustment – assumedly due to the contrast these downward comparisons entail. Based on their finding that breast cancer patients reported a preponderance of spontaneous downward comparisons, Wood, Taylor, and Lichtman (1985) argued that regaining self-esteem is a major motive for contrasting oneself downward under stress.

While especially in the early stages of severe medical illnesses, such as cancer, patients may feel a need for social comparisons with fellow patients, in advanced stages of a potentially incurable disease, when chances of recovery are limited, patients may feel a decreased need for social comparisons with fellow patients, as these may, in many cases, be upward and contrasting in nature, primarily generating negative affect. Such effects were illustrated in a study by Morrell et al. (2012), who found that ovarian cancer patients in an advanced stage of the disease (stage III and IV) preferred to avoid contact with other ovarian cancer patients and preferred to seek the company of ‘normal’ others, for normalizing information and information that facilitated upward identification. In order to still experience some positive affect, such patients may prefer to ignore social comparison information that emphasizes the severity of their disease relative to other patients. Something similar may apply to individuals with chronic diseases such as rheumatoid arthritis (RA). Blalock, Afifi, DeVellis, Holt, and DeVellis (1990), for instance, showed that nearly 50% of unprompted social comparisons involved others not affected by RA. After controlling for differences in physical health status, patients who emphasized their similarity to, rather than their differences from, individuals not affected by RA exhibited better psychological adjustment. In line with the identification-contrast model, especially in downward comparison, feelings of negative affect were mediated by identification with downward comparison others (also see DeVellis et al., 1990, who found a preponderance of downward comparisons associated with negative affect among patients suffering from RA).

Individual Differences

Not everyone seems equally able to use upward identification and downward contrast in order to enhance their well-being. Several studies show that individuals high in neuroticism tend to identify themselves with others who are worse-off (e.g., Buunk, Van der Zee, & Van Yperen, 2001; Van Oudenhoven-Van der Zee, Buunk, Sanderman, Botke, & Van den Bergh, 1999). Other studies show that neurotic

individuals more frequently make both upward and downward comparisons, with both types of comparison generating relatively high levels of negative affect; in other words, highly neurotic people engage in upward contrast and downward identification (Van der Zee, Buunk, & Sanderma, 1996; Van der Zee, Oldersma, Buunk, & Bos, 1998). Similar findings have been reported for self-esteem, one of the components of neuroticism (e.g., Buunk, Collins, Taylor, Van Yperen, & Dakoff, 1990). These findings are in line with the general literature on neuroticism, self-esteem, and coping (e.g. Mohiyeddini, Bauer, & Semple, 2015), which shows that neurotic and low self-esteem individuals show relatively inadequate coping strategies in response to stress. It seems that, in general, neurotic and low self-esteem individuals find it relatively difficult to generate the positive emotions needed to build survival-promoting personal resources in times of stress.

Another individual difference variable that affects the relationship between well-being and social comparisons is *social comparison orientation* (SCO). Gibbons and Buunk (1999) introduced this concept to refer to the personality disposition of individuals who are strongly focused on social comparison. Such individuals may compare themselves more frequently with others, particularly those in similar situations, and they should be more sensitive to social comparison information (see also Buunk & Gibbons, 2006). To measure SCO, Gibbons and Buunk constructed a scale with 11 items that are presented in Table 17.1.

Table 17.1 The scale for Social Comparison Orientation (INCOM)

Most people compare themselves from time to time with others. For example, they may compare the way they feel, their opinions, their abilities, and/or their situation with those of other people. There is nothing particularly ‘good’ or ‘bad’ about this type of comparison, and some people do it more than others. We would like to find out how often you compare yourself with other people. To do that we would like to ask you to indicate how much you agree with each statement below, by using the following scale.

1. I often compare how my loved ones (boy or girlfriend, family members, etc.) are doing with how others are doing

2. I always pay a lot of attention to how I do things compared with how others do things

3. If I want to find out how well I have done something, I compare what I have done with how others have done

4. I often compare how I am doing socially (e.g., social skills, popularity) with other people

- ^a5. I am not the type of person who compares often with others

6. I often compare myself with others with respect to what I have accomplished in life

7. I often like to talk with others about mutual opinions and experiences

8. I often try to find out what others think who face similar problems as I face

9. I always like to know what others in a similar situation would do

10. If I want to learn more about something, I try to find out what others think about it

- ^a11. I never consider my situation in life relative to that of other people

^aReverse scored. Answers range from ‘(1) I disagree completely’ to ‘(5) I agree completely’

In a representative sample of Dutch citizens of all age groups, the scale had a normal distribution with a skewness of $-.18$. The mean ($M = 32.7$) as well as the median ($Md = 33$) were both virtually identical to the scale midpoint (33), which suggests that there are as many high comparers as there are low comparers. Individuals high in SCO seem to have a high chronic activation of the self as SCO is quite strongly related to public and private self-consciousness (Gibbons & Buunk, 1999); in fact, these are among the strongest correlates of SCO, varying from $r = .38$ to $.49$. Thus, those high in SCO tend to be particularly aware of themselves in the presence of others and tend to engage in reflection upon their own thoughts and feelings. In addition, individuals high in SCO are characterized by a strong interest in what others feel, a strong empathy for others, and a general sensitivity to the needs of others. Indeed, in addition to self-consciousness, one of the strongest correlates of SCO is interpersonal orientation ($r = .45, p < .001$), a construct that includes an interest in what makes people tick, as well as a tendency to be influenced by the moods and criticism of others, and an interest in mutual self-disclosure – all aspects that are characteristic of individuals with a high interdependent self (Swap & Rubin, 1983). As might be expected, there is also a negative correlation ($r = -.35, p < .001$) between SCO and the Big Five trait intellectual autonomy (or openness to experience as it is sometimes called; Gibbons & Buunk, 1999). This means that those high in SCO are generally somewhat lower in independent and creative thinking, or, put differently, higher in conformity. Finally, SCO has generally low correlations with depression, anxiety, neuroticism, and low self-esteem (Gibbons & Buunk, 1999).

The associations involving SCO are, however, more complex than initially thought. For example, Buunk, Zurriaga, Peiró, Nauta, and Gosalvez (2005) showed that employees high in SCO reported more contrast in their social comparisons, i.e., they reported more positive affect after downward comparisons, and more negative affect after upward comparisons. Along similar lines, a number of studies suggest that SCO may moderate associations between engaging in social comparison and well-being. In a study among nurses, Buunk, Zurriaga, and Peiro (2010) found that especially among individuals with a high SCO score, the frequency of comparisons was a predictor of feelings of burnout 9–10 months later. In a study among cancer patients, Van der Zee, Oldersma, Buunk, and Bos (1998) found that patients high in SCO responded with more negative reactions (such as identification) to downward comparisons. In addition, individuals high in SCO are sensitive to the experience of relative deprivation – that is, resentment originating from the belief that one is deprived of desired and deserved outcomes compared to others (also see Callan, Kim, & Matthews, 2015). In a longitudinal study among nurses, Buunk, Zurriaga, Gonzalez-Roma, and Subirats (2003) found that relative deprivation had increased particularly among nurses high in social comparison orientation who, 10 months earlier, had engaged more often in downward and upward comparisons and had derived more feelings from these comparisons. This heightened sense of relative deprivation may lead to higher levels of psychological distress and burnout symptoms, undermining individuals' well-being and the ability to cope with stress (e.g., De la Sablonniere, Tougas, De la Sablonniere, & Debrosse, 2012).

Situational Factors

In addition to individual differences, the situations individuals find themselves in may affect the association between social comparisons and well-being. For instance, Buunk et al. (2005) found that employees who perceived the social climate at work as cooperative reported more identification with their co-workers – i.e., more negative affect from downward comparisons and more positive affect from upward comparisons. Circumstances may force individuals to make social comparisons they otherwise would not make, some of which are not conducive to affect or well-being. Another important situational factor is the incentive structure at work or in the classroom (Garcia, Tor, & Schiff, 2013). A common example that emerges in the classroom is whether the course is graded on a curve or absolute scale, with the former evoking much more social comparison and producing more competitiveness than the latter. Especially competitive settings tend to evoke social comparisons characterized by contrast, a type of comparison that may, in theory, both generate positive affect (in the case of downward contrast) as well as negative affect (in the case of upward contrast). However, in competitive settings, even the positive affect evoked by downward contrast and outperforming others may be limited. The competitive success may clash with the goal of maintaining satisfying relations with others, leading outperformers to experience discomfort when they believe that their superior status poses a threat to outperformed others. Thus, although outperformance may be privately satisfying, it may cause negative affect when individuals perceive a clash with their need for interpersonal closeness (Exline & Lobel, 2001).

Social Comparison and Well-Being: Experimental Evidence

In contrast to correlational studies, experimental studies have found more direct evidence for the *effects* of social comparison on well-being, though these effects are not always similar to what correlational studies would suggest. In these experimental studies, respondents are presented with a vivid description of a comparison target that is depicted as either being better-off on a particular dimension (upward comparison) or worse-off (downward comparison). It is sometimes argued that this type of manipulation is somewhat artificial since in real life individuals may not choose to compare themselves with the target they are presented with, because, for instance, they usually avoid upward comparisons or hardly make social comparisons at all. Nonetheless, these studies are important sources of knowledge, since often social comparisons are not just a matter of choice. In many settings, such as offices, classrooms and hospitals, it is almost impossible *not* to compare oneself with others (e.g., Dijkstra, Kuypers, Van der Werf, Buunk, & Van der Zee, 2008). In addition, experimental studies may help clarify how interventions that aim to increase well-being may use social comparison information to reach this aim.

In general, experimental studies suggest that, in line with the identification-contrast model, individuals tend to identify themselves with upward targets, but that a high degree of stress may hinder such identification. For instance, among sociotherapists, Buunk, Ybema, Gibbons, and Ipenburg (2001) found that an upward comparison target generated more positive and less negative affect than a downward comparison target. However, as in the correlational study among nurses by Buunk et al. (2001), those high in burnout reported lower levels of positive affect from upward comparisons. In fact, as suggested by correlational studies, those experiencing stress may benefit more from downward contrast. For example, in a study among disabled individuals, Buunk and Ybema (1995) found that, especially among those who experienced high degrees of stress, exposure to downward comparisons contributed positively to the evaluation of one's situation.

Nevertheless, overall, and not only among those under stress, exposure to downward comparison targets may contribute to well-being, assumedly because it induces downward contrast. For example, Vogel, Rose, Roberts, and Eckles (2014) showed that exposure to downward comparison targets on social media (e.g., a low activity social network, unhealthy habits) resulted in higher self-esteem than exposure to upward comparison targets (e.g., a high activity social network, healthy habits). In a similar vein, Reis, Gerrard, and Gibbons (1993) found that women who compared themselves with a woman who used contraceptives ineffectively demonstrated more self-esteem improvement than women who compared themselves with a female who used contraceptives effectively.

Not only the direction, but also the *content* of the social comparison information may be important. For instance, Bennenbroek et al. (2003) presented cancer patients with audiotapes of fellow cancer patients talking about different elements of their treatment and disease: either the procedure of the treatment (1), their emotions about the disease and the treatment (2), or the way they coped with their disease (3). This study showed that mood was elevated and self-efficacy increased when patients listened to fellow patients talking about the procedure or coping (but not about their emotions), suggesting that social comparison about procedure and coping may be useful supplements for patient educational material (however, see a study by Brakel, Dijkstra, Buunk, & Siero, 2012, according to which the content of the tape may be less important).

Individual Differences

Several studies suggest that individual differences may moderate the positive effects of downward comparisons. For instance, Aspinwall and Taylor (1993) showed that downward comparison information, compared to no comparison information, caused low-self-esteem students to report more favorable self-evaluations and greater expectations of future success in college (also see Tesser, 2000). Both Gibbons and McCoy (1991) and Gibbons and Gerrard (1989) found that low but not high self-esteem people showed mood improvement after downward comparisons.

In a similar vein, Gibbons (1986) showed that downward comparison information – reading about a person who was currently experiencing highly negative affect – improved the mood states of depressed individuals, but not of non-depressed individuals, suggesting that realizing that others are doing worse may help depressed people feel somewhat better.

As we suggested above, there is also evidence that SCO may moderate the effects of exposure to social comparisons. For instance, a study that was done as a follow up to the earlier mentioned study by Bennenbroek et al. (2003) showed that with increasing SCO, 2 weeks and 3 months later, a lower quality of life was reported when, prior to radiation therapy, patients had listened to the emotion tape, while a higher quality of life was reported when patients had listened to the coping tape (Buunk et al., 2012). The important role of SCO in moderating the effects on well-being of exposure to social comparison targets was also highlighted in a study by Buunk and Brenninkmeyer (2001) among depressed and non-depressed individuals. This study showed that, among the non-depressed, with increasing levels of SCO, a comparison target who overcame his or her depression through active coping (high effort) evoked a relatively positive mood whereas a comparison target who overcame his or her depression seemingly by itself (low effort) evoked a relatively negative mood. In contrast, among the depressed, with increasing levels of SCO, the low-effort target evoked a relatively positive mood change, and the high-effort target a relatively more negative one. Well-intended educational material that aims to inspire depressed patients by presenting a former depressed patient who overcame his depression by active coping may therefore have adverse effects for at least some patients. Indeed, for depressed patients, active coping may seem unattainable, since an important symptom of depression is passivity and a lack of energy. Because of their heightened reactivity to social comparison information, this may have a negative effect on mood, especially among those high in SCO.

Nevertheless, in line with the correlational studies mentioned earlier, SCO may also under certain conditions enhance contrast effects on well-being. For example, Buunk, Groothof, and Siero (2007) found that individuals who were exposed to a comparison target with a very dissatisfying social life evaluated their own social life as better than participants who were exposed to a comparison target with a very satisfying social life, but only among individuals high in SCO, suggesting that individuals high in SCO tend to contrast themselves more with others. A possible explanation for the diverse effects of SCO is that SCO interacts with other situational and individual differences variables, such as the dimension under comparison, in determining identification or contrast with a comparison target.

Comparison Target

Not only individual differences, but also features of the upward and downward comparison targets may moderate the effects of social comparison. For instance, experimental studies in the domain of personal relationships have shown that the extent to

which a comparison target puts in effort plays a role in the degree to which social comparisons with regard to one's marriage may affect mood. More specifically, Buunk and Ybema (2003) examined the effects of social comparison with the marriage of another woman upon women's mood by presenting participants with a story of either a (1) happily married woman who put a lot of effort into her marriage, (2) a happily married woman who did not put effort into her marriage, (3) an unhappily married woman who put a lot of effort into her marriage, or (4) an unhappily married woman who did not put effort into her marriage. Results showed that upward targets evoked more positive mood than downward targets, and that women tended to identify themselves particularly with the upward high effort target. However, downward comparisons, although negatively affecting mood, resulted in a more positive evaluation of one's own relationship than upward comparisons, suggesting an effect of identification on mood, and an effect of contrast on self-evaluation. In a follow-up study, Buunk (2006) also examined the role of SCO, finding that, as individuals were higher in SCO, the high-effort couple evoked more positive affect and more identification whereas the low-effort couple evoked more negative affect and less identification. Additional evidence for a higher tendency to identify oneself with better-off others among those high in SCO comes from a study by Bosch, Buunk, Siero, and Park (2010) who found that, as women were higher in SCO, exposure to an attractive target (upward comparison) was positively related to self-evaluations of attractiveness, whereas exposure to a less attractive target (downward comparison) was related negatively to self-evaluations of attractiveness.

Construing Oneself as Better-Off Than Others

While the studies described above involve self-reported or actual exposure to social comparison targets, individuals may also cognitively *construct* such targets. An important implication of the identification-contrast model is that, in line with what evolutionary psychology would predict, individuals have a "wired in" tendency to develop a positive self-concept – or high self-esteem – by attaining a subjective feeling of doing better than others on relevant dimensions. Therefore, individuals who are able to actively attain and maintain this feeling by cognitively constructing themselves as better-off than others will exhibit higher levels of adjustment and mental health (e.g., Taylor & Brown, 1988). A positive self-concept or high self-esteem based on such cognitive constructions may generate the positive affect that helps build the resources individuals need to cope with stress and may help individuals conquer obstacles and take on life's challenges, facilitating adaptive coping with stressors (e.g., Fickova & Korcova, 2000; Tomaka, Morales-Monks, & Shamaley, 2013) and fostering perseverance and performance (e.g., Sommer & Baumeister, 2002).

The tendency to rate oneself as being higher on positive attributes and lower on negative attributes than most other people has been referred to as the *better-than-average (BTA) effect* (e.g. Kuyper et al., 2011; also called illusory superiority:

Hoorens, 1995). In studies assessing the BTA effect, individuals usually compare themselves with a relatively ambiguous group of others ('most other people') or an ambiguous comparison target (the 'average' or 'typical' person) that provides plenty of opportunities for self-enhancement. The BTA effect has been observed in a variety of settings. For example, in work settings, Meyer (1980) found that most people felt they performed better than about 75% of others with the same job. Only very few people considered themselves below average. No less than 80% of higher professionals and managers typically feel that they are among the top 10% at their jobs. Likewise, among more than 15,000 secondary school students in The Netherlands, Kuyper et al. (2011) found that most children thought they were more athletic, more likeable, more attractive and more capable of getting high grades than most of their classmates. In a similar vein, undergraduate students believe that they are more likely than their peers to use condoms when having sex with someone for the first time (Ross & Bowen, 2010). It must be noted that, from the individual's point of view, the perception of being better than others may be completely correct, for instance because one is indeed a better manager than other managers. However, for attributes for which the distribution in the population is about normal, it is not possible for the majority of people to be above average. Therefore, the belief of most people that they are better than average is biased and inaccurate (Kuyper et al., 2011).

Because particularly close others are often perceived as part of the self, individuals may also tend to positively bias the image they have of their close relationships (e.g. Fowers, Veingrad, & Dominics, 2002), resulting in an 'extended' BTA effect. For instance, Buunk (2001) as well as Rusbult, Van Lange, Wildschut, Yovetich, and Verette (2000) found that most individuals tended to view their own relationship as better than the relationships of most others (also see Buunk & Van Yperen, 1991). In a similar vein, Suls, Lemos, and Stewart (2002) found that, although undergraduates attributed more positive traits to themselves relative to the 'average' undergraduate, they also rated their friends as superior on these traits than the 'average' undergraduate.

In general, a feeling of being better-off than others is associated with high well-being, and a feeling of being worse-off is associated with low well-being. This is quite obvious in work settings. Brenninkmeyer, Van Yperen, and Buunk (2001) found that, while compared to teachers low in burnout, teachers high in burnout could generate negative behaviors they showed less often than other teachers, they were no longer able to mention positive behaviors that they showed more often than other teachers. In a number of studies, particularly among blue-collar workers, the feeling of being worse-off than other workers was found to be accompanied by occupational stress (McKenna, 1987), and increased absenteeism (e.g., Hendrix & Spencer, 1989). Problems with well-being due to the perception of being worse-off than others may become especially salient among career oriented professionals around the age of 40, when they become concerned about the likelihood of attaining their career goals in the future, and may feel that similar others have accomplished more, which induces feelings of relative deprivation. This will be magnified by a feeling of entitlement that has been built up as a consequence of high investments during the preceding career. Due to the BTA effect, professionals around the age of

40 may think they get less than they deserve and may, for instance, feel aggrieved when others are promoted and they are not. In a study among a representative sample of professional men, Buunk and Janssen (1992) found that the highest levels of relative deprivation occurred in professionals between 35 and 45 years of age, and that only in this age group did relative deprivation correlate significantly with health complaints. Presumably, younger people still feel they have a chance to attain what they want, whereas older people may have accepted their situation. This study illustrates that, although in the short run, the BTA effect may cause people to feel good about themselves, in the long run it may lead to negative emotions, such as envy and feelings of injustice.

Also in intimate relationships, the BTA effect is very relevant to well-being. For instance, Buunk (2001) showed that the extent to which individuals viewed their relationship as superior to those of others (i.e., perceived superiority) was associated with relationship satisfaction, while Rusbult et al. (2000) found perceived superiority assessed 20 months earlier predicted relationship status (persisted vs. ended) and increases in dyadic adjustment. In addition, Buunk and Van Yperen (1991) found that the extent to which individuals perceived the input-outcome ratio of their own marriage as being better compared to similar others significantly predicted relationship satisfaction. There is also evidence that the perception of having a better relationship than most others *affects* well-being somewhat directly. In two studies, Buunk (1998) tested the hypothesis that when individuals first answered a question about *comparative evaluation* (i.e., the degree in which they felt they had a better or worse chance of having a happy intimate relationship in the future than most others) and next a question about *general evaluation* (i.e., the chance of having a happy intimate relationship), the correlation between both variables was much higher than when the order of the questions was reversed, assumedly because the BTA effect influenced evaluations of one's current relationship. Even more direct, experimental evidence for effects of this type comes from a study by Buunk, Oldersma, and De Dreu (2001), who asked individuals dissatisfied with their relationship to generate aspects in which they were better-off than other couples, which resulted in enhanced relationship satisfaction, but only for those high in SCO. A similar effect was not found when individuals were simply asked to generate aspects of their relationship that were good. It seems that, like in the earlier mentioned study by Buunk et al. (2007), only individuals high in SCO are sensitive to downward contrasts and may profit from their beneficial effects.

Practical Implications

Research on social comparison reveals many different avenues for interventions that may increase well-being, self-esteem, and positive affect. First, downward contrasts may help students maintain high self-esteem while upward identification may help them improve themselves in terms of academic performance (Dijkstra et al., 2008). This is important knowledge for teachers and parents, for example, when

considering special classes for a child. More specifically, an intellectually gifted pupil may benefit from a special class in terms of achievements because, compared to a mainstream class, special classes for gifted pupils increase the possibilities for upward identification. However, special classes may also reduce opportunities for downward contrast, and as a consequence, lower gifted pupils' self-esteem. Special classes for gifted pupils may therefore be only or especially beneficial to those pupils whose self-esteem is adequate, making a child's self-esteem, for both teachers and parents, an important factor when deciding about special classes for a gifted child. In contrast, for children whose achievements in mainstream classes are lower, for example because of a learning disability, the reverse seems true. Although in this case special classes may enhance the self-esteem of low-performing pupils, they provide little opportunity for upward identification and, as a consequence, little opportunity to improve one's performances. Special classes for low-performing pupils may therefore be only or especially beneficial to those pupils whose self-esteem is low and whose academic achievements suffer from this low self-esteem. In such cases, special classes could constitute a form a temporary intervention that helps low-performing pupils develop a more robust and positive self-image, after which they may again participate in mainstream classes where their academic achievements may profit from upward identifications.

Second, our review shows that upward contrasts may lead to envy and feelings of injustice that may undermine relationships and, in organizations, reduce performance. In organizations, these upward contrasting social comparisons may be reduced by stimulating workers to perceive themselves and their work as unique. The manager may, for instance, provide personal feedback to workers, in which he or she underlines what is special about each worker and in what exclusive way the worker contributes to the goals of the organization. A sense of uniqueness may diminish the need for social comparison: because workers perceive themselves as 'different' from co-workers, there seems little sense in making such comparisons. Such an intervention, however, may also reduce the positive effects that social comparisons have at work, such as the inspiration that may come along with upward identification. Rather than aiming to reduce social comparisons in general, organizations may therefore try to *influence and change* potentially destructive social comparison tendencies, for example by providing information that causes upward contrasts to be replaced by upward identifications. This may be done by using and communicating objective and clear criteria for rewards, such as promotions, while also being clear about why non-promotions are occurring. This information may strengthen feelings of procedural and distributional justice by helping workers realize that the rewarded co-worker has indeed deserved his or her reward and that decisions concerning the allocation of rewards are made in a fair way (e.g., Garcia-Izquierdo, Moscoso, & Ramos-Villagrasa, 2012).

Third, findings from social comparison research among patients suffering from a medical disease may provide insight in the best way to develop patient educational material. Bennenbroek et al. (2003) found that information from fellow patients about treatment procedures and effective ways of coping enhanced mood and self-efficacy, in contrast to information about fellow patient emotions, which

decreased well-being. Patient educational material should therefore focus especially on fellow patients' perceptions of procedure, treatment and coping while avoiding narratives of distress. In addition, to prevent 'emotional contagion' of negative emotions among patients, fellow patient groups may be best led by professional caretakers, who can help the group focus on information directly relevant to what one can expect in treatment.

Fourth, relationship counselling for distressed couples may use interventions based on social comparison research to help couples regain or strengthen a positive sense of their relationship (Buunk et al., 2001). A counsellor, for instance, may ask partners to each make a list of characteristics according to which their relationship is better than those of others and discuss the lists with the couple. This intervention may help couples shift the focus from what is negative about their relationship to more positive aspects, which will help them see why their relationship is still worth fighting for.

Conclusions

In line with humans' social nature, both correlational and experimental studies convincingly show that social comparisons – both spontaneous and forced – may strongly affect people's mood states, perceptions of well-being, and perceptions of self and close others. The studies reviewed in this chapter largely show evidence for the identification-contrast model. That is, to experience positive affect and enhanced well-being, and to view the self and one's close relations as superior, individuals prefer to identify with similar others doing better or, if this possibility is limited, contrast with similar others doing worse. The identification-contrast model is highly compatible with the evolutionary psychological assumption that social cognition is shaped by humans' striving for survival and reproduction (e.g., Seyfarth & Cheney, 2015), and that individuals may use social comparisons to facilitate this striving. More specifically, by selectively comparing the self with others, humans may maintain or generate positive affect, perceptions of increased well-being, self-esteem and improved relationships with others that may promote survival and reproduction, especially under conditions of stress, when survival and reproduction are challenged.

Although the identification-contrast model describes how individuals tend to compare themselves in general, in line with evolutionary psychological assumptions, humans also show high flexibility when it comes to the use of social comparisons. That is, exactly how individuals compare themselves with similar others and what the effects of these comparisons are depends on individual difference variables, such as SCO, self-esteem and one's level of well-being, as well as the situation individuals find themselves in. The findings on social comparison are not only theoretically relevant, but may have important practical implications for interventions in health and educational settings, organizations, and close relationships, underlining the importance of social comparisons as determinants and change avenues for well-being.

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Chapter 18

Prosocial Behavior and Empathy-Related Responding: Relations to Children's Well-Being

Tracy L. Spinrad and Nancy Eisenberg

Abstract Moral emotions and behavior are thought to play an important role in individuals' well-being. We begin this chapter by defining moral behavior and differentiating between the empathy-related responses of empathy, sympathy, and personal distress. Next, we discuss associations between individuals' emotions and empathy-related responding (a broad term that encompasses empathy, sympathy, and personal distress), with a focus on both positive and negative emotions. We also discuss the relations of empathy and sympathy to high social competence and low problem behavior. The associations reported in this chapter highlight the importance of these social-emotional constructs in understanding the development of the Happy Mind.

Introduction

Psychologists have been interested in understanding how individuals respond to others in need. Appropriate responses to others' distress (e.g., concern, helping behaviors) have important implications for positive social functioning, such as social competence, socially appropriate behaviors, and low problem behaviors. In this chapter, we first differentiate among children's various responses to others' distress. Next, we review the relations of empathy and its related responses, such as sympathy, to positive and negative emotions, and we discuss literature pertaining to its social correlates.

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Definitions

Prosocial behavior has been defined as voluntary behavior intended to benefit another (Eisenberg & Fabes, 1998). Psychologists have proposed that prosocial behavior, particularly altruism, is often motivated by empathy or sympathy. Empathy is defined as an affective response that is the same or quite similar to what another person is feeling or would be expected to feel, such as feeling sad when someone else is sad (see Eisenberg, Spinrad, & Knafo-Noam, 2015). Sympathy may stem from empathy (but can also be derived directly from perspective taking or other cognitive processes such as retrieving information from memory) and consists of feelings of sorrow or concern for a distressed or needy person. Another important construct that should be differentiated from sympathy is personal distress. Personal distress is a self-focused, aversive emotional reaction to another's emotions that often involves feeling discomfort or anxiety in response to a needy other; it may stem from empathic overarousal, but it also may arise from other processes, such as shame or cognitive processes. Thus, when individuals experience empathy, they are likely to feel concern for the other (i.e., sympathy), or feel aversive self-focused emotions such as discomfort or distress (i.e., personal distress), or perhaps, some combination of responses. We use the term empathy-related responding to refer to empathy, sympathy, and personal distress more globally.

Relations of Empathy-Related Responding to Prosocial Behavior

Theorists (Batson, 1991; Eisenberg & Fabes, 1990; Hoffman, 2000) have argued that individuals who are prone to experience sympathy (and sometimes empathy) tend to be motivated to act in prosocial ways. Personal distress, because it is an aversive experience, is expected to be associated with actions that are likely to reduce one's own distress. Thus, those who experience personal distress would only be expected to behave prosocially when escaping contact with the needy person is not possible (Batson, 1991). Research findings are consistent with this notion: Sympathy (and sometimes empathy) has been positively related to prosocial behavior (Carlo, Padilla-Walker, & Nielson, 2015; Eisenberg et al., 1989; Eisenberg & Fabes, 1990; see Eisenberg, Spinrad, & Knafo-Noam, 2015). Personal distress reactions sometimes, albeit not as consistently, have been negatively related to prosocial behavior (Eisenberg, Fabes, Karbon et al., 1996; Eisenberg, Fabes, Murphy et al., 1996; Fabes et al., 1994).

Associations of Prosocial Behavior and Empathy-Related Responding to Other Emotions

Conceptually, individual differences in empathy and/or sympathy reactions may be due in part to differences in people’s other emotional reactions. That is, individuals who are susceptible to high levels of negative emotion are thought to be relatively likely to exhibit personal distress reactions. On the other hand, those who typically experience emotions within a tolerable range, or who can modulate intense emotion, may be more likely to experience sympathy. However, it is also important to note that the direction of relations are often unclear—just as emotions may predispose individuals to particular reactions in response to others’ distress, it may also be the case that moral emotions and behavior predict later positive and negative affect (e.g., Edwards et al., 2015; see Fig. 18.1).

Positive Emotions

Fredrickson’s broaden and build theory posits that positive emotions broaden individuals’ thought-action tendencies and build their resources. For example, happiness may create the urge to play, to be creative, or to explore. Positive emotions also are thought to invite interactions from others, and thus are assumed to promote children’s social resources, positive feelings about others, and attachment relationships (Fredrickson, 2001). Because positive emotions are likely to build social resources, it

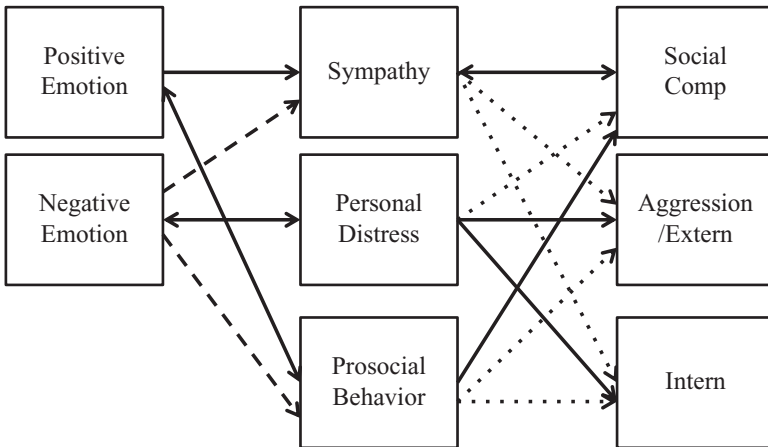


Fig. 18.1 Predicted relations among emotions, empathy-related responding, and social adaptation

Note. *Social Comp* Social competence, *Extern* Externalizing, *Intern* Internalizing. *Solid lines* indicate predicted positive relations. *Dotted lines* indicate expected negative relations. *Dashed lines* represent the expectation that the direction depends on the distinct negative emotion

is possible that positive emotions are particularly important for reacting with empathy or sympathy (see Eisenberg & Fabes, 1991). Individuals who are positive are likely to be open to information and responsive toward others' welfare. Further, these individuals may be more in tune with others' emotions, be better at not becoming overly aroused by negative emotion, and be more socially competent, in general.

Dispositional Positive Emotionality Investigators have found children's temperamental positive emotionality to be associated with relatively high empathy-related responding (Eisenberg, Fabes, Karbon, et al., 1996; Eisenberg, Fabes, Murphy, et al., 1996; Lengua, 2003; Oberle, Schonert-Reichl, & Thomson, 2010; Robinson, Zahn-Waxler & Emde, 1994; Young, Fox, & Zahn-Waxler, 1999; also see Eisenberg et al., 1994, for adults). For example, Eisenberg and colleagues (Eisenberg, Fabes, Karbon, et al., 1996; Eisenberg, Fabes, Murphy, et al., 1996) showed that kindergarteners' to second graders' dispositional positive emotionality was related to teachers' and children's reports of sympathy, particularly for boys. Preschoolers' positive emotionality has also been associated with children's relatively high *positive empathy*, a construct designed to understand children's happiness upon witnessing others' good fortune (Sallquist et al., 2009).

The broaden and build theory can also be used to consider the role of positive emotionality in prosocial behavior. In addition to fostering sympathy (which is likely to motivate prosocial behavior), positive emotions, as a way to build, are likely related to the belief that one's own actions will be competent. That is, those who experience positive emotions are likely to believe that they can meet the other person's needs. Empirical evidence has demonstrated that positive emotionality is positively related to children's helping behaviors (Caprara et al., 2008; Denham, 1986; Fabes et al., 2012; Tian, Du, & Huebner, 2015; Volbrecht, Lemery-Chalfant, Aksan, Zahn-Waxler, & Goldsmith, 2007; Wang & Saudino, 2015). In one study, for example, positive affect longitudinally predicted higher helping behavior in a sample of toddlers (Volbrecht et al., 2007).

The personality traits of agreeableness and extraversion, which likely overlap somewhat with positive emotionality, have also been related to prosociality (Carlo, Okun, Knight, & de Guzman, 2005; Clark, Thorne, Vann, & Cropsey, 2014; Graziano, Habashi, Sheese & Tobin, 2007; Ma, Cheung, & Shek, 2007). For example, Caprara et al. (2010) found positive relations of adolescents' agreeableness to their prosocial disposition both within and across time, even after controlling for stability in the constructs. In another study, adolescents' affective empathy (i.e., sharing in the emotions of others) was positively related to extraversion (Jolliffe & Farrington, 2006a, 2006b).

Situational Positive Emotionality Rather than focusing on dispositional individual differences in positive emotions, some researchers have examined the relation of situational positive emotionality (i.e., observed during laboratory procedures or naturalistic observations) to children's prosociality (Chapman, Zahn-Waxler, Cooperman, & Iannotti, 1987; Denham, 1986, Garner & Estep, 2001; Light et al., 2009; Strayer, 1980; Wang, Chen, Chen, Cui, & Li, 2006). Wang et al. (2006) showed that Chinese children's positive affect observed during mother-child interactions predicted observed prosocial behavior toward peers 2 years later. In another investigation, Lennon and Eisenberg (1987) found that both recipients and benefac-

tors of spontaneous (i.e., unrequested) sharing in preschool displayed more positive affect during average play sessions.

There is also experimental evidence to indicate that inducing positive emotions promotes prosocial behavior, even in children (Carlson, Charlin, & Miller, 1988; Rosenham, Underwood, & Moore, 1974). In one study, adults' positive mood induction fostered low-cost prosocial behavior (e.g., helping lead a discussion group) compared to adults who were assigned to a neutral mood condition or those who were confronted with high-cost (e.g., situations that represented potentially negative consequences to self) helping situations (Kayser, Greitemeyer, Fischer, & Frey, 2010).

Further, it is also likely that behaving prosocially has rewarding benefits. In other words, rather than assuming that positive emotionality promotes empathy and prosociality, it is also possible that doing good makes one feel good. Indeed, in a series of studies, often using experimental designs, Aknin and colleagues have shown that people who give to others exhibit more happiness than when they receive the same resources for themselves (Aknin, Barrington-Leigh et al., 2013; Dunn, Aknin, & Norton, 2014). These findings have been replicated in work with young children (Aknin, Hamlin, & Dunn, 2012) and with adults and children from isolated villages in Vanuatu, Oceania (Aknin et al., 2015).

In addition to feeling happy, helping others may improve individuals' psychological health by buffering and distracting people from stress, providing a sense of meaning and value of life, elevating mood, and promoting social integration (Midlarsky, 1991; Midlarsky & Kahana, 2007). Alden and Trew (2013) reported that socially anxious individuals who were assigned to a condition to engage in acts of kindness toward others reported increases in positive affect over the 4 weeks of the study. Perhaps engaging in helpful behavior enables individuals to develop a more positive view of themselves, a mindset that may increase positive affect. Midlarsky (1991) proposed that helping may benefit the helper because prosocial behavior provides a sense that one "matters." Prosocial behavior and altruistic attitudes in the elderly have also been found to foster subsequent positive affect and life satisfaction (Kahana, Bhatta, Lovegreen, Kahana, & Midlarsky, 2013).

Thus, it appears that there are positive associations of positivity with both empathy-related responding and prosocial behavior. More than likely, the relations are bidirectional, such that positive emotionality predisposes one to empathy and caring, while acting in altruistic ways improves affect and well-being. Despite such relations, the findings may be somewhat confounded by other third variables, such as social competence or sociability. Thus, further research, both experimental and longitudinal, is needed to understand the direction of effects as well as to study the unique prediction of emotionality apart from other potential third variables.

Negative Emotions

A number of researchers have considered the role of individual's negative emotionality on their sympathy and prosocial behavior. People who are prone to experience negative emotions may be likely to become over-aroused when confronted with

another's distress. Indeed, there is fairly consistent evidence that temperamental negative emotionality has been positively associated with personal distress reactions (Eisenberg et al., 1994, Guthrie et al., 1997; Laible, Carlo, Panfile, Eye, & Parker, 2010; Young et al., 1999).

Further, it is expected that such over-arousal would inhibit sympathy and prosocial responses. Research findings have been somewhat mixed. Negative emotionality has sometimes been negatively related to sympathy (Bandstra, Chambers, McGrath, & Moore, 2011; Eisenberg et al., 1998; Murphy, Shepard, Eisenberg, Fabes, & Guthrie, 1999) and prosocial behavior (Denham & Burger, 1991; Carlo, Crocket, Wolff, & Beal, 2012; Liew et al., 2011; Volling, Herrera, & Poris, 2004).

Nonetheless, despite numerous reports of negative relations between children's negative emotionality and empathy or prosocial behavior, some researchers have found positive associations (Broeren et al., 2013, Howes & Farver, 1987; Laible, Eye, & Carlo, 2008, 2010; Robinson, Zahn-Waxler, & Emde, 1994; Rothbart, Ahadi, & Hershey, 1994) or no relations (Kiang, Moreno, & Robinson, 2004; Panfile & Laible, 2012). Findings may be somewhat mixed because relations might change with age or because negative emotionality is a relatively global construct; distinct negative emotions (i.e., sadness, fear, anger) likely differentially relate to children's moral emotions and behavior. In addition, relations may differ depending on whether investigators measure dispositional (trait) emotion or emotional responding in specific empathy-inducing contexts.

Fearful children might be expected to have difficulty expressing concern for others because they are likely to feel over-aroused and seek comfort for themselves. Thus, it is not surprising that individual differences in fear have been positively related to personal distress reactions (Liew et al., 2011; Spinrad & Stifter, 2006) and negatively related to prosocial behavior (Gulay, 2011). However, Spinrad and Stifter (2006) found that fearful infants showed more concern toward distressed adults (mother and stranger) in toddlerhood. They posited that fearful infants may have been particularly vigilant toward another's distress or perhaps they "froze" and fixated on the distressed adult. Interestingly, other investigators have found similar positive relations between fear and moral emotions (i.e., empathy, guilt; Kochanska, Gross, Lin, & Nichols, 2002; Rothbart et al., 1994).

In contrast to fear, individuals who are prone to sadness may be particularly responsive to others' expressions of distress. Thus, researchers have hypothesized that temperamental sadness would be positively related to their sympathy and prosocial behavior. Indeed, Rothbart et al. (1994) showed a positive relation between sadness and empathy in children. Similar relations have been found with adults (Eisenberg et al., 1994). In a recent study, the association of sadness to children's empathy changed with age (Edwards et al., 2015). Specifically, in a panel model in which prior levels of young children's sympathy and sadness were statistically taken into account, sadness was unrelated to sympathy at 18 months of age and was negatively related at 30 months. However, the relation between sadness and sympathy was positive at 42 months of age, suggesting that as children gain perspective-taking skills, their own sadness might increase their likelihood of experiencing sympathy toward another's sadness.

Children's anger, which is positively associated with externalizing problems and aggression, has been negatively related to empathy-related responding and prosocial behavior (Denham, 1986; Diener & Kim, 2004; Roberts & Strayer, 1996; Roberts, Strayer, & Denham, 2014). For example, in work with 5-year-old children, a negative relation between children's empathy and aggression and anger was found (Strayer & Roberts, 2004; also see Denham, 1986; Roberts & Strayer, 1996). However, negative associations between anger and children's empathy-related responding and prosocial behavior may be qualified by other variables, such as children's self-regulation (Diener & Kim, 2004; van der Mark et al., 2002) or parental behavior (Spinrad & Stifter, 2006).

In summary, prosocial and empathy-related responding have been related to both dispositional and situational emotions. Happiness appears to be positively related to empathy-related responding and prosocial behavior, although the direction of causation is not clear. Negative emotions have been both positively and frequently negatively related to sympathy and prosocial behavior. Not only may distinct emotions be differentially associated with moral emotions and behavior, but there also are likely changes with age. Interactions between emotionality and regulatory skills also appear to explain differences in empathy-related responding and prosocial behavior, such that the relations between emotionality and children's sympathy may be particularly strong for children who have relatively strong regulatory skills (Eisenberg, Fabes, Karbon et al., 1996; Eisenberg, Fabes, Murphy et al., 1996; Eisenberg et al., 1998). Thus, the associations between negative emotions and sympathy/prosocial behavior are likely quite complex.

The Relations of Prosocial Behavior and Empathy-Related Responding to Social Functioning

Children who experience concern for others would be expected to approach relationships with sensitivity and understanding. These individuals are relatively likely to feel responsible for others' well-being and behave in ways that benefit others. In contrast, children who exhibit lack of empathy and sympathetic concern may have heightened problem behaviors and bullying, and be at risk for more severe problem behaviors (see Fig. 18.1).

Positive Social Competence

Empathy and especially sympathy have been positively related to children's positive social functioning in both concurrent and longitudinal studies (Eisenberg, Pidada, & Liew 2001; Eisenberg, Fabes, Karbon et al., 1996; Gulay, 2011; Murphy et al., 1999; Sallquist et al., 2009). In one study, 6–8-year-olds' dispositional sympathy was

positively related to earlier social skills and concurrent socially appropriate behavior (Eisenberg, Fabes, Karbon et al., 1996). In follow-ups of the same sample, Eisenberg et al. (1998) and Murphy et al. (1999) reported similar relations between sympathy and measures of social competence concurrently and 2, 4, and/or 6 years earlier.

Sympathy and prosocial behavior have also been positively related to the quality of peer relationships. Prosocial children and adolescents tend to be popular with their peers and well-liked (Attili, Vermigli, & Roazzi, 2010; Caputi, Lecce, Pagnin, & Banerjee, 2012; Gorman, Schwartz, Nakamoto, & Mayeux, 2011; Lansu, Cillessen, & Bukowski, 2013; Rodkin, Ryan, Jamison, & Wilson, 2013), and tend to have supportive peer relationships (Carlo, McGinley, Hayes, & Martinez, 2012; Caputi et al., 2012; de Wied, Branje, & Meeus, 2007; Monahan & Booth-LaForce, 2015; Padilla-Walker, Fraser, Black, & Bean, 2015). Fabes et al. (2012) found that children who affiliated with prosocial peers tended to be more positive and less negative in later peer interactions. Thus, even surrounding oneself with prosocial people appears to have a positive impact on social interactions.

The ability to take others' perspectives (broadly defined, including perspective taking, emotion understanding, and false-believe understanding) is believed to foster empathy/sympathy and prosocial behavior (Caputi et al., 2012; Eisenberg, Zhou, & Koller, 2001; Eggum et al., 2011; Ensor & Hughes, 2005; Ensor, Spencer, & Hughes, 2011; see Eisenberg & Fabes, 1998; Eisenberg et al., 2015, for reviews). These socio-cognitive skills are likely to improve children's peer interactions and social competence. Thus, it is possible that empathy-related responding is indirectly associated with social competence through children's socio-cognitive skills, although sociocognitive skills may also foster empathy and sympathy, which in turn motivate prosocial behavior.

Fewer Problem Behaviors

Because empathy and sympathy reflect a focus on others' feelings and needs, they are thought to reduce antisocial behavior. That is, individuals with low empathy or sympathy may not appreciate the impact of their actions on others. There is considerable evidence that empathy-related responding and children's aggression or externalizing problems are negatively related (Carlo, Crocket, Wolff, & Beal, 2012; Carlo, McGinley, Hayes, & Martinez, 2012; Carlo et al., 2014; Hay, Hudson, & Liang, 2010; Hay & Pawlby, 2003; Laible, Murphy, & Augustine, 2014; Padilla-Walker, Carlo, & Nielson, 2015; Strayer & Roberts, 2004; see also Miller & Eisenberg, 1988), although this relation may, in general, be weak in adulthood (Vachon, Lynam, & Johnson, 2014). In a meta-analysis, Card, Stucky, Sawalani, and Little (2008) reported a negative relation between direct aggression (e.g., physical or verbal aggression) and prosocial behavior. However, there was also a unique positive association between indirect aggression (e.g., excluding others, spreading rumors) and prosocial behavior. These findings suggest that children who use indirect aggression may use their social skills to involve other peers in this form of aggression.

Despite the consistent negative relations between aggression and prosocial behavior, these relations may be more complex at earlier ages. Gill and Calkins (2003) obtained a positive association between aggression and empathy in a sample of 2-year-olds. It is possible that this positive relation may reflect a level of assertiveness or approach tendencies in young children. Thus, aggression in toddlers or very young children may not necessarily indicate the intent to harm others or hostility, but rather the ability to approach an unfamiliar person. Further research on this relation in younger children is needed.

Children and/or adolescents who bully others would be expected to be low in empathy. Negative relations between empathy and bullying have been found (Laible et al., 2008, 2014; Stavrinides, Gerogiou, & Theofanou, 2010). Further, the inverse association between empathy and bullying may be particularly strong (or only significant) among boys (Caravita, Di Blasio, & Salmivalli, 2009; Gini, Albiero, Benelli, & Altoe, 2007; Jolliffe & Farrington, 2006a, 2006b, 2011). In a two-wave longitudinal study across 6 months, Stavrinides et al. (2010) showed a reciprocal relation between bullying and low empathy in a sample of sixth grade students, such that earlier bullying predicted lower empathy as well as the reverse direction of effects.

Prosocial behavior and/or sympathy also appear to protect against risk behaviors. Theoretically, children who care for others are likely to identify with prosocial morals and values and may be attracted to positive activities (e.g., volunteerism, school-based involvement). Although the literature in this area is sparse, prosocial behavior has been negatively related to substance use (Carlo, Crockett, Wilkinson, & Beal, 2011) and deviant peer associations (Carlo et al., 2014). Positive youth development (a construct that includes a factor of compassion/caring) has been negatively related to risk behaviors, although this effect size may be somewhat small (Jelicic, Bobek, Phelps, Lerner, & Lerner, 2007).

Further, individuals who exhibit psychopathic traits, by definition, are thought to exhibit reduced empathy and guilt. Both adults and children who have been diagnosed with psychopathic traits tend to show low empathy in response to others (Anastassiou-Hadjicharalambous & Warden, 2008; de Weid, Goudena, & Matthyss, 2005; see Blair, 2005; Frick & White, 2008). For example, researchers have found that children with callous unemotional traits lack appropriate levels of empathy compared to children without callous unemotional traits (de Wied, van Boxtel, Matthyss, & Meeus, 2012; Frick & White, 2008). In addition, lack of empathy or sympathy has been a useful predictor of criminal activity and violence in both youth and adults (Cheng, Hung, & Decety, 2012; Martinez, Stuewig, & Tangney, 2014; Robinson, Roberts, Strayer, & Koopman, 2007). Along these lines, Cheng et al. (2012) showed impaired empathy in response to others' pain in a sample of juvenile offenders with high callous unemotional traits compared to a control group.

Although there has been considerable interest and research supporting the notion that lack of empathy and sympathy is related to aggression, bullying, and conduct behavior problems, there is much less work on the role of empathy-related responding to internalizing problems such as depression. It is intuitive that factors such as poor peer relationships or social competence mediate the relation between empathy and depressive symptoms. Further, self-focused personal distress reactions are

thought to result in increased fear, arousal, or depressive symptoms (see Tone & Tully, 2014). Indeed, personal distress has been linked to anxiety, guilt, and depression (O’Conner, Berry, Weiss, & Gilbert, 2002; Smith, 2015); therefore, one would expect sympathy and prosocial behavior to be negatively related to internalizing symptoms.

On the other hand, although seldom studied, O’Connor and colleagues (2002) discussed a type of prosocial behavior in which someone falsely believes they are to blame for another’s distress. This type of guilt and personal distress reaction may lead to what has been labeled “pathological altruism.” Zahn-Waxler argued that children of depressed parents, especially girls, may experience pathological guilt and anxiety, contributing to costly prosocial behavior and depression (see Zahn-Waxler & Van Hulle, 2012). Such prosocial behavior is likely guilt-induced rather than based on altruistic motives. There is a need to study how guilt and personal distress are related to prosocial behavior and later internalizing problems, especially in work with children.

In the few studies that have considered other-oriented (rather than guilt-induced) prosocial behavior and internalizing problems in normative samples, negative relations have been found (Jelicic et al., 2007; Wang & Saudino, 2015). In one study of older adults, volunteer work was linked to lowered depression levels for those over 65 years of age, but not for younger participants (Musick & Wilson, 2003). In a more recent study, prosocial behavior toward family members indirectly predicted lower levels of adolescent anxiety (through maternal warmth); however, anxiety predicted *more* prosocial behavior toward friends (Padilla-Walker, Carlo, & Nielson, 2015; see also Prinzie, Van Harten, Dekovic, Van Den Akker, & Shiner, 2014). These findings suggest that prosocial behavior toward friends and family members may have different meanings in adolescence. Nonsignificant relations between prosocial behavior and internalizing problems also have been reported (Gleason, Jensen-Campbell, & Ickes, 2009; Hay & Pawlby, 2003). Thus, the relations between prosocial responding and internalizing problems are less clear and may be somewhat complex, varying by the motivation for prosocial behavior (i.e., guilt versus other-oriented) and the recipient involved (i.e., friends, family, strangers).

To summarize, the findings reviewed on the relations of prosocial behavior, and empathy-related responding, to children’s well-being support the view that empathy-related responding, particularly sympathy and prosocial behavior, are clearly related to important components of social functioning. That is, learning to respond to others’ distress with sympathy/empathy and other-oriented behavior is related to positive adjustment. On the other hand, lack of empathy may be a “risk” for developing problem behaviors (especially externalizing problems and aggression), although research on the relations of sympathy and prosocial behavior to internalizing problems is sparse and somewhat inconsistent.

Future Directions and Implications

It is particularly important to differentiate among different types of empathy-related responding when considering relations with emotion and social functioning. Future work to understand the predictors and outcomes of sympathy and prosocial behaviors is needed, especially longitudinal research examining the direction of effects. Experimental designs (particularly those conducted in natural settings) are valuable to understand the causal relations among empathy-related responding, prosocial behavior, and socio-emotional outcomes.

Further, more attention to the role of cognitive processing is needed. For example, socio-cognitive skills (e.g., self-other differentiation, perspective taking, emotion understanding) likely play a role in the emergence of empathy-related responding and prosocial behavior. Hoffman (1982) suggested that children's perspective taking is necessary for children to be able to differentiate between their own and another's distress and to accurately understand others' emotions. Further, children's affect may predict prosocial behavior through their interpretation of the situation and actions required. Longitudinal research examining the causal pathways would be useful in determining how socio-cognitive skills contribute to empathy-related responding and prosocial behavior. Although not discussed in this chapter, self-regulatory processes may partly account for the association between sympathy and socially competent functioning; self-regulation is critical for both aspects of functioning (see Eisenberg, 2010).

Interventions to promote sympathy and prosocial behavior are an important long-term goal. There have been a number of school-based interventions aimed at fostering sympathy and prosocial skills, with some positive results (see Caprara et al., 2014, 2015). However, most of the intervention programs have focused on much broader behaviors such as social skills and emotion management (see Conduct Problems Prevention Research Group, 1999, 2002). Thus, understanding the mechanisms involved in effective interventions is a key topic for future research. Given the role of sympathy in critical aspects of social adaptation, it is important to find ways to stimulate sympathy and prosocial behavior throughout the lifespan.

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Chapter 19

On the Road to Social Well-Being

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Abstract The paths to social well-being begin early in development, through parent-child interactions that shape broad sets of social cognitions in the attachment system. These social schemas affect our abilities to form and sustain the positive social ties central to psychological well-being. Although these capacities are shaped in childhood, they are not immutable. The authors describe the links between attachment and social intelligence and offer an approach to improve the positive cognitions underlying social well-being.

Together, social intelligence and secure attachment help foster satisfying lifelong relationships that form the basis of social well-being. This chapter discusses the developmental journey from the biological and behavioral underpinnings of attachment style to the capacity for socially intelligent cognitions on the path to social well-being. To begin, the historical and present state of social intelligence is discussed with respect to similar theories of emotional intelligence and the attachment system. Next, attachment theory and the attachment system are explored to provide a foundation for behavior in close attachment relationships. Then, the various influences on the attachment system, including the development of social intelligence throughout life, are discussed to provide a deeper understanding of how these constructs are intertwined. Finally, the individual and communal benefits of social intelligence are outlined alongside one approach to improve social intelligence.

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Social Intelligence

Social intelligence is the combination of one's capacity to engage in satisfying relationships, identify the value of social connections, and take another's perspective (Thorndike, 1920). This concept is important because it allows individuals and communities to develop and maintain strong social relationships that positively affect well-being. Virtually everyone can benefit from enhanced social intelligence through improved social experiences, an ability to relate to less socially able individuals, and a variety of other mechanisms. Figure 19.1 provides a visual depiction that broadly outlines our view of the road to social well-being, including the possibility of using a social intelligence intervention to boost social capacities.

Social intelligence consists of an organized set of cognitive principles that permit accurate judgments and decision making in social interactions. It is a capacity that develops through internal reflection and an evolving understanding of the social world, one that is ultimately reliant on the motivation to become more attentive to others (Hemingway, 2012; Khilstrom & Cantor, 2011; Reiss, Bailey, Dunn, & Phillips, 2012). Importantly, social intelligence includes cognitive processes related to social engagement, performance expectations in interpersonal relations, and the humanization of social relations.

These cognitive processes are critical because humans, unlike inanimate objects and most other animals, are "causal agents" (Pennington, 2000). As causal agents, individuals have their own motivations, prejudices, goals, and unconscious perceptions that drive decision making, and the overall social action-reaction process. Thus,

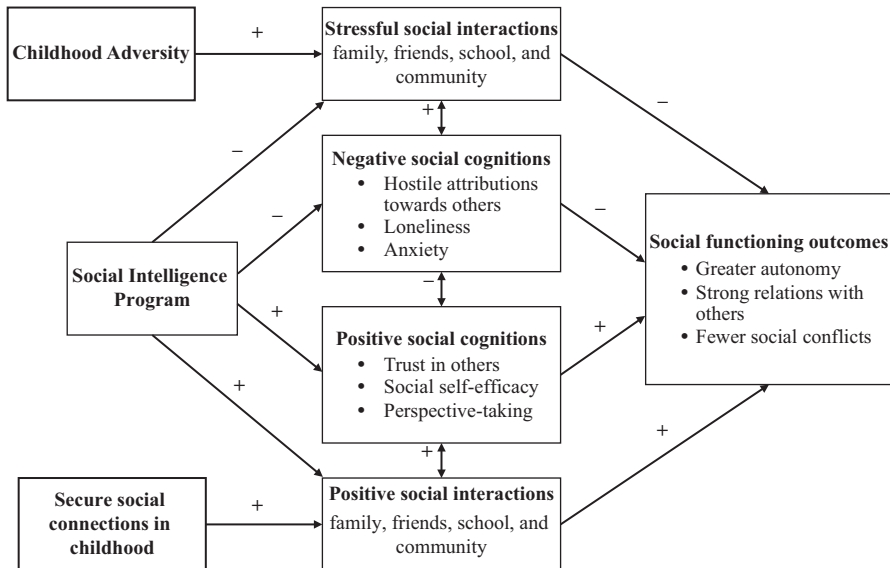


Fig. 19.1 Key pathways to social well-being

improved social relationships require a shift in focus away from the self and toward others because humans, by definition, are all relational beings (Gazzaniga, 2011).

Social intelligence is conceptually similar to, but distinct from, emotional intelligence. Emotional intelligence is defined as the ability to monitor others' feelings and one's own, to discriminate between these feelings, and apply the information provided by each actor (others and oneself) to guide one's behavior (Salovey & Mayer, 1990). In contrast to a focus on managing acute emotional states within an emotional intelligence framework, social intelligence focuses primarily on understanding and managing social interactions and long term social relationships. Clearly, identifying and reacting to acute emotional states can be helpful to forming and informing social interaction and, perhaps for this reason, emotional intelligence has been described as a subset of social intelligence (Goleman, 2006).

Interestingly, social intelligence and emotional intelligence interventions may successfully enhance their targeted measures, social or emotional intelligence, respectively, without influencing one another (Zautra, Zautra, Gallago, & Velasco, 2015). However, emotional intelligence programs may also increase an individual's awareness of the motivations and feelings of others (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Zautra et al., 2012). Thus, there are some areas of overlap between social and emotional intelligence interventions. Here, the focus on social intelligence reflects the chapter's broader goal of connecting attachment theory's explanations of relationship development with social intelligence's ability to enhance awareness of social cognitions and to modify these cognitions in order to reinforce or modify pre-existing attachment behaviors.

To modify social cognitions, social intelligence shifts the focus from the self and one's own emotions to a better understanding and acceptance of the feelings, beliefs, and intentions of others (Goleman, 2006). This shift allows individuals to better relate with others in social environments. As a result, social intelligence and social competence overlap such that high social intelligence promotes social competency (Kihlstrom & Cantor, 2011; Snow, 2010).

Conversely, low social intelligence may be characterized by negative social cognitions that lead to less socially competent behaviors. Consequently, such individuals may experience lower levels of social and overall well-being. Fortunately, social cognitions are not static. Individuals can improve the quality of their social cognitions through enhancing their social intelligence, with the ultimate goal of improving their social relationships and well-being.

Attachment Theory

The capacity for social intelligence is rooted in childhood relationships, particularly those with early caregivers. Attachment theory describes the development of positive social cognitions as the result of incorporating vibrant and emotionally invested primary caregiver relationships into the internal working models that guide individuals' lifelong perceptions and behaviors (Collins, 1996; Merz & Consedine,

2012). Focusing on the critical role of early experiences in forming beliefs and expectations about relationships with significant others, attachment theory posits an attachment system responsible for managing close relationships through all stages of life (Crittenden, 2006; Fraley, 2002). First described by Bowlby as an innate cognitive system that evolves over an individual's lifetime, the attachment system influences and organizes motivational, emotional, and memory processes with respect to attachment figures, such as significant caregivers and romantic partners (Bowlby, 1969/1982; Crittenden 1995). Moreover, attachment style is closely related to the success of social relationships, the development of positive social cognitions, and lifelong well-being. (Ainsworth, Blehar, Waters, & Wall, 1978; Hazan & Shaver, 1987).

Though attachment theory was first investigated by Bowlby (1969/1982) in the context of the infant-caregiver relationship, subsequent research applied the attachment system idea to the adulthood context, focusing on adult romantic attachments as an analog for early childhood relationships with primary caregivers (Crittenden, 1997; Fraley, 2002; Hazan & Shaver, 1987). Researchers have found numerous commonalities between the attachment behavior exhibited by adult romantic partners and by infants in the infant-caregiver context, including the propensity of individuals to exhibit a sense of security in the presence of an attachment figure and insecurity when the attachment figure is unavailable, whether that figure is a caregiver or a partner (Ainsworth et al., 1978; Hazan & Shaver, 1987). Further research into the dynamics of the attachment system has found functionally similar attachment dimensions that define the attachment system of infants and adults, leading to the conclusion that the attachment system is important throughout life (Brennan, Clark, & Shaver, 1998; Fraley & Spieker, 2003).

The attachment system's primary goal throughout life is to maintain a sense of felt security through a variety of behaviors (Ainsworth et al., 1978; Crittenden, 2006). To accomplish this goal, the attachment system is responsible for monitoring and evaluating signs of social threat. In addition, the attachment system monitors and evaluates the availability of caregivers and other attachment figures. When the attachment system's primary goal of felt security is not fulfilled, it will engage various secondary strategies to regulate attachment-related feelings and needs in response to these monitored factors (Mikulincer & Shaver, 2003). These secondary strategies include hyper-activating strategies, which consist of insistent attempts to attain proximity to and support from an attachment figure, and deactivating strategies that include efforts to distance oneself from attachment figures (Mikulincer, Shaver, & Pereg, 2003). Ultimately, continuing use of these secondary strategies in the face of significant pressure on the attachment relationship leads to the development of negative social cognitions and an insecure attachment style.

Attachment Styles

Investigators first identified three¹ unique attachment styles: secure, avoidant, and ambivalent-resistant (Ainsworth et al., 1978). Although other attachment styles² and at least one attachment disorder³ exist, the modern trend is to conceptualize attachment as a dual-axis system (Fraley, 2010). This approach measures the relative anxiousness and avoidance of an individual's attachment behavior rather than explicitly classifying an individual into a particular style⁴ (Brennan et al., 1998; Fraley & Spieker, 2003). An alternative approach, particularly when assessing the stability of attachment style throughout life, divides attachment styles into secure and insecure based on the anxious and avoidant dimensions of the dual-axis system (Fraley, 2002). To assess attachment behaviors in the context of social cognitions and social intelligence, this chapter focuses on three attachment styles: secure, anxious, and avoidant.

The secure attachment style is characterized by high levels of confidence, strong social skills, and the ability to maintain long-lasting close and romantic relationships (Cooper, Shaver, & Collins, 1998). Key social cognitions including high self-esteem, self-worth, and successful coping skills, which serve as the foundation for several positive outcomes (Bowlby, 1980). As such, secure attachment is strongly linked to positive social cognitions and, indeed, assists with the development of these positive cognitions. In turn, the secure attachment style facilitates positive social and overall well-being.

The avoidant attachment style is characterized by difficulty expressing negative feelings and a tendency to withdraw from emotionally charged situations (NICHD, 2006). Individuals with an avoidant attachment style are uncomfortable with close contact and social interactions because they lack the skills necessary to maintain successful relationships (Cooper et al., 1998). In part, this may be because individuals with the avoidant attachment style do not experience reward sensations from positive social interactions to the same extent as other individuals do (Vrticka, Andersson, Grandjean, Sander, & Vuilleumier, 2008).

¹Other variations on this classification system have been described, such as the classification of attachment into secure, fearful, preoccupied, and dismissive styles (Bartholomew & Horowitz, 1991).

²In addition to these three attachment styles, another commonly discussed and distinct attachment style is disorganized attachment. Disorganized attachment is characterized by poor communication skills, poor relationship maintenance, reduced emotional regulation, and a predisposition to psychopathologies (Juffer, Bakermans-Kranenburg, & IJzendoorn, 2005).

³Reactive Attachment Disorder ("RAD") occurs when a child is exposed to pathogenic care. RAD is characterized by developmentally inappropriate and disturbed social relatedness that typically begins prior to age 5 and may lead to serious psychopathologies (Hornor, 2008). RAD and its accompanying psychopathologies are beyond the scope of this chapter.

⁴The dual-axis system of attachment can be used to separate participants into one of four categories based on their scores: secure, preoccupied, avoidant, and fearful-avoidant (Brennan et al., 1998).

The anxious attachment style is characterized by impulsivity, inappropriate disclosure of information, and detrimental attempts to cling to relationships (Cooper et al., 1998). This style has also been referred to as preoccupied, ambivalent-resistant, and anxious-resistant (Brennan et al., 1998; Ainsworth et al., 1978; Fraley & Spieker, 2003). Individuals with an anxious attachment style are interested in seeking and maintaining relationships but often fear the loss of existing relationships. The combined effect of this desire for and fear of losing relationships induces a state of hyper-vigilance toward attachment figures (Carlson & Sroufe, 1995). Anxiously attached individuals in this hyper-vigilant state are constantly on guard for any perceived signs of abandonment or deceit from an attachment figure (Carlson & Sroufe, 1995). The negative effects of this hyper-vigilance are magnified by the tendency to feel and express anger or jealousy in response to a perceived lack of trust (Carlson & Sroufe, 1995). As a result, the desperate desire for close relationships and accompanying fear of rejection may actually drive others away (Allen & Land, 1999). In all, these individuals differ from people with an avoidant attachment style in that they actively seek relationships but lack the social sensitivity needed to know when to trust and how to understand the intentions of others they care about.

Distribution of Attachment Styles

Researchers estimate that more than half of the population is securely attached while avoidant attachment is slightly more common than anxious attachment among the insecurely attached. One study of infant attachment style estimated that approximately 62% of infants are securely attached, 23% exhibit an avoidant attachment style, and 15% are anxiously attached (Campos, Barrett, Lamb, Goldsmith, & Stenberg, 1983). A study examining adult attachment estimated that approximately 56% of adults are securely attached, 24% have an avoidant attachment style, and 20% are anxiously attached (Hazan & Shaver, 1987). Overall, these studies indicate that insecure attachment is only slightly less common than secure attachment.

Attachment Stability Throughout Life

Attachment stability over an individual's lifetime remains an open question in attachment theory. While it is understood that earlier attachment relationships can impact future attachment security and social cognitions, it is unclear how well prior attachment style predicts present and future attachment. Researchers have found conflicting results regarding attachment stability that vary depending on the length of time assessed. Over relatively short periods, especially less than 5 years, attachment is moderately stable, as indicated by a moderate correlation ($r = .39$) between initial and subsequent attachment style (Fraley, 2002).

Fraley (2002) expanded on this assessment of attachment stability using mathematical predictions to assess two models of attachment stability. The first model, known as the revisionist model, posits that over a long period of time, there would be little or no correlation between initial and later attachment security (Fraley, 2002). The revisionist model suggests that attachment style can be completely overwritten in the course of a lifetime so that little significant impact remains from early-life attachment security (Fraley, 2002). Fraley (2002) rejected this model in favor of the prototypical model, which assumes that early-life attachment security will remain, to some extent, as an indelible prototype.

However, later studies have concluded that for periods of time greater than 5 years, the magnitude of the relation between early and later attachment styles begins to diminish until, for time periods greater than 15 years, there is no statistically significant correlation between initial and subsequent attachment style (Pinquart, Feussner, & Ahnert, 2013). Thus, Pinquart et al. (2013) rejected Fraley (2002)'s conclusions in favor of the revisionist model. At present, it is unclear whether the revisionist model or the prototypical model is more accurate, though such a determination is well beyond the scope of this chapter. Instead, it is important to note that earlier attachment experiences may have some influence on future attachment relationships, but that influence is neither immutable nor everlasting (Fraley, 2002; Pinquart et al., 2013). In part, this variability may be explained by differences in the dynamics of adult romantic relationships and infant-caregiver relationships, including changes in reciprocity and role expectations. Ultimately, the present state of attachment theory suggests that attachment relationships are critical to well-being and subject to improvement, under the appropriate circumstances.

Forming and Reforming Attachment Behaviors for Social Well-Being

Social cognitions shape interpersonal interactions and relationships throughout life. Through social cognition, the attachment system helps to develop and maintain the internal working models and behaviors responsible for seeking and maintaining close attachment relationships. Initial attachment behaviors are developed in response to numerous psychological and biological influences that may continue to shape the attachment system throughout life. This chapter focuses on three main areas of influence that affect the attachment system, social cognitions, and social well-being: biological factors including genetics, epigenetics, and hormones; early infant-caregiver interactions; and social intelligence in adolescence and adulthood.

Biological Influences

Social cognitions, attachment behaviors, and attachment style can be heavily influenced by a variety of biological factors. These factors include direct genetic effects, epigenetic changes related to the early caregiving environment, and a variety of potential hormonal effects. Although these biological factors may have a significant effect on individuals, many are modulated by environmental factors, including the infant-caregiver relationship. In addition, these factors may have positive or negative effects on an individual, depending on the specific factor involved.

Genetic variations may influence an array of physiological and neurological systems from birth and are thus highly relevant to attachment behaviors. For example, the serotonergic system, a neurochemical system linked to the regulation of mood and emotions, is heavily influenced by the 5-HTTLPR gene (Barry, Kochanska, & Philibert, 2008). A common variation in this frequently studied gene, characterized by a short allele, can alter the serotonergic system to increase an individual's risk of a wide range of emotional and behavioral problems (Barry et al., 2008). Moreover, serotonergic dysfunction has been strongly implicated in a variety of psychopathologies (Brown & Hariri, 2006; Posner, Rothbart, & Sheese, 2007).

The social and behavioral risks of genetic variation are influenced by other factors, including lifelong environmental factors, that can increase or reduce actual harm (Moffitt, Caspi, & Rutter, 2005). For instance, adults with the short allele of the 5-HTTLPR gene are more likely to develop depression when exposed to multiple significant stressors in the course of their life (Caspi et al., 2003). In contrast, infants with the short allele are more likely to develop a secure attachment style when exposed to a responsive mother-infant relationship, compared to similarly at risk infants with unresponsive mothers (Barry et al., 2008). This study also found that infants without the short allele did not significantly benefit from a responsive mother-infant relationship with respect to their attachment style (Barry et al., 2008). Thus, the short allele may make individuals more sensitive to their environments, whether negative or positive. This is but one example of the potent effects of genetic factors on social attachment.

In addition to having varied effects depending on an individual's genetics, social environmental influences have been shown to affect epigenetics. Epigenetics refers to the expression of particular genes as controlled by chemical processes that are influenced by external factors, including close attachment relationships. Whether or not a particular gene is expressed will alter an individual's phenotype and physiological function, with the potential to harm long-term health. For example, an individual's negative perception of parenting over a period of time might have a cumulative effect on the individual's epigenetics (Naumova et al., 2016). The effects of early negative experiences in an infant's social environment may include disruption of immune function through epigenetic changes (Carlucci et al., 1997; Naumova et al., 2016). Such disruption can lead to long-term disorders of the immune system and other health problems. Although further study in this emergent area is necessary, environmental influences, including early attachment relationships, appear not

only to have a disparate impact based on an individual's genetics but also may actually alter the expression of a person's genome to change their physiological function and overall health. However, it is important to note that genetic factors are only a small part of the development of the attachment system. Additional biological factors, including a variety of hormones, may directly impact social development.

Hormones can influence cognitive and social development both in-utero and throughout life. Prior to birth, maternal hormones can positively or negatively impact fetal development, with lasting effects. For example, cortisol, a steroid hormone released in response to stress, can cross the placental barrier to negatively influence the unborn child (Matthews, 2000; Challis et al., 2001). Cortisol has been shown to suppress immune function and have detrimental effects on fetal brain development (Bergman, Sarkar, Glover, & O'Connor, 2010). Thus, cognition, social development, and the attachment system may all be impacted by maternal stress hormones prior to birth.

In infants, characteristic secure attachment behaviors in the infant-caregiver relationship may positively affect hormone function. Some of the most seminal work in this area has been conducted by Michael Meaney and his colleagues. One study in the rodent model has shown changes in neo-natal hormones in response to gentle handling (Meaney et al., 1991). This study found that handling of neo-natal rats, which provides tactile and thermal stimulation similar to the touch-play exhibited in secure infant-caregiver attachment relationships, may result in protective changes to the hypothalamic-pituitary-adrenal ("HPA") axis (Meaney et al., 1991). Specifically, the investigators found that handled animals are better able to shut off the stress response and are more sensitive to the hormones that signal the termination of the stress response (Meaney et al., 1991). Because hormones released during the stress response suppress the immune system, the ability to more rapidly terminate a stress response may have beneficial health effects. For social well-being, the ability to quickly terminate the stress response may reduce the effect of harmful life stressors and protect against age-related cognitive impairment. Interestingly, further investigation of the rodent HPA axis has found that altering parental behavior had epigenetic effects on the HPA axis resulting in changes to the stress response system, with improvements in rats exposed to more secure mothering behaviors (Weaver et al., 2004). Ultimately, a number of biological factors can influence health and social development; however, the influence of early and lifelong attachment relationships cannot be understated.

Early Attachment Relationships and Parenting

Mothers often serve as important caregivers and central attachment figures, especially during early life. In particular, sensitive and responsive mothering behaviors are essential to the development of strong social skills and emotional regulation during childhood (Kochanska, 2001; Mayes, 2006; Mikulincer & Shaver, 2007; Schore, 2001). Research has found that signaling maternal availability through

mother-to-infant gaze is critical to regulating infant distress and increasing infant engagement (Beebe et al., 2010; Slee, 1984). During the first 3–9 months of life these positive maternal behaviors are particularly important in the development of secure attachment and its accompanying positive cognitions (Feldman, 2003, 2007a).

During this time period, a mother engages in a pattern of responsive exchanges with her infant that includes coordinated co-vocalizations, gaze patterns, gentle, loving touch, and mutual expressions of positive affect (Feldman, 2003, 2007a). This sort of synchronous mother-infant engagement pattern promotes childhood self-regulation (Feldman, Weller, Leckman, Kvint, & Eidelman, 1999), optimizes social adaptation, reduces depression risk in adolescence (Feldman, Gordon, Schneiderman, Weisman, & Zagoory-Sharon, 2010; Feldman, Gordon, Zagoory-Sharon, 2010), and enhances the capacity for empathy through childhood and adolescence (Feldman, 2007b). In all, these positive behaviors promote secure attachment, which in turn allows children to develop positive cognitions that benefit their lifelong well-being.

Paternal influences are also important in developing positive cognitions and adopting a secure attachment style. Fathers primarily influence their children through activities and interaction rather than direct biological influences (Carter et al., 2005; Lonstein & DeVries, 2000). For example, research suggests that paternal involvement is responsible for preparing children for new experiences and excitement rather than providing a sense of security, which is primarily the role of the mother (Feldman, 2003). Overall, the father-child attachment relationship is related to the quantity and quality of fathering behavior and to increases in paternal sensitivity over time (Brown, Mangelsdorf, & Neff, 2012). Although maternal and paternal influences serve different purposes in social development, both are adaptive in developing a full range of social schemas.

Attachment style development can be moderated, disrupted, and altered throughout life, especially during childhood (Carter et al., 2005; NICHD, 2006; Suomi, 2006). Consistent positive parental behaviors help a child to develop secure attachment (Atwool, 2006; Pleck, 2010). When those parental behaviors are absent, insecure attachment arises. For example, a child may develop an anxious attachment style when a caregiver is inconsistently responsive to a child's needs or otherwise unavailable (Brown, McBride, Shin, & Bost, 2007). In contrast, avoidant attachment may develop in response to a caregiver who appears hostile, even if this hostile appearance is only a subjective belief of the child. Because of variable sensitivity and subjective feelings of developing children, many behaviors and factors may play a role in the development of insecure attachment.

Lifetime Influence of Social Intelligence

Social intelligence is closely linked to attachment style in part because of the profound effect caregivers' behavior can have on their children. Attachment theory proposes that securely attached parents will tend to display positive attachment behaviors toward their child, causing the child to become securely attached (Ainsworth et al., 1978; Bowlby, 1969/1982). However, this also suggests that parents with an insecure attachment style are more likely to engage in detrimental attachment behaviors with their children, leading to the development of an insecure infant-caregiver relationship. To overcome this predisposition, caregivers can learn more appropriate attachment behaviors, such as being consistently available and responsive to their young children. Even in the absence of secure attachment on the part of one's parents, individuals can develop social intelligence that promotes positive social cognitions that, in turn, can promote appropriate social and attachment behaviors.

Ideally, caregivers should use their social intelligence skills throughout the child rearing process to promote and sustain secure attachment in the child. However, it has been demonstrated that when previously insecure infant-caregiver attachment relationships incorporate more positive parenting behaviors, an insecure child will move toward a more secure attachment style (NICHD, 2006). Children showed increased social competency and reduced externalizing behavior in response to improvements in parental attachment behavior (NICHD, 2006). Thus, parents who are made more aware of and coached in their parenting behaviors are able to change their own attachment behaviors and the course of their child's attachment system development.

Although attachment theory has long suggested that early attachment security is critical to long-term attachment, the instability of attachment security over time strongly suggests that the attachment system is malleable. This malleability further suggests that attachment behaviors may be improved by life experiences and subsequent relationships. In turn, social skills are critical to improving these relationships and increasing the probability that a particular individual will develop healthy and lasting attachment relationships in adolescence and adulthood. To that end, the social cognitions instilled by social intelligence can serve as the basis for future social interactions and attachment relationships. Indeed, changes toward a more secure attachment style seem to be possible at every stage of development, even if change is limited by previous adaptations (Carlson & Sroufe, 1995). Thus, although early positive parental attachment behaviors are ideal, positive changes remain possible with proper guidance.

Improving Social Intelligence

Improving social intelligence can have broad positive effects beyond individual improvements in social cognitions, interpersonal relationships, and the attachment system. For example, improving social intelligence in a particular securely attached individual will not only enhance positive social cognitions in that individual, but will allow securely attached individuals to better relate to and understand insecurely attached individuals. Research on effective methods to communicate with insecurely attached individuals provides insight into how an average person can learn to have positive interactions with insecurely attached individuals.

A recent study of communication in a clinical therapy setting found that inflection and other non-verbal cues were more important than verbal communication alone in effective communication with insecurely attached individuals (Havas, Svartberg, & Ulvenes, 2015). The study examined results on the Affect Attunement Scale, which revealed an overlap between effective communication strategies and skills promoted by social intelligence. Specifically, Havas et al. (2015) found that strategies such as perspective taking, active listening, and humanization of others increased the effectiveness of conversations with insecurely attached individuals. Thus, the positive social cognitions promoted by social intelligence may allow securely attached individuals to be more attuned to insecurely attached people in verbal and non-verbal signaling. In turn, this attunement may reduce difficulties experienced by secure and insecure individuals when trying to form relationships with one another. In the short term, these changes may increase well-being for both parties, particularly in work and family environments where continued relationships are essential. In the long term, communities may become more receptive to the vulnerability of insecure community members and promote greater access to social support for those in need through improved understanding of insecurely attached individuals.

Beyond these internal benefits, social intelligence can improve inter-community relationships by addressing a recurring source of strife across and within communities. Communities frequently suffer from internal and external conflicts that arise from prejudice and implicit biases. At the community level, this conflict manifests in the development of in- and out-groups. This in-group versus out-group dichotomy can occur on a small scale, for instance social cliques in a school, and on a large scale, as seen within and across neighborhoods divided along ethnic and racial lines. Regardless of the scale, there will always be in-groups and out-groups because humans have evolved to form close social bonds and discriminate between close and distant relationships. However, by moving toward more secure attachments throughout the community, communities can improve the manner in which in-group individuals and groups view and treat out-group members.

This solution is complicated by insecurely attached members of each community, who tend to respond worse to inter-group division. To address this conflict, insecure individuals can learn more adaptive cognitions through social intelligence interventions designed to reduce out-group biases. Research has found that securely

attached individuals are generally immune to the perceptions of external threat that underlie the conflict created by the in-group versus out-group dichotomy (Mikulincer & Shaver, 2007, 2011). Because of this immunity, securely attached individuals find it unnecessary to defend their group by deriding the out-group (Mikulincer & Shaver, 2007, 2011). In addition, these securely attached group members are able to activate constructive emotion-regulation cognitions that reduce the perception of threat from out-group members while simultaneously increasing their own sense of love-worthiness, self efficacy, cognitive flexibility, tolerance, and confidence in conflict resolution (Mikulincer & Shaver, 2007). As insecure members become more secure, they can adopt these positive social cognitions and modify their out-group biases to be more accepting and tolerant of out-groups. Thus, social intelligence training can benefit entire communities by increasing attention to social relationships with greater awareness that may ultimately increase well-being across communities.

Social intelligence can be improved through social intelligence programs, such as the Social Intelligence Training (“SI Training”) developed by the Social Intelligence Institute or through similar social intelligence interventions. Specifically, the SI Training has been shown to effectively improve measures of social intelligence in a sizable sample of young adults (Zautra et al., 2015). In that study, young adult participants showed increased attentiveness to others’ emotions, a greater willingness to engage in perspective taking, and reported increased self-efficacy in social relationships (Zautra et al., 2015). Similarly, other research has recognized successful interventions in cases of emotionally and socially insensitive parents (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003). Finally, emotional intelligence programs have had some success in improving certain social cognitions, such as the ability to monitor the feelings of others and one’s self, likely because of emotional intelligence’s close relationship with social intelligence (Fredrickson et al., 2008; Zautra et al., 2012).

The Social Intelligence Training Curriculum

The Social Intelligence Training (“SI Training”) was designed to modify key social cognitions related to social engagement and efficacy expectations in interpersonal relations (Matsushima & Shiomi, 2003), and to encourage the adoption of certain meta-cognitive principles that make up the training’s core values and the foundation of social intelligence (Snow, 2010). The SI Training also alerts participants to potential barriers to social-emotional development, such as insecure attachment (Zautra, Infurna, Zautra, Gallardo, & Velasco, 2016; Masi, Chen, Hawkey, & Cacioppo, 2010). By combining lessons from social intelligence principles and attachment theory, widely available social intelligence interventions, including the SI Training, can promote social skills essential to interpersonal relations. Four specific meta-cognitive principles serve as the foundation of the training: humanization, socially applied neuroscience, experiential individuality, and choice.

Humanization of others is the cornerstone principle that guides the entire SI Training (Hemingway, 2012; Snow, 2010). In essence, individuals have a tendency to subconsciously dehumanize others and treat them as static objects or as two-dimensional beings. This dehumanization may lead to individuals treating others as objects to be manipulated or may simply result in a decreased understanding of the importance or even presence of other people's emotions and motivations. Thus, this principle is about teaching individuals to understand that others should be treated as complete people with cares, concerns, and emotions worthy of their attention.

Socially Applied Neuroscience refers to the application of cognitive and social neuroscience to an individual's behavior toward themselves and others. Cognitive neuroscience indicates that the mind simplifies, classifies, and automates our thoughts and behaviors toward ourselves and others. To accomplish this, individuals develop subconscious concepts which inform them about what to expect from situations, known as schemas, and experience-based techniques for rapidly solving problems, learning, and discovery, known as heuristics (Bar-On, 2007). However, because heuristics result in a sufficient rather than optimal solution, and schemas rely on perceptions and biases, these shortcuts can be harmful in social settings. Relying on neuroplasticity, the ability to alter neural pathways through experience, individuals can replace suboptimal relational schemas and heuristics to enhance their social relationships (Kihlstrom & Cantor, 2011). Social intelligence draws on these lessons and abilities to improve social cognitions, either through the SI Training or a similar social intelligence intervention.

Experiential Individuality, the third principle underlying the SI Training, refers to an individual's uniqueness derived from their past experiences and expectations of the future. However, this uniqueness can be overlooked because it complicates the social world while the mind attempts to simplify perceptions. Thus, uniqueness may limit an individual's understanding of others, forcing this understanding to be incomplete and biased to some degree. Moreover, these biases may be amplified by the disparity between perceived in-groups and out-groups (Galinsky & Moskowitz, 2000; Kahneman, 2011; Wang, Iannotti, & Nansel, 2009). This limited and distorted understanding of others, caused by automatic over-simplifications, creates a tension between humanization and simplification. The SI Training addresses this tension by offering methods to reduce biases toward others and overcome schemas.

The final key principle, choice, is based on the concept that people naturally seek connection with others (Baumeister & Leary, 1995; Jolliffe & Farrington, 2011). Although there are many reasons why people may be unable or unwilling to make and sustain social connections, such as temperament or personality (Savla et al., 2013; Schafer, 2011), they can learn to show greater humanity and make wiser choices in their social relationships. Social intelligence manifests through daily choices: choosing to connect and engage rather than avoid and reject others.

The SI Training is typically delivered as an online course available through a web-portal as a series of interactive learning modules. The self-paced course contains approximately 11 h of content and is designed to be completed within 4 months. Recently, the SI Training has been delivered to groups and individuals in a variety of settings, including schools, elder care and healthcare facilities, and at home. For

participants without stable internet access, the SI Training can also be delivered through digital media, such as CDs or portable hard drives. The SI Training was designed to be widely accessible and appeal to a broad range of individuals and communities in the hope of fostering widespread improvements in social intelligence.

Conclusion

Social intelligence is a malleable capacity that can develop over time through internal reflection to enhance social cognitions and interpersonal relationships. Positive social cognitions and beneficial social processes may develop from an early age when children are exposed to a nurturing environment that promotes secure attachment. However, the development of secure attachment can be disrupted by biological barriers, suboptimal caregiver relationships, and environmental factors. When attachment development is disrupted, children are likely to develop an insecure attachment style and negative social cognitions that diminish social efficacy and well-being throughout life. The development of insecure attachment can be mitigated and even reversed under the right circumstances, such as the presence of available, nurturing, and socially intelligent caregivers. Unfortunately, these protective forces are not present in every situation and attachment insecurity is common in adults, accounting for as much as 44% of the adult population (Hazan & Shaver, 1987). Compounding this problem, attachment insecurity often interferes with the development of beneficial social relationships, leading to social isolation. Indeed, research suggests that approximately one third of adults are persistently lonely (Zautra, 2014).

Social intelligence interventions, such as the SI Training, can help individuals adopt positive social cognitions and attachment behaviors. These newly adopted thoughts and behaviors may reduce attachment insecurity and social isolation. Over time, these improvements in social and attachment behaviors will propagate through communities and further reduce individual social isolation. As individuals and communities become more socially intelligent and adopt positive attachment behaviors, individual and communal well-being will improve allowing everyone to achieve a more satisfying and fulfilling life experience.

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Part V

Meaning

Chapter 20

The Functionality of Emotional Clarity: A Process-Oriented Approach to Understanding the Relation Between Emotional Clarity and Well-Being

Tanja Lischetzke and Michael Eid

Abstract If our emotions are trying to tell us something, people higher in emotional clarity should be at a distinct advantage. In this chapter, we first present a conceptual definition of emotional clarity (and related constructs) and give an overview of how emotional clarity is measured. Next, we review existing empirical evidence on the adaptive value of emotional clarity for SWB. To provide a larger framework for integrating empirical findings from different areas of research, we outline three different processes through which individual differences in emotional clarity might be related to individual differences in SWB: affect regulation, acquiring and maintaining meaning in life, and interpersonal relationship building. For each theoretical process, we review the available empirical evidence. We conclude that future research that directly tests process-oriented hypotheses on the functionality of emotional clarity will be particularly helpful for further developing the theoretical models.

Emotions have the potential to provide us with information that can help facilitate our adaptation to environmental challenges and enhance well-being (Keltner & Gross, 1999). Hence, individuals higher in emotional clarity should be at a distinct advantage. Being clear about one's moods and emotions is generally presumed to be adaptive (e.g., Berenbaum, Raghavan, Le, Vernon, & Gomez, 2003), and deficits in emotional clarity have been conceptualized as a transdiagnostic factor involved in many forms of psychopathology such as depression, social anxiety, or problematic alcohol use (e.g., Vine & Aldao, 2014). Indeed, research has demonstrated that individual differences in emotional clarity—that is, the extent to which individuals can

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unambiguously identify and label their emotional experiences—are associated with individual differences in subjective well-being (SWB; e.g., Gohm & Clore, 2002; Lischetzke, Eid, & Diener, 2012). Moreover, several studies have demonstrated that many of the correlates of SWB (e.g., physical and mental health, coping, personality variables, and the quality of social relationships) are also related to emotional clarity (Timoney & Holder, 2013). Which processes might be responsible for the link between higher emotional clarity and these positive outcomes? The available correlational evidence points to the possibility that emotional clarity and SWB might be linked to common causes. Another interpretation is that emotional clarity might play an important role in individuals' daily lives. In this chapter, we take a process-oriented perspective and focus on the role of emotional clarity in regulating affect, developing meaning in life, and building positive interpersonal relationships.

We first present a conceptual definition of emotional clarity that distinguishes the construct from related constructs, and we provide an overview of how emotional clarity is measured. We then review the empirical evidence that supports the functionality of emotional clarity for SWB. Using a general model of affect regulation, we delineate the points at which individual differences in emotional clarity might influence affect regulation and review the available empirical evidence on emotional clarity's role in affect regulation. Finally, we describe additional accounts of the clarity-SWB link in relation to meaning in life and interpersonal relationship quality.

What Is Emotional Clarity?

Individuals do not simply experience affective states (e.g., anger, nervousness, pleasant mood, or pride), but they also consciously monitor and evaluate such states. Mayer and Gaschke (1988) termed this reflective process *meta-mood experience*. Being clear versus unclear about one's ongoing feelings (i.e., knowing what one is feeling at the moment vs. being confused about one's feelings) represents an important characteristic of this reflective process. Mayer and Stevens (1994) showed that individuals differ considerably in their level of clarity about an ongoing mood and that these individual differences can be differentiated from other meta-mood experiences (e.g., the acceptance and the typicality of an ongoing mood). In this chapter, we use the term *momentary emotional clarity* when referring to the extent to which individuals are certain about what they feel at the present moment. The reflective process may refer to either a mood state (i.e., an affective state that is not directed toward a specific object), such as feeling relaxed versus tense, or to an emotion (i.e., an affective state that is directed toward a specific object), such as being proud of something (for the distinction between moods and emotions, see Frijda, 1993).

Salovey, Hsee, and Mayer (1993) distinguished between momentary (state) and dispositional (trait) meta-mood experiences. *Trait emotional clarity* has been defined as the extent to which individuals can usually identify and understand their moods and emotions (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995; Swinkels & Giuliano, 1995). Given that most previous research on emotional clarity has

focused on the trait level, we will use the term *emotional clarity* to denote dispositional individual differences in this chapter (and the term *momentary emotional clarity* to refer to the state of being clear).

In recent years, additional conceptual refinements have been suggested for the emotional clarity construct. Boden and Berenbaum (2011) suggested differentiating between two facets of emotional clarity. The first, *type clarity*, refers to the extent to which individuals can typically identify and distinguish between the types of emotions they experience (i.e., corresponding to the classic definition of dispositional emotional clarity described above). The second, *source clarity*, refers to the extent to which individuals typically know the causes of their emotions. Empirically, self-reports of these facets have been shown to be distinguishable but highly correlated with each other (Boden & Berenbaum, 2011; Boden & Thompson, 2015). In this chapter, we use the term emotional clarity to refer to the type clarity facet and source clarity to refer to the source clarity facet.

Another conceptual refinement refers to the possibility that deficits in emotional clarity may be valence specific (Thompson et al., 2015)—that is, individuals who are typically rather unclear about their negative feelings might not show the same difficulties with respect to their positive feelings. Thompson et al. found that neuroticism and depression were related to lower clarity of negative but not positive emotions. Given the novelty of these findings, more research is needed on the issue of valence-specificity.

How Can Emotional Clarity Be Differentiated from Related Concepts of Affective Information Processing?

One conceptually related construct is alexithymia. This construct emerged from observations of psychosomatic patients. The original conceptualization of alexithymia included four components: (a) difficulty identifying one's own feelings and distinguishing between feelings and bodily sensations, (b) difficulty describing one's feelings to others, (c) limited imaginative capacity, and (d) an externally oriented thinking style (e.g., Luminet, Rimé, Bagby, & Taylor, 2004). The first of these alexithymia facets represents a lack of emotional clarity. Palmieri, Boden, and Berenbaum (2009) demonstrated that difficulty identifying feelings and emotional clarity can be regarded as two poles of a continuum. Being able to identify one's feelings seems to be a precondition for verbally communicating one's feelings. However, due to a focus on emotional expression and communication, difficulty describing feelings is conceptually distinct from a lack of emotional clarity (Palmieri et al., 2009). Empirically, research has shown that difficulty identifying feelings and difficulty describing feelings have different correlates (e.g., Le, Berenbaum, & Raghavan, 2002; Timoney & Holder, 2013). Our review of empirical findings on the links between emotional clarity, SWB, and affect regulation therefore focuses on findings that were based on measures of emotional clarity or difficulty identifying feelings.

The concepts of emotional awareness (e.g., Lane & Schwartz, 1987), emotion differentiation (e.g., Feldman Barrett, Gross, Christensen, & Benvenuto, 2001; Kang & Shaver, 2004), and emotional granularity (e.g., Tugade, Fredrickson, & Feldman Barrett, 2004) refer to the level of complexity with which individuals represent their feelings. Some individuals make subtle distinctions between affect words and describe their affective experiences in very specific terms, whereas others use more global terms to represent their feelings (e.g., along a single pleasant–unpleasant continuum). However, both groups of individuals might report that they know exactly what they are feeling. Conceptually, a less complex structural representation of affective experiences does not necessarily imply confusion about one’s feelings. On the other hand, a highly complex internal structure of affective experiences does not necessarily guarantee confidence in identifying one’s feelings at a given moment. Empirically, self-reports of trait emotional clarity and trait emotion differentiation (as assessed by the Differentiation subscale of the Range and Differentiation of Emotional Experience Scale by Kang & Shaver, 2004, which contains items such as “Each emotion has a very distinct and unique meaning to me”) were positively related, and these correlations were moderate in size (Kang & Shaver, 2004).

However, Boden, Thompson, Dizén, Berenbaum, and Baker (2013) analyzed the relation between self-reported emotional clarity and an indirect measure of emotion differentiation (based on repeated assessments of emotional states). In their studies, self-reported clarity and the indirect measure of emotion differentiation (the average intraindividual correlation between emotion ratings across repeated assessments) were unrelated and demonstrated differential relations with affect intensity and affect variability. Erbas, Ceulemans, Pe, Koval, and Kuppens (2014, Study 2) found a small to moderate positive relation ($r = .20$) between indirectly measured emotion differentiation and self-reported emotional clarity. Taken together, emotional clarity and emotion differentiation can be theoretically and empirically distinguished, but future research is needed to further examine the role that assessment method plays in the constructs’ empirical associations. In this chapter, we focus on emotional clarity and do not review findings on indices of emotion differentiation.

How Can Emotional Clarity Be Measured?

Most research on emotional clarity has examined dispositional individual differences. Emotional clarity as a trait is typically measured via self-report. Individuals indicate the degree to which they are generally clear (vs. unclear) about their feelings on items such as “I almost always know exactly how I am feeling” (Trait Meta-Mood Scale [TMMS]; Subscale Clarity of Feelings; Salovey et al., 1995), “I am often confused about what emotion I am feeling” (20-Item Toronto Alexithymia Scale [TAS–20]; Subscale Difficulty Identifying Feelings; Bagby, Parker, & Taylor, 1994), “I am never really sure what I am feeling” (Mood Awareness Scale [MAS]; Subscale Mood Labeling; Swinkels & Giuliano, 1995), or “I have difficulty making

sense out of my feelings” (Difficulties in Emotion Regulation Scale [DERS]; Subscale Lack of Emotional Clarity; Gratz & Roemer, 2004). Different studies have demonstrated high convergence between these self-report scales (e.g., Giromini, Velotti, de Campora, Bonalume, & Zavattini, 2012; Gohm & Clore, 2002; Lumley, Gustavson, Partridge, & Labouvie-Vief, 2005; Palmieri et al., 2009).

To date, measuring momentary emotional clarity has received less attention. Some studies have used state versions of emotional clarity scales (Kokkonen & Pulkkinen, 2001; McLaughlin, Mennin, & Farach, 2007; Mayer & Gaschke, 1988; Mayer & Stevens, 1994; Vine, Aldao, & Nolen-Hoeksema, 2014). That is, self-report measures of momentary clarity have been obtained by asking participants to indicate how much each item applies to them at the current moment rather than in general (e.g., “I am very clear about my present emotion”). Another self-report measure of momentary clarity involves specific judgments of one’s certainty about one’s responses to momentary affect items (e.g., Arndt, Lischetzke, Crayen, & Eid, 2017; Lischetzke, Cuccodoro, Gauger, Todeschini, & Eid, 2005). The rationale is that with higher momentary clarity, individuals should be more confident about their ratings of state affect items.

Due to the internal nature of emotional clarity, many researchers agree that self-reports offer the best method for assessing state and trait emotional clarity (see e.g., Boden & Berenbaum, 2011). Self-report measures are easy to administer and typically show good reliability. However, they rely on respondents’ ability and willingness to report on the construct of interest (Lucas & Baird, 2006). Moreover, global self-reports of trait emotional clarity capture generalized beliefs and may be prone to biases such as personality-related beliefs or gender stereotypes (e.g., Robinson & Clore, 2002).

As an alternative to self-reports, a response time (RT) measure of momentary emotional clarity has been used in some studies (Arndt et al., 2017; Lischetzke et al., 2005; Lischetzke, Angelova, & Eid, 2011; Thompson et al., 2015). The rationale behind RTs is that at moments when individuals are rather clear about their affective state, they should be able to rate their affective state comparatively quickly (i.e., faster RTs presumably reflect higher momentary emotional clarity). In other research areas, a similar strategy has been employed: For instance, RTs to attitude items have been used as an index of attitude accessibility (Fazio, 1995), and RTs to craving items have been used as an index of craving certainty (Germeroth, Wray, & Tiffany, 2015). When using aggregated RTs as an index of dispositional individual differences, it is important to control for baseline speed of responding (Fazio, 1995). In two experience sampling methodology (ESM) studies (Arndt et al., 2017; Lischetzke et al., 2011), RTs to affect items were related to participants’ self-reported momentary certainty about their affect ratings but not to self-reported trait emotional clarity. There is some evidence for the predictive validity of the response time measure of emotional clarity (Arndt et al., 2017; Lischetzke et al., 2005, 2011; Thompson et al., 2015), but due to the novelty of the measure, more research is needed.

What Is the Empirical Evidence for the Functionality of Emotional Clarity for SWB?

To date, most studies reporting relations between emotional clarity and indicators of SWB have used a cross-sectional design and have assessed self-reported trait levels of emotional clarity. Gohm and Clore (2002) reported moderate positive correlations between emotional clarity and a composite measure of SWB. Other studies looked at specific facets of SWB. Some studies analyzed the relation between emotional clarity and life satisfaction (i.e., the cognitive component of SWB; Diener, 2000) and found a positive, small-to-moderate relation (e.g., Extremera, Durán, & Rey, 2007, 2009; Kämpfe & Mitte, 2010; Le et al., 2002; Palmer, Donaldson & Stough, 2002; Swinkels & Giuliano, 1995; Vergara, Alonso-Alberca, San-Juan, Aldás, & Vozmediano, 2015). With respect to the affective component of SWB (i.e., mood and emotions; Diener, 2000), a range of studies have consistently found moderate positive associations with clarity: Individuals higher in trait emotional clarity have reported higher trait levels of happiness (e.g., Extremera, Salguero and Fernández-Berrocal 2011; Kämpfe & Mitte, 2010), higher trait levels of pleasant mood (e.g., Lischetzke & Eid, 2003), and higher trait levels of positive affect (e.g., Ciarrochi, Heaven, & Supavedeeprasit, 2008; de Gucht, Fischler, & Heiser, 2004; Le et al., 2002; Swinkels & Giuliano, 1995; Vergara et al., 2015). Moreover, emotional clarity has been shown to be positively related to spiritual well-being (Rosik & Soria, 2012).

Higher levels of emotional clarity have been shown to be associated with lower depression scores in adults (e.g., Balluerka, Aritzeta, Gorostiaga, Gartzia, & Soroa, 2013; Berenbaum, Bredemeier, Thompson, & Boden, 2012; Gilbert et al., 2012; Moriya & Takahashi, 2013; Vine & Aldao, 2014) and children (Flynn & Rudolph, 2010). Also, lower emotional clarity has been found to be related to more negative affect, anxiety, hostility, stress, and mental health problems such as somatization and insomnia (e.g., Ciarrochi et al., 2008; de Gucht et al., 2004; Gilbert et al., 2012; Le et al., 2002; Palmer et al., 2002). Moreover, clinical psychological research has found that self-reported deficits in emotional clarity are implicated in various disorders (e.g., depression, social anxiety, borderline personality, binge eating, and alcohol use; Berking & Wupperman, 2012; Vine & Aldao, 2014). Using ESM and an indirect (RT) measure of emotional clarity, Thompson et al. (2015) found that individuals with major depressive disorder had lower clarity of negative emotions than healthy controls.

It is interesting to note that the link between emotional clarity and SWB is a very robust finding that seems to generalize across cultures: In a college student survey conducted in 42 nations, emotional clarity was positively related to cognitive and affective SWB in nearly all nations, albeit to varying degrees (Lischetzke et al., 2012).

What processes might be responsible for the positive link between emotional clarity and SWB? Given that the research reviewed above was usually based on cross-sectional correlational designs, causal direction could not be determined.

Individuals with higher emotional clarity might be happier and less depressed because (a) higher clarity enhances SWB, (b) being dispositionally happy makes it easier to be clear about one's feelings, or (c) some other variable (e.g., personality) influences both variables. Theoretical accounts of emotional clarity typically focus on the first explanation and propose different mediating processes. We will review these accounts next.

What Is Emotional Clarity's Role in the Affect Regulation Process?

Moods and emotions may be subject to attempts to regulate their intensity and quality. Although moods and emotions can be differentiated by general characteristics such as object directness and time pattern (Frijda, 1993)—which also means that they may be elicited in different ways and influenced by different factors—the processes that guide their regulation share some features. Regulation attempts may occur either deliberately (i.e., involving conscious awareness and effort) or automatically (i.e., without a conscious decision and without effort). However, it seems plausible to assume a continuum that ranges from the automatic to controlled regulation of affective states (e.g., Gross, 1998; Mauss, Bunge, & Gross, 2007). Given that emotional clarity has been defined in terms of conscious awareness, we focus on controlled regulation processes here by referring to two models of affect regulation: Gross' (2015) extended process model of emotion regulation and Larsen's (2000) control theory model of mood regulation. By synthesizing the common features of these models, we aim to delineate the points where individual differences in emotional clarity (and closely related constructs) might have an impact on the success or failure of affect regulation. Our starting point is when an affective state enters into conscious awareness (left side of Fig. 20.1).

In his extended process model of emotion regulation, Gross (2015) combined an account of the emotion-generating process (via appraisals) on a lower level with an upper-level emotion regulation process, which involves (a) identifying the emotions to be regulated, (b) selecting an emotion regulation strategy, and (c) implementing a regulation strategy. In particular, during the identification stage, an emotion state is perceived by the person, who evaluates it (with respect to some standard or goal) as a candidate for regulation and decides whether or not to regulate it. According to Gross (2015), one key cause of potential failure in emotion regulation involves deficiencies at the emotion perception step (i.e., a lack of momentary emotional clarity). In a similar vein, Larsen (2000) posited that mood regulation involves comparing the current mood state with a desired mood state and that mood-regulating behaviors are executed to reduce potential discrepancies. According to Larsen, one reason why successfully identifying one's mood state should facilitate mood regulation is that it permits individuals to evaluate their affective state with respect to current concerns and decide whether it is necessary to do something about it.

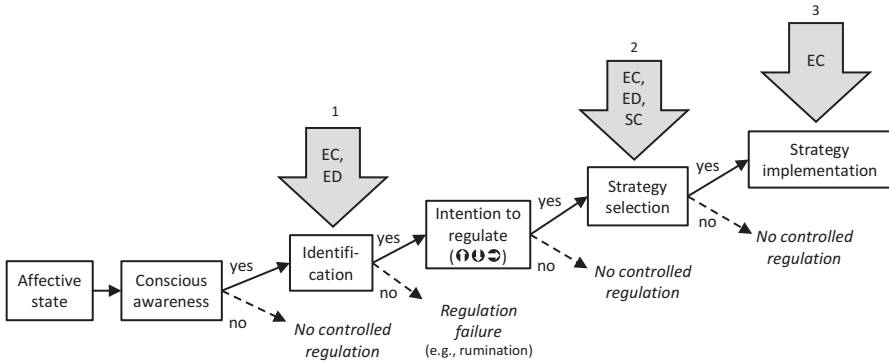


Fig. 20.1 Flowchart of the affect regulation process. The *grey arrows* indicate the points where individual differences in emotional clarity (EC), emotion differentiation (ED), and source clarity (SC) might influence the affect regulation process

In Fig. 20.1, the first vertical arrow indicates that—in a given situation—individual differences in emotional clarity should influence an individual’s probability of knowing what he or she is feeling at the moment. Individuals with higher emotional clarity should be less likely to feel confused about their affective state in a given situation. Individual differences in the related construct of emotion differentiation should have an impact on the specificity with which an individual labels his or her affective state in that situation.

It is important to note that when individuals form an intention to regulate their affective state, this does not necessarily imply a momentary preference for more pleasant and less unpleasant affect. Depending on the goals that individuals pursue (e.g., to confront others in a social interaction), they might prefer to maintain or even increase their negative feelings (e.g., anger) and reduce their positive feelings (e.g., happiness) to the extent that they believe these feeling states will be useful for pursuing their goal (e.g., Tamir, Bigman, Rhodes, Salerno, & Schreier, 2015). In Fig. 20.1, the box labeled “Intention to regulate” therefore contains three arrows that indicate different directions of change (upward, downward, maintain) that individuals might desire for their affective state.

Once an intention to regulate the affective state is formed, individuals can select and implement a regulation strategy. In Gross’ (2015) model, the strategy selection stage includes an evaluation of potential regulation strategies in light of current contextual factors (e.g., available physiological or cognitive resources) as well as specific characteristics of the perceived emotion state (e.g., its intensity). To down-regulate mild anger, for instance, individuals might choose a different strategy (e.g., cognitive change) than to down-regulate intense anger (e.g., distraction; Sheppes et al., 2014). The implementation stage involves translating a general selected strategy (e.g., cognitive change to deal with anger at one’s partner) into situation-specific tactics (e.g., coming up with justifications for the partner’s behavior). Hence, the selection stage and the implementation stage represent a second and third point, respectively, in the affect regulation process where the degree to which individuals

are clear about their momentary feelings can influence the success or failure of regulation.

From a resource allocation perspective (e.g., Ellis & Ashbrook, 1989), high emotional clarity implies that only few cognitive resources are needed to arrive at an understanding of one's momentary feelings. Hence, the better individuals know what they feel, the more cognitive resources they should have available for evaluating potential regulation strategies and effectively implementing them (Hemenover, Augustine, Shulman, Tran, & Barlett, 2008; Larsen, 2000). That is, emotional clarity's positive impact on cognitive resources in the identification stage should itself have a positive impact on regulatory behavior in the strategy selection and implementation stages. Moreover, emotional clarity might directly affect strategy selection and implementation (Arrows 2 and 3 in Fig. 20.1): Knowing what one is feeling at a given moment should make it easier to use one's feelings to provide information about the current situation and hence to select and tailor a strategy for dealing with the current context. For instance, a person who clearly recognizes that she is feeling very tense at a given moment but also rather tired might down-regulate her tension by selecting and implementing an appropriate strategy that does not require much energy (e.g., distracting herself by listening to her favorite music). In addition, a feeling of certainty about one's affective state might foster individuals' subjective belief that they can actively change their affective state (i.e., enhance self-efficacy), which in turn might lead individuals to invest greater effort during strategy implementation.

In terms of clarity-related constructs, the more specific individuals' representations of their affective states are (i.e., the higher their emotion differentiation is) and the better they understand the causes of their feelings at the moment (i.e., the higher their source clarity is), the better individuals may be at selecting a strategy that has the best chance of regulating the affective state in accordance with their current goals and circumstances (Arrow 2 in Fig. 20.1).

Which empirical findings support the adaptive role of emotional clarity in affect regulation? Some of the evidence points indirectly toward the possibility that a lack of emotional clarity results in less effective affect regulation, as manifested in elevated levels of affect variability, which has been measured by global self-report (Boden, Thompson et al. 2013, Study 1; Thompson, Boden, & Gotlib, 2017), ESM (Boden, Thompson et al. 2013, Study 2), or clinical interview (Thompson, Dizén, & Berenbaum, 2009). Other studies have tested whether emotional clarity buffers the negative effects of stress on well-being: Extremera et al. (2009) found that the link between higher perceived stress during the last month and reduced life satisfaction was less pronounced for individuals high (vs. low) in emotional clarity. However, Goldman, Kraemer, and Salovey (1996) found no evidence for a moderator effect of emotional clarity on the relation between students' distress and physical symptom reporting over the course of a semester.

In studies on associations between emotional clarity and self-report measures of broad affect regulation competencies, individuals with higher emotional clarity reported more self-efficacy in affect regulation (Kämpfe & Mitte, 2010) and better mood repair (e.g., Kämpfe & Mitte, 2010; Lischetzke & Eid, 2003; Salovey et al.,

1995; Salovey, Stroud, Woolery, & Epel, 2002). Moreover, an ESM study demonstrated that (indirectly measured) momentary emotional clarity was related to higher self-reported mood regulation success within persons (Lischetzke et al., 2011).

In some studies on the self-reported use of specific affect regulation strategies, higher emotional clarity was related to more active-planful coping (Gohm & Clore, 2002) and less expressive suppression (Arndt et al., 2017; Gross & John, 2003; Zelkowitz & Cole, 2016). However, in two studies, Salovey et al. (2002) found that emotional clarity was unrelated to the habitual use of specific coping strategies (e.g., distraction or emotional support seeking). With respect to cognitive reappraisal (i.e., construing an emotion-eliciting situation in a way that changes its emotional impact; e.g., Gross & John, 2003), empirical evidence is also mixed: A coping measure of positive reinterpretation was positively related to emotional clarity in some studies (Gohm & Clore, 2002; Gohm, Corser, & Dalsky, 2005) but unrelated to emotional clarity in another (Salovey et al., 2002, Study 2). When reappraisal was measured with the Emotion Regulation Questionnaire (Gross & John, 2003), emotional clarity was unrelated to reappraisal in four studies (Arndt et al., 2017; Boden, Bonn-Miller, Kashdan, Alvarez, & Gross, 2012; Boden, Gross, Babson, & Bonn-Miller, 2013; Gross & John, 2003). By contrast, Boden and Thompson (2015) reported that emotional clarity positively predicted cognitive reappraisal (predictors included in the model were type clarity, source clarity, and involuntary and voluntary attention to emotions). One reason for the mixed evidence on the link between emotional clarity and the habitual use of specific regulation strategies could be that the adaptiveness of a specific regulation strategy varies by context (Gross, 2014). In particular, the benefits of specific regulation strategies such as reappraisal might depend on the extent to which the strategy is employed in a context-sensitive manner (Aldao, Sheppes, & Gross, 2015). A challenge for future research might be to more directly test whether emotional clarity facilitates the context-sensitive selection of regulation strategies.

Research analyzing actual affect change and momentary affect regulation in the laboratory or in daily life is particularly relevant for gaining more insight into emotional clarity's role in affect regulation. Unfortunately, this kind of research is rather scarce. In one laboratory study (Salovey et al., 2002), individuals high in emotional clarity demonstrated less physiological reactivity (cortisol release) in response to stressors, a finding that might be interpreted to mean that they passed through the entire affect regulation process more effectively. In another laboratory study (Salovey et al., 1995), individuals high in emotional clarity demonstrated a larger decrease in ruminative thoughts following an experimental stressor. In a similar vein, a longitudinal online study (Vine et al., 2014) showed that, on average, lower self-reported momentary clarity of emotions about an upsetting memory was related to more rumination over time. These findings are in line with the idea that when it is difficult to identify one's ongoing feelings, it will also be more difficult to decide whether or not to regulate them (see Fig. 20.1). It is interesting that the same study found that the relation between a lack of momentary emotional clarity and increased rumination was particularly pronounced among individuals with a high intolerance of ambiguity (Vine et al., 2014). This might suggest that individuals differ in the

extent to which they experience a momentary lack of clarity about their feelings as aversive (which in turn might fuel repetitive thinking in search of answers).

The laboratory study by Salovey et al. (1995) revealed that individuals high in emotional clarity were faster at repairing their negative mood following a stressor, a finding that is consistent with the notion that successful affect identification “frees up” cognitive resources that can then be used to select and effectively implement a regulation strategy (Arrows 2 and 3 in Fig. 20.1). Two other studies also examined individual differences in actual affect regulation but used instructions to induce specific regulation strategies (Baker & Berenbaum, 2007; Hemenover et al., 2008). Baker and Berenbaum (2007) asked participants to think about a current stressor and subsequently instructed them to use either problem-focused coping (i.e., to think about and write down concrete steps for dealing with their problem) or emotional-approach coping (i.e., to focus on and express their feelings on paper). To analyze the differential effectiveness of the induced regulation strategies, the authors used a composite measure of emotional clarity and communication (which included items on clarity and difficulty identifying feelings but also items on difficulty describing feelings and ambivalence over emotional expressiveness). If assigned to the emotional-approach coping condition, individuals low (but not high) in clarity reported higher levels of positive affect in the 2 weeks following the writing exercise. That is, individuals low in clarity profited more from using emotional-approach coping than individuals high in clarity (who had little to gain from the induction procedure). By contrast, if assigned to the problem-focused coping condition, individuals high in clarity reported higher levels of positive affect than individuals low in clarity. That is, individuals high in clarity profited more from using problem-focused coping. This last finding is in line with the idea that emotional clarity facilitates affect regulation by helping individuals make use of the information provided by emotions to tailor a selected strategy to the current situation (Arrow 3 in Fig. 20.1).

Hemenover et al. (2008) used films to induce negative affect (Study 1) or sadness (Study 2) in participants and subsequently assigned them to either an affect repair task or a control task. Across the two studies, writing about positive memories was effective at decreasing negative affect (or sadness) and increasing positive affect. It is important to note that in the positive memories condition, participants with high (vs. low) emotional clarity were more effective at enhancing good and attenuating bad feelings—also supporting the idea that emotional clarity has a facilitating effect on strategy implementation (Arrow 3 in Fig. 20.1).

Taken together, empirical findings on the role of emotional clarity in the affect regulation process are still primarily indirect (focusing on correlations with affective outcomes) and based on trait measures. Future research should build on and extend existing process-oriented experimental and longitudinal studies to more directly test hypotheses derived from affect regulation models (e.g., by experimentally manipulating the situational context in which regulation takes place in the lab or by combining tasks/interventions on how to regulate affect with ESM designs). This might help to more specifically identify the ways in which being clear versus unclear about one’s feelings influences affect regulation.

What Other Processes Have Been Proposed to Account for the Link Between Emotional Clarity and SWB?

Meaning in Life

Meaning in life refers to a coherent and purposeful comprehension of one's life, the world, and how one fits in the world (e.g., Steger, 2009). Both theoretical and empirical work has demonstrated that *having* meaning in life (i.e., individuals' perception of their life as being purposeful, significant, and valuable) can be distinguished from *searching* for meaning in life (i.e., individuals' efforts to establish and/or augment the significance of their life; Steger, Frazier, Oishi, & Kaler, 2006). A growing body of empirical research has demonstrated that the presence of meaning in life can be considered beneficial to SWB, whereas the search for meaning seems to comprise both functional and dysfunctional aspects, as evidenced by its associations with some positive characteristics (e.g., open-mindedness and curiosity) but also negative characteristics (e.g., depressive symptoms and rumination; see Steger, 2009, 2012, for an overview).

As a cognitive basis of the development of a sense of meaning, Shin, Steger, and Henry (2016) emphasized the importance of having a coherent understanding of the self. Being able to identify and understand one's own moods and emotions should help individuals interpret diverse life experiences and gain self-knowledge. Abeyta, Routledge, Juhl, and Robinson (2015) argued that emotional clarity should improve peoples' ability to detect and derive meaning from emotional information. In line with this reasoning, the bivariate relation between emotional clarity and the presence of meaning in life was found to be moderate to strong (e.g., Abeyta et al., 2015, Studies 1-3; Augusto-Landa, Pulido-Martos & Lopez-Zafra, 2011), and this relation held when perceptions of self-worth were controlled (Abeyta et al., 2015).

According to the meaning-maintenance model (Proulx & Inzlicht, 2012), experiences that violate expectations and threaten individuals' view of themselves and the world (e.g., unjust discrimination or a diagnosis of a terminal illness) lead to aversive arousal, which in turn motivates efforts to recapture meaning. Abeyta et al. (2015) proposed that emotional clarity should allow individuals to more effectively down-regulate negative reactions to distressing experiences, and as a result, individuals high in emotional clarity should be better able to maintain perceptions of meaning in the context of existentially threatening thoughts. In an experimental study, Abeyta et al. (2015, Study 5) used a mortality salience manipulation to test whether emotional clarity could buffer the effects of momentary threats to existential meaning. As hypothesized, the authors found that when experiencing existentially threatening thoughts (during a writing task that was designed to render death thoughts salient), individuals high (vs. low) in emotional clarity reported higher subjective vitality (i.e., a specific component of meaning referring to a sense of energy for goal-related action that results from living a meaningful life).

Taken together, emotional clarity can be theoretically linked to the presence and maintenance of meaning in life, but empirical evidence on this link is still scarce.

Future research might shed more light on emotional clarity's role in the development of a sense of meaning (e.g., during adolescence; cf. Shin et al., 2016).

Interpersonal Relationship Quality

Emotional experiences and emotion regulation often take place in a social context (partners, groups, organizations, etc.). From a social context view, individuals are senders of emotional information as they implicitly or explicitly express their feelings to others. For the effective regulation of emotions in social systems, it is important that individuals identify and communicate their emotions appropriately. On the other hand, individuals are also receivers of emotional signals. Effective emotion regulation within social systems therefore also requires individuals to identify others' emotions correctly. That is, from a social context view, emotional clarity refers to the ability to identify not only one's own emotions but also the emotions of social partners. The two abilities are related, but distinguishable: Lischetzke et al. (2012), for instance, found an average correlation of $r = .32$ between individuals' clarity of their own feelings and their self-reported clarity of others' feelings.

Well-functioning social relationships are a major source of well-being (e.g., Diener & Biswas-Diener, 2008). Hence, individuals who are good at identifying their own and others' emotions might be happier because (a) they are better able to regulate their own and others' emotions in social relationships and (b) because they are better able to build more satisfying relationships. To date, empirical studies on the role of emotional clarity in social relationships has focused on individuals' clarity concerning their own feelings and has used alexithymia scales to measure emotional clarity. Some of these studies only reported their results using total alexithymia scores. To better link the current analysis with the previous sections, we exclusively focus on studies that allow for facet-level conclusions.

One important factor facilitating emotion regulation in social relationships is to feel compassion for others. Gilbert et al. (2012) found that difficulty identifying one's own feelings was weakly related to a greater fear of having compassion for others and strongly related to a greater fear of receiving compassion from others. That is, individuals low in emotional clarity seem to have a negative attitude toward compassion and might be reluctant to get involved in other people's emotions.

Although process-oriented studies analyzing the role of emotional clarity in the building of social relationships are lacking, there is some empirical evidence that different facets of alexithymia are associated with relationship quality. In a study by Humphreys, Wood, and Parker (2009), more difficulty identifying feelings was related to lower relationship satisfaction and sexual satisfaction. Other studies analyzed the association between difficulty identifying feelings and relationship satisfaction in heterosexual couples and tested for gender differences in this association. The findings were mixed: In a study on married couples, Cordova, Gee, and Warren (2005) found that for both husbands and wives, difficulty identifying feelings was associated with lower marital satisfaction and less experience of intimate safety for

both spouses. In the study by P. Eid and Boucher (2012), wives' and husbands' difficulty identifying feelings was related to lower wives' marital satisfaction, but unrelated to husbands' marital satisfaction. Emotional clarity might be important for other types of social relationships, too. Ciarrochi et al. (2008) showed that emotion identification skills are related to a larger quantity and higher quality of social support received in early adolescence.

Taken together, there is some empirical evidence that emotional clarity is an important factor in relationship quality. However, previous studies were cross-sectional or longitudinal with only a few measurement occasions, and they focused on the clarity of people's own emotions and not on the clarity of others' emotions. Future studies should take a more process-oriented view and cover both aspects of emotional clarity.

Concluding Remarks

In this chapter, we reviewed existing empirical evidence on the adaptive value of emotional clarity for SWB. To provide a larger framework for integrating the empirical findings on emotional clarity from different areas of research, we outlined three different processes through which individual differences in emotional clarity might be related to individual differences in SWB—*affect regulation, acquiring and maintaining meaning in life, and interpersonal relationship building*. Future research that directly tests process-oriented hypotheses on the functionality of emotional clarity will be particularly helpful for further developing these theoretical models.

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Chapter 21

Can Affectively Negative Experiences Contribute to Well-Being? The Affectively Negative Need-Fulfillment Model

Jacob Juhl, Clay Routledge, Joshua A. Hicks, and Constantine Sedikides

Abstract Psychological well-being is traditionally characterized by high positive affect and low negative affect. However, we propose that experiencing negative affect can be beneficial for well-being. Specifically, we advance that psychological needs, which are vital for well-being, can be fulfilled in situations characterized by negative affect. To support our proposal, we outline five affectively negative situations (i.e., stressful goal-pursuit, the frightening supernatural, other-directed annoyance, passion for social causes or beliefs, highly adverse life events) that can simultaneously meet psychological needs. We summarize our proposals in the Affectively Negative Need-Fulfillment Model and contextualize our analysis within the literature.

According to scholarly orthodoxy, psychological or subjective well-being (henceforth: well-being) is characterized by high levels of positive affect (PA) and low levels of negative affect (NA). However, we propose that experiencing NA can be beneficial for well-being. In particular, we put forward that psychological needs, which are vital for maintaining and promoting well-being, can be fulfilled in situations characterized by NA. We summarize the conventional perspective on PA and NA's roles in well-being. Then, we consider how experiencing NA may be beneficial for well-being via need-fulfillment; here, we outline affectively negative situations

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that can meet psychological needs. Subsequently, we distill our proposals in a theoretical model and contextualize it within the literature.

Existing Perspective on Affect in Well-being

Well-being is generally conceptualized as a combination of high satisfaction with life, high PA, and low NA. We consider the role of PA and NA in well-being in more detail.

Positive Affect

Well-being is defined, in part, by the presence of PA (Diener, 1984). That is, being psychologically well involves feeling happiness, joy, contentment, pride, and enthusiasm (Diener, Suh, Lucas, & Smith, 1999). PA is such a large part of well-being that psychologists use the terms PA, happiness, and well-being interchangeably (Busseri & Sadava, 2011; Sheldon, 2016) and often operationally define well-being as PA (Diener et al., 1999). Clearly, individuals who experience more PA have better well-being. PA is also linked to physical health (Pressman & Cohen, 2005), creativity, sociability, and success in both work environments and family life (Lyubomirsky, King, & Diener, 2005). Given PA's role in well-being and its broader benefits, psychologists have recently focused on promoting PA through interventions (e.g., expressing gratitude, counting one's blessings, engaging in prosocial behavior; Lyubomirsky & Layous, 2013).

Negative Affect

Well-being is also defined by the relative absence of NA (Diener, 1984). That is, being psychologically well involves the lack of sadness, anxiety, guilt, and anger. Traditionally, psychologists' efforts to improve well-being have focused largely on the reduction of affectively negative states (Seligman & Csikszentmihalyi, 2000). This is understandable because frequent and intense NA is conducive to the onset of psychological disorders (Kashdan & Biswas-Diner, 2014).

Can Experiencing Negative Affect Be Beneficial for Well-being?

Despite the recent emphasis on promoting PA and a long-standing emphasis on reducing NA, we consider the idea that experiencing NA can sometimes be beneficial for well-being. Our proposal rests on two premises: (1) well-being is based, in part, on the fulfillment of psychological needs, and (2) psychological needs can be fulfilled within situations characterized by NA. The first premise is well accepted; however, we briefly expound it and define the psychological needs relevant to our proposal. The second premise has not been thoroughly articulated or directly supported. We theoretically develop it by outlining situations characterized by NA that can help meet psychological needs.

Psychological Needs

Psychological needs are psychological states that are necessary for the maintenance and promotion of psychological well-being (Deci & Ryan, 2000). The notion that well-being rests on the fulfillment of psychological needs is central to several classic and contemporary theories in psychology (Baumeister & Leary, 1995; Maslow, 1943; Murray, 1938; Ryan & Deci, 2000). Congruent with this, individuals who manifest better need fulfillment report greater satisfaction with life (Oishi, Diener, Lucas, & Suh, 1999; Rich, Hanna, & Wright, *in press*). Additionally, individuals evince higher PA within need-fulfilling situations (Diener, Larsen, & Emmons, 1984). Moreover, within-person increases in need-fulfillment are associated with higher PA (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000), and experimental interventions aimed at fulfilling psychological needs increase happiness (Sheldon et al., 2010).

Different theories highlight the relevance of different needs (Pittman & Zeigler, 2007). We do not wish to argue for the prominence of certain needs or to provide an exhaustive list of needs. Rather, we are interested in needs that are (1) widely considered to be basic needs, and (2) can be fulfilled within affectively negative situations. In particular, we focus on situations that can satisfy the needs for meaning, self-esteem, and social connectedness.

Meaning is the subjective experience of purpose, value, and coherence in one's life and in the world (Becker, 1971; Wong & Fry, 1998). Self-esteem refers to a positive evaluation of one's self (Sedikides & Gregg, 2008; Sedikides & Strube, 1997). Social connectedness is the sense of being accepted by, belonging to, and connected with other persons or groups (Bowlby, 1988; Deci & Ryan, 2000). Empirical evidence points to the importance of meaning (Low & Molzahn, 2007; Routledge & Juhl, 2010), self-esteem (Routledge et al., 2010; Sheldon, Elliot, Kim, & Kasser, 2001), and social connectedness (Baumeister & Leary, 1995; Jetten, Haslam, & Haslam, 2012) for well-being.

Affectively Negative Need-Fulfilling Situations

Given that well-being is largely contingent upon need-fulfillment, we must further specify our second premise, namely, that psychological needs can be fulfilled within situations characterized by NA. First, we define the term “situation” broadly. In some instances, situation may refer to an immediate context that lasts a few minutes or seconds (e.g., reading an e-mail, seeing a news headline). In other instances, situation may refer to a more permanent circumstance (e.g., attending college, raising children). Second, we do not propose that NA itself leads to need-fulfillment. Rather, we posit that these situations lead to need-fulfillment via other psychological processes that are activated within them. Third, we emphasize the simultaneity of NA and need-fulfillment. That is, we argue that there are situations that *simultaneously* arouse NA and fulfill one or more needs. We do not merely suggest that people are willing to temporarily endure unpleasant circumstances in exchange for longer-term PA or need-fulfillment benefits (i.e., delayed gratification). We propose instead that there are situations in which people can fulfill their psychological needs at the exact same instance they are experiencing NA. We call these affectively negative need-fulfilling situations (ANNFS).

To support our second premise, we consider five ANNFS: stressful goal-pursuit, the frightening supernatural, other-directed annoyance, passion for social causes or beliefs, and highly adverse life events. We provide a theoretical rationale for why each ANNFS simultaneously arouses NA and fulfills psychological needs, and we offer circumstantial evidence for our claims. This is not necessarily an exhaustive list of ANNFS, and the ANNFS may not be mutually exclusive.

Stressful Goal-Pursuit The first ANNFS is stressful goal-pursuit. This situation refers to experiencing psychological stress (anxiety, worry, fatigue) while pursuing goals. Although not all goal-pursuits are stressful, many are. To illustrate, several career goals require a grueling training process. Academics and professionals put themselves through emotionally taxing educational programs. Earning degrees involves tests, papers, projects, and deadlines, all of which can provoke anxiety and distress. Athletes similarly undergo physically and mentally painful training in pursuit of their career objectives. Additionally, the common goal of raising children entails stress and anxiety, as any sleepless and fatigued parent would attest. Supporting this, research shows that individuals who place greater importance on their goals experience more anxiety (Kasser & Ryan, 1996). Similarly, the more invested individuals are in their goals, the more worry they report about them (Pomerantz, Saxon, & Oishi, 2000).

Despite the NA accompanying some goal-pursuits, this situation may help fulfill the need for meaning. Goal-pursuits give people a purpose or reason to live, which fosters the sense that one’s life has value and significance (Feldman & Synder, 2005; Griffith & Graham, 2004). For example, career goals in which the professional has a considerable influence on others’ lives (e.g., medical doctor) are associated with greater meaning (Yeager & Bundick, 2009). Taken together, evidence demonstrates that goal-pursuits can be both stressful and need-fulfilling. However,

we could locate no research that directly speaks to the simultaneity of NA and meaning within the context of goal-pursuit. Nevertheless, preliminary evidence is consistent with this notion. For example, Steger, Kashdan and Oishi (2008) conducted a daily diary study to assess how the engagement in unpleasant activities (which included writing about goals) and pleasant activities are related to meaning. They found that engaging in unpleasant behaviors was positively associated with meaning, whereas engaging in pleasure-laden behaviors was not.

Further evidence consistent with our proposal originates from research on “the parental paradox,” which is the romanticized desire to have children juxtaposed the stress of actually raising children (Baumeister, 1991). Theorists have attempted to solve the paradox by suggesting that parenthood, albeit largely characterized by NA, is desired because it enhances meaning (Baumeister, 1991; Hansen, 2012). Raising children grants life with a purpose and offers a path to leave a legacy (Lyubomirsky & Boehm, 2010). Empirical work has demonstrated that raising children is characterized by NA (Evenson & Simon, 2005; Simon, 2008). However, identifying one’s self as a person who takes care of children is associated with greater meaning (Baumeister, Vohs, Aaker, & Garbinsky, 2013). Also, experimentally inducing death thoughts by having participants write about death (1) intensifies the search for meaning (Juhl & Routledge, 2014; McGregor, Zanna, Holmes, & Spencer, 2001) and (2) increases the desire to have offspring (Wisman & Goldenberg, 2005). Together, these findings suggest that the desire for children is driven in part by the need for meaning. In all, engaging in goal-pursuits can sometimes be stressful, yet simultaneously fulfill the need for meaning.

The Frightening Supernatural Another ANNFS is frightening encounters with the supernatural world. This situation refers to perceiving an encounter, or merely thinking about and being exposed to information about encounters, with potentially threatening supernatural agents. The film *Paranormal Activity*, in which a young couple is haunted by a nefarious demon, provides a quintessential example of this situation. Viewers described it as a “truly scary” movie (Ebert, 2009) that creates a “pervasive sense of dread” (Lumenick, 2009). The situation, then, entails NA (fear, in particular). However, it also has the potential to fulfill the need for meaning. To illustrate how, it is prudent to discuss cultural anthropologist Ernest Becker’s (1971) dichotomy between the visible and invisible world.

In *The Birth and Death of Meaning*, Becker (1971) stated that one way people attain meaning is from believing that the universe contains an invisible world in addition to the physical (i.e., visible) one. To believe in the invisible world is to perceive that there are more significant causal agents or forces in the universe upon which the physical world depends. Becker claimed that if one’s behavior is ultimately rooted in and being observed by agents in a more meaningful invisible world, everything one does can have significance. Therefore, entertaining the idea that ghosts or demons exist suggests that an invisible world with causal agents is real and that the world is not simply a collection of random physical events, but a guided and purposeful place. Furthermore, the possibility that invisible spirits exist, even scary ones, may help affirm certain meaning-providing religious beliefs (Kwilecki, 2011).

In sum, ghosts and demons may provoke fear, but they should also allow people to ponder the notion that the world is a place imbued with meaning.

Although there is no research directly testing our proposal that supernatural experiences can simultaneously evoke fear and help meet the need for meaning, some findings provide tentative support for it. To begin, religiosity, which some scholars classify as supernatural belief (Tobacyk & Milford, 1983; Young & Morris, 2004), is a pervasive source of meaning (Kanazawa, 2015; Sedikides & Gebauer, 2013). Additionally, correlational work has shown that individuals who frequently perceive that they have experienced supernatural phenomena possess greater meaning (Palmer & Braud, 2002). Similarly, those claiming to have experienced paranormal phenomena report that their life is guided and purposeful (Kennedy, 2005; Kennedy & Kanthamani, 1995).

Experimental research also suggests that supernatural belief provides meaning. Routledge, Roylance, and Abeyta (2017) heightened the need for meaning (through a meaning threat manipulation) and then assessed participants' belief in supernatural testimonials. They found that heightening the need for meaning increased the belief that the supernatural testimonials were true. Similarly, experimentally inducing death thoughts (in essence, activating the need for meaning; Juhl & Routledge, 2014; McGregor et al., 2001) increases beliefs in supernatural agents (Norenzayan & Hansen, 2006). Overall, this work has illustrated that people turn to supernatural belief to meet their need for meaning. Nevertheless, more research is required to demonstrate the simultaneity of the experience of fear and increased meaning when encountering or thinking about supernatural phenomena.

Other-Directed Annoyance The next ANNFS is other-directed annoyance, which, as the name suggests, refers to being annoyed with another individual (or other individuals). Psychologists consider it a given that others can be a source of annoyance (Kowalski, 2003; Laak, Olthof, & Aleva, 2003). Despite the accompanying presence of NA, this situation may simultaneously help the annoyed individual meet the need for self-esteem. When an individual is annoyed with another person, the annoyed individual often renders an unfavorable judgment of the annoying person. Criticizing others gives the annoyed individual the opportunity for downward social comparison. That is, it gives him or her an opportunity to compare themselves to some who is, in some respect, worse off (e.g., less intelligent, morally inferior, unfunny). Comparing oneself to someone that is worse off can make the annoyed individual feel better about her/himself. Additionally, making unfavorable judgments of others implies that one is in a superior position from which such judgments can be made. This sense of superiority may boost self-esteem.

No research has shown that individuals can simultaneously be annoyed with another while experiencing a self-esteem boost. However, the literature has documented that downward social comparisons can be beneficial for self-esteem (Taylor & Lobel, 1989; Wills, 1981). Some of this research has focused specifically on how criticism and unfavorable judgments of others serve the need for self-esteem. This work has indicated that, in order to manage experimentally threatened self-esteem, individuals are more critical of and derogatory towards others. In one such study,

participants who experienced a self-esteem threat (by being placed in a relatively low status group) made more unfavorable judgments of their peers' written work than control participants (Amabile & Glazebrook, 1982). In another study, threatening self-esteem (by insulting participants' ability to solve a puzzle) increased derogatory attitudes towards minority groups (Cowen, Landes, & Schaet, 1959). Taken together, this work established that negatively judging others has the potential to help fulfill the need for self-esteem, suggesting that other-directed annoyance is an affectively unpleasant, yet need-fulfilling, situation.

Passion for Social Causes or Beliefs The fourth ANNFS is passion for social causes or beliefs. It reflects contexts in which passion for certain social causes (e.g., social movements, collective action, protests) or beliefs (e.g., religious, political) manifest in anger and frustration. The Tea Party rallies in 2009, the Arab Spring uprising in 2010, and the Occupy Wall Street demonstrations in 2011 are highly publicized examples of such social causes. Participants in these causes were frustrated, even enraged. Similarly, people's fervor for their beliefs can arouse negative emotions. People engage in frustrating arguments as a means to promote their beliefs. The 2016 presidential election in the US is an archetypal example of people irately asserting their political beliefs. It has sparked heated debate, leaving one journalist stating that the election is "All about Anger" (Kurtzleben, 2015). Indeed, research has shown that identifying with a social cause is associated with greater anger related to the cause (Stürmer & Simon 2009) and that social or political debate leads to anger (Holbert, Hansen, Caplan, & Mortensen, 2007). While this situation is characterized by NA, we propose that it simultaneously helps meet psychological needs for meaning, self-esteem, and social connectedness.

Meaning There are at least two ways in which taking part in social causes might augment meaning. First, participation can give individuals the sense of contributing to a purposeful endeavor that will make a substantial and positive difference in the world. Participants' actions, and hence their life, have value and meaning. Similarly, participating individuals incorporate such social causes into their identity (Jasper, 2014). Attaching one's self and contributing significantly to groups can make them feel as if their lives are more meaningful (Castano, Yzerbyt, & Paladino, 2004; Lifton, 1979/1983). Consistent with these ideas, individuals who participate in protests believe that their efforts will have an impact (Mannarini, Roccato, Fedi, & Rovere, 2009).

Second, belief systems (e.g., religious, political) are sources of meaning because they help individuals maintain perceptions that the world is a purposeful place. Engaging in debates and arguments regarding one's belief, although sometimes frustrating, gives people the opportunity to reflect, with bias, on their beliefs. This, in turn, can strengthen beliefs. Research confirms that such arguments bolster meaning-providing beliefs. For example, viewing political debates consolidates individuals' political beliefs (Meffert, Chung, Joiner, Waks, & Garst, 2006). Additionally, those who characterize themselves as argumentative have greater meaning (Baumeister et al., 2013).

Self-esteem The negative emotion that people often feel when lending support to social causes or asserting their beliefs is indignation, “the morally grounded form of anger” (Jasper, 2014, p. 208). That is, people feel frustrated because they perceive others as acting immorally and unjustly (Miller, 2001). Occupy Wall Street protesters, for example, were indignant of the corrupt financial sector and attacked the sector’s moral foundation. They took the moral high ground, asserting their own ethical principles.

Evidence indicates that taking the moral high ground benefits self-esteem. To begin, many individuals base their self-esteem, in part, on being virtuous and moral (Alicke & Sedikides, 2009; Sedikides & Gregg, 2008). There are even scales that measure the extent to which self-esteem is grounded in being virtuous and moral (Aquino & Reed, 2002; Crocker, Luhtanen, Cooper, & Bouvrette, 2003). Moreover, people meet self-esteem needs by self-enhancing, with most believing that they are better than average on socially desirable characteristics (Alicke & Govorun, 2005; Sedikides, Meek, Alicke, & Taylor, 2014). Morality is the characteristic on which people self-enhance the most (Allison, Messick, & Goethals, 1989; Van Lange & Sedikides, 1998). Taken together, although participating in social causes can be frustrating, it can help people meet the need for self-esteem.

Social Connectedness Participating in social causes may foster social connectedness because it gives individuals the opportunity to interact with like-minded others and be members of social groups. Although protesters may sometimes be angry, they stand alongside fellow protesters with common goals. This, in turn, may promote a sense of togetherness and a collective identity (Jasper, 2014). Consistent with these notions, participants in protests often identify with the social cause (Mannarini et al., 2009), and taking part in collective action increases the extent to which individuals identify with a social cause (Klandermans, 2003). In all, this research suggests that the need for social connectedness can be met while experiencing anger.

Highly Adverse Life Events It is impossible to escape life without experiencing some highly adverse life events (e.g., death of a loved one, serious illness or injury, sexual assault, natural disaster, terrorist attack on one’s ingroup, job loss; Bonanno, 2004). Certainly, some of these events (e.g., sexual assault) have no psychological silver lining. Yet, others may be conducive to the fulfilment of the needs for meaning or social connectedness.

Meaning Highly adverse events that are particularly significant may foster meaning, because individuals are able to detect that something significant has happened. For example, the death of a loved one is a meaningful event. The significance of the event, and life in general, is not likely lost on the bereaved. Terrorist attacks provide another example. 9/11 evoked fear in Americans. Nevertheless, Americans likely comprehended the gravitas of the event, understanding its contribution to the global drama and the history books for centuries to come.

There is little empirical evidence for these proposals. However, research on psychological responses to and preference for literary work and films provides tentative

support. Death thoughts (which activate the need for meaning) increase preferences for tragic stories (Goldenberg et al., 1999), suggesting that people find meaning in tragic events. Moreover, films judged to be meaningful by viewers also evoke sadness (Oliver & Raney, 2011). Of course, tragic or sad events happening to fictional characters is a far cry from similar personal experiences. However, psychological states elicited in response to fictional events may simulate, to some extent, psychological states elicited by those events in real life (Davis, 1980). Additionally, despite the gap between consuming fictional events and experiencing real events, this research is still consistent with our broader assertion that people can meet the need for meaning while experiencing NA.

Social Connectedness Highly adverse events may augment social connectedness because they render relationships and social identities salient. The passing of a loved one is extremely sad. However, when a family member dies, people commonly spend time with close family and friends, which may strengthen social connectedness. Indeed, research has shown that bereaving individuals receive high levels of social support (Thuen, 1997) and report feeling connected with others (Wheeler, 2001). As another illustration, although 9/11 induced fear, Americans reported being strongly connected with each other and to their collective identity to a greater extent immediately after 9/11 than six and 18 months after 9/11 (Moskalenko, McCauley, & Rozin, 2006). In all, highly adverse events may help meet the need for social connectedness.

Willfully Choosing to Be in ANNFS

Thus far, we have argued that people can fulfill psychological needs in situations characterized by NA. However, we also propose that people willfully place themselves in ANNFS in order to meet psychological needs. That is, guided by motives to fulfill psychological needs, individuals choose to be in situations that arouse NA, if those situations are also need-fulfilling. Certainly, this is not true for all ANNFS (e.g., highly adverse life experiences), but it is relevant to at least some ANNFS. For example, protesting on behalf of a social cause is something individuals clearly choose to do. Additionally, some individuals willfully put themselves in situations in which they are forced to consider the frightening possibility that ghosts exist. Consider, for example, the aforementioned film *Paranormal Activity*. Despite being notoriously horrifying, it grossed over 100 million dollars at the box office (boxoffice Mojo.com). Similarly, there are several popular reality shows devoted to hunting ghosts (e.g., *Ghost Adventures*, *The Dead Files*, *Ghost Hunters*), and people pay to go on tours of allegedly haunted locations. Thus, people willingly place themselves in at least some ANNFS.

The Affectively Negative Need-Fulfillment Model

Well-being is typically construed as a combination of the presence of PA, the relative absence of NA, and high levels of life satisfaction. We have argued that well-being can be promoted within situations characterized by NA. Specifically, some of the core ingredients necessary for well-being (i.e., psychological needs) are attainable while simultaneously experiencing NA. As noted, the effects of psychological need-fulfillment on well-being manifest as increased PA and life satisfaction, and we suspect the same is true in the case of need-fulfillment within affectively negative situations. At the very least, need-fulfillment within affectively negative situations may induce a sense of satisfaction or contentment. Our position on whether need-fulfillment within affectively negative situations leads to PA is less firm, but we think this is plausible.

We summarize our proposals in the Affectively Negative Need-Fulfillment Model (Fig. 21.1). The model begins with the motivation to fulfill psychological needs (box 1). The motivation propels individuals to place themselves in need-fulfilling situations. Certainly, the motivation may guide them towards a variety of need-fulfilling situations, only some of which are affectively negative. The model, however, only focuses on affectively negative situations (box 2). Also, while need-fulfillment motives push individuals to willingly place themselves in ANNFS, sometimes individuals simply find themselves within ANNFS. These situations elicit NA (box 3). Despite their affectively negative character, they are simultaneously need-fulfilling (box 5). Critically, ANNFS do not fulfill psychological needs because of the NA they engender—hence, the absence of an arrow from NA (box 3) to need-fulfillment (box 5). Rather, the situations fulfill psychological needs because of distinct psychological processes engendered within them (box 4). Finally, need-fulfillment produces satisfaction and PA (box 6), even when needs are fulfilled within affectively negative situations.

The model is laid out in sequential steps. However, we again want to emphasize the simultaneity of the psychological states in the model. Specifically, we propose that once a person finds themselves in box 2 (i.e., in an ANNFS), they immediately experience the states in boxes 3–6. Metaphorically, the progression from box 2 to boxes 3–6 is akin to electricity spreading when a light switch is turned on. Once in box 2, the switch is on and the subsequent states immediately follow. These states persist at least as long as the person remains in the situation. To illustrate, upon negatively judging another person, people immediately feel anger, irritation, and/or frustration. While simultaneously experiencing this NA, they make a downward social comparison, which instantaneously boosts self-esteem. Elevated self-esteem, then, instantaneously leads to a sense of satisfaction.

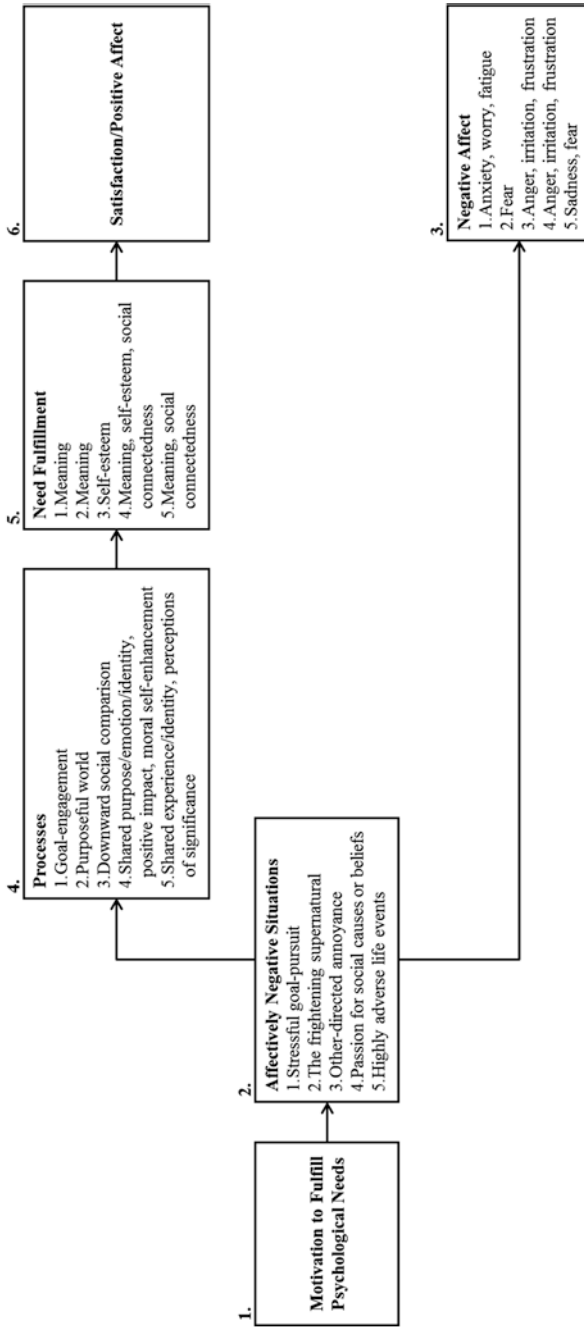


Fig. 21.1 Affectively Negative Need-Fulfillment Model. *Note.* Numbers 1-5 within boxes 3, 4, and 5 correspond to the affectively negative situations in box 2. For example, “anxiety, worry, and fatigue” from number 1 of box 3 represents the affectively negative states of stressful goal-pursuit

Contextualizing the Affectively Negative Need-Fulfillment Model

A key purpose of this chapter is to build upon the current understanding of well-being. We do not aspire to prescribe a path by which people can attain well-being. In particular, we do not advocate that individuals actively seek affectively negative experiences as a way to improve their well-being. Although we have argued that experiencing NA can be good for well-being, we think that experiencing frequent and intense NA is a recipe for psychological malfunction (Kashdan & Biswas-Diner, 2014). Regardless, our analysis is consistent with perspectives that NA is adaptive and should thus be embraced rather than avoided (Forgas, 2013; Kashdan & Biswas-Diner 2014). More importantly, the Affectively Negative Need-Fulfillment Model is congruent with, yet distinct from, other lines of inquiry (such as the instrumental perspective of emotion regulation and research on trauma) that have highlighted the benefits associated with experiencing NA. In addition, the model sheds light on how individuals can experience mixed emotions.

Instrumental Emotion Regulation

Our analysis complements the instrumental perspective of emotion regulation (Tamir, 2016). According to this perspective, people want to feel pleasant emotions, but also want to feel emotions instrumental for attaining goals or desired outcomes. Sometimes the attainment of certain goals or outcomes is best facilitated by unpleasant emotions. For example, when needing to be competitive or confrontational, it is useful to be angry (Van Kleef, De Dreu, & Manstead, 2004). Indeed, when faced with confrontation, people prefer to engage with stimuli that increase anger (Tamir, Mitchell, & Gross, 2008). Similarly, they prefer to feel fear when fear helps them avoid threats (e.g., predators; Tamir & Ford, 2009).

In line with the instrumental perspective of emotion regulation, our analysis suggests that people are willing to experience unpleasant emotions when such emotions are paired with the fulfillment of psychological needs. Stated otherwise, the situations characterized by anxiety, fear, annoyance, anger, and sadness that we described above are useful for meeting psychological needs. Our analysis, however, differs in at least two ways from the instrumental perspective of emotion regulation. First, research on the instrumentality of emotions has shown that negative emotions, in and of themselves, are useful for achieving specific goals (e.g., winning an argument). Conversely, our analysis suggests that NA, itself, does not fulfill needs. Rather, it is features of the situations, in which NA is present, that are useful for need-fulfillment and beneficial for well-being. Second, we have focused on the *psychological* benefits (i.e., need-fulfillment, well-being) that can be harvested while concurrently experiencing NA. The instrumental perspective on emotion regulation focuses more on tangible (non-psychological) benefits, such as winning an argument or avoiding predators.

Trauma

In discussing the need for meaning, Victor Frankl (1946/1992) asserted that people can find meaning while suffering through objectionable circumstances. He argued that believing there is a meaning or purpose behind suffering (i.e., a good reason for suffering) helps maintain psychological equanimity. Contemporary psychologists have shown that traumatic experiences (e.g., serious illness, natural disaster) engender efforts to restore meaning that is threaten in these adverse circumstances (Neimeyer, 2002; Park, 2010). Although Frankl (and the contemporary research that ensued) addressed how individuals restore meaning to cope with suffering, he also suggested that people can experience personal growth and gain psychological strength above and beyond that which was originally threatened by the adverse situations. Specifically, Frankl (1946/1992) advocated that individuals view their suffering as an accomplishment—something they successfully survived. Consistent with this, contemporary research on posttraumatic growth suggests that, after individuals have had time to cope with and make sense out of adverse events, they may experience psychological benefits (e.g., meaning) that go above and beyond simply repairing the psychological damage caused by the traumatic event (Calhoun & Tedeschi, 2000; Davis, Nolen-Hoeksema, & Larson, 1998).

Our model differs from this work in several ways. First, psychological growth is not experienced during traumatic events. It is only when people have had the time to deeply introspect on life that they may become capable of harnessing psychological benefits from trauma (Davis et al., 1998). We instead propose that individuals can improve well-being (via need-fulfillment) while simultaneously experiencing NA, and not after a substantial adjustment period. Second, our model is irrelevant to the question of how people cope with NA or negative events. That is, for the situations we described, we do not propose that people actively try to find meaning (or seek to fulfill other needs) in order to reduce or cope with the accompanying NA. We posit instead that NA and need-fulfillment operate independently, yet simultaneously, in ANNFS. Third, the post-traumatic growth literature focuses exclusively on extremely negative or traumatic life events. Our proposals primarily, though not exclusively, concern events and situations that are not so severe. Although the anxiety of earning a medical degree, the stress of raising children, and the fear after a terrorist attack can be very unpleasant, they pale in comparison to the suffering of those in concentration camps. Finally, the posttraumatic growth literature focuses on traumatic events that people would never willingly choose to experience. We focus, by comparison, on affectively negative situations in which individuals may, though certainly do not always, willfully place themselves as a means to meet psychological needs.

Making Mixed Emotional Experiences Possible

The current analysis helps explain why it is possible for people to experience a mixture of positive and negative emotions simultaneously. Research has demonstrated that individuals can have such mixed emotional experiences. For example, situations such as college graduations (Ersner-Hershfield, Mikels, Sullivan, & Carstensen, 2008), ridding oneself of long-held possessions (Price, Arnould, & Curasi 2000), and watching bittersweet films (Larsen & McGraw, 2011) can all arouse both PA and NA. Our analysis offers a potential explanation for why it is possible to simultaneously experience PA and NA. We outlined several situations that are characterized by NA, yet can simultaneously help fulfill psychological needs. We also reviewed evidence that need-fulfillment improves well-being and that this can surface as increased PA. We further entertained the idea that need-fulfillment, even within affectively negative situations, can lead to PA. If this is true for some ANNFS, then individuals in such ANNFS experience a mixture of PA and NA. Thus, one reason why mixed affective experiences are possible is because needs can be fulfilled within affectively negative situations. To illustrate, the expected death of an elderly relative is arguably bittersweet. It is predominantly sad, but it may also foster social connectedness and thus PA.

Concluding Remarks

Traditionally, well-being has been characterized by a plethora of PA and a dearth of NA. Despite this, we have proposed that experiencing NA can be good for well-being. Prior work has revealed that fulfilling psychological needs is imperative for the promotion and maintenance of well-being, and we have argued that there are situations characterized by negative affect that can simultaneously fulfill these needs. Outlining several such situations, we theoretically explicated the Affectively Negative Need-Fulfillment Model and pieced together empirical support from existing literatures. In doing so, we have forged a path for future research to better understand the role of affect in well-being.

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Chapter 22

Making Sense: Meaning in Life in a Cognitive Context

Sarah Ward and Laura King

Abstract Meaning in life is an important contributor to psychological and physical health. In this chapter, we consider how this aspect of well-being relates to constructs within social psychology and social cognition that describe people's attempts to make sense of their existence and social environment. We first review the relationship between the experience of meaning in life and information processing styles. Next, we distinguish between proximal and more distal variables that influence the experience of meaning. Proximal social cognitive variables include positive affect and the detection of environmental regularities. We then describe more distal sources of meaning, such as religious and secular worldviews, and consider additional potential distal sources that have not yet been examined. We close by considering intriguing research directions for the role of cognition in the experience of meaning.

Making Sense: Meaning in Life in a Cognitive Context

The experience of meaning in life is included in theoretical (e.g., Allport, 1961; Frankl, 1984; Kierkegaard, 1849/1983; Maslow, 1968; Yalom, 1980) and lay (King & Napa, 1998) approaches to the Good Life. A large and ever-growing body of evidence shows that those who endorse items like, "My personal existence is very purposeful and meaningful" tend to be better off than those who do not in a host of ways (e.g., see Heintzelman & King, 2014a for a review). Meaning in life is widely recognized as a cornerstone of well-being and it is sometimes portrayed as a definitive aspect of eudaimonic well-being (i.e., happiness that comes from the actualization of one's potentials; e.g., Heller et al., 2013). Although meaning in life has sometimes been described as ineffable (King, 2012), definitions tend to include at least three important experiences: purpose, significance, and coherence (King, Hicks, Krull, & Del Gaiso, 2006; Martela & Steger, 2016). Purpose entails a sense

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that one's actions are goal-directed and serve some larger end. Significance means that one matters to the social world and that one has made a contribution that will outlive the self. Coherence means that one's experience creates a unified whole, or put simply, that one's life makes sense. Psychometric research shows that each of these related experiences contribute to a global feeling of meaning in life (Krause & Hayward, 2014).

Here, we seek to embed the experience of life's meaning in an explicitly cognitive context, focusing primarily on the coherence aspect of meaning – the idea that the meaningful life is one that makes sense to the person living it. This is not to imply that purpose and significance are not, in some ways, cognitive experiences. Surely, rating one's life on purpose or significance entails thinking. But the coherence facet of meaning seems especially suited to linking the experience of meaning in life to cognition and cognitive variables. To the extent that information processing is concerned with making sense of experience, then it is relevant to the experience of meaning in life. Consider for a moment the implications of this idea: If at least part of meaning in life is the feeling that experience makes sense, then the many constructs within social psychology and social cognition (e.g., worldviews, beliefs, heuristics, ideologies, “meaning systems”) that are proposed to help people makes sense of the social world are implicated in the experience of meaning in life. Social and social cognitive variables may therefore function to support and enhance a sense of meaning.

In this chapter, we review the answers to the question, “What makes life make sense?” from several perspectives. First, we present a theoretical approach that places meaning in life within dual processing models and recent research findings relevant to that model. Second, we consider a variety of sources of the experience of “sense,” drawing a distinction between proximal and distal sources of meaning in life. We then describe more proximal social cognitive variables that influence meaning in life, more distal sources of meaning, and the interplay between these sources of meaning. Finally, we consider the intriguing future research directions implied by our examination.

Information Processing and the Experience of Meaning in Life

Often within psychology (and philosophy) the experience of meaning is portrayed as deriving from a reflective process through which meaning is constructed and laid over a reality of meaninglessness (e.g., Kierkegaard, 1983; Yalom, 1980). From these perspectives, the experience of meaning relies on deep introspection, allowing a person to transcend the inherent meaninglessness of existence. In keeping with this idea, when people talk about meaning in life, they often talk about finding or creating meaning. Similarly, we sometimes refer to the meaning of an event as “whatever we make of it,” and wholly a product of cognitive appraisal (King, 2012).

These descriptions of the experience of meaning implicate what is often called system 2 or reflective information processing, as described by numerous dual process

models (e.g., Epstein, 1994; Evans, 2010; Strack & Deutsch, 2004; Thompson, et al., 2013). These dual process models describe one mode of processing that is intuitive, automatic, implicit, and rapid (sometimes called system 1 or Type 1 processing) and another mode that is analytical, effortful, explicit, and slow (sometimes called system 2 or Type 2 processing). The intuitive system operates preconsciously, is associationistic, and is thought to originate in affective associations, representing a long history of associative learning. The analytical system is responsible for reflection, which emerges when we stop to consider and appraise. Evans (2010) referred to these two systems of processing as the “Old Mind” and “New Mind,” reflecting the fact that system 1 is the evolutionarily older of the two types of processing.

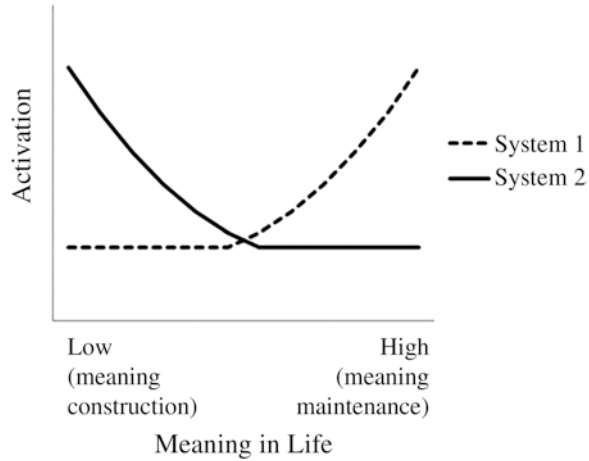
Both styles of processing information are ways of making sense of experience. Detecting reliable associations in the environment is a key function of intuitive processing (e.g., Evans, 2010). If meaning is experienced through the existence of reliable connections in the environment – that is, in experiences that make sense – then intuitive processing may have a role to play in the experience of meaning. If meaning is the product of deliberation or active construction, reliance on reflective processing might seem to be particularly well suited to this task. A recent program of studies (Heintzelman & King, 2016) examined the links between processing styles and meaning in life with intriguing results.

In a number of studies, reliance on *intuitive* information processing (measured using the Faith in Intuition scale, Pacini & Epstein, 1999, including items like, “I believe in trusting my hunches”) was consistently and positively associated with meaning in life. The association between reliance on these gut feelings and meaning in life was found to be independent of a host of possible “third variables,” including positive affect, religiosity, self-esteem, personality traits, need for cognition, and organismic need satisfaction (Heintzelman & King, 2016).

To more fully examine the association between information processing styles and meaning in life, participants in one study completed the Cognitive Reflection Task (CRT; Frederick, 2005) and a self-report measure of meaning in life. The CRT contains questions that have a compelling (but erroneous) heuristic answer. To succeed on these questions, participants must override the urge to give the heuristic answer and produce the correct answer upon careful reflection. In the study (Heintzelman & King, 2016, Study 4), participants completed the CRT and a measure of meaning in life in counterbalanced order. Results showed that meaning in life was negatively related to CRT: When meaning in life was low, CRT performance was higher; when meaning in life was high, participants were more likely to provide heuristic answers to the CRT. Importantly, these results depended on order as well: Low meaning in life was associated with better performance on the CRT only when meaning in life was rated first, suggesting that low levels of meaning in life led to greater reflection. Relations were also curvilinear, such that reflection was particularly high at very low levels of meaning (Heintzelman & King, 2016).

Figure 22.1 summarizes the associations between meaning in life and information processing styles. As can be seen in the figure, at low levels of meaning in life, reflective processing dominates; at high levels of meaning in life, reliance on intuitive processing is high. Interesting, at moderate levels of meaning in life, the

Fig. 22.1 Meaning in Life and Information Processing Styles



relationship between feelings of meaning and information processing is essentially 0. The patterns shown in Fig. 22.1 fit well with (the feeling of) meaning-as-information approach (Heintzelman & King, 2014b), our next topic.

(The Feeling of) Meaning-as-Information Approach

The mood-as-information approach to affect (Schwarz & Clore, 1988) led to a remarkable change in the way that scientists think about the association between emotion and cognition. From this perspective, affective feelings provide information that directs the style of information processing we adopt. An implication of the mood as information approach is that a broad range of feeling states can also serve the function of directing information processing styles (Clore, 1992). In keeping with this idea, Heintzelman and King (2014b) proposed a new approach to the association between information processing and cognitive style. Similar to the mood as information approach, rather than viewing meaning in life as an outcome of cognitive processing, the (feeling of) meaning-as-information holds that the feeling of meaning directs information processing. This perspective suggests that feelings of meaning ebb and flow in response to the extent to which external stimuli are characterized by reliable connections among aspects of experience and these feelings direct behavior and cognition in particular ways (Heintzelman & King, 2014b). Why would high feelings of meaning in life direct processing to the intuitive system? Linking the experience of meaning to associative learning, the meaning-as-information approach suggests that this feeling of meaning indicates the environment is rich with reliable associations (Heintzelman & King, 2014b). As such, it makes sense to rely on the processing style that detects and acquires such connections, the “Old Mind.”

It may be valuable to point out here that the meaning-as-information approach does not assume that the experience of meaning is a wholly constructed experience. Rather, meaning can also come from environmental circumstances. When objective circumstances make sense, life should feel more meaningful, regardless of the use of effortful processing. (We review research testing this idea later in this chapter).

The meaning-as-information approach has an unexplored and potentially provocative implication in the context of social cognition. Social stereotypes concern our expectations of others. As such, these stereotypes may help to determine how much our social world “makes sense.” Researchers in social psychology have long been interested in responses to individuals who violate stereotypical expectancies, both in terms of implications for person perception and group evaluations (Bettencourt et al., 2016) and potentially challenging and changing stereotypic beliefs (e.g., Prati, Crisp, & Rubini, 2015; Prati, Vasiljevic, Crisp, & Rubini, 2015). If we think of social stereotypes as our expectancies for social interactions and as ways to simplify a potentially confusing, complex social world (e.g., Hertwig, Hoffrage, & the ABC Research Group, 2012), then we might expect that stereotypes could support a sense of the meaning in life. When social targets fit our expectations (and conform to stereotypes), they “make sense”, augmenting life’s meaning. Conversely, counter-stereotypical targets would be expected to lower meaning in life.

The meaning-as-information approach describes a path from the feeling of meaning to information processing styles. An innovative set of implications of this approach concerns the heretofore unrecognized link between intuitive information processing and the experience of meaning in life. However, it is also intriguing to consider the left-hand side of Fig. 22.1, showing the link between low levels of meaning and the recruitment of reflective processing. Particularly considering the assumed role of reflection in the construction of meaning in life, we might reconsider the role of reflection in the experience of meaning, as we will further argue.

Reflection and Meaning, Revisited

One way to examine the association between reflection and the experience of meaning is to consider what happens when a person’s meaning systems are challenged—when long-cherished worldviews no longer apply. Traumatic life events can certainly challenge assumptions, defy expectations, and threaten a sense of meaning in life. It is at such times that difficult life experiences may require a change in worldviews themselves, as the person must accommodate new and unexpected circumstances (Block, 1982; King & Hicks, 2007). In response to traumatic life events, it is not uncommon for individuals to actively seek to struggle to “make sense” of experience and to create or recreate a sense of meaning. However, attempting to find meaning in a traumatic event does *not* appear to consistently promote better meaning or well-being (Park, 2010). Instead, questioning the meaning of traumatic events may result in rumination and distress, rather than resolution (e.g., Bonanno, Papa,

Lalande, Zhang, & Noll, 2005). Consequently, people may ultimately experience poorer well-being and adjustment when they attempt to make sense of traumatic events (e.g., Park, 2010). Although actively deliberating on a difficult life experience is associated with greater cognitive complexity over time (King & Hicks, 2007), it is not associated with well-being. There is simply no research literature demonstrating that thinking long and hard over a traumatic life event leads to a sense of constructed meaning that offers comfort.

Even outside of the context of trauma, research suggests that people generally do not enjoy the process of thinking privately without being engaged in other tasks, and would rather be engaged in other—even negative—tasks rather than think alone (Wilson et al., 2014). Yet, one can imagine many enjoyable types of thinking, such as nostalgia or daydreaming, that may contribute to a sense of meaning in life and well-being. Certainly, nostalgia or daydreaming may remind people of their social connections or boost their mood, both of which are known to promote meaning in life (Hicks, Cicero, Trent, Burton and King, 2010; King et al., 2006). In addition, some states of intentionally not thinking, like meditation, may also contribute to well-being. Future research could profitably examine how these various thinking states and individual differences in the propensity to engage in these thoughts influence well-being.

Interestingly, cognitive ability, which has often proved to be irrelevant to psychological wellbeing (Wirthwein & Rost, 2011), has been shown to be associated with the experience of meaning in life. For instance, meaning in life is associated, longitudinally, with slower age-related decline in cognitive functioning and lowered risk of Alzheimer's disease (Boyle, Buchman, Barnes, & Bennett, 2010). The nature of these associations has been further illuminated by research showing that a sense of meaning in life moderated the association between brain indications of Alzheimer's and cognitive declines (Boyle et al., 2012). Individuals who expressed a strong sense of purpose and meaning in life (in interviews) were less likely to show cognitive symptoms despite these negative brain status indicators. Of course, even longitudinal research cannot establish causal links. It may be that individuals who maintain a sense of meaning in life show a capacity to compensate for the brain changes they experience. It might also be that the capacity to compensate lends itself to a sense that life maintains a feeling of purpose.

Considering meaning in life and thinking illuminates some of the (at times contradictory) assumptions that have been made about this important aspect of well-being. For example, meaning in life is sometimes portrayed as an aspect of functioning that is reserved for a few truly insightful, introspective individuals – those who are able and willing to devote considerable time and introspection to discovering the meaning of their existence (Seligman, 2011). For want of a better word, meaning in life would seem to require that a person be “deep.” Yet, simultaneously, great insight is thought to lead to the inevitable recognition that life, in reality, is meaningless (Camus, 1955; Yalom, 1980). The finding that meaning in life is correlated with reliance on intuitive information processing (Heintzelman & King, 2016) shows that these earlier perspectives may be misguided. People who are

prone to overthinking may be less inclined to feel that their lives are meaningful. It may be that the experience of meaning is rooted in more primitive thinking styles.

Consider a more general cognitive bias toward perceiving events as purposeful or “meant to be” that might play a role in meaning. The perception that one’s life is meaningful may stem from a cognitive bias towards teleological thinking, a tendency to inaccurately perceive objects or events as serving a particular purpose or function. Examples of teleological reasoning include viewing water as existing so that life can survive on Earth or thinking that bats hunt mosquitos in order to control over-population (sample items from Kelemen, Rottman, & Seston, 2013). Children are especially likely to reason teleologically about a wide range of phenomena, yet the inclination towards teleological reasoning also persists through adulthood (Kelemen, 1999). Imbuing natural phenomena and objects with intentionality may foster a sense of meaningfulness of the living and inanimate objects in the world. Some evidence provides support for this notion: Willard and Norenzayan (2013) demonstrated that teleological thinking was related to believing that there is a purpose to events in one’s life and that things happen for a reason. This study did not include a measure of personal meaning, so it is unclear how teleological thinking relates to meaning in life and well-being more broadly. Yet, it is likely that the propensity to view one’s life as significant and purposeful may be propelled by a cognitive bias towards perceiving all things with intentionality and purpose.

Similar to teleological reasoning, fate involves believing in the interconnectedness of events and that things happen for a particular reason. Past research shows that believing that events are fated, or “meant to be”, bolsters the meaningfulness of them (Kray et al., 2010). Although it would seem that the tendency to view events as purposeful and fated is especially true of those who are religious, both religious and non-religious people believe in fate and perceive life events as happening for a particular purpose (Banerjee & Bloom, 2014). These results suggest that there is a general cognitive bias toward believing in the purposefulness of life events, which may bolster a sense of the inherent meaningfulness of one’s personal life.

Surely, conclusions based on teleological thinking and fate beliefs may fall away when subjected to intense reflection. The feeling that life makes sense may become increasingly difficult when people are preoccupied with reflecting on their lives, or ironically, their life’s purpose. As we consider next, meaning in life may be rooted not only in profound experiences but also potentially trivial ones.

Sources of Meaning in Life

A variety of experiences have been shown to make life feel meaningful. Some of these involve relatively immediate circumstances (e.g., mood, information in working memory) that make life feel meaningful, purposeful, significant, and coherent. Other meaning-facilitating experiences are more broad and stable. These might include personality characteristics (e.g., extraversion, conscientiousness) that support a sense of meaning in life, life circumstances (e.g., family status, income), as

well as broad belief systems such as religious faith. We refer to each of these types of sources of meaning as proximal and distal, respectively. The influence of proximal sources on the experience of meaning can be seen in the ways that experimental manipulations affect judgments of life's meaning. More distal sources of meaning are more likely to have a diffuse influence on the experience of meaning, often studied in correlational research. Of course, as we review below, sometimes the same variable can serve as a proximal (e.g., induced positive mood) and distal (e.g., positive affectivity) source of meaning in life.

The distinction between proximal and distal sources of meaning in life is similar to the difference made between micro- and macro-levels of meaning within Terror Management Theory (TMT, e.g., Vess, 2013). Micro-level meaning refers to the sense of meaning that comes from regularities and structural aspects of the environment. Macro-level meaning comes from more stable sources such as cultural world-views. Macro-level meaning emerges from investments in social structures that will outlive the self. As such, macro-level meaning is likely to quell existential anxiety. Although the coherence aspect of meaning in life might seem most tied to micro-level meaning, it is important to bear in mind that macro-level meaning and distal sources of meaning not only serve motivational/existential functions. They also provide life with a framework for interpreting and understanding experience. Relying on these meaning systems allows people to make sense of potentially chaotic experiences. Thus, in the next sections, we consider proximal and distal answers to the question, what makes life make sense?

Proximal Sources of Meaning in Life

A set of answers to the question, *what makes life meaningful?* has been identified by studies examining social cognitive variables and ratings of meaning in life. These proximal antecedents of meaning in life include positive mood, objective aspects of the environment, and chronically and temporarily accessible information.

Positive Affect Being in a pretty good mood is a robust predictor of meaning in life (e.g., King et al., 2006). Positive affect – that is, feeling happy, cheerful, and pleased – is a consistent positive correlate of meaning in life. Moreover, induced positive affect leads to higher levels of meaning in life (King et al., 2006; Ward & King, 2016). This conclusion applies even to the positive affect that emerges from the metacognitive experience of easily processing visual stimuli (i.e., processing fluency). In one study, meaning in life was higher when ratings were made on items with an easier (versus harder) to read font (Trent, Lavelock, & King, 2013). This difference was explained by the enhanced positive affect that people experienced when rating easy-to-read fonts. Research suggests that the link between positive affect and meaning in life is not simply the product of relying on positive affect as a heuristic. For example, the link between positive affect and meaning in life is stronger when participants are told to thoughtfully consider their meaning in life

ratings (Trent & King, 2010), compared to typical instructions or instructions to render those judgments rapidly. Positive affect seems to be part of people's sense of what a meaningful life feels like. These results suggest that when an experience feels "right," it also feels meaningful (Hicks, Cicero, et al., 2010).

Environmental Regularities If meaning in life is concerned with experience making sense, then it is important to remember a basic truth of human existence: Sometimes (probably for most people, most of the time) life makes sense. Although we may often think of ourselves as "making sense" of existence, the world around us is characterized by physical laws, regularities, and reliable associations (Domjan, 2005; Vess, 2013). Simply living in a world that makes sense ought to support a sense of meaning in life (King, 2012, 2014). In line with this idea, research has begun to demonstrate that the experience of meaning in life is bolstered by the existence of patterns and regularities in the environment. For example, in a series of studies, Heintzelman, Trent, and King (2013) demonstrated that when people were exposed to objectively coherent stimuli, they had higher meaning in life compared to people exposed to incoherent stimuli. These results emerged for photographs of trees (presented in seasonal or random order) as well as linguistic triads (that were coherent or incoherent) and, importantly, the manipulations had no effect on mood.

Interestingly, additional research has linked the structure of stimuli to a sense of purpose as well. In a series of studies, participants exposed to concepts related to structure (versus randomness) were more motivated to expend effort toward personal goals (Kay, Laurin, Fitzsimons, & Landau, 2014). Thus, environmental regularity may facilitate not only the coherence of existence, but also provide a basis for the pursuit of purposeful endeavors.

At least one implication of the conclusion that life feels more meaningful when environmental stimuli make sense is that meaning in life may be tied to reality and is not a wholly constructed experience. We will revisit this idea later in the chapter but for now, it is interesting to note that the feeling that life is meaningful is not always something that is struggled over or actively created. It can emerge from a pretty good mood or from living in a world that makes sense. These sorts of findings suggest that meaning in life might be a far simpler proposition than is often assumed. To the extent that it is true that human existence generally makes sense (King, 2012; King & Hicks, 2009), we would expect the experience of meaning in life to be relatively commonplace, and it is. A review of representative samples as well as research studies measuring meaning in life showed that most people rate their lives as pretty meaningful (Heintzelman & King, 2014a).

Accessible Information Studies show the important cognitive dynamics that can influence the experience of meaning in life. Meaning in life judgments, like other well-being judgments, are dependent on the accessible mental contents when those judgments are rendered. That is, judgments of life's meaning depend on chronically and temporarily accessible information. For example, research has shown that priming concepts related to positive mood (e.g., happy, joyful) led to higher meaning in life than primes of neutral words (e.g., violin, hubcap) (King et al., 2006). Similar

studies show that priming social relationships and religion can influence meaning in life levels as well (Hicks & King, 2008; Hicks, Schlegel & King, 2010).

Indeed, human life is complex and sometimes more than simple rules (and simple feelings) are required to undergird the experience of meaning in life. The questions that demand answers are not always so simple for creatures capable of conscious thought, introspection, and awareness of their own demise. These significant, existential questions may require bigger answers and may be more likely to draw on distal sources of meaning.

Distal Sources of Meaning in Life

Distal sources of meaning in life involve relatively stable, longer-term experiences and characteristics that support a sense of meaning. As noted above, some of these may be personal or situational characteristics. The trait of extraversion is associated with higher levels of meaning in life (King et al., 2006). Similarly, socioeconomic status is positively related to meaning in life (Ward & King, 2016). Turning to more cognitive variables, there are stable aspects of a person's mental life that likely serve as distal sources of meaning in life. An important way that people make sense of experience is via their longstanding beliefs and values. Psychologists and philosophers have often portrayed meaning in life as deriving from a reflective process through which those things that will make life meaningful are generated, discovered or adopted, allowing a person to enjoy a life of purpose that transcends the inherent chaos of existence (e.g., Kierkegaard, 1983; Yalom, 1980). Maslow (1968, p. 206), in particular, noted, "The human needs a framework of values, a philosophy of life...in about the same sense that he needs sunlight, calcium, and love." This philosophy of life might be found in religious faith but it can presumably emerge from more secular values (Allport, 1961) or worldviews.

Worldviews are "sets of beliefs and assumptions that describe reality" (Koltko-Rivera, 2004; p. 3) and can include beliefs about myriad topics, particularly human nature and the nature of existence. Worldviews are also primarily concerned with providing answers to existential questions, such as the ultimate meaning of life or what behaviors contribute to a meaningful life (Koltko-Rivera, 2004). At their base, worldviews are ways of making sense of the world.

Worldviews not only provide coherence to existence, but also inform the motivations and goals people seek, imbuing existence with purpose. For instance, people who value spirituality and religion are likely to pursue goals related to these worldviews as a way to feel a greater sense of meaning in life. People whose worldviews are strongly oriented towards relationships are likely to derive a sense of purpose in life from having close, important relationships. In addition, and importantly, worldviews are a way in which we establish a sense of significance. For instance, according to Terror Management Theory (TMT), living up to esteemed cultural goals and investing in a worldview can provide a sense of symbolic immortality against the threat of death (Solomon, Greenberg & Pyszczynski, 1991). In sum, worldviews are

a key schema (Block, 1982) for understanding and making sense of the world but they are also linked to purpose and significance. As such, these worldviews should be expected to contribute to a sense of meaning in life.

Religious Faith The worldview most widely recognized as relevant to meaning in life (and well-being more generally: Davis & Kiang, 2016; Hayward & Krause, 2014; Salsman et al., 2015) is religion. Religions provide a comprehensive worldview that answers fundamental questions about the history and purpose of human existence. People who are religious have a readily available and clear-cut set of answers to essential questions about the meaning of their lives, affording existential security and guidance. Religious people report a higher sense of meaning in life than the nonreligious (e.g., Hicks & King, 2008; Oishi & Diener, 2014; Park, 2005; Steger & Frazier, 2005). The positive association between religious faith and meaning in life fits with the idea that religion serves as a worldview: It is a way of making sense of the world. Interestingly, research supports the notion that this meaning-relevance of a religious worldview explains its association with well-being more generally. That is, the link between meaning in life and religiosity explains the association between religiosity and life satisfaction (Steger & Frazier, 2005).

The association between religiosity and the experience of meaning in life is fascinating within a cognitive context because according to a meta-analysis, religious faith shares a small but reliable negative association with cognitive ability (measured in a variety of ways: Zuckerman, Silberman, & Hall, 2013). This negative association may suggest that a skeptical mind may have difficulty maintaining faith in non-rational phenomena as a means of making sense of the world. Interestingly, Zuckerman et al. (2013) suggest a trade-off, such that intelligence and religion may serve the same adaptive functions in people's lives. Clearly, such a possibility suggests that research examining the association between cognitive ability, meaning in life, and well-being more broadly would be valuable in understanding the potential meaning-related functions of cognitive ability. It may be that intelligence, itself, serves as a distal source of meaning: What better resource for making sense of experience could there be than high levels of cognitive ability?

Of course, religious beliefs are not the only supernatural beliefs that characterize human worldviews. It is also possible that more unusual or magical beliefs may aid people in making sense of experience. Do they, therefore, enhance a sense of meaning in life? Research has not directly examined the potential associations between magical beliefs and the experience of meaning in life. Many aberrant beliefs, like conspiracy theories or paranormal beliefs, may at first glance seem to be negatively related to well-being. One can imagine it would be unhealthy to believe in phenomena that are uncorroborated by science and highly unlikely. However, many of these irrational beliefs may provide a sense of order and structure, helping to assuage uncertainty and, in doing so, promote meaning. These irrational beliefs may be especially powerful in promoting meaning among people experiencing high degree of uncertainty in their lives. The association between meaning and more unusual or magical belief systems remains an intriguing topic for investigation.

Secular Belief Systems Certainly, religion provides a comprehensive worldview that provides meaning, yet there are also numerous secular belief systems that bolster the experience of meaning in life. People with strong beliefs in a just world—that life is generally fair and that negative circumstances only happen to those who deserve them (Lerner, 1980)—may have an easier time making sense of the world and their experiences in it. This worldview may bolster a sense of meaning in life because it provides reassurance that one has control over the outcomes they experience. There is some empirical support that belief in a just world is related to meaning in life, even among people who encountered an experience that is likely to challenge assumptions about the fairness of one's outcomes. In a sample of cancer survivors, Park, Edmondson, Fenster and Blank (2008) found that people with a stronger sense of meaning in life were more likely to believe that the world is fair and just.

Beliefs in free will also contribute to how people perceive the meaningfulness of life events. After thinking counterfactually about a life event (i.e., considering how life would be different if it did not happen), people with stronger beliefs in free will rated life events as more meaningful than people with lower beliefs in free will (Seto, Hicks, Davis, & Smallman, 2015). Belief in free will may make people more prone to recognize the control they have over life events and the many possibilities that could have happened, which can promote a sense of meaningfulness of the outcomes that did occur.

It is important to bear in mind that worldviews may support a sense of meaning in life while also promoting attitudes and beliefs that are less than optimal. For example, consider that conservative right-wing beliefs may make sense of life experiences but may also imply negative views of others or animosity toward outgroups. Such worldviews may lead to aggression towards individuals who challenge one's worldview. They may also be difficult to change precisely because they support a sense of meaning in life. Indeed, the meaning function of religious and secular worldviews may help to explain the potential for these views to lead to negative behaviors when worldviews are threatened. Some religious worldviews may cause people to make choices that are detrimental to meaning or well-being. For instance, women who espouse cultural or religious worldviews that consider women inferior to men may have difficulty making sense of their lives. Moreover, by making decisions consistent with this worldview—for instance, women not taking educational or employment opportunities due to their gender—they could ultimately experience a lower sense of meaning. In addition, people with worldviews that strongly emphasize rational thinking and denounce any magical beliefs, such as fate, may have difficulty perceiving any events in their lives as inherently meaningful, ultimately leading to lower well-being.

The Interplay of Proximal and Distal Sources of Meaning in Life

Proximal and distal sources of meaning in life are related in important ways. First, as already noted, the same variable (for instance, social relationships) can be a proximal source of meaning (e.g., when relationships are primed) and a distal source of meaning (e.g., a person's long standing relationship status). Reminders of sources of meaning in life can influence not only the levels of meaning in life people espouse but also the (distal) variables on which those judgments rely. For example, following primes of hell, religious individuals were less reliant on religious faith in judgments of life's meaning (Hicks & King, 2008). Similarly, primes of loneliness led people to become less reliant on relationships in their judgments of meaning in life (Hicks, Cicero, et al., 2010). These priming studies suggest that proximal factors can limit or facilitate the role of more distal factors in meaning in life. This influence can have implications for the levels of meaning in life that are ultimately espoused. For instance, primes of loneliness tend to reduce the link between meaning in life and social relationships—even for individuals who have strong, satisfying relationships. Distal sources of meaning may lack a relationship to meaning in life if they are not salient. Once they are made salient, they may have strong influence on meaning in life (Hicks, Cicero, et al., 2010). In turn, the effect of proximal sources of meaning in life may be moderated by existing levels of more distal, stable variables. For instance, primes of religious concepts may not influence the meaning in life experienced by individuals who are not religious.

Implications and Future Directions

Numerous social psychological theories have proposed that people have a strong need for coherence and consistency, yet it is unclear how this motivation pertains to well-being. The notion that coherent environmental stimuli can foster meaning in life, a central feature of well-being, accords well with previous social psychological theories, like cognitive dissonance and consistency motivation (e.g., Festinger, 1957; Simon, & Holyoak, 2002), that have emphasized the crucial need for structure and cognitive consistency. However, these past theories have not been studied in relation to well-being, despite the obvious implications that consistency feels good and dissonance is experienced as aversive. Thinking about the processes that contribute to a meaningful life may be a way to implicate these social cognitive processes in fundamental aspects of human psychological functioning.

Importantly, the foregoing discussion presents a multitude of open and intriguing research questions. Very little research has linked investment in worldviews, other than religiosity, to well-being. No research has examined the ways that expectancy violations affect the experience of meaning in life. Nor has research provided evidence that social heuristics indeed make sense of experience and, in so doing,

impinge on the experience of meaning in life. It is likely that there are a host of additional places in social cognitive psychology in which scholars have claimed that a variable or process serves a meaning-related function. Ferreting these out and testing whether they, in fact, have implications for the experience of meaning is an important goal for future research. Linking processes of social cognition (e.g., worldviews, stereotypes, and beliefs) to the experience of meaning in life would also show why these sometimes socially troublesome phenomena can be difficult to change: They support a sense that life is meaningful.

People may think of meaning in life as a grand experience associated with particularly profound life events or experiences. They may think of meaning in life as emerging out of deep reflection. We hope that the ideas and research reviewed here might inspire other ways of thinking about meaning in life. We know that meaning in life is affected and facilitated by mundane circumstances. Moreover, we encourage others to consider that every time a construct is viewed as helping us to “make sense”, it may have implications for this important aspect of psychological functioning.

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Chapter 23

Nostalgia as a Psychological Resource for a Meaningful Life

Andrew A. Abeyta and Clay Routledge

Abstract Nostalgia is a mostly positive emotional experience that involves reminiscing about personally significant events and/or social relationships. A growing literature indicates that nostalgic reflection generally promotes well-being. This chapter focuses on how nostalgia promotes well-being by functioning as a resource for meaning in life. First, we discuss research demonstrating that nostalgic memories are meaningful memories and that reflecting on nostalgic memories bolsters a sense of meaning in life. Moreover, we review evidence that nostalgia is a psychological resource that people turn to when experiencing meaning deficits. Further, nostalgia functions to buffer existential threats and mitigate the negative consequences of lack of meaning. Finally, we discuss research suggesting that nostalgia encourages the pursuit of the good life by energizing meaning-making efforts of authenticity, self-growth, and interpersonal connection.

Nostalgia is all around us. Whether it is through consuming the latest revival of a cherished movie/television franchise from the past, sharing pictures of the past with friends via online social networking websites like Facebook, Instagram, or Twitter (a phenomena known as “Throwback Thursday”), or simply reminiscing with friends and family, people enjoy reflecting nostalgically on their past and do so quite frequently (Hepper, Ritchie, Sedikides, & Wildschut, 2012; Wildschut, Sedikides, Arndt, & Routledge, 2006). Thus, what once was considered a malady or a symptom of mental illness is now widely accepted as a normative and enjoyable pastime (for a reviews see, Routledge, 2015; Sedikides et al., 2015). Further, a growing empirical literature indicates that nostalgia is psychologically beneficial in promoting well-being and mitigating distress (for a reviews see, Routledge, 2015; Routledge,

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Wildschut, Sedikides, & Juhl, 2013; Sedikides et al., 2015). In the current chapter, we focus on how nostalgia promotes well-being by fostering perceptions of meaning in life. Specifically, we review evidence that reflecting nostalgically on one's past bolsters a sense meaning in life, buffers existential threats, counters negative outcomes associated with lacking meaning, and encourages meaning-making efforts.

Nostalgia

Nostalgia is a mostly positive emotional experience that involves reflecting on cherished memories of persons and events (Routledge, 2015; Sedikides et al., 2015; Wildschut et al., 2006). The specifics of nostalgic memories vary, but in general these memories tend to feature the self as a protagonist and nearly always reference social events and/or relationships (Abeyta, Routledge, & Juhl, 2015a; Abeyta, Routledge, Roylance, Wildschut, & Sedikides, 2015c; Wildschut et al., 2006). In terms of emotion, nostalgia represents a mixed or ambivalent emotional experience. That is, nostalgic memories contain feelings of happiness tinged with elements of loss, sadness, and longing for the past. However, references to positive emotions in nostalgic memories far outweigh references to negative emotions (Abeyta et al., 2015c) and nostalgic memories tend to follow a redemptive narrative sequence, whereby negative experiences are redeemed or give way to positive outcomes (e.g., personal growth, gratitude: Wildschut et al., 2006).

Consistent with our operational definition of nostalgia, dictionaries define nostalgia as “the pleasure and sadness that is caused by remembering something from the past and wishing you could experience it again” (Nostalgia; Merriam-Webster online dictionary, n.d.). Lay conceptions of nostalgia converge with dictionary definitions. Specifically, research indicates that laypersons generally consider nostalgia to be a predominantly positive experience with elements of loss and a longing to return to or relive the past. Further, laypersons consider nostalgia a revisiting of fond and personally significant memories primarily about childhood and/or interpersonal relationships (Hepper et al., 2012).

Finally, and most relevant for the current chapter, nostalgic memories are meaningful memories. Content analyses have revealed that nostalgic memories tend to be focused on personally significant life events, such as weddings, graduations, religious ceremonies, etc. (Wildschut et al., 2006). Nostalgic memories also feature meaningful interpersonal attachments and focus on themes of love and belongingness (Abeyta et al., 2015a, 2015c; Wildschut et al., 2006).

The Importance of Meaning in Life

Meaning can be approached from varying levels of analysis (e.g., Vess, 2013). Keeping with existential traditions (e.g., Frankl, 1959), we define meaning as a general sense of one's significance, agency, and purpose (Steger, Frazier, Oishi, & Kaler,

2006). Meaning is a fundamental human motive (e.g., Frankl, 1959; Hicks & Routledge, 2013) and research indicates that perceptions of meaning in life are an important component of psychological health and well-being (for a review see, Heintzelman & King 2014). For example, people with greater perceptions of meaning in life are happier and express being more satisfied with the conditions of their life (Park, Park, & Peterson, 2010). Perceptions of meaning are also inversely associated with depressive symptoms (Mascaro & Rosen, 2005), suicidality (Edwards & Holden, 2001), and substance abuse (Kinnier et al., 1994). Moreover, research indicates that people with greater perceptions of meaning in life respond more positively to psychotherapy (Debats, 1996) and that meaning is a critical resource for coping with traumatic life events (e.g., Park & Folkman, 1997). Finally, meaning in life is associated with physical health and longevity (Bower, Kemeny, Taylor, & Fahey, 2003; Hill & Turiano, 2014). In sum, meaning in life is an important component of the good life. Therefore, it is important to identify psychological experiences that promote meaning in life. Nostalgia is one psychological resource that promotes meaning in life.

Nostalgia Contributes to Meaning in Life

Personal achievements and interpersonal relationships contribute to perceptions of meaning in life (e.g., Emmons, 2003; Stillman & Lambert, 2013). Because nostalgia is a means of revisiting life's most significant events and relationships, it should function to fortify an individual's sense that their lives are purposeful and significant. Research supports this proposition by providing evidence that measured nostalgia predicts meaning and induced nostalgia increases meaning.

Nostalgia Predicts Perceptions of Meaning in Life

Research has supported the link between nostalgia and meaning in life by demonstrating that trait and state nostalgia predict meaning. First, research (Routledge et al., 2011) has tested the association between trait nostalgia and meaning in life by administering the nostalgia proneness measure and assessing presence of meaning (Steger et al., 2006) and purpose in life (McGregor & Little, 1998). The nostalgia proneness measure is a 5-item self-report measure that presents a dictionary definition of nostalgia (i.e., "According to the Oxford Dictionary, 'nostalgia' is defined as a 'sentimental longing for the past.'") and instructs respondents to answer questions that are meant to assess how frequently people become nostalgic (e.g., "How often do you experience nostalgia?", "Generally, speaking, how often to you bring to mind nostalgic experiences"). This research found that nostalgia proneness was positively correlated with meaning and purpose in life (Routledge et al., 2011). Second, research (Routledge et al., 2011) has tested whether state nostalgia corresponds with greater meaning by having participants bring to mind two of their favorite songs, rate how nostalgic they made them feel and the extent to which the

songs made them feel like “life is worth living”. The more nostalgic the songs made the participants feel, the more they reported that the songs made them feel like life is worth living (Routledge et al., 2011). Providing additional support that state nostalgia predicts meaning in life, research has evidenced that scent evoked nostalgia is positively associated with meaning (Reid, Green, Wildschut, & Sedikides, 2015).

Nostalgia Increases Meaning in Life

A number of studies have provided experimental evidence that nostalgia increases perceptions of meaning in life. In one study, participants were randomly assigned to receive either song lyrics that they had indicated in a pre-session made them feel nostalgic (nostalgia condition) or lyrics from a song they did not indicate as being nostalgic (control condition). After reading the song lyrics, participants completed a state version of the Presence of Meaning subscale from the Meaning in Life Questionnaire (MLQ; Steger et al., 2006). Participants in the nostalgia condition reported greater meaning than participants in the control condition (Routledge et al., 2011).

In a separate package of studies, researchers provided additional support that nostalgia increases meaning (Routledge, Wildschut, Sedikides, Juhl, & Arndt, 2012). In one study, participants were instructed to bring to mind and write about either a nostalgic memory (nostalgia condition) or a desired future event (control condition), and then completed the state Presence of Meaning subscale (Steger et al., 2006). Participants in the nostalgia condition reported greater meaning than the participants in the control condition. A subsequent study compared the effect of nostalgic reflection to reflecting on a positive memory on the Search for Meaning subscale of the MLQ instead of the Presence of Meaning subscale (Steger et al., 2006). Search for Meaning represents the desire to find meaning and research indicates that high search can be, though is not always, a response to lack of meaning (Steger, Kashdan, Sullivan, & Lorentz, 2008). If nostalgia gives people meaning, then people should feel less of a desire to continue searching for it. Indeed, participants in the nostalgia condition reported less searching for meaning than participants in the control condition (Routledge et al., 2012).

Nostalgia Is a Psychological Resource for Managing Threats to Meaning

Most people are able to attain a satisfying sense of meaning in life (Heintzelman & King, 2014). Nonetheless, life is fraught with experiences that challenge personal meaning. For example, social exclusion (e.g., Hicks, Schlegel, & King, 2010), experiences that violate one’s expectations (e.g., Heintzelman, Trent, & King, 2013), traumatic life experiences (e.g., Park & Folkman, 1997), and reminders of mortality

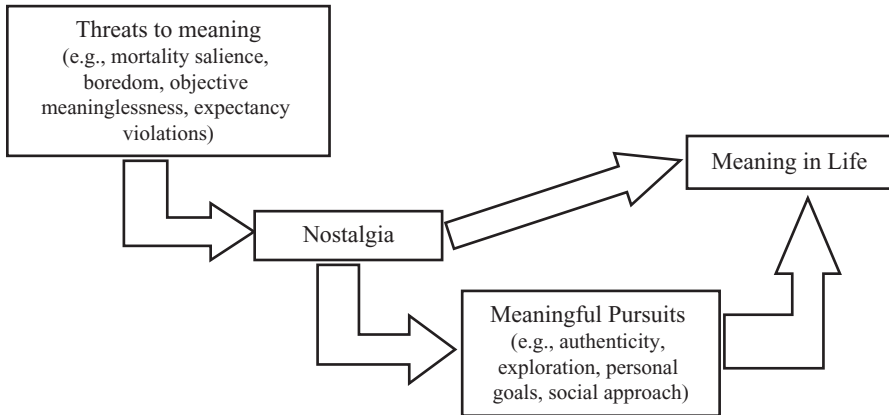


Fig. 23.1 Conceptual model of nostalgia as a meaning making resource. Threats to meaning trigger nostalgia, nostalgia buffers threats to meaning, nostalgia increases meaning, and nostalgia encourages meaningful pursuits

(e.g., Abeyta, Routledge, Juhl, & Robinson, 2015b; Routledge et al., 2010) compromise a sense of meaning in life. Nostalgia bolsters a sense of meaning in life and thus should be a psychological resource that people turn to when they feel like their sense of meaning is challenged (Fig. 23.1).

Threats to Meaning Trigger Nostalgia

Research has supported nostalgia as a resource for managing threats to meaning by showing that people naturally recruit nostalgia when they are confronted with meaning threats. For example, in one study (Routledge et al., 2011) participants were assigned to a meaning threat or control condition. In both conditions, participants read an essay written by a prominent philosopher. In the meaning threat condition, the essay argued the human life is meaningless and insignificant in the grand scheme of things, whereas in the control condition the essay focused on the limitations of computers. After reading one of the essays, participants completed a measure of state nostalgia. Participants in the meaning threat condition reported feeling more nostalgic than participants in the control condition (Routledge et al., 2011).

Research (van Tilburg, Igou, & Sedikides, 2013) has also found that boredom, a psychological experience that decreases purpose in life and motivates search for meaning (van Tilburg & Igou, 2011), instigates nostalgia. Specifically, participants were instructed to copy down 10 references from a Wikipedia page on concrete mixtures (high boredom condition) or copy down two references (low boredom condition). Next, participants were asked to bring to mind either a nostalgic memory, or to bring to mind an unspecified memory (i.e., in this condition, the participants could bring to mind any memory and the word nostalgia was not used).

Finally, participants completed a measure of state nostalgia. In the low boredom condition, participants who brought to mind a nostalgic memory felt more nostalgic than participants who brought to mind an unspecified memory. However, in the high boredom condition, participants in the nostalgic condition felt equally as nostalgic as participants in the unspecified memory condition. Thus, participants in the high boredom condition recruited a nostalgic memory even when they were not instructed to do so. As a threat to meaning in life, boredom triggered nostalgia.

Nostalgia Buffers Threats to Meaning

Research also supports the notion that nostalgia is a psychological resource for managing threats to meaning by demonstrating that nostalgia buffers the negative effects of existential threats. According to terror management theory (TMT; Greenberg, Pyszczynski & Solomon, 1986), the knowledge that death is inevitable has the potential to arouse distress and anxiety and undermine perceptions of meaning. To stave off the potential for anxiety, TMT suggests that people invest in symbolic structures (e.g., family, religion) that imbue life with meaning. A large body of research supporting TMT demonstrates that experimentally making thoughts of mortality salient (mortality salience) motivates people to affirm/defend these symbolic meaning-providing structures (for a review, see Burke, Martens, & Faucher, 2010) and that doing so reduces the accessibility of death related thoughts (Arndt, Greenberg, Solomon, Pyszczynski, & Simon, 1997). However, when people are not given the opportunity to affirm/defend symbolic meaning-providing structures, mortality salience can increase distress, undermine psychological well-being, and lower perceptions of meaning in life (Abeyta et al., 2015b; Routledge et al., 2010). Thus, death reminders have the potential to undercut meaning. As a source of meaning, nostalgia should help people manage mortality concerns.

To begin, research has investigated the potential for nostalgia proneness to buffer the effect of mortality saliences on meaninglessness (Routledge, Arndt, Sedikides, & Wildschut, 2008). If thoughts of death ultimately challenge an individual's sense of purpose and significance, then mortality salience should increase meaninglessness. However, inasmuch as nostalgia fortifies meaning, mortality salience's effect on meaninglessness should only be observed among those who rarely engage in nostalgia. To test these ideas, researchers measured nostalgia proneness, made salient death or pain, and assessed meaninglessness. Specifically, after completing the nostalgia proneness measure previously described, participants responded to two open-ended questions concerning death (the mortality salience condition) or two parallel questions about dental pain (the control condition). Following the manipulation, participants completed the No Meaning Scale (Kunzendorf, Moran, & Gray, 1995; e.g., "Life has no meaning or purpose"). Participants in the mortality salience condition reported greater meaninglessness than participants in the control condition. However, the effect of mortality salience was only significant at low lev-

els of nostalgia proneness. People who regularly engage in nostalgia did not respond to mortality salience with increased meaningfulness.

Research has also provided evidence that nostalgia buffers other effects of mortality salience. For example, mortality salience has been found to increase the accessibility of death related thoughts, but that affirming meaning through symbolic structures in response to mortality salience reduces DTA (Arndt et al., 1997). As a resource for meaning, research has evidenced that nostalgia buffers the effect of mortality salience on death thought accessibility (Routledge et al., 2008). Mortality salience also leads to increased death anxiety when people are unable to affirm sources of meaning in life (Abeyta, Juhl, & Routledge, 2014). There is also evidence that nostalgia buffers the effect of mortality salience on death anxiety (Juhl, Routledge, Arndt, Sedikides, & Wildschut, 2010). Finally, TMT contends that individuals respond to death-awareness by affirming and/or defending meaningful symbolic structures and research has generally supported this contention, demonstrating that mortality salience increases ingroup bias as well as the derogation of outgroup members (Burke et al., 2010). Research has demonstrated that nostalgia buffers mortality salience's effect on outgroup derogation (Juhl et al., 2010) and ingroup bias (Routledge, Juhl, Abeyta, & Royslance, 2014). In sum, as resource for meaning, nostalgia counters the effects of mortality salience.

Other research indicates that nostalgia counters a wide range of meaning threats, not just mortality salience. For example, theory and research suggests that people derive meaning from a structured world (Landau et al., 2004; Proulx, Heine, & Vohs, 2010; Vess, Routledge, Landau, & Arndt, 2009) and that experiences that violate peoples' expectations of order and predictability undercut meaning in life (Heintzelman et al., 2013). As a source of meaning in life, nostalgia should lessen the effect of expectancy violations on perceptions of meaning in life. Supporting this proposition, one study found that participants who viewed an abstract painting meant to challenge the viewers' expectations about the visual world reported a reduced sense of meaning in life, relative to participants who viewed a painting of a rainbow that did not violate expectations. However, reflecting on a nostalgic event after viewing the art, relative to reflecting on an ordinary event, eliminated this effect (Routledge et al., 2012).

Nostalgia has also been found to counter the effects of arguments that challenge the objective meaningfulness of life (Routledge et al., 2011). People should be motivated to derogate or discount an argument that challenges life's meaning as a way to affirm their sense of personal meaning. However, waxing nostalgic should reduce the need to respond defensively to meaning threats. In support of this, one study found that an essay that argued that life is meaningless was evaluated more negatively than a control essay (Routledge et al., 2011). However, nostalgia mitigated this effect. Specifically, when participants reflected on a nostalgic memory before evaluating the meaningless or control essay, there was no significant difference between the essay ratings. By contrast, the meaningless essay was evaluated more harshly than the control essay when people reflected on an ordinary memory (Routledge et al., 2011). This study further supports the notion that nostalgia mitigates threats to meaning.

Nostalgia Counters Negative Consequences Associated with Lack of Meaning

In addition to increasing a sense of meaning in life and buffering threats to meaning, a number of studies indicate that nostalgia counters the downstream consequences of meaning deficits. That is, as a meaning making resource, nostalgia more broadly contributes to psychological well-being and promotes adaptive functioning.

Nostalgia Promotes Well-Being for Those Who Lack Meaning

Subjective vitality is an indicator of eudaimonic well-being that refers to the energy that a person has for living (Ryan & Frederick, 1997). It may be hard for an individual to maintain a high level of vitality if they lack meaning. Indeed, people who lack a sense of meaning in life have reduced vitality (Routledge et al., 2011). However, nostalgia has been found to mitigate this relationship. Specifically, researchers first assessed meaning by having participants complete McGregor and Little's (1998) purpose in life scale, then randomly assigned participants to reflect on and write about a nostalgic or ordinary memory, and finally had participants complete the State Vitality scale (Ryan & Frederick, 1997). The researchers observed that low purpose in life was significantly associated with less vitality. However, participants low in purpose in life in the nostalgia condition reported greater vitality than low purpose participants in the ordinary condition (Routledge et al., 2011).

Nostalgia Reduces Stress for Those Who Lack Meaning

People who lack a sense of meaning in life are particularly vulnerable to experience stress when coping with challenging life events (Park & Folkman, 1997). As a resource for meaning, nostalgia should enhance coping for people who lack meaning. Research testing this proposal assessed participant's meaning in life and their baseline stress levels. Then participants reflected on and wrote about either a nostalgic or ordinary memory. Next, participants completed the Trier Social Stress Test (TSST), a well-validated protocol for inducing stress (e.g., Kirschbaum, Pirke, & Hellhammer, 1993). Finally, participant's stress level was assessed again immediately after the TSST and, for a final time, 30 minutes later. Results from this study (Routledge et al., 2011) confirmed that nostalgia helps people with meaning deficits manage stress. In general, the TSST increased subjective stress from baseline, but stress levels returned back to baseline after the 30 min rest period. However, meaning and nostalgia affected how much stress participants experienced immediately after the TSST. In the ordinary memory condition, participants low in meaning

experienced greater stress than participants high in meaning. However, nostalgia mitigated this effect. Among low meaning participants, nostalgia, relative to a control condition, decreased stress. Further, there was no stress difference between high and low meaning participants in the nostalgia condition. In sum, people who lacked a sense of meaning in life experienced the most stress from the TSST, but nostalgia mitigated this effect.

Nostalgia Promotes Meaning-Making Efforts

Clearly, nostalgia promotes well-being by increasing a sense of meaning in life and helping people cope with threats to meaning and lack of meaning. A number of recent studies indicate that nostalgia also promotes well-being by motivating meaningful pursuits of authenticity, personal growth, and maintaining and deepening social bonds.

Nostalgia Encourages Authentic Self Expression

A number of theoretical perspectives indicate that a core component of adaptive psychological functioning relates to the importance of living one's life authentically, knowing one's true self, and pursuing goals for internal (rather than external) reasons (Deci & Ryan, 2000; Kernis & Goldman, 2006). Living authentically contributes to perceptions of meaning in life (e.g., Abeyta, Routledge, & Sedikides, 2015d; Schlegel, Hicks, Arndt, & King, 2009) and is more broadly associated with well-being (Kasser & Ryan, 1996; Kernis & Goldman, 2006). A number of studies demonstrate that nostalgia is a psychological experience that encourages authenticity.

For example, in one study, research participants were randomly assigned to bring to mind and write about a nostalgic event, an ordinary event, or a positive event from their personal past. The participants were then instructed to rate the extent to which the event reflected "the person you truly are". Participants in the nostalgia condition indicated that the event reflected who they truly were to a greater extent than participants in either the positive event or ordinary conditions (Stephan, Sedikides, & Wildschut, 2012). Providing additional support for the link between nostalgia and the true self, a study by Lenton, Bruder, Slabu, and Sedikides (2013) instructed participants to write about a time when they felt most like their true self or to write about when they felt least like their true self. Participants then rated how nostalgic they were feeling. It was the participants who wrote about a true self experience that felt the most nostalgic.

Building on these initial findings, research has investigated whether nostalgia encourages expression of the authentic or true self and increases the cognitive accessibility of the true self. In one study (Baldwin, Biernat, & Landau, 2015),

researchers tested whether nostalgic memories are rated as more authentic than ordinary memories and if this authenticity decreases the extent to which people adopt an extrinsic self-focus (i.e., are concerned with meeting external standards). First, participants were randomly assigned to bring to mind and write about a nostalgic or ordinary memory and then rated the extent to which the memory they wrote about reflected their authentic or true self (Kernis & Goldman, 2006). Finally, participants rated the extent to which they are concerned with meeting external demands (Williams, Schimel, Hayes, & Martens, 2010). Results demonstrated that nostalgic memories were rated as reflecting the authentic self to a greater extent than ordinary memories, and that participants who reflected on a nostalgic memory reported a less extrinsic self-focus than those who reflected on an ordinary memory. Critically, the extent to which the memory reflected the authentic self mediated nostalgia's effect on extrinsic self-focus. Thus, reflecting nostalgically on the past connects people with their authentic self and in turn frees them from the burden of external demands.

In another study (Baldwin et al., 2015), nostalgia increased cognitive accessibility of the authentic self. Specifically, participants brought to mind and wrote about a nostalgic or an ordinary memory and then wrote about who they truly are (authentic self condition) or who they are in their day-to-day life (everyday self condition). Researchers recorded how long the authentic or everyday self writings were (i.e., how much time they spent writing + how many words were written) and coded the writings for words that reflect cognitive elaboration using computer software (Pennebaker, Booth, & Francis, 2007). Participants in the nostalgia condition wrote more and used a higher percentage of words related to cognitive elaboration when writing about their authentic self than participants in the control condition. Thus, nostalgia increased the accessibility of the authentic self.

Taken together, nostalgic reflection helps people connect with who they truly are: Nostalgia increases feelings of authenticity, reduces focus on external demands of the self, and increases the cognitive accessibility of the authentic self. Being able to connect with an authentic self is a necessary component for leading a personally fulfilling and meaningful existence (Deci & Ryan, 2000; Kernis & Goldman, 2006; Schlegel et al., 2009). Thus, nostalgia promotes a more meaningful existence by encouraging people to live authentically.

Nostalgia Encourages Personal Growth

Psychological growth requires transcending external preoccupations and pursuing internally motivated personal goals. The pursuit of these goals imbues life with happiness and meaning (e.g., Deci & Ryan, 2000). A number of recent findings suggest that nostalgia encourages the pursuit of internally derived goals and in turn positions nostalgia as a catalyst for personal growth.

Inspiration is an evoked experience whereby an external stimulus orients a person away from their current state towards a novel pursuit (Thrash & Elliot, 2003). Recent research indicates that nostalgia triggers inspiration (Stephan et al., 2015).

In one study (Stephan et al., 2015), participants brought to mind and wrote about a nostalgic or ordinary memory and then completed a state measure of inspiration (Thrash and Elliot, 2003). Participants who reflected on a nostalgic memory reported feeling more inspired than participants who reflected on an ordinary memory. Nostalgia has also been found to increase the inspiration to engage in exploration (Baldwin & Landau, 2014; Stephan et al., 2015).

The inspiration that nostalgia evokes appears to be functional – it energizes people’s goal pursuits. To demonstrate this, researchers (Stephan et al., 2015) had participants bring to mind either a nostalgic memory or an ordinary memory, and then complete a measure of inspiration as well as a measure of goal motivation. Participants who reflected on a nostalgic memory reported greater inspiration and were more motivated to pursue their goals than participants who reflected on an ordinary memory. Critically, inspiration mediated nostalgia’s effect on goal pursuits. Thus, nostalgia evokes the inspiration needed to pursue personally meaningful goals.

Taken together, these studies highlight nostalgia as a tool for personal growth. Nostalgia inspires people and encourages them to explore the world around them. Further, the inspiration nostalgia evokes translates to motivation for pursuing meaningful goals.

Nostalgia Mobilizes Meaningful Interpersonal Goals

Most people would agree that social roles and relationships are a major part of what makes life meaningful. Indeed, research supports the notion that interpersonal relationships give life meaning (Stillman & Lambert, 2013). Specifically, threats to social belonging undermine perceptions of meaning in life (Hicks et al., 2010), feelings of social belonging lead to greater perceptions of meaning (Lambert et al., 2013), and people identify close relationships (e.g., family relationships) as their most important source of meaning in life, even when considering other prominent sources of meaning, like religion and personal achievements (Lambert et al., 2010).

Nostalgia is an experience engrained in sociality. Lay persons identify memories of close others as a central feature of nostalgia (Hepper et al., 2012) and content analyses of nostalgic memories indicate that nostalgia focuses on meaningful social roles and relationships and contain themes of love and belonging (Abeyta et al., 2015a, 2015c; Wildschut et al., 2006). Nostalgia also functions to increase a sense of social connectedness (i.e., a sense of acceptance, belonging, and social support: Juhl, Sand, & Routledge, 2012; Wildschut et al., 2006) and restores a sense of belonging in response to loneliness and social exclusion (Seehusen et al., 2013; Zhou et al., 2008). Of relevance to the current chapter, Routledge et al. (2011) found that the social benefits of nostalgia mediated the effect of nostalgia on meaning in life. Thus, nostalgia bolsters a sense of meaning because it makes people feel loved by and connected to others.

A recent set of studies (Abeyta et al., 2015a) demonstrates that nostalgia does much more than increase feelings of belonging. Nostalgia also mobilizes social goal pursuits. For example, in one study, participants were randomly assigned to reflect on a nostalgic memory, an ordinary memory, or a positive memory. Then, participants reported the extent to which they intended to pursue approach-oriented friendship goals (e.g., “I feel that I want to move toward growth and development in my friendships”; Elliot, Gable, & Mapes, 2006). Participants who reflected on a nostalgic memory reported greater intentions to pursue friendship goals than did participants in either the ordinary or positive memory conditions.

Nostalgia appears to promote social goals by increasing a sense of social efficacy. For example, in one study (Abeyta et al., 2015a), participants were first instructed to conduct a YouTube search for, listen to, and write about a song that made them feel nostalgic or a song that they liked and had recently heard. Participants then completed a measure of social efficacy (e.g., “rate your confidence in your ability to...establish successful relationships”; Bandura, 2006). Finally, participants were instructed to bring to mind one of their closest friends and then to imagine that they and their close friend had a disagreement that strained their friendship. With this conflict scenario in mind, participants rated how optimistic they felt that the conflict would be resolved and how proactive they would be in resolving the conflict. Participants in the nostalgic condition, relative to the control condition, reported greater social efficacy, more optimism that the conflict with their friend would be resolved, and expressed greater willingness to be proactive in resolving the conflict. Critically, social efficacy mediated nostalgia’s effect on optimism that the conflict would be resolved and intentions to be proactive. Nostalgia made people feel confident about their social abilities, which in turn gave them a more positive outlook toward and greater motivation to pursue their goal of resolving a friendship conflict (Abeyta et al., 2015a).

Taken together, reflecting nostalgically on the past fosters feelings of social connectedness and in turn bolsters perceptions of meaning in life (Routledge et al., 2011). Further, nostalgia encourages people to actually connect with others by giving them the confidence and motivation to pursue interpersonal goals of maintaining and deepening interpersonal bonds (Abeyta et al., 2015a). Social roles and relationships are a robust source of meaning in life, so interpersonal strivings are meaningful pursuits (Stillman & Lambert, 2013). Thus, nostalgia encourages a meaningful existence by mobilizing the social self.

Nostalgia, Meaning and the Good Life

In all, a growing literature identifies nostalgia as a resource for meaning in life. Nostalgic memories are meaningful memories; they tend to focus on significant life events and feature meaningful social relationships. Engaging in nostalgic reflection increases a sense of meaning in life and helps counter threats to meaning. Meaning in life is regarded as a key component of a happy life (Seligman, 2002) that is

positively associated with positive affect, satisfaction with life, hope, and happiness (Feldman & Snyder, 2005; Park et al., 2010; Steger et al., 2006). As a resource of meaning, nostalgia encourages well-being and effective coping with stress. Moreover, nostalgia promotes meaningful pursuits of authenticity, exploration, and affiliation. In sum, the research we reviewed in this chapter shows that nostalgia is not just an amusing pastime; rather, nostalgia fills life with meaning and promotes the good life.

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Chapter 24

Religious Cognitions and Well-Being: A Meaning Perspective

Crystal L. Park

Abstract The vast majority of research on the topic of religion and well-being has focused on behaviors (e.g., service attendance, prayer), motivation (e.g., intrinsic religiousness), or inner experiences (e.g., transcendence). Instead, the present chapter focuses on the important and understudied intersection of religious beliefs and well-being. First, religious beliefs are defined and described as a central feature of meaning making systems. The relevant literature linking religious beliefs and well-being is reviewed and limitations of current research are discussed. A more comprehensive model is then proposed. Directions for future research conclude this chapter.

Most people identify with a religious group—approximately 80% worldwide—and of the remaining 20% who are unaffiliated, many hold religious or spiritual beliefs (Hackett et al., 2012). The vast majority of people in the United States attend religious services at least monthly, pray at least daily, state that religion is a very important part of their lives, and believe in heaven, hell, angels, demons, and miracles (e.g., Pew Forum, 2009; see Table 24.1). Studies conducted in other countries report lower levels of religion than those reported in the US, but figures are still fairly high (e.g., Hank & Schaan, 2008; Williams & Sternthal, 2007). In fact, as Table 24.2 shows, people hold fairly high beliefs in a personal God in countries around the world. Only 15% of people worldwide describe themselves as atheist, agnostic, or nonreligious (Zuckerman, 2009). Clearly, although not all individuals are religious, religion is central to the lives of many individuals (Park, 2013).

A tremendous amount of research has been conducted on associations between religion and well-being in recent decades (for reviews, see, Koenig, King, & Carson, 2012; Lee & Newberg, 2005). However, religiousness is a complex phenomenon with many aspects. For example, an expert panel convened by the Fetzer Institute and the National Institute on Aging identified 12 unique dimensions of religiousness and spirituality important to health. Other schemes have divided religiousness into

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Table 24.1 Beliefs reported in recent US nationally representative polls

	% Believe in	% Don't believe in	% Not sure/Don't know
God	80–93	6–10	1–10
Heaven	70–81	11–15	8–15
Miracles	73–75	14–16	11–12
Survival of the soul after death	68–70	12–15	17–18
Angels	68–75	14–17	11–15
The devil	61–70	21–26	8–13
Hell	59–69	22–25	8–16
The Bible is the actual word of God and is to be taken literally	30	67	3
The Bible is the inspired word of God but not everything in it should be taken literally	46	51	3
Reincarnation – that you were once another person	21–24	53–54	23–25

Note: Ranges reflect estimates from different polls. Data are drawn from Gallup (2009), Harris Interactive (2005, 2008) and Pew Forum (2009)

cognitive, behavioral and emotional features (Salsman, Fitchett, Merluzzi, Sherman, & Park, 2015) or into beliefs, knowledge, experiences, practice and consequences (Stark & Glock, 1968).

These categorization schemes vary widely, but generally recognize cognition or belief as a core aspect of religiousness. In fact, some researchers have asserted that belief comprises its *central* feature (e.g., Idler, 1999, p. 31). Although acknowledged to be a central part of religiousness, beliefs tend to be relatively under-examined by social scientists even though beliefs are highly important in individuals' understanding of themselves and the world and may strongly relate to overall well-being (Ellison et al., 2001). Instead, the vast majority of research on the topic of religion and well-being has focused on behaviors (e.g., service attendance, prayer), motivation (e.g., intrinsic religiousness), or inner experiences (e.g., transcendence). The present chapter focuses on the important and understudied intersection of religious beliefs and well-being. First, religious beliefs are defined and described within a meaning making system. Relevant literature linking religious beliefs and well-being is reviewed, and a more comprehensive model is proposed. Future research directions conclude this chapter.

Defining Religious Beliefs

Lay dictionaries typically define beliefs as statements that a person accepts or is convicted of as being true. Concordantly, religious beliefs have been defined as “Propositional statements a person considers to be true about religion” (Macavei &

Table 24.2 Believing in a personal god (i.e., a God “who concerns himself with every human being personally”) from the National Opinion Research Center (2008)

Country	% Agreeing
(East) Germany	8.2
Czech Republic	16.1
France	18.7
Sweden	19.1
Japan	24.0
The Netherlands	24.4
Norway	25.7
Great Britain	26.9
Slovenia	26.9
Austria	27.4
Denmark	28.2
Australia	28.5
Hungary	30.9
(West) Germany	32.0
New Zealand	34.2
Latvia	38.1
Spain	39.1
Russia	40.8
Switzerland	45.0
Slovakia	51.0
Italy	54.0
Cyprus	55.8
Portugal	58.1
Northern Ireland	59.5
Poland	59.6
Ireland	64.1
Israel	66.5
United States	67.5
Chile	71.8
The Philippines	91.9

Miclea, 2008, p.2). Jervis (2006) used the phrase “reality appraisal” (p. 652) to describe belief, a definition consistent with lay use of the term “belief” as well as with those of most behavioral scientists. A more specific definition such as that proffered by Barrett and Lanman (2008) brings additional clarity: “the state of a cognitive system holding information (not necessarily in propositional or explicit form) as true in the generation of further thought and behavior” (p. 110).

There is no widely-used taxonomy of religious beliefs. The most widely studied are probably the belief in the existence of God and belief in the existence of an afterlife (Idler, 1999), but there are many others, including beliefs about God’s nature (God image), theodicies (beliefs about God’s role in suffering), beliefs in a soul, beliefs about evil, beliefs about sin, and so on (Slattery and Park, 2012).

Religious Beliefs: A Meaning Systems Perspective

Meaning systems refer to individuals' understanding of themselves and the world as well as their system of goals and values. Religious beliefs often form a large part of the foundation of individuals' meaning systems (Newton & McIntosh, 2013; Park, 2013) and may thereby influence other basic beliefs such as those regarding locus of control or a just world (Moreira-Almeida et al., 2006). By influencing perceptions of themselves and the world, individuals' religious beliefs may also influence other aspects of their meaning systems, such as their values (i.e., things on which people place subjective importance) and behaviors (i.e., whether and why they act in particular ways). Thus, understanding the role of religious beliefs on psychological functioning is essential for understanding people and for promoting well-being.

Religious beliefs exist on a continuum, ranging from very broad global beliefs (e.g., in the existence and nature of God) to situation-specific appraisals based, in part, on one's global beliefs (e.g., attributions for a specific occurrence; Park, 2013). Global religious beliefs are part of one's global meaning system (Newton & McIntosh, 2013), and, along with the context of a given situation, influence situational beliefs. Situational religious beliefs involve the meanings that people assign to the specific events or experiences in their lives; these are the level of beliefs with which most people concern themselves (e.g., *not* why does God allow bad things to happen to good people, a global existential problem, but why did God allow *this specific experience* to happen to *me*?). From a meaning perspective, both global and situational beliefs are important determinants of subsequent feelings and behaviors (Park & Folkman, 1997; Park, 2010).

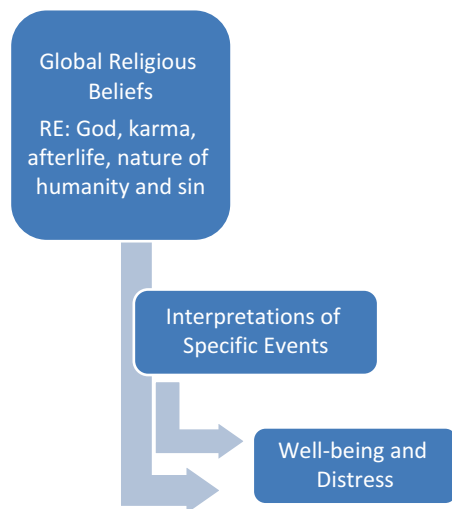
Religious meaning, as reflected in beliefs about the nature of God and the universe, as well as the many other beliefs that follow from these fundamental beliefs (e.g., life is fair, people can be trusted), have been the focus of theologians and philosophers for millennia. Beliefs are a central component of every religious system (Hood, Hill, & Spilka, 2009), and evidence from a variety of disciplines, including neuroscience, anthropology, evolutionary biology, and cognitive science, converges on the notion that religious beliefs are universal aspects of human beings (e.g., Barrett & Lanman, 2008; Sanderson, 2008). Importantly, from a psychological perspective, every person can be considered to have some level of religious beliefs, even if the level of belief is zero. That is, the total lack of a belief is useful to know and understand. Thus, for example, assessing an atheist's belief in God (i.e., someone scoring 0) still yields a meaningful score for inclusion in studies of relationships between levels of a given belief and some other construct, such as well-being. Indeed, given the large numbers of people who score high in strength of various religious beliefs, scores of 0 are highly useful pieces of data.

Linking Religious Beliefs and Well-Being: The Meaning-Making Model

Religious beliefs may influence well-being both directly, reflected in a general sense of well-being, and as mediated through interpretations of specific experiences (see Fig. 24.1). In keeping with the spirit of this book, this chapter focuses specifically on the positive aspects of well-being such as happiness and life satisfaction; however, negative aspects, including distress and psychopathology, are included in the model to present a more complete picture. Positive and negative aspects of well-being may influence one another, and thus this model includes both, although little empirical research has directly examined this issue. Interestingly, most researchers who have examined religious cognitions and functioning have done so in the context of distress or maladjustment. Thus, there is a much larger literature focused on relations of religious beliefs with psychopathology than with well-being (e.g., Koenig et al., 2012).

As to the direct influences of religious beliefs on well-being shown in Fig. 24.1, religious beliefs have been theorized to have the ability to provide an abiding sense of well-being. For example a belief in God may reinforce the notion that one is not alone in a cold and uncaring universe, but instead, lives in a world overseen by a benevolent loving parental figure who cares without end and ceaselessly attends to one's personal experiences. Such a notion is thought to generate a deep sense of comfort that may carry through one's daily life (Ellison, Burdette, & Hill, 2009). Similarly, given humanity's foreknowledge of our own impending deaths, the belief in a literal afterlife can lead to a feeling of general peace and contentment. That is, firmly believing that regardless of what happens to one's mortal body, one's (more important) aspect of self, the soul, will continue in perpetuity relieves existential

Fig. 24.1 Model of religious beliefs and well-being



dread and frees a person to be happy and unworried (Ellison et al., 2009). Of course, the specific effects of beliefs in an afterlife would be expected to depend on how positive one views that afterlife (Bradshaw, Ellison, & Flannelly, 2008).

In addition to beliefs in God and an afterlife, there are many other beliefs that may influence an individual's ongoing sense of well-being and happiness, including the extent to which there is ultimate divine or cosmic justice, the image one holds of God (e.g., as infinitely loving or punitive), the extent to which one's sacred scriptures are the literal word of God, and the nature of humanity (e.g., as inherently flawed and sinful, as ultimately redeemable). Each individual's global belief system is a unique and complex matrix of such religious beliefs (again, even if they score zero on all supernatural beliefs) and secular beliefs, shaped by received knowledge and their own experience across the lifespan.

Although beliefs may have a substantial general effect on well-being, they may also exert strong effects on well-being by affecting how individuals interact with and make meaning of the world (Ellison et al., 2009). Making meaning involves interpreting specific experiences, especially potentially stressful ones (Park, 2010). Thus, global religious beliefs may lead individuals to make more benign interpretations of difficult situations, buffering them from the stresses of daily living and promoting more happiness and satisfaction with life (Park, 2012a, 2012b). For example, religious beliefs may enable individuals to reappraise adverse or highly stressful experience in more positive ways (e.g., Vishkin et al., 2016).

Current Research Findings Regarding Religious Beliefs and Well-Being

Although rich theoretical linkages between religious beliefs and well-being have long been posited, empirical investigation of these linkages has been slow to develop. In large part, this lack of attention is due to the general tendencies of psychology of religion researchers to ignore cognitive aspects of religiousness as well as to focus on negative aspects of physical and mental health. The studies focusing on religious belief-well-being links generally indicate salutary associations, although the findings are inconsistent and the different methods used across studies, especially with regard to samples and measures, make aggregation difficult.

Global Religious Beliefs

Belief in God Perhaps the most basic religious belief – belief in God – may be related to well-being by providing a sense of comfort and protection that is unmatched by other sources, a supernatural parent always available to listen and help. In spite of the high prevalence of a belief in God noted above, surprisingly few

studies have specifically focused on the associations between beliefs in God and well-being, especially with regard to positive aspects of well-being. Those few studies have generally found that beliefs in God are favorably, but weakly, linked to positive well-being. For example, in a study of undergraduates who had experienced a major life trauma within the past five years, belief in God positively related to happiness but not to life satisfaction (Park & Gutierrez, 2013). A random sample of 989 adults in an Australian community survey completed the Bradburn Balanced Affect Scale and three measures of Christian faith and practice: belief in God, personal prayer, and church attendance. While all three religious measures were positively correlated with positive affect and affective balance, belief in God had the highest relationship (Francis & Kaldor, 2002).

Belief in God may even promote well-being by serving as a resource for recovery from mental illness. In a prospective study of patients in a day-treatment program at a psychiatric hospital, belief in God predicted positive treatment response and greater increases in psychological well-being over the course of treatment (Rosmarin, Bigda-Peyton, Kertz, Smith, Rauch, & Björngvinsson, 2013). A belief in God may have served as a resource on which patients could draw for strength and support as they worked through their psychological difficulties.

Beliefs in Afterlife As noted earlier, believing in an afterlife relieves a sense of existential worry over the mortality of the physical body, which may allow individuals to be more open to and accepting of their unfolding lives. Several studies have examined relations between belief in an afterlife and well-being in large representative samples in the US. For example, among US adults in a national probability sample, stronger beliefs in an afterlife were associated with higher feelings of tranquility (Ellison et al., 2009). In a large study of older adults in North Carolina, belief in afterlife was correlated with well-being, but only for Protestants (and the correlation was small) (Cohen & Hall, 2009). In data from the 1995 Detroit Area Study, belief in eternal life was related to a composite measure of well-being (Ellison, Boardman, Williams, & Jackson, 2001).

Similar findings have been reported in smaller more select samples. Among young adults drawn from high schools, youth groups, and colleges, belief in afterlife was correlated with life satisfaction for both Catholics and Protestants (Cohen, Pierce, Chambers, Meade, Gorvine, & Koenig, 2005). However, in a sample of older adults with chronic heart failure, belief in an afterlife was not related to life satisfaction (Park, Lim, Newlon, Suresh, & Bliss, 2014).

Studies have also been conducted in countries besides the US. Two studies of older adults in Japan found that beliefs in a good afterlife are related to life satisfaction (Imamura et al., 2015; Krause et al., 2002). A study conducted in Thailand illustrated the importance of context: in a sample of Buddhists, for those who had recently meditated, belief in afterlife was strongly related to life satisfaction, but was unrelated for those who had not meditated recently. However, for Christians, beliefs in afterlife were unrelated to well-being in a sample surveyed right after church services but were related in a sample surveyed at another time (Chaiwutikornwanich, 2014).

In addition to these studies focusing explicitly on belief in an afterlife, Diener and Clifton (2002) reported associations using a measure combining belief in God/higher power and afterlife. They found that in a probability sample in one US city, the correlation was small but stable; similarly, in a broad probability sample of over 40 countries, this belief measure correlated with both life satisfaction and happiness. Again, the correlations were small, but the authors noted the lack of variance in the measures as well as a notably larger correlation between this combined set of beliefs and well-being for older adults.

God Image/Concept One's concept of God, often termed *God image*, is a frequently studied aspect of religious beliefs. How individuals conceptualize God's character and behavior can be foundational for their global meaning system. For this reason, one's view of God may exert a strong influence on well-being. Many different God images have been studied, including understanding God as Benevolent, Wrathful, Purposeful, Punishing, Guiding, and Caring (Wong-McDonald & Gorsuch, 2004).

Typically, holding stronger beliefs in more benevolent or positive images of God are generally associated with better well-being, but the findings are complicated. For example, nationwide survey of adults in the US found that having a belief in a loving and protecting God was associated with higher levels of general well-being (Bradshaw, Ellison, & Flannelly, 2008). Similarly studies of undergraduates found that higher beliefs in a loving God, and lower beliefs in a controlling God, were associated with positive mood and higher life satisfaction (Wiegand & Weiss, 2006) and that traditional benevolent conceptualizations of God was positively correlated with greater spiritual well-being (Wong-McDonald & Gorsuch, 2004). In another large random nationally representative survey, the 2007 Baylor Religion Survey (BRS), holding a loving God image was positively and significantly correlated with a sense of purpose in life (Stroope, Draper, & Whitehead, 2013). Further analysis of the BRS indicated that having a belief in a God who is directly concerned and involved in one's life (divine involvement) was positively associated with a sense of meaning in life. However, religious affiliation modified this association such that the positive relationship was true only for evangelical Protestants, mainline Protestants, and Catholics, and not for other religionists or religious nones (Jung, 2015).

In addition to possible moderation of effects by denomination, race might also moderate the linkage. A sample of university students in the US reported their endorsement of different types of religious beliefs: that (a) God loves me and considers me special (b) God is in control of everything that happens and (c) God has a reason for all of the bad things that happen. Only the beliefs that God loves me (esteem-enhancing) were associated with a composite measure of well-being. In addition, for African-American students only, beliefs that God has a reason were also correlated with well-being (Blaine & Crocker, 1995).

The studies on relations between God image beliefs and well-being are few in number and yield complicated findings, often with only a few image beliefs related to well-being. In a small sample of Canadian women who had been diagnosed with cancer five years prior, among six specific God images assessed, only conceptual-

izing God as provident (in control of their lives) was correlated with life satisfaction, a moderately strong relationship (Gall, Renart, & Boonstra, 2000). Further, strength of effects may be more or less strong depending on other factors. In addition, strength of relations between God image beliefs and well-being may depend on whether analyses control for other variables. For example, a study of chronic pain patients in Belgium found that positive God images were associated with happiness, both directly and indirectly through positive interpretation of their disease, while angry God images were inversely associated with happiness. However, the effects of angry God image disappeared after controlling for pain severity (Dezutter et al., 2010). Clearly, much more work is needed in order to make understand how different God image beliefs relate to well-being.

Orthodoxy Orthodoxy refers to a belief in the basic tenets of one's religion. Orthodoxy may promote well-being by giving reassurance that one is following the proper path in life and alleviate uncertainty and doubt. Only a handful of studies have examined whether orthodoxy relates to well-being. In a randomly selected sample from the greater Akron Ohio area of the U.S., Christian Orthodoxy was found to be unrelated to life satisfaction or positive affect (Poloma & Pendleton, 1990). However, in a sample of Christian young adults in the U.S. and the U.K., Christian orthodoxy was modestly correlated with life satisfaction (Zahl & Gibson, 2012) and in a sample of Jewish Israeli students, Jewish orthodoxy was related to a composite measure of well-being (happiness, lack of distress) (Vilchinsky & Kravetz, 2005).

Fundamentalism Fundamentalism refers to the belief that there exists one set of religious teachings that clearly contains the inerrant truth about deity and humanity that must be followed; unlike orthodoxy, fundamentalism is typically assessed without reference to any particular set of beliefs, rather referring specifically to the belief that there is one source of truth (Altemeyer & Hunsberger, 1992). Fundamentalism, like orthodoxy, may influence well-being by promoting a sense of certainty. Only a few studies, all conducted with college students, have examined links between fundamentalism and psychological well-being. In one study of students at a South African University, religious fundamentalism correlated positively with the presence of meaning in life but was not related to life satisfaction (Nell, 2014). In a sample of Catholic Italian university undergraduate students, religious fundamentalism was positively associated with high life satisfaction (Carlucci, Tommasi, Balsamo, Furnham, & Saggino, 2015). In a sample of U.S. college students, religious fundamentalism was related to religious well-being but not existential well-being (i.e., meaning in life). However, among the subsample of religious undergraduates, religious fundamentalism was moderately strongly related to both religious and existential well-being (Genia, 1996).

Divine Control/Religious Fatalism Beliefs regarding God's control over the world generally—or over one's own life in particular—may be related to well-being by providing reinforcement and encouragement to persevere in the pursuit of difficulties. Alternately, such beliefs could lead to a sense of fatalism or helplessness.

ness. A large study of older adults in the greater Washington, DC (US) area, studied the belief that God exerts a commanding authority over the course and direction of his or her life (divine control). This study found that belief in divine control was positively related to a sense of mattering. These associations were particularly strong among African Americans, individuals with no college degree, and women (Schieman, Bierman, & Ellison, 2010).

However, beliefs in God as having control over one's life are not universally positive. Studies of religious fatalism indicate that in the context of health, such beliefs are often associated with poorer health behaviors. For example, in a diverse urban sample of people living with HIV, holding perceptions of God as the locus of control over their health predicted much poorer adherence with antiretroviral HIV medications (Finocchiaro-Kessler, Catley, Berkley-Patton, Gerkovich, Williams, Banderas, & Goggin, 2011).

Situational Religious Beliefs

Although a fair amount of research has examined the role of religious attributions in adjusting to negative life events such as floods or cancer, most of this research has focused on distress and other negative outcomes. Only a few studies have examined how attributions for negative life events relate to positive aspects of well-being. The above-mentioned study of college students who had experienced a major life event found that attributions that God was responsible for their event were positively related to happiness but not to life satisfaction (Park & Gutierrez, 2013). Similarly, in a study of adults in the U.K. who had experienced recent major life stress, attributions of God as in control of the event correlated positively with positive affect (Loewenthal, MacLeod, Goldblatt, Lubitsh, & Valentine, 2000). And in a study of college students bereaved from the loss of a close loved one within the past year, attributions that God caused the death were unrelated to life satisfaction but positively related to stress-related growth (Park, 2005).

A More Comprehensive Meaning Model of Religious Beliefs and Well-Being

As discussed earlier, the available research indicates that global religious beliefs are associated with well-being (e.g., Ellison et al., 2009). Further, there is some suggestion that these associations may be mediated through situational appraisals of specific stressful experiences. Thus, results of empirical work to date are consistent with the model shown in Fig. 24.1. However, given the centrality of religious beliefs in individuals' global meaning systems, a more comprehensive model is needed to more fully delineate relationships between religious beliefs and well-being and

guide future empirical inquiry. A more comprehensive model with additional mediators and pathways is shown in Fig. 24.2. These mediators have been described in theoretical literature. For example, psychologists have proposed that religious beliefs can influence cognitive processing styles. Religious beliefs have been posited to lead to a reliance on heuristics (e.g., What does our creed say?) to quickly form judgments rather than engaging in reflective inquiry (Carone & Barone, 2001, p. 990).

More broadly, others have proposed that religious beliefs pervasively influence perceptions and interpretations by serving as schemas that filter experience (Silberman, 2005). Thus, religious beliefs influence what people notice, experience, and remember (Barrett, 2013). The extent to which religious beliefs are salient and available determines the extent to which they are drawn upon to form perceptions and attributions (Ozorak, 2005). For example, a study of attention to visual stimuli found that, regardless of current religious affiliation, those who were raised as Calvinist (emphasizing individual responsibility) compared to those raised as Catholic or Jewish (emphasizing social solidarity) exhibited the global precedence effect (greater attention to global than to local features) (Colzato et al., 2010). These functions of religious beliefs may result in confirmatory bias, a process by which selectively noting and recalling information that is consistent with one’s pre-existing beliefs about the world. One’s global meaning system is a powerful influence in such top-down processing, and religious beliefs facilitate this concept-driven processing (Newton & McIntosh, 2013; Ozorak, 2005).

In addition to these general influences, religious beliefs influence how individuals appraise situations and may allow individuals with stronger positively-toned religious beliefs to make more benign appraisals of their encounters. These positive appraisals will minimize stress exposures and promote well-being on an ongoing basis (Park, 2012a, 2012b).

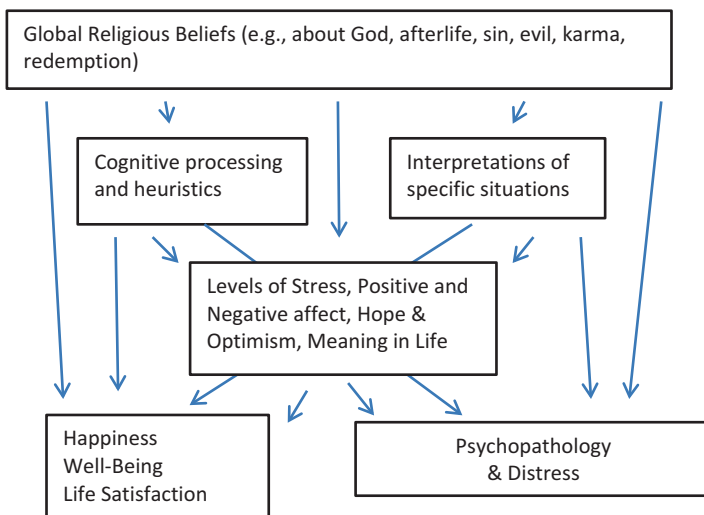


Fig. 24.2 More comprehensive model of religious cognitions and well-being

Finally, according to Fig. 24.2, both appraisals and cognitive processing that derive from religious beliefs may have not only direct effects on well-being, but may also exert influence on well-being by promoting intermediary positive states, including lower levels of stress and negative affect and higher levels of positive affect, hope, optimism and meaning in life, which will in turn promote well-being. That is, religious beliefs—at least some of them—may lead people to experience situations as less stressful, find more purpose in life, feel confident and certain in their way of life, worry less, and generally experience a more positive and happy life.

Limitations of Current Research and Future Directions

Research on religious beliefs and well-being, such as that reviewed here, typically suffers from a number of limitations. First, researchers often purport to study *beliefs*, but use assessment tools that confound beliefs with other aspects of religiousness such as practices and subjective experiences (Hill, 2005; Park, 2012a, 2012b). Even the measure produced by the Fetzer/NIA panel mentioned earlier contains a “beliefs” subscale that unfortunately confounds questions about belief (e.g., “Do you believe there is a life after death?”) with other aspects of religiousness (e.g., How much is religion a source of strength and comfort to you?) (Fetzer/NIA, 1999). Unfortunately, there are no well-designed measures of “religious beliefs”; instead, investigators must select a measure designed specifically for each belief in which they are interested. For example, measures of afterlife beliefs (Osarchuk & Tatz, 1973) and theodicies (Hale-Smith, Park, & Edmondson, 2012) are available.

Most studies examined only a single religious belief rather than examining an array of beliefs and their potential interplay. Further, I was unable to locate any research linking a number of important religious beliefs (e.g., in sin, in karma) with well-being. Future researchers aiming to assess religious specific belief domains must choose measures appropriate to the task. Researchers should scrutinize candidate measures to determine whether they truly capture the belief construct of interest. Religious beliefs should also be assessed in terms of both their content and their strength.

Another obvious limitation in this area of study is the reliance on weak study designs: nearly all of the research on the topic of religious beliefs and well-being was conducted cross-sectionally, and very little of it took into account potential confounding variables. Thus, no directionality or causality can be assumed. Further, the noted associations reported may be strongly influenced by underlying third variables. For example, such beliefs may be associated with belonging to social networks, which could account for the effects of belief (Galen, 2015). In addition, specific to beliefs, findings could be due to the *certainty* with which one holds one’s beliefs rather than the content of those beliefs. In fact, some research has demonstrated that certainty may underlie the effects of beliefs. A study of adults in a local community yielded a curvilinear relationship such that those with higher belief certainty (both confidently religious and atheists) reported greater well-being relative to those with low certainty (unsure and agnostics). The authors concluded

that the effects of beliefs may be due to “a confident worldview rather than religious beliefs themselves” (Galen & Kloet, 2011, p. 673).

Further, very little of this research has been conducted with representative samples—most research is conducted in the United States, often with college students. This limitation is true of most areas of research, but may be especially important to consider in the context of religious beliefs. Not only do religious beliefs vary greatly across demographic characteristics, but religious beliefs may exert very different influences depending on that demographic. In the research reviewed here, the few studies that looked for moderator effects reported them, often to the effect that the results were especially weak for some and strong for other groups. Religious beliefs may be especially related to well-being among older adults, those from specific religious groups, minorities, and those with less education. It has been suggest that the benefits of at least some religious beliefs may be greater for persons who lack a sense of direct mastery or control (Schieman et al., 2010).

Another important direction for this research area to attend a to the role of lack of belief, including examining how having no belief in God or an afterlife might constitute more than simply a non-existent belief, but may constitute an important end of the belief continuum. Those who do not have religious beliefs may substitute other secular beliefs or supernatural ones that help them to frame their experiences and thereby influence their well-being. In addition, very little is currently known about the interplay between secular and religious belief systems; they are not necessarily mutually exclusive and for many people, appear to work in concert.

In summary, the current research on the links between religious beliefs and well-being is, at best, suggestive of generally salutary relationships, but a new generation of research using stronger methods and analytic strategies is needed. Further, research will be much more illuminating if it examines mediational pathways to examine the mechanisms through which beliefs exert their effects. The model in Fig. 24.2 provides many possible pathways to test. Research findings to date, while limited in both scope and conclusiveness, are consistent with the notion that religious beliefs are related to well-being, but indicate that this is a complex issue. Beliefs in God and afterlife are generally related to life satisfaction, positive emotions, and other aspects of well-being, but the *content* of these beliefs likely matters as well. That is, the influence of belief in God may depend on what type of God one or what type of afterlife in which one believes. At present, many intriguing issues await better measurement and testing. With studies based on more sophisticated conceptualizations and using sound methods, we will be able to learn much more about how beliefs influence well-being.

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Chapter 25

Wiser But Not Sadder, Blissful But Not Ignorant: Exploring the Co-Development of Wisdom and Well-Being Over Time

Nic M. Weststrate and Judith Glück

Abstract For thousands of years, philosophers have argued that wisdom makes the good life possible. Yet, paradoxically, the development of wisdom has been strongly associated with difficult life events—life-challenging experiences that may leave one feeling ‘sadder but wiser.’ This chapter opens with an exploration of psychological theories that have evolved in the last three decades to define and measure the elusive construct of wisdom. Next, we review theory and research with the goal of clarifying the interrelations among wisdom and well-being. Finally, we resolve the wisdom and well-being paradox by examining their possible co-development over time. We propose that one’s level of well-being varies as a function of the stage one is at along the developmental trajectory toward wisdom following a challenging life event, and, reciprocally, the development of wisdom depends on one’s evolving level of well-being. Initially, difficult life experiences may temporarily forestall well-being while individuals do the challenging work of constructing wisdom, but over time wisdom will promote a fulfilling life.

There is a strong cultural belief that wisdom and well-being represent alternative developmental outcomes following life experience. Positive life experiences leave people happier, whereas negative life experiences leave them wiser. The ‘sadder but wiser’ notion, however, seems to contradict the equally powerful belief that wisdom leads to a good life. In this chapter, we reconcile the wisdom and well-being paradox by proposing a developmental process model that assumes wisdom and well-being are interactively related over time. We argue that for some individuals, wisdom and well-being co-develop in response to events that have textured their life course.

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Before articulating this developmental model, we define wisdom and explore the reasons why wisdom could be thought to both positively and negatively relate to well-being, and review empirical evidence in support of these two viewpoints.

Defining and Measuring Wisdom: An Elusive Construct

Wisdom has long been considered a utopian quality—a rare and coveted ideal state that encompasses excellence in mind and virtue. The psychological study of wisdom is relatively young, with the first research appearing in the 1980s (see Staudinger & Glück, 2011 for a review). Perhaps wisdom's elusive nature and low incidence rate have historically discouraged systematic attempts at empirical scrutiny. Early studies focused mainly on laypeople's subjective theories of wisdom, but soon expert theories and measurement models began to emerge.

Current psychological wisdom theories can be divided into two groups, as Staudinger, Dörner, and Mickler (2005) have argued. Theories of general wisdom define wisdom as insight into human life in general, whereas theories of personal wisdom emphasize the individuals' insights into their own life, based on personal experiences. The first psychological wisdom theories were about general wisdom. Paul Baltes and his colleagues (Baltes & Smith, 2008; Baltes & Staudinger, 2000; Smith & Baltes, 1990) at the Max Planck Institute for Human Development in Berlin defined wisdom as expertise (i.e., broad and deep knowledge acquired through long-term deliberate learning) in fundamental life matters (i.e., the difficult questions of human existence). Consequently, when they developed the first empirical approach to measuring wisdom, they utilized a methodology from expertise research. In the Berlin Wisdom Paradigm, participants provide think-aloud responses to hypothetical life dilemmas that tap fundamental life matters (e.g., "A 15 year old girl wants to be married right away. What should one consider and do?"). Responses are scored for five aspects of wisdom-related knowledge. The basic criteria include rich factual and procedural knowledge about life. The meta-criteria include lifespan contextualism (i.e., awareness of the relevance of contexts, including life phases, for people's thinking and behavior), value relativism (i.e., awareness and acceptance of individual, cultural, and historical differences in value orientations) and, perhaps most importantly, recognition and management of uncertainty (i.e., being aware of the high degree of unpredictability and uncontrollability in life).

Along similar lines, Igor Grossmann and colleagues have more recently developed a new definition of wise reasoning as "the use of certain types of pragmatic reasoning to navigate important challenges of social life" (Grossmann et al., 2010, p. 7246). This includes dialectical thinking, intellectual humility, and the ability to take different viewpoints, to recognize the limitations of knowledge, and to search for conflict resolution and compromise. Grossmann and colleagues measure wise reasoning by scoring participants' responses to fictitious, but realistic, social conflicts (e.g., political tensions between two ethnic groups living in the same nation).

Critics of general wisdom approaches have argued that they are too focused, both conceptually and empirically, on cognitive aspects of wisdom. Most prominently, Monika Ardelt (2004) wrote that “wisdom cannot exist independently of individuals” (p. 260), i.e., that wisdom is not a theoretical, but a deeply personal phenomenon, rooted in individual experiences and the insights gained from them. Ardelt’s (2003) *Three-Dimensional Wisdom Model* defines wisdom as a personality characteristic that integrates cognitive, reflective, and compassionate dimensions. The cognitive dimension concerns the willingness to search for truth, i.e., to understand life situations thoroughly, while acknowledging the limits of one’s knowledge. The reflective dimension involves transcending one’s own subjective view and instead looking at situations from multiple perspectives. The compassionate dimension concerns the desire to promote the well-being of others, and manifests in positive and caring emotions and prosocial interests. Consistent with the idea of a personality characteristic, Ardelt (2003) devised a self-report scale measuring the three dimensions.

Michael R. Levenson (Levenson, Jennings, Aldwin, & Shiraishi, 2005) proposed a somewhat different theory of personal wisdom, rooted in Buddhist as well as philosophical conceptions (Curnow, 1999), which defines wisdom as self-transcendence. Self-transcendent individuals are not reliant on external self-definitions, and are thus able to perceive others and the world as they really are, and to establish truly caring relationships and feelings of union with others. Like Ardelt (2003), Levenson et al. (2005) developed a self-report scale to measure wisdom, as has Jeffrey Webster (2003, 2007). Webster operationalizes wisdom as a combination of openness, emotional regulation, humor, critical life experience, and reminiscence/reflectiveness.

Self-report scales are clearly faster and easier to administer and score than open-ended measures of wisdom, which are effortful to administer, transcribe, and score. However, self-report measures may be highly susceptible to distorted self-perceptions: If wise individuals tend to be more critical of themselves than other people, they may describe themselves less favorably, and thus receive lower scores on self-report scales (Glück et al., 2013; Redzanowski & Glück, 2013).

From the perspective of their conceptual backgrounds, it makes sense that conceptions of general wisdom have been operationalized as open-ended measures, whereas conceptions of personal wisdom have been translated into self-report scales. More recently, however, open-ended measures of personal wisdom have been developed, based on the idea that characteristics like self-knowledge, self-reflection, or self-transcendence can be measured by analyzing how participants think and talk about themselves. For instance, Mickler and Staudinger (2008) have developed a self-reflection task using five criteria that parallel those of the Berlin Wisdom Paradigm. Similarly, Glück et al. (2016; also see Weststrate & Glück, 2017) have developed a wisdom interview about difficult autobiographical events.

In sum, conceptions of general wisdom focus on wise thinking—the ability to think about difficult issues of human life in a complex way that considers multiple perspectives and acknowledges the uncertainty inherent in life. Conceptions of personal wisdom do not deny that this way of thinking is characteristic of wisdom, but

since they assume that wisdom is gained through personal experience, they consider affective, motivational, and personality characteristics as equally important. It is still an open question whether personal and general wisdom can be empirically distinguished (and if so, how they relate to one another) or if they represent different ways of looking at the same phenomenon. Empirical correlations between measures of wisdom tend to be no higher than .30, but this is partly due to non-shared method variance (Glück et al., 2013). The question about how best to measure wisdom is still very much alive in the literature.

Importantly, the empirical relationships between wisdom and other constructs are determined, to some degree, by choice of measure (Glück et al., 2013). Performance measures are usually moderately correlated with fluid and crystallized intelligence and relatively select variables from the personality and attitudes domain, most typically openness to experience and personal growth (Mickler & Staudinger, 2008; Staudinger, Lopez, & Baltes, 1997). Self-report measures have higher correlations with various well-being and positive personality constructs, with openness to experience standing out as a particularly consistent and strong predictor (e.g., Ardel, 2003, 2011; Levenson et al., 2005; Webster, 2003, 2007; Webster, Westerhof, & Bohlmeijer, 2014; Zacher, McKenna, & Rooney, 2013). Webster (2003, 2007) actually considers openness as a component rather than a correlate of wisdom, though others, including us, consider it a prerequisite for the development of wisdom (Ardelt, 2011; Glück & Bluck, 2013). With a complex and somewhat fuzzy construct like wisdom and a dearth of long-term longitudinal studies, it is both conceptually and empirically difficult to distinguish between these two possibilities.

Developing Wisdom Across the Lifespan

Researchers are not exactly sure how common wisdom is at the population level, but experts agree that its prevalence is low (Jeste et al., 2010). The range of measures used to assess wisdom assume that it is present to some degree in every person, but this could be debated. Rather than vary on a continuum, wisdom might be some qualitatively distinct constellation of attributes that only very few people manifest. Given its low incidence, researchers have utilized oversampling techniques, such as nomination procedures, to access adequate variability in wisdom. Although strictly anecdotal, in a recent sample of 47 wisdom nominees that we collected in our lab, only 10 of those nominees seemed really extraordinary to us, demonstrating that even among wisdom nominees, actual wisdom may be rare (Glück et al., 2013). Another approach used by researchers has been to focus on the top wisdom scorers in their samples (e.g., Ardel, 2010; Mickler & Staudinger, 2008), but normed cut-off points do not really exist for wisdom in the same way that they do for intelligence or ego development. Data aside, many people would argue that, by definition, wisdom is a rare phenomenon—what makes a piece of advice wise is its extraordinary nature.

If we agree that wisdom is rare, then it must also be difficult to cultivate in people. Who are these special people that develop wisdom? Research has shown that age, in itself, is an insufficient condition for wisdom—studies have consistently found zero correlations between age and wisdom (see Staudinger, 1999; Sternberg, 2005). Cross-sectional research, however, has shown that adults outperform adolescents on tasks that require wisdom-related knowledge, and that wisdom develops at its steepest rate during emerging adulthood, with older cohorts demonstrating comparable levels of wisdom to each other (Pasupathi, Staudinger, & Baltes, 2001).

It remains an open question as to whether cultural institutions or technologies can promote wisdom development. For example, the question has been asked: Could wisdom be taught in schools? Some think so, but it is not yet clear what a wisdom curriculum would entail (see Ferrari & Potworowski, 2008; Sternberg, 2001). Even so, attempts have been made to teach wisdom in the areas of character education (Park & Peterson, 2008) and conventional settings such as the middle school history classroom (Sternberg, Jarvin, & Reznitskaya, 2008). Religious and spiritual engagement may encourage wisdom, particularly Eastern traditions where self-transcendence is a developmental goal achieved through practices like meditation and mindfulness (Rosch, 2008). When asked to nominate cultural-historical exemplars of wisdom, North Americans commonly nominated religious and spiritual figures (e.g., Jesus Christ, Pope John Paul II, Buddha), who everyday people strive to emulate (Weststrate, Ferrari, & Ardelt, 2016). At a macro-level, cultural belief systems and value orientations in the East and West might foster different types of wisdom. Along these lines, cross-cultural research on lay theories of wisdom has documented differential emphases on wisdom's cognitive and non-cognitive components (e.g., Le & Levenson, 2005; Takahashi & Bordia, 2000).

Empirical research in this area is scant, but there is some evidence to suggest that professional training may influence wisdom. Research conducted using the Berlin Wisdom Paradigm has found that individuals working in the human services, such as clinical psychologists, score higher on wisdom-related knowledge than control participants (Smith, Staudinger, & Baltes, 1994; Staudinger, Maciel, Smith, & Baltes, 1998; Staudinger, Smith, & Baltes, 1992). It is inferred that exposure to fundamental life situations, especially difficult ones, and training in their management, encourages general wisdom development, although we do not know if the same is true for personal wisdom (also see Wink & Helson, 1997). Research has also shown that socio-cognitive interventions can boost wisdom performance, at least temporarily (Staudinger & Baltes, 1996; Staudinger, Kessler, & Dörner, 2006).

In light of this evidence, it stands to reason that the cultivation of wisdom is possible, but we need further research into the technologies, social contexts, and opportunity structures that support it. In the current chapter, we are somewhat more interested in naturally-occurring contexts that create affordances for wisdom development, such as momentous life events. Experts and laypersons alike believe that wisdom develops from life experience, and in particular, difficult life experiences (Glück & Bluck, 2011; Jeste et al., 2010). As the Old English proverb goes, “A smooth sea has never made a skilled sailor.” Challenging life experiences are also

the types of events that are most likely to jeopardize our well-being. It is with this framing in mind that we begin our exploration of the interrelations among wisdom and well-being.

Disentangling the Paradoxical Relations Among Wisdom and Well-Being

The relationship between wisdom and well-being is complex and even paradoxical at times, with nuances that warrant further explication. Consistent with the Western philosophical tradition, the majority of wisdom researchers would probably argue that wisdom facilitates the attainment of well-being—that is, wisdom makes the good life possible. Having been described by the Stoics as the ‘art of living’ (Sellars, 2009), wisdom provides the life- and self-insight required for happiness and personal flourishing. This presumed positive association is implied by numerous studies that use aspects of well-being or personality adjustment as evidence for construct validity when evaluating self-report wisdom scales (Ardelt, 1997, 2003; Levenson et al., 2005; Webster, 2003). Scant research has considered that well-being may be equally important for the development of wisdom (cf. Wink & Staudinger, 2015), which would suggest that their relationship is reciprocal. Persuasive arguments can also be made for an alternative pattern of associations, namely that wisdom and well-being are inversely related, or more specifically, that the onerous process of developing wisdom may constrain the experience of well-being. In this section, we explore some of these arguments at a theoretical level and then highlight known empirical relations between wisdom and well-being outcomes that might shed light on this developmental conundrum.

Sadder But Wiser: Developing Wisdom Is Tough Work

While as a field we know relatively little about the development of wisdom, it has been repeatedly associated with challenging life experiences by laypersons and experts (Glück & Bluck, 2011; Jeste et al., 2010). From this perspective, wisdom-fostering experiences are likely to jeopardize well-being rather than promote it, which is supported by research using data from long-term panel studies that show major life transitions, such as widowhood, unemployment, and disability, are associated with long-lasting decreases in life satisfaction (e.g., Anusic, Yap, & Lucas, 2014).

Yet, the cultural expression ‘sadder but wiser’ suggests that while a difficult life event may leave one feeling emotionally negative, at least for some individuals, adversity also creates a context for growth in wisdom. Through reflecting upon life’s great calamities and lesser misadventures, it is possible to learn behavioral

lessons, gain life- or self-insight, and acquire a more complex and realistic view of the world, becoming better at dealing with obstacles and crises in life. Researchers have found that individuals almost universally report developing wisdom from stressful life events (Sutin, Costa, Wethington, & Eaton, 2010). In a recent study where we asked participants to provide an autobiographical memory of a wisdom-fostering event, one participant opened her story with the words, “It was the best worst day of my life.” She then went on to powerfully describe how an unprovoked assault by her husband catalyzed a long and arduous journey of self-discovery and growth. In this study, we found that self-perceived wisdom-fostering events were disproportionately negative in nature (Weststrate & Ferrari, 2015). As such, adversity may be an important facilitative experiential context for wisdom.

One reason why difficult life events foster growth is that they induce (some) people to reconsider prior taken-for-granted beliefs and assumptions about themselves and life in general. In constructivist terms, by exploring the meaning of a disrupted worldview, individuals revise or replace previous schemes with new ways of understanding (Block, 1982). In ideal circumstances, this process integrates past and new schemes into a more comprehensive understanding of life, representing growth in wisdom (Staudinger, 2001; Staudinger & Kunzmann, 2005). The idea that the disruption of schemes is central to development is consistent with models of posttraumatic growth (Tedeschi & Calhoun, 2004; Zoellner & Maercker, 2006), stress-related growth (Park, Cohen, & Murch, 2006), and growth through adversity (Joseph & Linley, 2006).

While it is entirely possible and expected that some positive life events, such as becoming a parent for the first time, will present an opportunity for growth in wisdom, it is more likely that wisdom develops from adversity. By adversity, we are not referring to relatively mundane daily hassles. If handled in a productive manner, daily hassles may result in heightened levels of practical intelligence or environmental mastery, but not wisdom (though minor irritations may trigger some skills useful to the eventual development of wisdom). Instead, we are referring to challenging life events, such as divorce, serious illness, and job loss, that motivate individuals to confront and make sense of the uncontrollable and impermanent nature of life, which may result in the realization that bad things can happen to anyone at any time and that control is often an illusion. Learning to accept and manage this uncertainty is a hallmark of wisdom (e.g., Baltes & Staudinger, 2000), although it is likely to be a difficult lesson to learn, at least initially.

The type of critical life- and self-examination that is expected to lead to wisdom in response to personal hardship is not easy work. For the majority of people, finding a silver lining or narrating a happy ending to an adverse event is functionally adaptive, consequently sustaining their happiness and preserving their current worldview. Wise people, on the other hand, see life in deep, complex, and realistic terms. Several wisdom conceptions assume that wise individuals are more aware of the dark sides of human life than others, including the limits of human agency and the unpredictability of life (e.g., Ardel, 2003; Baltes & Staudinger, 2000; Glück & Bluck, 2013; Grossmann et al., 2010). Assuming that wise individuals have a greater understanding of the complexities of human existence, they should be less prone

than others to some typical contributors to well-being, such as unrealistic optimism, control illusions, or self-esteem protecting attributions (Taylor & Brown, 1994). Without these self-protective mechanisms, the process of reflecting on a difficult life experience, including the exploration of negative emotions and the role that one may have played in the occurrence and outcome of an undesirable event, is likely to be emotionally unpleasant for the developing wise person (Weststrate & Glück, 2017).

Based on an analysis of the personality growth literature, Staudinger and Kunzmann (2005; see also Staudinger & Kessler, 2009) proposed that individuals differ in fairly predictable ways with respect to how they adapt to life situations, placing them on two distinguishable trajectories of positive personality development, which they referred to as adjustment and growth. Adjusters typically respond to life situations in a manner that aims to maintain their present worldviews and levels of well-being. Growers tend to respond to life experiences in ways that promote self-development and psychological maturity. Individuals who develop wisdom through difficult life experience are likely to be on the growth pathway, which may be emotionally challenging in the short term. Staudinger and Kunzmann (2005) concluded that, "It takes extraordinary effort and most likely pain to progress on the road to wisdom." (p. 326).

Wisdom and the Good Life: Aspects of Wisdom That Support Well-Being

Despite wisdom's unique connection to difficult life circumstances, most wisdom researchers and philosophers would argue that wisdom ultimately facilitates both adjustment and growth aspects of well-being. If wisdom truly evolves out of hardship, how is it that wise people maintain a sense of well-being? We explore three different explanations: (1) wise people are knowledgeable and skilled at managing difficult life scenarios; (2) wise people appreciate little and big pleasures in life; and (3) wise people consciously design their lives in unique ways that enhance their well-being.

Wise People Are Experts at Coping with the Quandaries of Life For many, the concept of wisdom conjures up the stereotypical image of the old wise man disseminating proverbs and maxims to advice-seekers looking to resolve a life dilemma of some kind. Consistent with this, dominant psychological wisdom theories, such as the Berlin Wisdom Paradigm, propose that, at its core, wisdom involves the skillful coordination and application of knowledge, judgment, and experience to fundamental life matters that are likely to have great import for well-being (Baltes & Staudinger, 2000; Sternberg, 1998). Wisdom-related knowledge includes insight, judgment, and factual and procedural knowledge that is needed for navigating life circumstances, and in particular, those ill-defined situations that involve a high degree of uncertainty. For many, uncertainty is a significant source of distress, yet

wise people benefit from attitudes and competencies that help them to successfully negotiate life's inevitable shades of grey. For instance, wise people have advanced emotion regulation skills (Glück & Bluck, 2013; Webster, 2003) and use strategies like mental distancing (Ardelt, 2005) to maintain a sense of equanimity in turbulent situations. In an effort to identify the mechanism through which wisdom positively influences well-being, Etezadi and Pushkar (2013) found that the positive association between wisdom and emotional well-being was explained by a dispositional tendency toward problem-focused and positive reappraisal styles of coping. Together, these ideas and findings suggest that wise people's acquired knowledge, frame of mind, and coping strategies all support the adaptive resolution of happiness-threatening life dilemmas.

Wise People Appreciate Life's Little and Big Pleasures Recent research has shown that wise people report a deep sense of gratitude, even for challenging life events (König & Glück, 2013a, b), which might leave many others angry, sad, or bitter (see also Glück, 2011). Wise people seem to have a remarkable capacity for appreciating the good things in life as well as life's hardships—an appreciation that may contribute significantly to the wise person's well-being. This heightened level of gratitude may actually *result from* the experience of hardship, which reminds an individual of the impermanence of life. Wise people count their blessings while they can, knowing that some of these blessings may be ephemeral. Along similar lines, recent research has demonstrated a link between wisdom, mindfulness, and savoring (Beaumont, 2011). The wise person might be especially inclined to bask in the warmth of a sunny day, both literally and figuratively.

Wise People Are Architects of Happy Lives: Ethnographic Insights Into the Habitats of a Rare Species Both in philosophy and in psychology, wisdom has been repeatedly linked to living a good life (e.g., Grimm, 2015; Yang, 2013). If one assumes that knowing how to live a good life also translates into how wise people actually live, and that a good life has anything to do with well-being, then wise individuals should be able to actively contribute to their own well-being. In the context of a large-scale research project in our lab, Katja Naschenweng carried out an ethnographic study of how wise people live. That project (see, e.g., Glück et al., 2013, 2016) was the first study to investigate autobiographical narratives as indicators of wisdom, so wisdom nominees as well as “ordinary people” were recruited, and a range of different wisdom measures were collected. The goal of the ethnographic study was to gain new ideas about the manifestation of wisdom in real-life contexts by observing the “rare species” of wise individuals in their natural habitat. Naschenweng selected five particularly wise participants—wisdom nominees who scored high in various wisdom measures and were also independently judged as wise by their interviewers—and arranged to visit each of them in their homes for several days and observe how they lived.

The wise participants' life stories and current situations were highly different, but their lives shared interesting commonalities. A characteristic that emerged consistently was the conscious and considerate way in which they made use of resources in their environment. All five lived in quiet places in the country with beautiful

views. They had actively selected and developed their housing situations (one had actually built his whole house with his own hands) to suit their personal needs. In all five cases, these needs included a love for direct contact with nature, but no interest in luxury or showing off. As one participant put it, “If you build your house like a king, you will be its servant. Build your house like a servant and you will be its king.” At the same time, the wise individuals had not turned away from the outside world: they were highly interested, but quite selective, in their use of media; they were engaged with art, literature, or philosophy; and they all had active social lives. They valued their partners, family, and friends highly and considered them as important sources of insight. As one participant described it, “You need people with whom you can discuss issues, not just the usual blah-blah. We talk about things that are really important to us. I grow through my friendships and relationships. Sometimes I really want to be challenged in those conversations.”

These findings are preliminary and based on a very small sample, but they open up interesting avenues for future research, suggesting that wise people are keenly aware of what is good for them: (1) resources that allow them to maintain their emotional balance, such as close relationships, being in touch with nature, and a quiet, comfortable home; and (2) resources that will challenge them to maintain an open and growth-oriented perspective, such as discussions with good friends and engagement with art, literature, and the media. Of course, while it is entirely possible that such ecological conditions serve as an incubator for the development of wisdom, we had the strong impression that these environments were a reflection or manifestation of personal wisdom, although the relationship is likely mutually constitutive.

Empirical Relations Among Wisdom and Well-Being

Now that we have theoretically argued that wisdom could be both positively and negatively related to well-being, what does the empirical research say? Table 25.1 summarizes the available correlational evidence. In sum, studies using self-report measures of wisdom have quite consistently documented positive, if low, correlations between wisdom and indicators of both growth and adjustment facets of well-being, whereas studies using open-ended performance measures have mostly found zero correlations, and the correlations they did find were with growth rather than adjustment. This highlights the likelihood that correlations may be inflated due to shared method variance between self-report wisdom and well-being scales. Our impression is that, in addition to the specific constructs they intend to measure, most self-report scales tend to tap a kind of general positive self-view, leading to relatively unspecific correlations between most positive psychological constructs. In addition to this methodological aspect, different methods for measuring wisdom assess somewhat distinct conceptualizations. The self-report scales all measure personal wisdom, while most open-ended measures assess general wisdom, which is conceptually more likely to be unrelated to the individual's personal well-being (Mickler & Staudinger, 2008).

Table 25.1 Summary of correlations between wisdom and well-being indicators

Self-report measures	Source	Adjustment indicators (subjective well-being, hedonic)	Growth indicators (psychological well-being, eudaimonic)
Three-Dimensional Wisdom Scale	Ardelt (1997)	Life satisfaction (+)	N/A
	Ardelt (2003)	Composite of life satisfaction, cheerfulness, energy level, control, relaxation, and absence of health worry (+)	Purpose in life (+)
		Depressive symptoms (-)	
		Mastery (+)	
	Ardelt (2015)	Composite of life satisfaction and cheerfulness (+)	Purpose in life (+)
		Mastery (+)	
	Ardelt and Edwards (2016)	Composite of life satisfaction, cheerfulness, and absence of depressive symptoms (+)	Purpose in life (+)
		Mastery (+)	
	Bergsma and Ardel (2012)	Happiness at present (+)	N/A
		Happiness in past 3 months (+)	
	Etezadi and Pushkar (2013)	Negative affect (-)	Meaning in life (+)
		Positive affect (+)	
		Perceived control (+)	
	Glück et al. (2013)	Self-acceptance (+)	Personal growth (+)
		Self-efficacy (+)	
Self-Assessed Wisdom Scale	Glück et al. (2013)	Self-acceptance (+)	Personal growth (+)
		Self-efficacy (+)	
	Webster (2003)	N/A	Ego integrity (+)
		Generativity (+)	
	Webster & Deng (2015)	Benefit finding (+)	Ego Integrity (+)
		Optimism (+)	Posttraumatic growth (+)
		Self-esteem (+)	
	Webster et al. (2014)	Emotional well-being (+)	Psychological well-being (+)
Adult Self-Transcendence Inventory	Glück et al. (2013)	Self-acceptance (+)	Personal growth (+)
		Self-efficacy (+)	
	Levenson et al. (2005)	Alienation (-)	N/A
Performance measures			

(continued)

Table 25.1 (continued)

Self-report measures	Source	Adjustment indicators (subjective well-being, hedonic)	Growth indicators (psychological well-being, eudaimonic)
Berlin Wisdom Paradigm (general wisdom)	Glück et al. (2013)	Self-acceptance (0)	Personal growth (0)
		Negative affect (-)	N/A
		Positive affect (-)	
	Kunzmann and Baltes (2003)	Affective involvement (+)	
		Life satisfaction (+)	Ego development (0)
		Negative affect (0)	Self-concept maturity (+)
	Mickler and Staudinger (2008)	Positive affect (0)	Composite of personal growth and purpose in life (0)
		Composite of autonomy, mastery, and self-acceptance (0)	
		Mastery (0)	
	Staudinger et al. (1997)	Positive relationships (0)	Purpose in life (0)
		Self-acceptance (0)	Autonomy (0)
		Composite of agreeableness, conscientiousness, life satisfaction, adjustment, and absence of neuroticism (+)	Composite of openness, psychological mindedness, and personal growth (+)
	Wink and Staudinger (2015)		Generativity (+)
		Life satisfaction (0)	Ego development (+)
		Negative affect (0)	Self-concept maturity (+)
Bremen Wisdom Paradigm (personal wisdom)	Mickler and Staudinger (2008)	Positive affect (0)	Composite of personal growth and purpose in life (+)
		Composite of autonomy, mastery, and self-acceptance (0)	
		Depressive brooding (-)	
Wise Reasoning About Social Conflicts	Grossmann et al. (2013)	Life satisfaction (+)	
		Negative affect (-)	
		Positive affect (0)	

Note. There are some cases where indicators of well-being overlap with both adjustment and growth. We have assigned categories based on operational definitions, but acknowledge they may be disputed in some cases

To our knowledge, only one study has observed a significant inverse relationship between wisdom and an indicator of well-being. Using the Berlin wisdom paradigm, Kunzmann and Baltes (2003) found that wisdom was negatively related to the experience of pleasant emotions (e.g., happy, cheerful, proud). Consistent with other research, however, Kunzmann and Baltes found that wisdom was negatively

correlated with the experience of negative emotions (e.g., afraid, sad, disappointed) and positively correlated with a construct they called affective involvement (e.g., interested, alert, inspired). It is noteworthy that these affective involvement adjectives are typically considered indicative of positive affect (see Watson, Clark, & Tellegen, 1988). The finding that wise people experience fewer of both positive and negative emotions is somewhat consistent with the idea that wisdom is associated with advanced emotion regulation skills and equanimity.

Only two studies have tested the possibility that well-being may influence wisdom, rather than the typical argument that wisdom contributes to well-being (e.g., Ardel & Edwards, 2016; Etezadi & Pushkar, 2013). In the first study, Wink and Staudinger (2015) argued that a certain level of adjustment is required to initiate and sustain growth-related processes that support wisdom development (for similar arguments, see Staudinger & Kunzmann, 2005; Staudinger & Kessler, 2009). As expected, they found that a significant indirect pathway through growth fully explained the relationship between adjustment and wisdom. This theorizing is consistent with the broaden-and-build theory of positive emotion, which argues that positive emotions broaden one's perspectives and promote exploratory behaviors that may be particularly important to wisdom development (Fredrickson, 2001).

In the second study, Ardel (2016) examined reciprocal relations between wisdom and well-being longitudinally. She found that self-report wisdom predicted increases in purpose in life, mastery, and subjective well-being at an assessment point 10 months after baseline measures were collected. Only initial levels of physical well-being predicted wisdom at the second time point. While illuminating and an important first step, more longitudinal research is needed from individuals at various life stages, over a longer period of time, and with multiple collection points to truly determine the mutual influences of wisdom and well-being, which we expect to be quite nuanced.

In sum, empirical studies have found either zero or positive relationships between wisdom and well-being. Does this mean that the 'sadder but wiser' hypothesis has been refuted? We suggest not—the wisdom and well-being relationship must be considered over time.

Reconciling the Viewpoints: The Co-Development of Wisdom and Well-Being Over Time

The wisdom and well-being paradox is perpetuated by a lack of longitudinal research that is required to disentangle the potential developmental sequencing of these two outcomes. The fact that some studies document positive associations between wisdom and well-being and other studies find no relationship at all could be a consequence of cross-sectional research that is insensitive to their co-development across time. Forging ahead, we propose that one's level of well-being varies as a function of the stage one is at along the developmental trajectory toward wisdom following a challenging life event.

Specifying the ‘Wisdom Is Bliss’ Developmental Pathway

Not everyone needs wisdom in order to be happy. In 1742, The English poet Thomas Gray wrote, “Where ignorance is bliss, ‘tis folly to be wise.” Despite a somewhat negative connotation, the notion that ‘ignorance is bliss’ has, ironically, become powerful folk wisdom. Many people have invoked this expression in an effort to legitimize avoiding any form of deep analysis of an uncomfortable life event. There are certainly cases in life where ignorance *is* bliss. Highly positive life events should surely be savored and not be scrutinized for deeper meaning (Lyubomirsky, Sousa, & Dickerhoof, 2006). Even for some of the more challenging life events, it is probably most adaptive to learn a quick behavioural lesson and move on. The ignorance is bliss approach may, in many cases, reflect the adjustment pathway of personality development (Staudinger & Kunzmann, 2005). Rather than analyze life experiences for deeper meaning, many people may benefit from making a relatively quick self-enhancing interpretation of an event that protects their well-being.

Other people, however, are not satisfied with this relatively superficial approach to making sense of their lives—wisdom-seekers are driven by an inherent desire to understand, to gain insights about the fundamental questions of being human, and to get a glimpse of the truth even if it may be painful. These people gain a particularly rewarding form of well-being through deepening their understanding of the human condition—the ‘wisdom is bliss’ pathway, or Staudinger and Kunzmann’s (2005) growth trajectory. These ideas are consistent with Maercker and Zoellner’s (2004; Zoellner & Maercker, 2006) Janus-face model of posttraumatic growth, which proposes (1) a constructive side involving deep, self-event analysis, and (2) a self-deceptive or illusory side involving a quick, self-protective interpretation of the traumatic event. These two forms of posttraumatic growth can co-exist, but unfold over different timelines which are related to different outcomes. While the constructive aspect correlates with long-term growth, the self-deceptive side confers benefits in the short- and long-terms that reflect adjustment.

Thus, paradoxically, in order to gain wisdom from the past, temporary decreases in well-being are expected to occur. The development of wisdom requires that a person ask tough questions about difficult life events: Why did this event happen? What role did I play in its occurrence and its outcome? How have my actions (or lack thereof) affected others? There is no doubt that asking these weighty questions will entail a degree of negative emotion, which may temporarily forestall feelings of well-being. Still, by exploring the meaning of a challenging life event, individuals actively construct wisdom from the past. For a time, these individuals are likely to feel sadder but wiser, but eventually this newly constructed wisdom should facilitate well-being, and well-being should, in turn, facilitate higher levels of wisdom.

The co-development of wisdom and well-being is expected to be a highly individualized and contextualized process, determined by a number of personal and social factors. The corpus of posttraumatic growth research is an important source of information on possible processes that support wisdom, given that wisdom is itself a significant example of such growth (Tedeschi & Calhoun, 2004). For exam-

ple, in a two-year longitudinal study on posttraumatic growth among women diagnosed with breast cancer, researchers found evidence for six unique developmental trajectories (Danahauer et al., 2015). Three trajectories reflected stability in a self-report measure of posttraumatic growth over time, two indicated modest increases, and one demonstrated a dramatic curvilinear increase, plateauing around 16 months. Interestingly, the group who exhibited the greatest levels of growth over time reported the second-highest level of depressive symptoms at diagnosis. The initial depressive symptomology may reflect early attempts to self-reflectively process the experience of being diagnosed with cancer, which would have been temporarily costly in terms of well-being, but bolstered growth over the longer term.

Similarly, Taku, Cann, Tedeschi, and Calhoun (2009) found that posttraumatic growth was predicted not only by recent deliberate rumination about the traumatic event, but also by intrusive rumination shortly after the event (reported retrospectively), suggesting that some immediate self-conscious thought might set the foundation for growth in the long-term. In an integrative model of the temporal unfolding of posttraumatic growth after bereavement, Calhoun, Tedeschi, Cann, and Hanks (2010) suggested that the amount of distress and challenge to one's personal beliefs that is caused by a life experience is positively associated with intrusive rumination shortly after the event, which, in turn, motivates the individual to engage in constructive rumination later, involving a reassessment of their worldviews in order to accommodate the experience. Thus, a certain level of emotional distress may be necessary to ignite self-reflective processes that foster growth in wisdom. It is important, however, to emphasize that too much distress might cause long-term embitterment and despair rather than growth. Finding the upper and lower limits of what could be considered a productive level of emotional distress is a direction for future research.

Figure 25.1 visually depicts three developmental pathways following adversity, two positive and one negative. For the sake of illustration, we assume that all pathways start with the same initial level of well-being. Individuals on the adjustment pathway—what we might call the ‘ignorance is bliss’ pathway—are expected to experience a short-term decrease in well-being, but then to respond quickly to the situation in a self-protective manner that buffers against any further loss, which may increase their baseline level of well-being slightly, assuming they learn a quick lesson and interpret the experience in some shallow, but self-affirming manner. The growth pathway—or ‘wisdom is bliss’ pathway—is associated with a more significant and somewhat prolonged decrease in well-being following the difficult event, which signifies the constructive process of exploring the event for deeper meaning. The life- and self-insight gained from this exploratory process is expected to increase levels of wisdom, which in turn influence feelings of well-being over the long-term.

As they grow wiser, individuals on the growth pathway benefit more and more from the ways in which wisdom is expected to facilitate well-being (e.g., savoring, gratitude, adaptive emotion regulation, coping skills). This sustained upward trajectory persists despite, or perhaps even as a result of, the individual's new appreciation for the fundamental uncontrollability and uncertainty inherent in many aspects

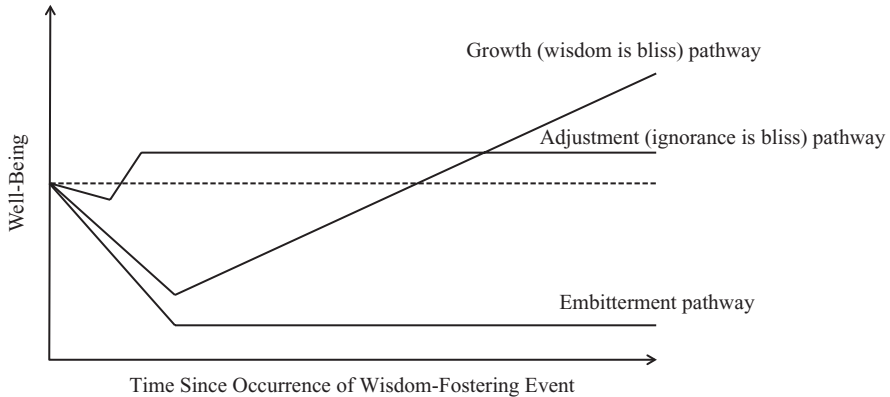


Fig. 25.1 Figure depicting three possible developmental trajectories following challenging life experience

of human life. Finally, we have included an example of a negative pathway, which in this case represents an embitterment response to difficult life experience. We have argued elsewhere that embitterment could be considered a developmental opposite to wisdom (Glück, 2011), meaning that similar types of life experiences could lead to wisdom or embitterment (or many other outcomes for that matter), but these pathways differ markedly in the situational and personal factors that determine them.

Pathway Determinants of the Road Less Travelled

Why are so few people able to grow from life experience? Research on posttraumatic growth has clearly noted the role of personal and social resources in determining growth (Danhauser et al., 2015; Tedeschi & Calhoun, 2004). The goal of much of the research we have recently conducted has been to elucidate those factors that support the development of wisdom. Glück and Bluck (2013) have proposed the *MORE Life Experience Model*, which outlines five personal resources that foster wisdom in response to life experiences. In short, the model makes the following assumptions: (1) Life challenges are important catalysts for the development of wisdom, and (2) psychological resources—in particular, a sense of mastery, openness, reflectivity, emotion regulation, and empathy—influence (a) how people appraise life challenges, (b) how they deal with them, and (c) how they integrate past life challenges in their life story. Thus, the resources that individuals bring with them as they encounter a difficult life event determine to what extent they will be able to grow from the event.

Mastery is a balance between full awareness of the unpredictability and uncontrollability of human life and the experience-based awareness of one's own ability

to deal with whatever may happen. Openness means being interested in new people, perspectives, experiences, and worldviews. Emotion regulation is the acquired ability to accurately perceive one's own emotions and regulate them as a situation requires. Empathy is a caring concern for the needs and feelings of others. The fifth resource, reflectivity, may be particularly interesting for the relationship of wisdom and well-being because it describes the process by which individuals gain wisdom from hardship. We have recently taken a closer look at how different forms of reflection relate to wisdom and well-being.

Self-Reflective Processing Modes Staudinger (2001) pointed to the importance of self-reflection for wisdom development, arguing that wise people do not simply reminisce on the past in reconstructive ways, but engage in analytical processes of explanation and evaluation, which deepen life- and self-insight. Consistent with this, autobiographical memory research has found that individual differences in how people narrate important life events are associated with diverse psychological outcomes (Adler, Lodi-Smith, Philippe, & Houle, 2016; McAdams & McLean, 2013).

Research by Laura King and colleagues on the relationship between self-reflection and adjustment and growth from life challenges is especially illustrative (King & Raspin, 2004; King, Scollon, Ramsey, & Williams, 2000; King & Smith, 2004). For example, King et al. (2000) asked parents to write narratives about finding out that their child had Down Syndrome. These narratives were then coded for self-reflective processes, which were reduced to two dimensions: closure and accommodative change. Individuals who scored high on closure emphasized event resolution and positive affect (i.e., happy endings). Accommodation, on the other hand, concerned active exploration of an event's meaning and reference to paradigmatic shifts in one's worldview as a result of the event. Narrating a happy ending predicted adjustment (e.g., life satisfaction, self-esteem), whereas accommodative change predicted ego development both at the time of the study and two years later. This study suggests that growth-oriented outcomes like ego development, and in our case wisdom, might require deep analysis of the event in relation to the self and life in general (also see King, 2001).

Based on these and similar studies (Lodi-Smith, Geise, Roberts, & Robins, 2009; Pals, 2006), we recently examined the relationship between modes of self-reflective processing and wisdom within the context of difficult life event memories (Weststrate & Glück, 2017). Across three methods for assessing wisdom, we found that wisdom was positively associated with exploratory modes of processing, which involved meaning-making and personal growth. Exploratory processing was uncorrelated with well-being, whereas redemptive processing, including emotional processing and event resolution, was positively related to adjustment. In sum, several studies suggest that the road to wisdom, which involves in-depth self-reflection and meaning-making, may be a bumpy and indirect route to a fulfilled and joyful life.

Future Directions for Wisdom and Well-Being Research

We have argued that wisdom and well-being develop in a dynamic interaction over time. To test these ideas, future research must include short- and long-term longitudinal studies. Future research should also examine what exactly makes wise people happy, and how sources of happiness may differ from the normative population. Finally, we are especially excited by the ethnographic insights into how wise people design their lives in happiness-promoting ways and hope this line of inquiry continues.

Conclusion

In a world wrought with personal and social challenges that require, and possibly promote, wisdom, reflecting on the development of wisdom and its relationship to well-being is a worthwhile endeavor. Despite its importance, wisdom has been a relatively understudied phenomenon. We hope this chapter has stimulated interest in wisdom research and shown that, for some people, wisdom may be an important contributor to well-being. Although the path may be long and arduous, the promises of wisdom are plentiful and worth cultivating.

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