emotional investments; that is, having objectives in living to which one is passionately committed.

Robert Solomon’s (1993) book, The Passions, is a brilliant formulation of this thesis. He begins by challenging long-held views, traceable to ancient Greeks, which construed human passions as unwanted, unexpected interruptions that degrade and demean us. He railed passionately against this characterization of passions as primitive ragemuffins, the refuse of psychic life that Western rationalism has long warned against with thinly veiled repulsion. Instead, Solomon proclaimed that passions are the very soul of our existence—they are the high court of consciousness, to which all else, even reason, must pay tribute. Passions thus are what commit and bind us to other people and to life causes that infuse our journeys with meaning and purpose. He drew on the Romantic era in music, literature, painting, and poetry to illuminate human passions. Some have belittled such works as the melodramatic histrionics of hopeless love affairs, but so doing misconstrues the greatest achievement of the Romantics; namely, their love of beauty, their reverence for the imagination, and their commitment to stirring up of the human spirit to give meaning and hope, particularly for dreary lives in an industrialized world that had become ever more dehumanizing. For Solomon, passions are quite simply the most important doings by which we create ourselves. As such, they completely resolve the core problem in the philosophy of the absurd—namely, those in full pursuit of their passions can never experience life as meaningless.

A further illustration of these ideas is Kay Redfield Jamison’s (2004) book, Exuberance. She describes exuberance as an abounding, ebullient, effervescent emotion; it is kinetic and unrestrained; it spreads upward and outward, carrying ideas and actions. As a psychiatrist as well as someone who suffered from bipolar disorder, she was careful to distinguish exuberance from mania. Along with summarizing research into its neural substrates, her book beautifully illustrates exuberance with the lives of famous people. John Muir and Theodore Roosevelt were two individuals who used their passionate commitments (exuberance) about the environment to make dramatic and lasting contributions toward preserving the wilderness. Another individual, the lesser known Wilson Bentley, was a New England farmer who was captivated by the beauty of snow. His famous declaration was that no two snowflakes are alike, which he showcased with his photographic masterpiece, Snow Crystals. “Snowflake” Bentley’s exuberance brought to millions an awareness of the loveliness that fell from the skies.

Although not frequently considered, it seems fruitful to entertain the idea that passionate commitments are fundamental to a well-lived life. Great achievements in life may not actually be possible without passions that reside at the core of one’s soul. The ultimate developmental challenge is coming to know what one’s passions are so that they can serve as guides for behaviors that give life meaning and purpose. This is where emotional development converges with another path; namely, the eudaimonic conception of well-being (Ryff, 2014), which blends feelings, goals, and actions in the pursuit of an excellence—effectively, a virtuous becoming of the best that one can be.

**CODA**

These musings are perhaps best seen as fugitive thoughts from someone outside mainstream emotion research. I chose to focus on guiding ideals in emotional development as a kind of provocation to reevaluate whether current science, with its emphasis on delimited aspects emotion regulation, is reaching high or deep enough to capture what really matters about optimal emotional experience across the life course. My philosophy is that we need thoughtful formulations of complex human capacities that wed our multifaceted emotions to our thoughts and motives and life situations, all in the service of helping us to become better individuals. Nurturing these ideals, in science and practice, may our best hope for building a better world.

**14.8 AFTERWORD**

**What Develops in Emotional Development?**

Regina C. Lapate and Alexander J. Shackman

In contrast to the first edition of The Nature of Emotion, which mostly focused on infancy, the contributors to the second edition considered the entire lifespan, including early childhood (Goldsmith, Cataldo & Nelson, and Shiner), adolescence (Shiner, Somerville & McLaughlin, and Crone & Pfeifer), adulthood (Shiner), and the transition from mid-life to older age (Hogan, Sims, & Carstensen, and Ryff).

**CHILDHOOD**

Within the first year of life, Cataldo and Nelson note that emotional-expression identification
ability undergoes considerable development. For instance, the ability to discriminate between a happy and a fearful face emerges between five and seven months, as indexed by behavioral and electrophysiological measures. This perceptual ability appears to be shaped by experience, as evidenced by several findings suggesting that children who have suffered early-life neglect display altered sensitivity for negative facial expressions (e.g., Pollak & Kistler, 2002). Cataldo and Nelson point out that a key challenge for the future is to understand whether and how the optimal development of this emotional-expression perceptual apparatus relates to the actual experience and expression of emotion.

Goldsmith and Shiner agree that the development of the self as well as of cognitive abilities during early childhood imbues core emotional states and traits with increasing complexity. The expression of the most “basic” or “primary” emotions—including joy, fear, anger, and sadness—comes on-line early in infancy, but continues to unfold over time. Shiner highlights work demonstrating that joy and fear emerge in the first year, with the expression of anger gradually increasing over the first several years, peaking around age three. Of course, children differ in their propensity to express each of these emotions, and Shiner tells us that individual differences in these emotional traits are moderately stable by the preschool years (see Questions 2 and 3). By middle childhood, children's emotional range broadens to encompass sophisticated emotions—like shame, envy, and empathy—that may require a comparatively more advanced and mature representation of the self and an increasingly nuanced view of others.

Cognitive processes important for self-regulation, including attention and cognitive control, develop rapidly in early childhood. As a consequence, Goldsmith notes, the expression and experience of emotions become less tied to their immediate eliciting stimulus—and are instead increasingly regulated by context and goals (see Question 7). Children gradually adopt “display rules” (Ekman, 1972; Safdar et al., 2009), and their reliance on behavioral strategies for emotion management and regulation (e.g., escape) decreases across middle childhood, giving rise to more sophisticated coping mechanisms, such as problem solving.

**adolescence**

Crone and Pfeifer and Somerville and McLaughlin agree that adolescents are prone to more intense and labile feelings, relative to both younger and older individuals. In particular, peak emotional reactivity rises, and emotional experiences fluctuate more rapidly. Shiner highlights evidence that Agreeableness and Conscientiousness decline, whereas dispositional negative affect, or what she terms Neuroticism (see Question 3), peaks in adolescence, particularly among girls. Somerville and McLaughlin tell us that, as adolescents’ social groups grow in complexity, interpersonal context exerts a particularly powerful influence on their emotional responses. In particular, socially meaningful stimuli (both positive and negative) exacerbate emotional reactivity, as indexed by hormonal, physiological, and subjective experience measures. Crone and Pfeifer adopt a broadly similar perspective, highlighting evidence that adolescence is marked by exaggerated reactivity in approach and reward circuits (e.g., ventral striatum) in response to social risk-taking tasks, particularly when performed in the presence of friends.

Several authors argue that adolescence is a period of complex changes not only in measures of emotional reactivity, but also in emotion regulation. Somerville and McLaughlin describe work showing that adolescents become progressively better at using cognitive reappraisal strategies to regulate negative affect in the laboratory (see also Question 7). But they also highlight important exceptions to this trend. For example, adolescents are selectively worse than older and younger individuals in voluntarily reappraising negative images if they depict social interactions or social suffering (e.g., Silvers et al., 2012). Somerville and McLaughlin also highlight evidence that adolescents differ in their motivation to regulate emotions in their daily lives. Adolescents seem to make less frequent use of adaptive regulatory strategies (e.g., cognitive reappraisal) relative to adults. And, compared to children, they show a greater propensity to ruminate about stressors. Somerville and McLaughlin hypothesize that these shifts in regulatory style may play an important role in facilitating other age-appropriate developmental tasks, such as establishing autonomy from caregivers and forging intimate relationships with peers. As an example, they raise the possibility that co-rumination, common during this time of development, may have functional advantages, such as enhancing self-knowledge, strengthening social bonds, and deepening friendship quality. Therefore, an important challenge for future work will be to disentangle whether adolescents are less
capable of or simply less motivated to down-regulate negative affect, particularly in social contexts. Crone and Pfeifer hypothesize that adolescents’ heightened emotionality reflects the asynchronous development of neural circuits supporting emotional reactivity and emotion regulation, noting that, “On one hand, limbic regions, such as the ventral striatum and amygdala, frequently show elevated reactivity in adolescence. . . . On the other hand, brain regions that allow us to control our thoughts and actions, such as the prefrontal cortex, show a protracted developmental trajectory . . . reaching ceiling levels approximately between 14 and 20 years of age.”

An exciting avenue for future research will be to clarify the relevance of this asynchronous neural development to emotional reactivity and regulation in the real world and in the clinic. Addressing this challenge and delineating specific aspects of neural development that increase vulnerability to psychopathology is particularly important because, as several authors emphasize, many neuropsychiatric disorders have their roots in adolescence (Lee et al., 2014).

ADULTHOOD AND OLDER AGE

In an interesting contrast with the trajectory into adolescence summarized here, Hogan, Sims, and Carstensen note that older adults report greater stability of emotional experiences, higher quality of daily interactions, and more positive emotional experiences. They argue that these trends cannot be explained by cognitive decline, neurodegeneration, or even aging per se. Instead, these trends reflect changes in the management of emotion. In particular, Hogan, Sims, and Carstensen review evidence suggesting that older individuals are more adept at using proactive social strategies to manage and regulate emotional experience. Older adults generate more adaptive solutions to interpersonal conflicts (e.g., marital strife) than younger adults do. Furthermore, they report less distress while encountering everyday hassles or social conflicts, fewer negative interactions in general, and a greater tendency to avoid situations and individuals associated with potential conflict.

In the transition from adulthood into old age, Hogan, Sims, and Carstensen argue that goals and perspectives prominently change, as described by their Socioemotional Selectivity Theory (SST). Goals are set within a temporal context: when time is perceived as limited, as with older age or the onset of terminal disease, social selection occurs, and emotional goals shift to prioritize the most positive and meaningful experiences and partners. Consistent with this perspective, older individuals’ emotional preferences and priorities resemble those of younger individuals when they are asked to imagine living much longer. Conversely, younger individuals’ preferences were indistinguishable from older individuals’ in the months following the September 11, 2001, terrorist attacks: both the young and the old placed greater emphasis on finding emotional meaning in their daily lives.

IDEAL EMOTIONAL DEVELOPMENT

Ryff draws on classical philosophy, the arts, and contemporary social science research while embracing the contribution of emotions and their development to well-being and optimal psychological functioning across the lifespan. In a shift of perspective from viewing emotions as something to be “controlled” to viewing them as goals in and of themselves enabling the living of a passionate life, Ryff focuses on ideal emotional functioning and highlights her ideal ends in emotional development. Those ideal ends include awareness of one’s own emotions (“know thyself”) as well as awareness of others’ emotions (“where awareness turns outwards”); increased usage of acceptance as a coping mechanism; increased range of emotional experiences as well as their complexity (“the joining of profound positives and negatives”), combined with flexibility and context attenuation. She beautifully illustrates this idea by describing kintsukuroi, the Japanese tradition of fixing broken pottery where “breakage is viewed as part of the history of the object” (rather than something to disguise). Finally, these ideal ends embrace emotions as “compelling and constructive forces for good,” and the possession of “deep emotional investments.” As Ryff reminds us, passions “are what commit and bind us to other people and to life causes that infuse our journeys with meaning and purpose.”