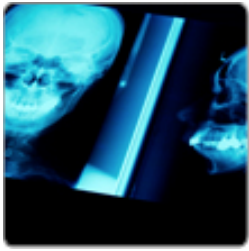


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Self-Control

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Introduction

One of the defining qualities that distinguish human beings from other species is self-control: the capacity to alter one's thoughts, feelings, and behaviors to align them with one's goals. Given the centrality of self-control to the human condition, it should come as no surprise that psychologists have studied this process from a variety of perspectives. This article highlights these different viewpoints to provide the reader with the raw materials needed to build an integrative understanding of this construct. Researchers often use different labels (e.g., willpower, self-discipline, inhibitory control, self-regulation, affect regulation, behavior regulation, desire regulation, effortful control, coping, thought control, etc.) to refer to ostensibly similar processes. Although substantive differences distinguish some of these constructs, they are all centrally relevant to the concept of self-control. Therefore, this outline includes readings that pertain to many of these constructs. The outline begins with a General Overviews section, which lists Popular Science Books and Edited Volumes, Trade Books, and Monographs that provide overviews of the self-control literature. It then describes Conceptual Frameworks that either directly illuminate the self-control concept or review processes that underlie different aspects of self-control. These conceptual frameworks are cast at multiple levels of analysis, highlighting the range of perspectives that are relevant to understanding self-control. Next, the outline provides articles that review the psychology of the Self—a concept that is often overlooked in the self-control literature. The article then transitions to describing readings on several key Self-Control Processes. It provides citations for articles on the Origins and Developmental Trajectory of Self-Control and highlights the short- and long-term Implications of self-control. It concludes by highlighting three Current Directions—Self-Control Interventions, the Strength Model of Self-Control, and Wisdom, Emotional Intelligence, and the Importance of Flexibility.

General Overviews

There are two avenues available to students interested in obtaining a general overview of self-control research. First, there are many Popular Science Books for general audiences written by leading researchers. These books often describe influential programs of research on topics within the self-control literature. Second, there are a number of Edited Volumes, Trade Books, and Monographs that examine the self-control construct in depth. These volumes are also written by leading scholars for more-specialized audiences than the popular science books.

Popular Science Books

These books provide overviews of specific programs of research and concepts that are prevalent in the self-control literature. In addition to accurately reporting the science, they also frequently describe the stories that surround the scientific pursuits that the researchers engaged in, making for enjoyable reading. Both Baumeister and Tierney 2011 and Mischel 2014 review programs of research that have profoundly influenced our understanding of self-control. Seligman 2006, Sapolsky 2004, and Frankl 1985 discuss self-control from a health and well-being perspective. Finally, three books provide more-general perspectives on how processes such as habit (Duhigg 2012), mindsets (Dweck 2006), and grit (Tough 2012) are related to self-control.

Baumeister, R. F., and J. Tierney. 2011. *Willpower: Rediscovering the greatest human strength*. New York: Penguin.

This book provides an overview of the consequences associated with high and low self-control, why people fail at it, and how to improve it. It pulls from the strength model of self-control, which conceptualizes self-control as a muscle that is capable of being depleted and strengthened.

Duhigg, C. 2012. *The power of habit: Why we do what we do in life and business*. New York: Random House.

This book provides an introduction to the psychology of habits. It reviews how habits are formed and how they can be changed via self-control.

Dweck, C. S. 2006. *Mindset: The new psychology of success*. Concentrated Knowledge for the Busy Executive. New York: Random House.

This book describes how mindsets influence motivation and behavior. It describes two types of mindsets—a fixed mindset (the belief that things cannot be changed) and a growth mindset (the belief that things can be changed)—and details how they influence one's thoughts, feelings, and behavior.

Frankl, V. E. 1985. *Man's search for meaning*. New York: Simon & Schuster.

In this classic, first published in 1946 (London: Hodder & Stoughton), Frankl uses his experience as a concentration camp prisoner during the Holocaust as a basis for deriving a theory about psychological resilience that focuses on meaning making. He argues that negative experiences are unavoidable, but people's ability to make meaning out of them determines how they respond.

Mischel, W. 2014. *The marshmallow test: Mastering self-control*. New York: Little, Brown.

This book describes Mischel's seminal research program on delay of gratification. It describes the processes that underlie delay of gratification, as well as implications that the ability to delay gratification and self-control more generally have for health, well-being, relationships, human nature, and public policy.

Sapolsky, R. M. 2004. *Why zebras don't get ulcers*. 3d ed. New York: Henry Holt.

This book explains how stress can undermine physical and psychological well-being. It also describes strategies people can use to enhance their ability to control stress and to improve their well-being and health.

Seligman, M. E. P. 2006. *Learned optimism: How to change your mind and your life*. New York: Vintage.

This book is borne out of the cognitive-therapy tradition. It delineates the cognitive signature of pessimistic and optimistic thinking. It discusses the benefits of an optimistic mindset for various life domains and offers exercises to measure and build optimism.

Tough, P. 2012. *How children succeed: Grit, curiosity, and the hidden power of character*. Boston: Houghton Mifflin Harcourt.

This book argues that "grit" (i.e., one's perseverance and passion for pursuing long-term goals) is central to children's ability to succeed in work and life. It integrates findings from psychology and neuroscience to bolster its thesis.

Edited Volumes, Trade Books, and Monographs

These edited volumes, trade books, and monographs provide a more in-depth survey of self-control than the cited Popular Science Books. Four handbooks (Forgas, et al. 2009; Gross 2014; Hassin, et al. 2010; Vohs and Baumeister 2010) provide a broad overview of the myriad processes involved in self-control. Bandura 1997 and Carver and Scheier 1998 review two influential theories in the self-control literature—self-efficacy and cybernetic theory of self-control, respectively. Finally, Rachlin 2000 provides a behaviorist view of self-control that forges important bridges to economics.

Bandura, A. 1997. *Self-efficacy: The exercise of control*. New York: W. H. Freeman.

This book provides an overview of “self-efficacy” (i.e., the belief of a person in his or her own competence). The first part describes the conceptual origins of self-efficacy. The second part situates self-efficacy in six areas of human functioning (i.e., cognitive, health, clinical, athletic, organizational, and international).

Carver, C. S., and M. F. Scheier. 1998. *On the self-regulation of behavior*. New York: Cambridge Univ. Press.

This book reviews one of the most influential frameworks for conceptualizing self-control: the cybernetic theory of self-control. It discusses the principles of feedback control and the relation of this process to goals in producing behavior. It is required reading for any student of self-control.

Forgas, J. P., R. F. Baumeister, and D. M. Tice, eds. 2009. *Psychology of self-regulation: Cognitive, affective, and motivational processes*. Sydney Symposium of Social Psychology 11. New York: Psychology Press.

This handbook divides into three sections: motivational processes in self-regulation, self-regulation and goal-oriented behavior, and affective and cognitive processes in self-regulation.

Gross, J. J., ed. 2014. *Handbook of emotion regulation*. 2d ed. New York: Guilford.

This handbook provides an up-to-date overview of the literature on emotion regulation. It reviews the conceptual foundations of emotion regulation, including biological, cognitive, and developmental influences. It also describes how social context and personality affect emotion regulation. Lastly, it reviews the relationship among emotion regulation, psychopathology, and health.

Hassin, R. R., K. N. Ochsner, and Y. Trope, eds. 2010. *Self control in society, mind, and brain*. Oxford Series in Social Cognition and Social Neuroscience. New York: Oxford Univ. Press.

This handbook consists of chapters that discuss how self-control works at multiple levels of analysis, including social, cognitive, and neuroscience. It divides into three sections: the neural processes that underlie self-control, the social-cognitive processes involved in self-control, and self-control in groups and society.

Rachlin, H. 2000. *The science of self-control*. Cambridge, MA: Harvard Univ. Press.

The book examines self-control through the lens of behavioral psychology and economics. It discusses impulsiveness, habit, addiction, craving, and the processes involved in overcoming or succumbing to temptation.

Vohs, K. D., and R. F. Baumeister, eds. 2010. *Handbook of self-regulation: Research, theory, and applications*. 2d ed. New York: Guilford.

This handbook provides an overview of research on self-regulation. It includes chapters from self-regulation experts working in a variety of different areas of psychology, including social-personality, clinical, developmental, cognitive neuroscience, and biopsychology.

Conceptual Frameworks

What is self-control? How does it work? Because self-control is relevant to multiple subdisciplines of psychology, researchers use conceptual frameworks and methodologies that span multiple levels of analysis to answer these questions. The following section lists classic and more-recent papers that either have been or have the potential to be particularly influential in shaping the way people think about self-control (also see Bandura 1997 and Carver and Scheier 1998, cited in Edited Volumes, Trade Books, and Monographs). This section organizes these articles into those that can be classified as falling primarily under the Social-Personality-Developmental Level of Analysis and the Cognitive and Biological Level of Analysis.

Social-Personality-Developmental Level of Analysis

This section highlights papers that address issues relevant to self-control through the lenses of social psychology, social cognition, personality psychology, and developmental psychology. Although some of the articles listed below focus exclusively on one of these levels of analysis, many of them integrate across multiple levels. This section begins by providing citations to four broad theories of self-control. Baumeister, et al. 2007 focuses on self-control as a limited resource; Fujita 2011 argues for a broader conceptualization of self-control that entertains the notion that it can be exerted effortlessly; Metcalfe and Mischel 1999 and Hofmann, et al. 2009 propose dual process frameworks for understanding self-control. Turning to models that focus specifically on emotion regulation, Gross 1998 proposes a process model of emotion regulation, while Charles 2010 uses an emotion regulation framework to understand why people become more resilient as they age. Finally, Higgins 1997 describes the origins and consequences of two key self-regulatory orientations that govern the way people think, feel, and behave, while Myrseth and Fishbach 2009 highlights the importance of conflict monitoring in the authors' two-stage model of self-control.

Baumeister, R. F., K. D. Vohs, and D. M. Tice. 2007. The strength model of self-control. *Current Directions in Psychological Science* 16.6: 351–355.

This article provides an overview of the strength model of self-control. It identifies activities that require self-control, suggests that self-control is limited and can be depleted with use, and argues that glucose is the biological basis for this limited resource.

Charles, S. T. 2010. Strength and vulnerability integration: A model of emotional well-being across adulthood. *Psychological Bulletin* 136.6: 1068–1091.

This article explains why negative emotional experiences decline across adulthood, whereas positive emotional experiences increase over the same time span. It suggests that people become more adept at emotion regulation as they age.

Fujita, K. 2011. On conceptualizing self-control as more than the effortful inhibition of impulses. *Personality and Social Psychology Review* 15.4: 352–366.

This article argues that conceptualizing self-control as the effortful inhibition of impulses is limiting and problematic. It

conceptualizes self-control as a process that allows people to advance abstract, long-term goals over short-term, concrete ones, and suggests that this process can be effortless.

Gross, J. J. 1998. The emerging field of emotion regulation: An integrative review. *Review of General Psychology* 2.3: 271–299.

This paper provides an overview of the concept of emotion regulation. It advances a process model of emotion regulation that consists of five stages: situation selection, situation modification, attentional deployment, cognitive change, and response modulation.

Higgins, E. T. 1997. Beyond pleasure and pain. *American Psychologist* 52.12: 1280–1300.

This article provides a framework for understanding how the way people approach pleasure and avoid pain influences self-regulation. It distinguishes between a promotion focus (focusing on accomplishments and aspirations) and a prevention focus orientation (focusing on safety and responsibilities) and describes the cognitive and emotional consequence of these orientations.

Hofmann, W., M. Friese, and F. Strack. 2009. Impulse and self-control from a dual-systems perspective. *Perspectives on Psychological Science* 4.2: 162–176.

This article presents a model of self-control that emphasizes the role of desire. It suggests that two systems support self-control: an impulsive system and a reflective system. It posits that the interactions between these systems along with situational and dispositional factors predict self-control outcomes and behavior.

Metcalfe, J., and W. Mischel. 1999. A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review* 106.1: 3–19.

This paper suggests that self-control is the function of the interplay of two constantly interacting systems: an impulsive, “hot” system and a reflective “cool” system. It pulls heavily from research on delay of gratification to support its claims and speculates about the neural processes underlying hot/cool-system functioning.

Myrseth, K. O. R., and A. Fishbach. 2009. Self-control: A function of knowing when and how to exercise restraint. *Current Directions in Psychological Science* 18.4: 247–252.

This article proposes a model of self-control that consists of a conflict identification stage and conflict resolution stage. It reviews variables that affect how people respond during both of these self-control stages.

Cognitive and Biological Level of Analysis

The period since the end of the 20th century has seen an explosion of research attempting to link mind and body in the context of self-control. This work is rapidly illuminating the biological substrates of self-control by allowing us to understand for the first time the “hardware” that makes self-control possible. The interdisciplinary nature of this work is also beginning to create, and in some cases has already forged, strong bridges between different areas of research (e.g., social-personality psychology, cognitive psychology, neuroscience) that have historically operated in isolation. In some cases, these interdisciplinary efforts have created new areas of research such as affective neuroscience, social neuroscience, and cognitive neuroscience. Therefore, this section highlights a number of articles that have explored the biological bases of self-control. Botvinick, et al. 2001; Heatherton 2011; and

Ochsner, et al. 2012 discuss the neural bases of self-control processes, including executive function. Diamond 2013 provides an up-to-date review of executive function, and Hofmann, et al. 2012 links self-regulation with executive function. Gunnar and Quevedo 2007 reviews self-control and endocrine processes, Brosschot, et al. 2005 focuses on autonomic profiles, and Zhang and Meaney 2010 discusses epigenetic processes. These works highlight the breadth and richness of work being conducted on this topic.

Botvinick, M. M., T. S. Braver, D. M. Barch, C. S. Carter, and J. D. Cohen. 2001. Conflict monitoring and cognitive control. *Psychological Review* 108.3: 624–652.

This article uses neuroscientific findings to explain how people monitor for conflicts that cue the need for cognitive control—a process that is intimately linked to the concept of self-control. It also describes the relationship between conflict monitoring and cognitive control.

Brosschot, J. F., S. Pieper, and J. F. Thayer. 2005. Expanding stress theory: Prolonged activation and perseverative cognition. *Psychoneuroendocrinology* 30.10: 1043–1049.

The authors describe how people's cognitive representations of stressors affect the duration of potentially harmful physiological responses such as delayed reactivity of the autonomic nervous system. It focuses on the role that perseverating over stressors plays in enhancing vulnerability to disease.

Diamond, A. 2013. Executive functions. *Annual Review of Psychology* 64:135–168.

This article reviews the literature on executive functions and breaks down core processes into inhibition and interference control, working memory, and cognitive flexibility. It also discusses developmental trajectories, training, and the importance of these processes.

Gunnar, M., and K. Quevedo. 2007. The neurobiology of stress and development. *Annual Review of Psychology* 58:145–173.

The ability to effectively regulate stress responses is a key self-control challenge. The authors review the literature on the psychobiology of stress responses and the role that social regulatory processes and individual differences play in stress response outcomes during critical developmental periods.

Heatherton, T. F. 2011. Neuroscience of self and self-regulation. *Annual Review of Psychology* 62:363–390.

This article discusses the neural bases of self-control and makes a case for the limited-resource view of self-regulation.

Hofmann, W., B. J. Schmeichel, and A. D. Baddeley. 2012. Executive functions and self-regulation. *Trends in Cognitive Sciences* 16.3: 174–180.

The authors argue that executive function is intimately linked with self-regulation, and they emphasize the need for more communication across disciplines. They also argue that basic components of executive function promote successful self-regulation.

Ochsner, K. N., J. A. Silvers, and J. T. Buhle. 2012. Functional imaging studies of emotion regulation: A synthetic review

and evolving model of the cognitive control of emotion. In *Special issue: The year in cognitive neuroscience. Annals of the New York Academy of Sciences* 1251.1: E1–E24.

This article reviews findings on the neural systems involved in emotion generation and emotion regulation. It identifies brain regions that support a widely investigated emotion regulation strategy called reappraisal. It also discusses the neural correlates associated with other strategies, such as situation selection and modification, attentional deployment, and response modulation.

Zhang, T.-Y., and M. J. Meaney. 2010. Epigenetics and the environmental regulation of the genome and its function. *Annual Review of Psychology* 61:439–466.

Researchers have long acknowledged the role that genes play in self-control. This article describes how environments influence gene expression. It demonstrates that genes are not destined to influence an organism's behavior—an observation that has enormous relevance for our understanding the potential malleability of self-control.

The Self

Central to the concept of “self-control” is the notion that there is a “self” that is either in control or being controlled. But what is the self? How does one's concept of the self develop over time and is it malleable? And importantly, what role does the self play in “self-control”? This section outlines a number of resources that touch on these questions. It is important to recognize from the outset that although the concept of “the self” is intimately linked with self-control, it is also related to a host of additional phenomena, which are outside the scope of this review. Therefore, this section provides a comprehensive bibliographic guide on the psychology of the self, (Guenther and Alicke 2013), as well as a reference to a handbook on the self (Leary and Tangney 2012), which brings together leading researchers to discuss various aspects of the self, including those related specifically to self-control. This section then lists a number of papers that offer different views on how to conceptualize the self. James 1890 discusses what constitutes the self, while Markus and Kitayama 1991 focuses on the self from a cultural standpoint. Markus and Nurius 1986 discusses possible selves, and McAdams 1993 talks about the self from a narrative standpoint. Moreover, Sherman and Cohen 2006 discusses self-maintenance processes, and Wilson 2009 reviews self-knowledge—two processes that have important implications for self-control.

Guenther, C. L., and M. D. Alicke. 2013. Psychology of the self. In *Oxford Bibliographies in Psychology*. New York: Oxford Univ. Press.

This resource provides a comprehensive list of relevant books and articles on the psychology of the self.

James, W. 1890. The consciousness of self. In *The principles of psychology*. Vol. 1. By W. James, 291–401. New York: Henry Holt.

In this classic chapter, James discusses what constitutes the self, the feelings that arise from the self, and the actions that are prompted by the self. This is required reading for any reader who is interested in the self. Republished as recently as 2010 (Memphis, TN: General Books).

Leary, M. R., and J. P. Tangney, eds. 2012. *Handbook of self and identity*. 2d ed. New York: Guilford.

This handbook provides an up-to-date review of research on the self. It is divided into four parts: (1) awareness, cognition, and regulation; (2) evaluation, motivation, and emotion; (3) interpersonal behavior and culture; and (4) physiological, phylogenetic, and developmental perspectives.

Markus, H. R., and S. Kitayama. 1991. Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review* 98.2: 224–253.

This article suggests that it is possible to construe the self in independent (emphasis on unique expression of personal characteristics) or interdependent (emphasis on harmonious interactions with others) terms, and that people from different cultures differ systematically in the self-construals they adopt, which influences their thoughts, feelings, and behavior.

Markus, H., and P. Nurius. 1986. Possible selves. *American Psychologist* 41.9: 954–969.

This article introduces the concept of “possible selves”— ideas people harbor about what they may become, would like to become, or are afraid of becoming.

McAdams, D. P. 1993. *The stories we live by: Personal myths and the making of the self*. New York: Guilford.

The author argues that the self is the product of stories that people construct about themselves. He discusses how people can alter their personal narratives and the consequences of doing so.

Sherman, D. K., and G. L. Cohen. 2006. The psychology of self-defense: Self-affirmation theory. In *Advances in experimental social psychology*. Vol. 38. Edited by M. P. Zanna, 183–242. New York: Academic Press.

This article summarizes research on self-affirmation theory, which posits that people are motivated to maintain self-integrity. It describes the processes involved in self-integrity maintenance, and its implications for interpersonal relationships, coping, and health.

Wilson, T. D. 2009. Know thyself. *Perspectives on Psychological Science* 4.4: 384–389.

This paper describes recent theoretical developments in self-knowledge research. It then discusses the negative outcomes associated with having low self-knowledge and identifies ways of improving self-knowledge.

Self-Control Processes

Psychologists have identified a number of processes that are involved in self-control. This section highlights four key processes: (1) Motivation, Goals, and Planning, (2) Attention Allocation, (3) Cognitive Change, and (4) Suppression. It is important to recognize that the line separating many of these categories is murky. For example, some attention allocation strategies involve certain degrees of cognitive change, and cognitive change is certainly involved in motivation, goals, and planning. This conceptual overlap notwithstanding, this section organizes articles so that they fit under the category headings that best capture their dominant features. Until a comprehensive framework emerges for integrating these processes, this format provides the most parsimonious way of presenting this information.

Motivation, Goals, and Planning

People can have myriad self-control tools at their disposal, but if they are not properly motivated to use those tools it is unlikely that they will exert self-control. This section reviews a number of articles that bear on this issue, focusing on the role that motivation, goals, and planning play in self-control. Two of the articles provide broad frameworks for thinking about how concepts such as

motivation, goals, and planning influence self-control. Dweck and Leggett 1988 describes how people's implicit theories orient them toward particular goals and, consequently, particular patterns of thought, feelings, and behavior. Aspinwall and Taylor 1997 discusses the anticipatory processes that help people manage problematic situations before they arise. This section then presents articles that discuss the role that four sets of processes play in helping maximize the likelihood that people achieve their self-regulatory goals—Ariely and Wertenbroch 2002 discusses deadlines, Gollwitzer and Sheeran 2006 reviews work on implementation intentions, Trope and Fishbach 2000 describes the role that counteractive self-control processes play in self-regulation, and Duckworth, et al. 2007 introduces grit. Finally, Ordóñez, et al. 2009 reviews the potential harmful effects of goal setting.

Ariely, D., and K. Wertenbroch. 2002. Procrastination, deadlines, and performance: Self-control by precommitment. *Psychological Science* 13.3: 219–224.

This article explains how people can exert self-control by precommitting to a goal—setting costly deadlines for themselves. It also demonstrates that people's self-imposed deadlines are less effective than externally imposed deadlines in helping them achieve their goals.

Aspinwall, L. G., and S. E. Taylor. 1997. A stitch in time: Self-regulation and proactive coping. *Psychological Bulletin* 121.3: 417–436.

The authors provide a framework for understanding the anticipatory processes that help people manage problematic situations before they arise, discussing the role that individual differences, skills, and resources play in proactive, anticipatory coping.

Duckworth, A. L., C. Peterson, M. D. Matthews, and D. R. Kelly. 2007. Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology* 92.6: 1087–1101.

This article examines the importance of grit—a person's perseverance and enthusiasm for accomplishing long-term goals—for predicting scholastic success. Shows that grit predicts success in a variety of educational domains over and beyond IQ.

Dweck, C. S., and E. L. Leggett. 1988. A social-cognitive approach to motivation and personality. *Psychological Review* 95.2: 256–273.

The authors argue that people's implicit theories about whether things are changeable (an incremental view) or unchangeable (an entity view) bias them toward pursuing specific goals that directly influence their cognition, motivation, and behavior in self-regulatory contexts.

Gollwitzer, P. M., and P. Sheeran. 2006. Implementation intentions and goal achievement: A meta-analysis of effects and processes. In *Advances in experimental social psychology*. Vol. 38. Edited by M. P. Zanna, 69–119. San Diego, CA: Elsevier Academic.

This meta-analysis highlights the importance of creating specific plans called “implementation intentions” for facilitating goal pursuit. It demonstrates that implementation intentions help people initiate goal striving, protect them against distraction and disengagement due to failure, and conserve resources for future goal striving.

Ordóñez, L. D., M. E. Schweitzer, A. D. Galinsky, and M. H. Bazerman. 2009. Goals gone wild: The systematic side effects of overprescribing goal setting. *Academy of Management Perspectives* 23.1: 6–16.

People often think that setting goals facilitates self-control. The authors suggest that goals can have a host of detrimental side effects, such as narrowing people's focus, increasing unethical behavior, and reducing intrinsic motivation. They then identify the conditions that predict when goal setting is harmful.

Trope, Y., and A. Fishbach. 2000. Counteractive self-control in overcoming temptation. *Journal of Personality and Social Psychology* 79.4: 493–506.

The article demonstrates how activating processes that are designed to counteract the short-term costs of exercising self-control (e.g., forgoing the immediate delight of consuming a cookie to follow through with one's long-term goal to lose weight) facilitates self-regulatory efforts.

Attention Allocation

This section reviews papers that capture attentional processes involved in self-control. Attention allocation refers to strategies that involve shifting one's attention to alter the cognitive, emotional, or behavioral impact that an internal stimulus (e.g., a thought or feeling) or external stimulus (e.g., a situation or object) has on a person. People can divert their attention in various ways. For example, Mischel and Ebbesen 1970 shows that people can divert their attention away from a stimulus altogether, a process that is colloquially referred to as distraction, to reduce its impact. Peake, et al. 2002 shows that people can also selectively attend to certain features of a stimulus to change the way they think, feel, or behave in response to it. Kaplan and Berman 2010 demonstrates that attention can be restored after it is depleted. Amir, et al. 2009; Tang and Posner 2009; and Wadlinger and Isaacowitz 2011 explore whether people can be taught how to strategically harness their attention.

Amir, N., C. Beard, M. Burns, and J. Bomyea. 2009. Attention modification program in individuals with generalized anxiety disorder. *Journal of Abnormal Psychology* 118.1: 28–33.

This experiment demonstrates that an attention modification program designed to reduce attentional bias to threatening stimuli decreases anxiety among people who suffer from generalized anxiety disorder.

Kaplan, S., and M. G. Berman. 2010. Directed attention as a common resource for executive functioning and self-regulation. *Perspectives on Psychological Science* 5.1: 43–57.

This article provides evidence indicating that executive functioning and self-regulation depend on a common attentional resource. A research program on environmental psychology provides insight into this relationship. It then discusses interventions aimed to restore this finite attentional resource.

Mischel, W., and E. B. Ebbesen. 1970. Attention in delay of gratification. *Journal of Personality and Social Psychology* 16.2: 329–337.

The authors manipulated the focus of children's attention in a delay-of-gratification paradigm. They found that delay duration increased when the rewarding stimulus was obscured from attention compared to conditions in which either the immediately available or delayed reward was available to attention.

Peake, P. K., M. Hebl, and W. Mischel. 2002. Strategic attention deployment for delay of gratification in working and waiting situations. *Developmental Psychology* 38.2: 313–326.

This article shows that flexibly attending to a reward while working on a non-engaging task promotes motivation to complete the task and facilitates delay of gratification.

Tang, Y.-Y., and M. I. Posner. 2009. Attention training and attention state training. *Trends in Cognitive Sciences* 13.5: 222–227.

This paper divides attention-training programs into those derived from Asian and Western traditions, and it explores the implications that Eastern versus Western regimens have on attention and self-regulation.

Wadlinger, H. A., and D. M. Isaacowitz. 2011. Fixing our focus: Training attention to regulate emotion. *Personality and Social Psychology Review* 15.1: 75–102.

The authors provide an overview of the role that attention plays in emotion regulation. They provide a model for training attention, categorize existing attention-training programs, and discuss implications for emotion regulation.

Cognitive Change

Several concepts in the self-control literature describe the basic process of changing the way one thinks about a stimulus to change the way one feels and behaves. For example, reconstrual, reappraisal, rethinking, working through, meaning making, emotional processing, cognitive processing, and schema change all converge on this basic idea. This section reviews the range of contexts in which this basic process has been shown to influence self-control. It presents a number of papers that demonstrate how people's construals of an emotionally arousing stimulus can influence how they think, feel, and behave. Fujita, et al. 2006 shows how high-level construals affect self-control. Mischel and Baker 1975 indicates that focusing on "cool" features of an appetizing object enhances self-control, and Taylor and Brown 1988 argues for the importance of positive illusions. Moreover, Gross 1998 describes the concepts of reappraisal and suppression and shows that they lead to different consequences for emotional experience, expression, and physiology. Kross and Ayduk 2011 reviews the cognitive and emotional consequences of self-distancing, while Wager, et al. 2004 demonstrates how changing people's belief about an inactive treatment reduces regions of the brain associated with pain. Finally, Wilson and Gilbert 2008 provides a framework that illuminates how understanding an emotional event leads to emotional adaptation (also see Lyubomirsky, et al. 2006, Gross 1998, and Metcalfe and Mischel 1999, the latter two cited under Social-Personality-Developmental Level of Analysis).

Fujita, K., Y. Trope, N. Liberman, and M. Levin-Sagi. 2006. Construal levels and self-control. *Journal of Personality and Social Psychology* 90.3: 351–367.

The authors demonstrate that inducing people to construe stimuli in abstract, high-level terms leads to enhanced self-control compared to inducing people to construe stimuli in concrete, low-level terms.

Gross, J. J. 1998. Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology* 74.1: 224–237.

This article demonstrates differences in emotional outcomes for reappraisal and suppression when viewing a disgusting film. Compared to a control condition, reappraisal and suppression reduced emotion-expressive behavior. However, reappraisal decreased disgust experience and sympathetic activation, whereas suppression increased sympathetic activation.

Kross, E., and O. Ayduk. 2011. Making meaning out of negative experiences by self-distancing. *Current Directions in*

Psychological Science 20.3: 187–191.

The authors explore how people can reflect adaptively over negative experiences so that they can work through rather than ruminate over them. They highlight self-distancing as a process that facilitates adaptive self-reflection.

Lyubomirsky, S., L. Sousa, and R. Dickerhoof. 2006. The costs and benefits of writing, talking, and thinking about life's triumphs and defeats. *Journal of Personality and Social Psychology* 90.4: 692–708.

This article shows that different ways of processing life events differentially affect well-being. Specifically, writing and talking about negative experiences improve well-being and health over time compared to thinking about them.

Mischel, W., and N. Baker. 1975. Cognitive appraisals and transformations in delay behavior. *Journal of Personality and Social Psychology* 31.2: 254–261.

The authors demonstrate that changing the way children cognitively represent a rewarding stimulus affects self-control in the delay-of-gratification paradigm. Specifically, children instructed to think about the “cool,” abstract features of a reward delayed gratification longer compared to those instructed to focus on the “hot,” consummatory features.

Taylor, S. E., and J. D. Brown. 1988. Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin* 103.2: 193–210.

This article argues that positive illusions are adaptive in situations where a person receives negative feedback or is threatened. It also discusses the implications of positive illusions for mental health.

Wager, T. D., J. K. Rilling, E. E. Smith, et al. 2004. Placebo-induced changes in fMRI in the anticipation and experience of pain. *Science* 303.5661: 1162–1167.

This article shows that cueing people to *believe* that an inert treatment will reduce their experience of pain reduces the subjective experience of pain, increases activity in brain regions involved in cognitive control, and reduces activity in brain regions that support pain processing.

Wilson, T. D., and D. T. Gilbert. 2008. Explaining away: A model of affective adaptation. *Perspectives on Psychological Science* 3.5: 370–386.

The authors suggest that when people encounter emotional experiences they are motivated to understand them. When they reach a satisfactory explanation for their experiences, affective adaptation occurs, which reduces emotional intensity.

Suppression

People often try to control their thoughts, feelings, and behaviors by muffling them so that they are outside of their conscious awareness or other people's awareness. This section provides citations for a range of tactics that people engage in toward this end, highlighting the consequences of doing so for diverse outcomes. Gross and Levenson 1993 elaborates on the intrapersonal consequences of expressive suppression, whereas Butler, et al. 2003 and Srivastava, et al. 2009 cover the interpersonal consequences of expressive suppression. Wenzlaff and Wegner 2000 reviews the processes and consequences of thought suppression. Pennebaker 1989 discusses the consequences of not expressing traumatic experiences, and Petrie, et al. 1998 elaborates on the implications that suppressing thoughts has on one's immune system. Some researchers conceptualize such

suppressive tactics as a form of avoidance. Therefore, in addition to providing links to articles that focus on suppression, this section also presents more-general frameworks for thinking about what emotional avoidance entails and why it can be harmful (Foa and Kozak 1986; Hayes, et al. 1996).

Butler, E. A., B. Egloff, F. H. Wilhelm, N. C. Smith, E. A. Erickson, and J. J. Gross. 2003. The social consequences of expressive suppression. *Emotion* 3.1: 48–67.

The authors show that suppressing emotional displays, a process called “expressive suppression,” leads to poor communication, increases negative emotional experiences, and increases blood pressure responses.

Foa, E. B., and M. J. Kozak. 1986. Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin* 99.1: 20–35.

This classic article provides a framework for thinking about the harmful effects of avoidance. It argues that people should confront (rather than avoid) fearful information so that they can alter the cognitive representations underlying their fear responses.

Gross, J. J., and R. W. Levenson. 1993. Emotional suppression: Physiology, self-report, and expressive behavior. *Journal of Personality and Social Psychology* 64.6: 970–986.

This article explores the emotional consequences of emotional suppression. It shows that emotional suppression successfully reduces expressive behavior but does not affect the subjective experience of emotion. The authors also found a mixed effect of suppression on physiological responses.

Hayes, S. C., K. G. Wilson, E. V. Gifford, V. M. Follette, and K. Strosahl. 1996. Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology* 64.6: 1152–1168.

This article discusses avoidance strategies in the context of psychopathology. It reviews strategies that people employ to escape or avoid emotions, thoughts, and other aversive experiences. It then discusses the consequences of engaging in these strategies.

Pennebaker, J. W. 1989. Confession, inhibition, and disease. In *Advances in experimental social psychology*. Vol. 22. Edited by L. Berkowitz, 211–244. San Diego, CA: Academic Press.

This chapter reviews findings on the psychological and physiological consequences of expressing (or failing to express) emotions surrounding traumatic experiences. It presents a formal theory of active inhibition along with a description of the development and breakdown of the self and the process of catharsis.

Petrie, K. J., R. J. Booth, and J. W. Pennebaker. 1998. The immunological effects of thought suppression. *Journal of Personality and Social Psychology* 75.5: 1264–1272.

The authors show that thought suppression leads to reduction in two biomarkers of positive immune functioning: circulating T lymphocytes (CD3) and total lymphocyte levels. They discuss the implications of thought suppression for health.

Srivastava, S., M. Tamir, K. M. McGonigal, O. P. John, and J. J. Gross. 2009. The social costs of emotional suppression: A

prospective study of the transition to college. *Journal of Personality and Social Psychology* 96.4: 883–897.

This article posits two components of emotional suppression: a stable component, representing individual differences, and a dynamic component, representing context-specific changes. It shows that both components of emotional suppression predict poor relationship outcomes.

Wenzlaff, R. M., and D. M. Wegner. 2000. Thought suppression. *Annual Review of Psychology* 51:59–91.

This classic article describes how thought suppression works and why it is often unsuccessful.

Origins and Developmental Trajectory of Self-Control

How do individuals develop self-control? How do self-control processes change across the lifespan? This section provides two handbooks that address this issue. Anderson, et al. 2008 focuses on the development of executive functions and associated brain regions, and Barrett, et al. 2013 concentrates on the development of self-regulation and emotion regulation. Papers are also provided that review developmental issues surrounding self-control. A classic article, Kopp 1982, discusses the origins of self-regulation. Aldwin, et al. 2011 reviews coping and self-regulation across the life-span, whereas Mischel, et al. 2011 examines findings from delay-of-gratification experiments and interprets them by using a developmental neuroscience framework. Zelazo, et al. 1997 reviews the literature on the early development of executive function, and Posner and Rothbart 2000 discusses the issue of neural plasticity as it relates to attention. Steinberg 2005 looks at the development of the adolescent brain and regulatory systems. Finally, Kochanska, et al. 2001 describes work on the development of self-regulation during the early years of life.

Aldwin, C. M., E. A. Skinner, M. J. Zimmer-Gembeck, and A. L. Taylor. 2011. Coping and self-regulation across the life span. In *Handbook of life-span development*. Edited by K. L. Fingerman, C. A. Berg, J. Smith, and T. C. Antonucci, 561–587. New York: Springer.

This chapter reviews the literature on coping and self-regulation across the life-span. It explores coping and self-regulation as complementary processes in social relationships, and it highlights the importance of resource regulation.

Anderson, V., R. Jacobs, and P. J. Anderson, eds. 2008. *Executive functions and the frontal lobes: A lifespan perspective*. Studies on Neuropsychology, Neurology, and Cognition. New York: Taylor & Francis.

This handbook reviews issues regarding executive function and frontal-lobe development from a developmental framework. It is divided into four sections: theoretical frameworks, assessments of executive functions across the lifespan, impairments of executive function, and rehabilitation of impairments.

Barrett, K. C., N. A. Fox, G. A. Morgan, D. J. Fidler, and L. A. Daunhauer, eds. 2013. *Handbook of self-regulatory processes in development: New directions and international perspectives*. New York: Psychology Press.

This handbook reviews the development of self-regulation and emotion regulation. It is divided into four sections: the development of emotion regulation and self-regulation, physiological and brain processes, mastery motivation, and self-regulation in atypical development.

Kochanska, G., K. C. Coy, and K. T. Murray. 2001. The development of self-regulation in the first four years of life. *Child Development* 72.4: 1091–1111.

The authors examine the development of self-regulation during the first four years of life, focusing on how children adopt parental rules and examining factors that contribute to internalization, such as gender, fearfulness, maternal power assertion, and effortful control.

Kopp, C. B. 1982. Antecedents of self-regulation: A developmental perspective. *Developmental Psychology* 18.2: 199–214.

This classic article calls for researchers to focus on the developmental course of self-initiated behavior regulation. It reviews the literature on early forms of control from infancy through preschool and discusses the beginnings (e.g., caregivers) of these control processes.

Mischel, W., O. Ayduk, M. G. Berman, et al. 2011. “Willpower” over the life span: Decomposing self-regulation. *Social Cognitive and Affective Neuroscience* 6.2: 252–256.

The authors review work on delay of gratification and the neurocognitive processes that underlie it. They discuss the implications of this work for lifelong individual differences in self-regulation abilities.

Posner, M. I., and M. K. Rothbart. 2000. Developing mechanisms of self-regulation. *Development and Psychopathology* 12.3: 427–441.

This article reviews six ways a person's learning experiences can temporarily or permanently change brain circuitry related to attention. It then reviews individual differences in temperament and different factors that can lead to normal or pathological development of self-regulatory systems.

Steinberg, L. 2005. Cognitive and affective development in adolescence. *Trends in Cognitive Sciences* 9.2: 69–74.

Steinberg presents a broad overview of cognitive and affective development of the adolescent brain. He then discusses the organization of regulatory systems.

Zelazo, P. D., A. Carter, J. S. Reznick, and D. Frye. 1997. Early development of executive function: A problem-solving framework. *Review of General Psychology* 1.2: 198–226.

This article reviews the literature on the development of executive function.

Implications

Lay belief holds that the ability to exert self-control is an asset that consequentially enhances people's ability to achieve their goals. Is this true? This section lists articles that outline the diverse positive outcomes that have been linked with self-control. Mischel, et al. 1989 demonstrates that the ability to exert self-control as a child (as measured by the delay-of-gratification paradigm) predicts academic achievement, while Casey, et al. 2011 shows that early-childhood delay ability predicts performance on executive function tasks decades later. Duckworth and Seligman 2005 provides evidence linking high scores on self-discipline with consequential outcomes such as academic performance. Moreover, de Ridder, et al. 2012; Moffitt, et al. 2011; and Tangney, et al. 2004 show that self-control is positively associated with health, personal finance, and less drug use. Finally, Bogg and Roberts 2004 links conscientiousness—a personality construct associated with self-control—with a host of health-related behaviors.

Bogg, T., and B. W. Roberts. 2004. Conscientiousness and health-related behaviors: A meta-analysis of the leading behavioral contributors to mortality. *Psychological Bulletin* 130.6: 887–919.

This article shows that high levels of conscientiousness, a trait linked to self-control, negatively predict risky health-related behaviors and positively predict beneficial health-related behaviors, which contribute to longevity.

Casey, B. J., L. H. Somerville, I. H. Gotlib, et al. 2011. Behavioral and neural correlates of delay of gratification 40 years later. *Proceedings of the National Academy of Sciences of the United States of America* 108.36: 14998–15003.

The authors demonstrate that children's ability to delay gratification at age four predicts their performance on a measure of executive function called the "emotional go/no-go task" forty years later. Moreover, high delayers showed greater difference of inferior frontal gyrus response between no-go and go trials compared to low delayers.

de Ridder, D. T. D., G. Lensvelt-Mulders, C. Finkenauer, F. M. Stok, and R. F. Baumeister. 2012. Taking stock of self-control: A meta-analysis of how trait self-control relates to a wide range of behaviors. *Personality and Social Psychology Review* 16.1: 76–99.

This meta-analysis examined the relationship between trait self-control and a variety of consequential behaviors. It revealed a positive relationship between trait self-control and better performance in school and work, weight control, interpersonal functioning, and well-being, and a negative relationship between trait self-control and addictive and deviant behavior.

Duckworth, A. L., and M. E. P. Seligman. 2005. Self-discipline outdoes IQ in predicting academic performance of adolescents. *Psychological Science* 16.12: 939–944.

This longitudinal study demonstrated that children who scored higher on a measure of self-control were more likely to attend school daily, to perform better on standardized achievement tests, and to be admitted to a competitive high school.

Mischel, W., Y. Shoda, and M. I. Rodriguez. 1989. Delay of gratification in children. *Science* 244.4907: 933–938.

In this seminal article, the authors review research indicating that a child's ability to delay gratification at age four predicts their academic achievement and ability to cope with stress years later. They then discuss the cognitive and attentional processes involved in effective delay of gratification.

Moffitt, T. E., L. Arseneault, D. Belsky, et al. 2011. A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Sciences of the United States of America* 108.7: 2693–2698.

This longitudinal study demonstrated that children who scored higher on a composite measure of self-control assessed at ages three, five, seven, nine, and eleven were characterized by better physical health, better personal finances, and less substance dependence and criminal outcomes decades later.

Tangney, J. P., R. F. Baumeister, and A. L. Boone. 2004. High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality* 72.2: 271–324.

The authors developed a trait self-control measure. They demonstrate that those with higher trait self-control had higher grade point averages and self-esteem and better interpersonal skills and relationships. High trait self-control also predicted less binge eating and alcohol abuse and fewer reports of psychopathology.

Current Directions

Self-control remains a vigorously pursued area of research. This section highlights three issues that are currently the topic of much research: (1) Self-Control Interventions, (2) the Strength Model of Self-Control, and (3) Wisdom, Emotional Intelligence, and the Importance of Flexibility.

Self-Control Interventions

Given the benefits linked with self-control, it should come as no surprise that researchers have increasingly become interested in understanding if and how this basic human capacity can be cultivated via interventions. This section reviews a number of early-21st-century attempts that focus on this issue. As you will see, researchers have adopted a variety of strategies for enhancing self-control. Whereas some efforts focus on cultivating self-control by using a “toolbox” approach that teaches participants multiple self-control skills, others focus on training more-specific skills. This section provides an overview of these diverse attempts to enhance self-control. Diamond and Lee 2011 reviews various interventions designed to improve executive functions. Klingberg 2010 discusses the implications of training working memory, a process closely implicated in self-control. Heckman and Kautz 2014 examines literature on how to improve character, a construct closely related to self-control. Hillman, et al. 2008 reviews the effects on exercise on cognition and brain functioning. Finkel, et al. 2013 shows how a reappraisal intervention can improve relationships. Jaeggi, et al. 2011 demonstrates the benefits of cognitive training, and Yeager, et al. 2013 explains how changing beliefs about the malleability of personality can reduce aggression. See also Walton and Cohen 2011.

Diamond, A., and K. Lee. 2011. Interventions shown to aid executive function development in children 4 to 12 years old. *Science* 333.6045: 959–964.

This article reviews interventions that have successfully improved various executive functions. It also discusses six different intervention approaches with empirical support for improving executive functions.

Finkel, E. J., E. B. Slotter, L. B. Luchies, G. M. Walton, and J. J. Gross. 2013. A brief intervention to promote conflict reappraisal preserves marital quality over time. *Psychological Science* 24.8: 1595–1601.

Demonstrates the efficacy of a brief intervention designed to rethink marital conflicts from a psychologically distanced perspective for improving marital quality after one year.

Heckman, J. J., and T. Kautz. 2014. Fostering and measuring skills: Interventions that improve character and cognition. In *The myth of achievement tests: The GED and the role of character in American life*. Edited by J. J. Heckman, J. E. Humphries, and T. Kautz, 293–317. Chicago: Univ. of Chicago Press.

This chapter reviews the literature on boosting cognitive and character skills. It argues for the importance of character skills such as emotional stability, perseverance, and conscientiousness, which are closely related to self-control. It then evaluates interventions designed to increase character skills.

Hillman, C. H., K. I. Erickson, and A. F. Kramer. 2008. Be smart, exercise your heart: Exercise effects on brain and cognition. *Nature Reviews Neuroscience* 9.1: 58–65.

This article reviews the effects of aerobic exercises and physical activity on improving cognition and brain function, including executive function. It describes effects occurring at the molecular, cellular, systems, and behavioral levels.

Jaeggi, S. M., M. Buschkuhl, J. Jonides, and P. Shah. 2011. Short- and long-term benefits of cognitive training. *Proceedings of the National Academy of Sciences of the United States of America* 108.25: 10081–10086.

The authors demonstrate that cognitive training in elementary and middle-school children through video game–like working memory tasks increases fluid intelligence. They also discuss limiting factors of cognitive training and propose future directions.

Klingberg, T. 2010. Training and plasticity of working memory. *Trends in Cognitive Sciences* 14.7: 317–324.

This article reviews the effects of training working memory, a cognitive process associated with self-control. It describes the brain regions associated with working memory, the carryover effects of training, and implications of training working memory in everyday life.

Walton, G. M., and G. L. Cohen. 2011. A brief social-belonging intervention improves academic and health outcomes of minority students. *Science* 331.6023: 1447–1451.

Walton and Cohen demonstrate how changing college students' perception of social adversity on campus helps improve grades and health three years after the intervention.

Yeager, D. S., A. S. Miu, J. Powers, and C. S. Dweck. 2013. Implicit theories of personality and attributions of hostile intent: A meta-analysis, an experiment, and a longitudinal intervention. *Child Development* 84.5: 1651–1667.

This article demonstrates that hostile interpretations stem from fixed beliefs about others' personality traits. It then demonstrates that changing people's beliefs about others' personalities from fixed to malleable results in less hostile attributions and aggressive desires.

The Strength Model of Self-Control

Since its inception, the strength model of self-control (see Baumeister, et al. 2007, cited under Social-Personality-Developmental Level of Analysis) has had a tremendous impact on our understanding of willpower. More recently, however, a number of researchers have begun to question how well this theory characterizes self-control. This section highlights both sides of this debate. Muraven and Baumeister 2000 argues that self-control is like a muscle that is capable of being temporarily exhausted and strengthened over time. Hagger, et al. 2010 provides meta-analytic support for the strength model. On the other hand, Converse and DeShon 2009 offers evidence against the model, discussing methodological issues. Job, et al. 2010 also raises questions about the model by showing that beliefs moderate ego depletion effects. Moreover, Xu, et al. 2014 discusses a more recent replication failure of depletion findings.

Converse, P. D., and R. P. DeShon. 2009. A tale of two tasks: Reversing the self-regulatory resource depletion effect. *Journal of Applied Psychology* 94.5: 1318–1324.

This article suggests that level of exertion on a regulation task only leads to depletion on a subsequent task if the person does not have time to adapt. If there is sufficient opportunity to adapt to a task, depletion effects do not take place.

Hagger, M. S., C. Wood, C. Stiff, and N. L. D. Chatzisarantis. 2010. Ego depletion and the strength model of self-control: A

meta-analysis. *Psychological Bulletin* 136.4: 495–525.

This meta-analysis reviews the literature on the strength model of self-control (a.k.a. ego depletion) to determine how well prior research supports the ego depletion model. It concludes that this model is well supported, identifies moderators of ego depletion effects, and tests rival models of ego depletion.

Job, V., C. S. Dweck, and G. M. Walton. 2010. Ego depletion—is it all in your head? Implicit theories about willpower affect self-regulation. *Psychological Science* 21.11: 1686–1693.

The authors demonstrate that ego depletion effects are moderated by people's belief in whether willpower is a limited or unlimited resource. They suggest that ego depletion may originate from one's belief that willpower is a limited resource rather than willpower actually being dependent on a limited physiological resource.

Muraven, M., and R. F. Baumeister. 2000. Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin* 126.2: 247–259.

This seminal article claims that self-regulation resembles a muscle, in that instances of self-regulation deplete a common energy source that is needed for willpower to be exerted.

Xu, X., K. E. Demos, T. M. Leahey, et al. 2014. Failure to replicate depletion of self-control. *PLoS ONE* 9.10: e109950.

The authors show a failure to replicate depletion effects through utilizing widely used depletion procedures and dependent measures by using a community sample. They suggest conducting further replication studies and publishing both significant and nonsignificant depletion effects.

Wisdom, Emotional Intelligence, and the Importance of Flexibility

Are some people better than others at recognizing when self-control is needed? And once people decide that self-control is needed, how do they determine which of the different tools they have at their disposal for implementing self-control is most appropriate? Over the years, psychologists have attempted to address these questions by examining concepts such as wisdom, emotional intelligence, and flexibility. This section presents a number of articles that define these constructs, examining their relevance to a range of phenomena relevant to self-control. Baltes and Smith 2008 provides an overview of wisdom research, and Kross and Grossmann 2012 describes how wisdom can be enhanced when reasoning about emotional issues. Turning to emotional intelligence, this section also points to a handbook on the topic (Barrett and Salovey 2002). Also included are Salovey, et al. 2008, which describes one of the most prominent models of emotional intelligence, and Ybarra, et al. 2013, which discusses how current conceptions of emotional intelligence can be enhanced. Finally, this section provides two papers that address the issue of coping (or regulatory flexibility) constructs that capture people's ability to recognize the demands of situations and then flexibly respond to them—which is intimately linked to the ability to exert self-control in daily life (Bonanno and Burton 2013, Cheng 2001).

Baltes, P. B., and J. Smith. 2008. The fascination of wisdom: Its nature, ontogeny, and function. *Perspectives on Psychological Science* 3.1: 56–64.

This article summarizes findings on the origins, functions, and importance of wisdom, from a philosophical and psychological standpoint. It discusses the Berlin wisdom paradigm approach, which uses a heuristic framework for studying wisdom in the laboratory and highlights future research directions.

Barrett, L. F., and P. Salovey, eds. 2002. *The wisdom in feeling: Psychological processes in emotional intelligence. Emotions and Social Behavior*. New York: Guilford.

This handbook provides an overview of emotional intelligence research. It is broadly divided into five sections: (1) perceiving emotion, (2) using emotion in thought and action, (3) understanding emotion, (4) managing emotion, and (5) extensions of research.

Bonanno, G. A., and C. L. Burton. 2013. Regulatory flexibility: An individual differences perspective on coping and emotion regulation. *Perspectives on Psychological Science* 8.6: 591–612.

The authors suggest that whether any given self-control strategy is helpful or harmful depends critically on the situation. They highlight the importance of “regulatory flexibility”—the ability to flexibly utilize different self-control strategies depending on the demands of the situation.

Cheng, C. 2001. Assessing coping flexibility in real-life and laboratory settings: A multimethod approach. *Journal of Personality and Social Psychology* 80.5: 814–833.

Cheng examines the perceptual and coping patterns that characterize individuals who score high on coping flexibility. She suggests that those who are highly flexible are more effective at using both problem- and emotion-focused coping strategies to achieve their goals.

Kross, E., and I. Grossmann. 2012. Boosting wisdom: Distance from the self enhances wise reasoning, attitudes, and behavior. *Journal of Experimental Psychology: General* 141.1: 43–48.

This article provides evidence that processing information from a distanced perspective (i.e., imagine the events unfolding as if you were a distant observer) compared to an immersed perspective (i.e., imagine the events unfolding as if you were there) enhances wise reasoning (e.g., dialecticism and intellectual humility), attitudes, and behavior.

Salovey, P., B. T. Detweiler-Bedell, J. B. Detweiler-Bedell, and J. D. Mayer. 2008. Emotional intelligence. In *Handbook of emotions*. 3d ed. Edited by M. Lewis, J. M. Haviland-Jones, and L. F. Barrett, 533–547. New York: Guilford.

This article reviews a model of emotional intelligence that captures individual differences in people’s ability to perceive, understand, regulate, and utilize this emotional information to help them achieve their goals. It discusses measurement issues and how emotional intelligence influences self-regulation.

Ybarra, O., E. Kross, D. S. Lee, Y. Zhao, A. Dougherty, and J. Sanchez-Burks. 2013. Toward a more contextual, psychological, and dynamic model of emotional intelligence. In *Advances in positive organizational psychology*. Vol. 1. Edited by A. B. Baker, 167–187. Bingley, UK: Emerald.

Ybarra and colleagues suggest that it is important to revise extant models of emotional intelligence to enhance their predictive utility. The authors emphasize the importance of (1) acknowledging the role that social context plays in emotional intelligence and (2) studying automatic and deliberate aspects of the processes of emotional intelligence.

[back to top](#)

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