

Detailed List of New Features

Expert Consultants. Lifespan Development is an enormous, complex field, and no single author, or even several authors, can possibly keep up with all of the rapidly changing content in the many periods and different areas of the lifespan. With each edition, John Santrock seeks the input of leading experts about the content in a number of areas of development, who provide evaluations and recommendations in their area(s) of expertise.

Proven Learning Goals Pedagogy. This hallmark of John Santrock's programs encompasses learning goals, chapter maps, Review and Reflect and Reach Your Learning Goals sections, which are all linked together. By following this pedagogical road map, students will read and retain course material more effectively and efficiently.

Connections between theory and applications. Santrock provides a wealth of applied examples to show students the personal meaning the field of lifespan development has for them. In addition to the narrative's applications, each chapter also boasts a "Connecting Development to Life" feature, which focuses on health and well-being, parenting, and education.

Developmental Connections in the text margins link discussions of topics across chapters.

Coverage of career opportunities. "Connecting with Careers" inserts profiles of individuals whose career relates to the chapter's content. The Careers Appendix describes a number of careers in education/research, clinical/counseling, medical/nursing/physical, and family/relationships categories.

Chapter by Chapter Changes

A significant reason why A Topical Approach to Life-Span Development has been successfully used by

instructors for edition after edition is the painstaking effort and review that goes into making sure the text

provides the latest research on all topic areas discussed in the classroom. This new edition is no exception,

with more than 1,500 citations from 2015, 2016, 2017, and 2018.

Following is a sample of the many chapter-by-chapter changes that were made in this new edition of A Topical Approach to Life-Span Development. Although every chapter has been extensively updated, four chapters (Biological Beginnings; Information Processing; The Self, Identity, and Personality; and Gender and Sexuality) were especially targeted for revisions based on the results of the Heat Map data discussed on page xvi.

Chapter 1: Introduction

· Update on life expectancy in the United States (U.S. Census Bureau, 2016)

• Expanded coverage of what the dramatic increase in life expectancy in such a short time frame means for society and the quality of life for older adults along with commentary about how society has essentially been built for young people rather than older adults and what is needed to improve the lives of older adults (Carstensen, 2015, 2016)

• New data on the dramatic increase in Latino and Asian American children in the United States with recent projections from 2014 to 2060 (Colby & Ortman, 2015)

 Updated data on the percentage of U.S. children and adolescents under 18 years of age living in poverty, including data reported separately for African American and Latino families (DeNavas-Walt & Proctor, 2015; Proctor, Senega, & Kollar, 2016)

• Inclusion of recent information from studies on variations in age and well-being, including variations involving middle age and health (OECD, 2014; Steptoe, Deaton, & Stone, 2015)

• New section, "Three Developmental Patterns of Aging," that describes the pathways of normal aging, pathological aging, and successful aging (Schaie, 2016)

• Description of recent research that found a higher level of conscientiousness was protective of older adults' cognition (Wilson & others, 2015)

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 Coverage of a study involving 17-year survival rates of 20- to 93-year-old Korean adults indicating that mortality rates were higher when biological age exceeded an individual's chronological age (Yoo & others, 2017)

• Expanded discussion of recent advances in assessing genes in the section on physiological methods to include specific genes linked to child obesity (Grigorenko & others, 2016; Zandona & others, 2017)

• Inclusion of findings that cross-sectional studies indicate that 90 percent of cognitive aging decline is due to a slowing of processing speed while longitudinal studies reveal that 20 percent or less of cognitive aging decline is due to processing speed (MacDonald & Stawski, 2015, 2016)

Chapter 2: Biological Beginnings

· Editing and updating of chapter based on comments by leading experts Elena Grigorenko and Kirby Deater-Deckard

• Updated and expanded discussion of genome-wide association studies, including research on suicide (Sokolowski, Wasserman, & Wasserman, 2016), autism (Connolly & others, 2017), attention deficit hyperactivity disorder (Naaijen & others, 2017), and glaucoma (Springelkamp & others, 2017)

Updated and expanded research on gene-gene interaction, including studies of obesity (Bordoni & others, 2017), type 2 diabetes (Saxena, Srivastaya, & Banerjee, 2017), arthritis (Hohman & others, 2016) and Alzheimer disease (Ebbert & others, 2016)

• Deletion of section on shared and non-shared environmental experiences because it is now being given less attention as a result of the increased emphasis on gene x environment interaction

• Inclusion of recent research in which a higher level of maternal responsivity to adaptive behavior of children with fragile X syndrome improved the children's communication skills (Warren & others, 2017)



• Updated description of how research now strongly supports the use of hydroxyurea therapy for infants with sickle cell anemia beginning at 9 months of age (Yawn & John- Sawah, 2015)

 \cdot Updated data on the average length and weight of the fetus at different points in prenatal development, including revisions involving these data in Figure 10

• Important updated revisions of the timetable of various aspects of neural development in the prenatal period, including the onset (21 days postconception) and closure of the neural tube (27 days postconception), when neurogenesis is largely complete (end of the fifth month postconception), and the initial appearance of neural migration (15 weeks postnatally) (Keunen, Counsell, & Bender, 2017)

· Coverage of a recent large-scale study in Brazil in which flour that was fortified with folic acid produced a significant reduction in neural tube defects (Santos & others, 2016)

• Description of a recent research review that concluded many aspects of the developing prenatal brain can be detected in the first trimester using ultrasound, which also can help to identify spina bifida at an early stage (Engels & others, 2016)

 Inclusion of information from a recent research review that concluded fetal MRI does not provide good results in the first trimester of pregnancy because of small fetal structures and movement artifacts (Wataganara & others, 2016). In this review, it also was argued that fetal MRI can especially be beneficial in assessing central nervous system abnormalities in the third trimester of pregnancy.

 Description of recent research that found cardiac defects, pulmonary problems, and microencephaly were among the most common fetal and neonatal outcomes when pregnant women have rubella (Yazigi & others, 2017)

• Discussion of recent research on isotretinoin (medication used to treat acne) being one of the most commonly pre- scribed drugs for adolescent girls seeking contraceptive advice yet, not girls are not receiving



adequate information about its harmful effects on offspring if they become pregnant (Eltonsy & others, 2016; Stancil & others, 2017)

• Coverage of recent research on negative outcomes for fetal alcohol spectrum disorders (FASD) that include lower executive function (Kindon, Cardoso, & McGrath, 2016), increased incidence of externalized and internalized behavior problems (Tsang & others, 2016), and a significantly lower life expectancy (Thanh & Johnsson, 2016)

• New description of the French Alcohol Society's (2016) recommendation that women should not consume any alcohol during pregnancy

• Inclusion of recent research indicating that maternal cigarette smoking during pregnancy was linked to increased risk of offspring cigarette smoking at 16 years of age (DeGenna & others, 2016)

• Description of recent research that found daughters whose mothers smoked during their pregnancy were more likely to smoke during their own pregnancy (Ncube & Mueller, 2017)

• Coverage of a recent large-scale U.S. study of the percentage of pregnant adolescent and adult women who reported drinking alcohol and using tobacco in the previous month (Oh & others, 2017)

• New content on the increasing use of e-cigarettes during pregnancy and research on pregnant women's misconceptions about e-cigarettes (Mark, 2015; Spindel & McEvoy, 2016)

• Coverage of recent research in which cocaine use during pregnancy was associated with impaired connectivity of the thalamus and prefrontal cortex in newborns (Salzwedel & others, 2016)

• Discussion of recent research indicating that cocaine use by pregnant women is linked to attention deficit hyperactivity disorder, oppositional defiant disorder, and posttraumatic stress disorder (PTSD) in offspring (Richardson & others, 2016), as well as self-regulation problems at age 12 (Minnes & others, 2016)



• Coverage of a recent meta-analysis that found marijuana use during pregnancy was associated with these outcomes in off- spring: low birth weight and an increased likelihood of being placed in a neonatal intensive care unit (Gunn & others, 2016)

New research indicating that pregnant women have increased their use of marijuana in recent years (Brown & others, 2016)

 Inclusion of two recent research reviews that concluded maternal obesity during pregnancy is associated with an increased likelihood of offspring becoming obese in child- hood and adulthood (Pinto Pereira & others, 2016; Santangeli, Sattar & Huda, 2015)

• Inclusion of recent research that revealed maternal prenatal stress and anxiety were linked to lower levels of infants' self-regulation (Korja & others, 2017)

• Description of a recent study in which taking antidepressants early in pregnancy was linked to increased risk of miscarriage (Almeida & others, 2016)

• Coverage of a recent study that revealed taking antidepressants in the second or third trimester was associated with increased risk of autism in children (Boukhris & others, 2016)

· Inclusion of a recent study that found intimate partner violence increased the mother's stress level (Fonseca-Machado Mde & others, 2015)

• Description of a recent study that found kangaroo care significantly reduced the amount of crying and increased heart rate stability in preterm infants (Choudhary & others, 2016)

• Discussion of a recent study in which depressive symptoms in both the mother and father were associated with impaired bonding with their infant in the postpartum period (Kerstis & others, 2016)



 Description of recent research in which Centering Pregnancy participation was linked to reduced incidence of low birth weight and reduced likelihood of being placed in a neonatal intensive care unit (Gareau & others, 2016)

• Discussion of a recent research review in which waterbirth neonates experienced fewer negative outcomes than non- waterbirth neonates (Bovbjerg, Cheyney, & Everson, 2016)

• Coverage of recent studies that have found low Apgar scores are linked to increased needs for long-term additional educational support and decreased educational attainment (Tweed & others, 2016); increased risk of developmental vulnerability at 5 years of age (Razaz & others, 2016); and increased risk of developing ADHD (Hanc & others, 2017)

 \cdot Updated data on the percentage of births in the United States that are preterm, low birth weight, and cesarean section (Martin & others, 2017)

• Coverage of a recent study that found especially in very preterm infants, the identical twin who was smaller (an index of prenatal environmental experience) than his/her co- twin was far more likely to have poorer working memory and a lower level of self-regulation at 8 years of age (Deater-Deckard, 2016). The most likely explanation of this outcome involves epigenetic influences.

• Inclusion of a longitudinal study in which the nurturing positive effects of kangaroo care with preterm and low birth weight infants at 1 year of age were still present 20 years later in a number of positive developmental outcomes (Charpak & others, 2017)

• Description of a recent study that revealed women with a history of depression were 20 times more like to develop postpartum depression (Silverman & others, 2017)

 \cdot Coverage of recent research indicating that when fetuses were exposed to serotonin-based antidepressants, they were more likely to be born preterm (Podrebarac & others, 2017)



· Coverage of a recent study in which postpartum depression was associated with an increase in 4-month-olds' unintentional injuries (Yamaoka, Fujiwara, & Tamiva, 2016)

 Inclusion of recent research in which mothers' postpartum depression, but not generalized anxiety, was linked to their children's emotional negativity and behavior problems at 2 years of age (Prenoveau & others, 2017)

• Discussion of a recent study that found depressive symptoms in mothers and fathers were linked to impaired bonding with their infant in the postpartum period (Kerstis & others, 2016)

• Coverage of a recent study that indicated 5 percent of fathers had depressive symptoms in the first two weeks following delivery (Anding & others, 2016)

Chapter 3: Physical Development and Biological Aging

• Description of a recent study that found positive effects of growth hormone treatment across five years for children born small for gestational age (Ross & others, 2015)

 Coverage of a recent review that concluded an accurate assessment of growth hormone deficiency is difficult and that many children diagnosed with the deficiency re-test normal later in childhood (Murray, Dattani, & Clayton, 2016)

· Description of a recent study that linked child sexual abuse to earlier pubertal onset (Noll & others, 2017)

· Coverage of a recent Korean study in which early menarche was associated with risky sexual behavior in females (Cheong & others, 2015)

 \cdot New research indicating that having an increase in Facebook friends across two years in adolescence was linked to an enhanced motivation to be thin (Tiggemann & Slater, 2017)

• Inclusion of a recent study that found early maturation predicted a stable higher level of depression for adolescent girls (Rudolph & others, 2015)



• Discussion of a recent study in which sarcopenic obesity was associated with a 24 percent increase in risk for all- cause mortality, with men having a higher risk than women (Tian & Xu, 2016)

• Coverage of a recent study that found greater intake of fruits and vegetables was linked to increased bone density in middle-aged and older adults (Qiu & others, 2017)

• Inclusion of recent research in which at-risk overweight and older adults lost significant weight and improved their mobility considerably by participating in a community- based weight reduction program (Rejeski & others, 2017)

• New description of research indicating that neural connections number in the trillions (de Haan, 2015)

• New content focused on Mark Johnson and his colleagues (Gliga & others, 2016; Johnson & others, 2015; Senju & others, 2016) as leading researchers on infant brain development, including their neuroconstructivist approach and studies of the development of the prefrontal cortex and its function, early identification of autism, face processing, and early social experiences

· Coverage of a recent study that found higher-quality mother-infant interaction predicted a higher level of frontal lobe functioning when assessed by EEG later in infancy (Bernier, Calkins, & Bell, 2016)

New discussion of the recent increase in the use of functional near-infrared spectroscopy to assess infants' brain activity, a measurement technique that is portable and allows researchers to monitor infants' brain activity while they are exploring the world around them (de Haan & Johnson, 2016; Emberson & others, 2017b). Also, inclusion of new Figure 9 that shows an infant in an experiment using near-infrared spectroscopy.

• Coverage of a recent study in which young children with higher cognitive ability showed increased myelination by 3 years of age (Deoni & others, 2016)

 \cdot New discussion of various ways development in the brain is linked to young children's cognitive development in early childhood



• Inclusion of recent research that linked poverty to maturational lags in children's frontal and temporal lobes and indicated that these lags were associated with lower school readiness (Hair & others, 2015)

• Description of a recent study that revealed higher levels of maternal sensitivity in early childhood were related to higher total brain volume in children (Kok & others, 2015)

• Coverage of a longitudinal study that found 11- to 18-year-olds who lived in poverty had diminished brain functioning at 25 years of age (Brody & others, 2017). However, adolescents whose families participated in a supportive parenting intervention did not show this diminished brain functioning

Inclusion of research indicating that global brain volume predicted mortality in adults (Van Elderen & others, 2016)

• Discussion of a recent study in which mice in an enriched environment learned more flexibly because of adult hippocampal neurogenesis (Garthe, Roeder, & Kempermann, 2016)

• Updated coverage regarding facets of the brain responsible for reduced brain volume with aging (Penazzi, Bakota, & Brandt, 2016)

• Coverage of a recent study of 36- to 42-month-old children that linked consistent bedtime routines to increased nightly sleep minutes across a six-month period (Staples, Bates, & Petersen, 2015)

• Description of a recent study of 2- to 5-year-olds that revealed each additional hour of daily screen time was associated with a decrease in sleep time, reduced likelihood of sleeping 10 hours or more per night, and later bedtime (Xu & others, 2016)

• Inclusion of a recent research review of 27 studies that con- firmed pacifier use is associated with a lower incidence of SIDS (Alm & others, 2016)

 Description of a recent Swedish study that revealed bed sharing was more common in SIDS deaths (Mollborg & others, 2015)

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• Coverage of a recent study in which a lower quality of sleep at 1 year of age was linked to lower attention regulation and more behavior problems at 3 to 4 years of age (Sadeh & others, 2015)

• Inclusion of recent research in China that revealed pre- school children who slept 7 hours or less had worse school readiness profiles and that children who used electronic devices three hours or more per day had shortened sleep durations (Tso & others, 2016)

• Description of recent Swedish studies of 16- to 19-year-olds in which shorter sleep duration was associated with a greater likelihood of school absence and shorter sleep duration and sleep deficit were the best sleep predictors of a low-grade point average (Hysing & others, 2015, 2016)

· Updated national data on adolescents' sleep patterns, including developmental changes (Kann & others, 2016)

• Discussion of a recent experimental study in which adolescents' sleep was restricted to five hours for five nights, then restored to ten hours for two nights; sleep restrictions negatively affected sustained attention, especially in the early morning (Agostini & others, 2017)

• Inclusion of a recent national study of more than 10,000 13- to 18-year-olds that linked a number of factors involving sleep timing and duration to increased anxiety, mood fluctuations, substance abuse, and behavioral disorders (Zhang & others, 2017).

• Coverage of a longitudinal study of adolescents in which poor sleep patterns were linked to an increased likelihood of drinking alcohol and using marijuana four years later (Miller, Janssen, & Jackson, 2017)

• New commentary that 70 percent of college students do not get adequate sleep and 50 percent report daytime sleepiness (Hershner & Chervin, 2015)

• Inclusion of recent research focusing on varying degrees of sleep deprivation and their association with increased vehicle crash rates (AAA Foundation, 2016)

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New content on the increasing consensus that short (less than seven hours) and long (nine hours or more)
sleep duration per night is detrimental to older adults' cognitive functioning (DeVore, Grodstein, &
Schamhammer, 2016; Lo 2016)

 Description of a recent study of older adults indicating that regular walking at or above 150 minutes per week predicted a lower likelihood of problems with sleep onset and sleep maintenance four years later (Hartescu, Morgan, & Stevinson, 2016)

• Update on life expectancy in the United States, which had risen to 78.8 years in 2013 (U.S. Department of Health and Human Services, 2015)

 \cdot Update on gender and ethnic differences in life expectancy in the United States (U.S. Department of Health and Human Services, 2015)

• Updated international comparisons of countries where life expectancies are highest and lowest (Central Intelligence Agency, 2015)

Updated information about diseases that women are more likely to die from than men are (Ostan & others, 2016)

· Updated data on the increasing number of U.S. centenarians, which reached 72,000 in 2014 (Xu, 2016)

• Description of a recent Georgia Centenarian Study that found physical health impairment and fewer social resources were linked to lower subjective well-being (Cho & others, 2015)

• Discussion of recent research that revealed differences between U.S. and Japanese centenarians (da Rosa & others, 2015)

· Coverage of a recent Chinese Longitudinal Healthy Longevity Study indicating that a higher level of education was linked to greater longevity (Luo, Zhang, & Guo, 2015)



• Inclusion of recent research that found a combination of particular FOXO genotypes and tea drinking were associated with the prevention of cognitive decline in the oldest- old, aged 92+ (Zeng & others, 2016)

• Updated information about the oldest living person in the United States (Delphine Gibson, 2014) and in the world (Emma Morano, 2017)

· New criticism of the evolutionary theory of aging (Singer, 2016)

• Reorganization of the discussion of biological theories of aging to include a new heading, "Cellular Processes," with new content on the increasing interest in sirtuins and their link to stress and various diseases such as cancer and cardiovascular disease (Ansari & others, 2017; Blank & Grummt, 2017) and the mTOR pathway (Chen & others, 2016a, b; Schreiber, O'Leary, & Kennedy 2016) as key cellular processes in aging and longevity

• Description of a recent study in which the percentage of T cells decreased in older adults in their seventies, eighties, and nineties (Valiathan, Ashman, & Asthana, 2016)

• New section, "Conclusions," that describes the current belief that although there are some individual aging triggers, such as telomere shortening, a full understanding of biological aging involves multiple processes operating at different biological levels (de Magalhaes & Tacutu, 2016)

Chapter 4: Health

New section, "State of the World's Children," that high-lights the high death rate of children under 5 in many countries and the poor health conditions for children in many countries (Black & others, 2017; UNICEF, 2016, 2017)

• Discussion of recent research indicating that how individuals react to daily stressors is linked to future health out- comes and longevity (Mroczek & others, 2015; Sin & others, 2015)



• New commentary that more than 60 percent of individuals with Alzheimer disease have at least one ApoE4 allele (Riedel, Thompson, & Brinton, 2016)

• Inclusion of recent research that confirmed family caregivers' health-related quality of life deteriorated when they cared for a family memory with Alzheimer disease (Valimaki & others, 2016)

• Discussion of a recent study that revealed 2½-year- old children's liking for fruits and vegetables was related to their eating more fruits and vegetables at 7 years of age (Fletcher & others, 2017)

• Updated data on the continuing increase in breast feeding by U.S. mothers (Centers for Disease Control and Prevention, 2016)

Description of a recent Danish study that found breast feeding did not protect against allergic sensitization in early childhood and allergy-related diseases at 7 years of age (Jelding-Dannemand, Malby Schoos, & Bisgaard, 2015). However, in another recent study, breast feeding was linked to a lower incidence of asthma from 6 to 42 months of age (Yamakawa & others, 2015).

 Inclusion of information about recent longitudinal studies that revealed when mothers participated prenatally and in early childhood in WIC programs young children showed short-term cognitive benefits and longer-term reading and math benefits (Jackson, 2015)

· Updated data on the percentage of U.S. 2- to 5-year-old children who are obese (Ogden & others, 2016)

• Discussion of a recent study of elementary school children that revealed 55 minutes or more of daily moderate-to-vigorous physical activity was associated with a lower incidence of obesity (Nemet, 2016)

• Description of a recent meta-analysis that found children who engage in regular physical activity have better cognitive inhibitory control (Jackson & others, 2016)

· Updated data on the percentage of 6- to 11-year-old U.S. children who are obese (Ogden & others, 2016)



• Updated coverage of genetic influences on obesity and inclusion of recent research that found high activity levels reduced the genetic linkage for obesity in same-sex twins (Hom & others, 2015)

• Description of a recent study in which family meals during adolescence protected against the development of over- weight or obesity in adulthood (Berge & others, 2015)

• Inclusion of a recent Japanese study that revealed the family pattern linked to the highest rates of overweight/obesity in children was a combination of irregular mealtimes and the most screen time for both parents (Watanabe & others, 2016)

 Discussion of a recent study in which children were less likely to be obese or overweight when they attended schools in states that had a strong policy implementation on healthy foods and beverages (Datar & Nicosia, 2017)

• Coverage of a recent research review that concluded the elementary school programs that emphasized increased physical activity, decreased intake of sugar-sweetened beverages, and increased fruit consumption were the most effective in reducing BMI measurements in children (Brown & others, 2016)

New section on binge-eating disorder (BED), including recent research on family connections to BED (Tetzlaff
& others, 2016)

• Inclusion of recent research in which an exercise program of 180 minutes per week improved the sleep patterns of obese adolescents (Mendelson & others, 2016)

• Discussion of a recent study in which a high-intensity exercise program decreased the depressive symptoms and improved the moods of depressed adolescents (Carter & others, 2016)

• New description of cognitive therapy being a particularly effective treatment for anorexia nervosa (Dalle Grave & others, 2016)



 \cdot New content on cognitive behavior therapy and interpersonal therapy being the two most frequent interventions used to treat BED (Grilo, 2017)

• Updated data on the incidence of obesity in U.S. adults overall and in different age groups (Flegal & others, 2016)

• Discussion of recent international comparisons of 33 countries in which the United States had the highest percentage of obese adults (35.3 percent) and Japan the lowest percent- age (3.7); the average of the countries was 23.2 percent of the population being obese (OECD, 2015)

• Discussion of two recent research studies that found no link between antioxidant vitamin intake and mortality (Henriquez- Sanchez & others, 2016; Stepaniak & others, 2016)

• Commentary that expert panels from Australia, Canada, the United Kingdom, and the United States recently were remarkably similar in recommending that young children get an average of 15 or more minutes of physical activity per hour over a 12-hour period, or about 3 hours total per day (Pate & others, 2015)

• Inclusion of recent research on 7- to 9-year-olds that found participating for approximately one year in organized lei- sure sports was linked to a decrease in cardiovascular risk (Mayo Clinic Proceedings, 2017)

· Coverage of recent research in which 60 minutes of physical activity per day in preschool academic contexts improved young children's early literacy (Kirk & Kirk, 2016)

• Updated national data on adolescents' exercise patterns, including gender and ethnic variations (Kann & others, 2016a)

• Description of a recent research review concluding that among a number of cognitive factors, memory was the factor that was most often improved by exercise in adolescence (Li & others, 2017)

• Coverage of a recent meta-analysis in which moderate and vigorous aerobic exercise resulted in a lower incidence of major depressive disorder (Schuch & others, 2016b)



• Coverage of a recent study of older adults in which resistance training improved their physical function, psychological well-being, and quality of life (Gill & others, 2017)

• Description a recent study in which adults who exercised regularly had lower levels of anxiety and depression (Khanzada, Soomro, & Khan, 2015)

• Discussion of recent research that found a one-year exercise intervention decreased stress symptoms in working adults (Kettunen, Vuorimaa, & Vasankari, 2015)

• Inclusion of a recent study of older adults that revealed walking a dog regularly was associated with better physical health (Curl, Bibbo, & Johnson, 2017)

Inclusion of recent research with sarcopenic older adults that found those who were physically active had a
25 per- cent probability of greater longevity than their sedentary counterparts (Brown, Harhay, & Harhay,
2016)

• Coverage of a recent study in which individuals who increased their physical fitness levels from low to intermediate or high had a lower risk for all-cause mortality than those who did not (Brawner & others, 2017)

• Discussion of a recent research review that concluded more physically fit and active older adults have greater prefrontal cortex and hippocampal volume, a higher level of brain connectivity, more efficient brain activity, better memory, and a higher level of executive function (Erickson, Hillman, & Kramer, 2015)

• Updated data on the percentage of older adults who engage in regular exercise, which has increased substantially since 2006 (Centers for Disease Control and Prevention, 2015)

• Inclusion of recent research on older adults in which those who engaged in regular physical activity following a heart attack were less depressed than their sedentary counterparts (Chao & others, 2015)

• Updated coverage of the Monitoring the Future study's assessment of drug use by secondary school students, with 2016 data on U.S. eighth-, tenth-, and twelfth-graders (Johnston & others, 2017)



• Discussion of a recent national study in which one in four twelfth-graders reported having consumed alcohol mixed with energy drinks, and this combination was linked to their unsafe driving (Martz, Patrick, & Schulenberg, 2015).

• Description of a longitudinal study in which younger age at first use of alcohol was linked to risk of heavy alcohol use in early adulthood (Liang & Chikritzhs, 2015)

• New content on e-cigarette use by adolescents, which now surpasses adolescents' traditional cigarette smoking among eighth-, tenth-, and twelfth-grade students (Johnston & others, 2017)

• Updated data on binge drinking in emerging adults and new data on binge drinking through 50 years of age, including new Figure 16 (Johnston & others, 2016)

• New data on cigarette smoking among adults from 18 years of age through 35+ years of age (Johnston & others, 2016)

Chapter 5: Motor, Sensory, and Perceptual Development

• New coverage of a recent study of infants' organization of exploratory behaviors in planning locomotion in challenging contexts (Kretch & Adolph, 2017)

• Discussion of a recent study that examined a number of predictors of motor milestones in the first year (Flensborg- Madsen & Mortensen, 2017)

 Description of recent studies that indicated short-term training involving practice of reaching movements increased both preterm and full-term infants' reaching for and touching objects (Cunha & others, 2016; Guimaraes & Tudelia, 2015)

 Inclusion of recent research indicating that providing reaching experiences to 3-month-olds who had not previously engaged in reaching behavior led to increased object exploration and attention focusing at 5.5 months of age (Libertus, Joh, & Needham, 2016)



• New coverage of a recent study that revealed 3-month-old infants who participated in active motor training using "sticky mittens" that allowed them to pick up toys engaged in more sophisticated object exploration at 15 months of age (Wiesen, Watkins, & Needham, 2016)

• Discussion of recent research that found children's gross and fine motor skills were associated with cognitive functions such as memory and processing speed, as well as math and reading achievement (Geertson & others, 2016)

• Description of a recent study of frail elderly adults in which a high-intensity walking intervention reduced their frailty, increased their walking speed, and improved their mobility (Danilovich, Conroy, & Hornby, 2017)

• Coverage of recent research on older adults that found poorer visual function was associated with (a) cognitive decline (Monge & Madden, 2016; Roberts & Allen, 2016), and (b) having fewer social contacts and engaging in less-challenging social/leisure activities (Cimarolli & others, 2017)

• New coverage of the recent increased interest in using stem-cell-based therapy to treat macular degeneration (Hanus, Zhao, & Wang, 2016; Klassen, 2016)

 Description of recent research that found older adults' hearing problems are associated with less time spent out of home and in leisure activities (Mikkola & others, 2016), increased falls (Gopinath & others, 2016; Jiam, Li, & Agrawal, 2016), and greater loneliness (Mick & Pichora- Fuller, 2016)

 Coverage of a recent study in which older adults with a hearing problem who used a hearing aid were less likely to be lonely than their hearing-impaired counterparts who did not use a hearing aid (Weinstein, Sirow, & Moser, 2016)

• Discussion of a recent study of 80- to 106-year-olds that found a substantial increase in hearing loss in the ninth and tenth decades of life (Wattanwar & others, 2017). In this study, although hearing loss was universal in the 80- to 106-year-olds, only 59 percent wore hearing aids.



• Coverage of a recent study in which 3-month-olds who had regular gentle tactile stimulation when they were fetuses were more likely to have an easy temperament than their counterparts who experienced irregular or no gentle tactile stimulation as fetuses (Wang, Hua, & Xu, 2015)

• Discussion of a study that found the pain threshold in newborns was lower than that of adults (Goksan & others, 2015)

Inclusion of a recent study that revealed kangaroo care was effective in reducing neonatal pain (Seo, Lee, & Ahn, 2016)

• Discussion of a recent research review that concluded older adults have a lower pain sensitivity, but only for lower pain intensities (Lautenbacher & others, 2017)

• Coverage of a recent study in which older adults with more severe pain performed more poorly on memory and executive function tasks than their older adult counterparts with no pain or less pain (van der Leeuw & others, 2016)

• Inclusion of a national study that tracked percentages of community-dwelling older adults with impaired taste, smell, and touch (Correia & others, 2016)

Chapter 6: Cognitive Developmental Approaches

• New coverage of a recent study of 5-month-olds that found their better performance on an A-not-B task was linked to how well they focused their attention on a different task, indicating that infants' attention may be involved in performance variations on the A-not-B task (Marcovitch & others, 2016)

• Expanded and updated criticism of the innate view of the emergence of infant morality with an emphasis on the importance of infants' early interaction with others and later transformation through language and reflective thought (Carpendale & Hammond, 2016)



• New discussion of a recent meta-analysis that linked greater use of social networking sites to higher levels of narcissism (Gnambs & Appel, 2017)

Chapter 7: Information Processing

 \cdot New content using a computer analogy to help explain the connection between cognition and the brain, and how humans process information, including new Figure 1

• New discussion of artificial intelligence and the emerging field of developmental robotics that examines various developmental topics and issues using robots, including a new photograph of a "human-like" baby robot (Cangelosi & Schlesinger, 2015; Morse & Cangelosi, 2017)

 New research involving a 20-year longitudinal study of adults from 42 to 97 years of age that revealed a greater processing speed decline was associated with increased mortality risk (Aichele, Rabbitt, & Ghisletta, 2015)

• Discussion of a recent study that found infants who initiated joint attention at 14 months of age had higher executive function at 18 months of age (Miller & Marcovitch, 2015)

• Coverage of a recent study in which hand-eye coordination involving connection of gaze with manual action on objects rather than gaze following alone predicted joint attention (Yu & Smith, 2017)

 Description of a recent experimental study that revealed yoga practice that included postures, breathing, and meditation improved the attention and information processing of older adults (Gothe, Kramer, & McAuley, 2017)

· Coverage of a recent study in which older adults who engaged in mindfulness mediation regularly showed improvements in goal-directed attention (Malinowski & others, 2017)

· Discussion of Patricia Bauer's (2015) view of developmental changes in infantile amnesia.



• Expanded and updated coverage of Alan Baddeley's important concept of working memory, including coverage of its link to improving many aspects of children's cognitive and academic development (Gerst & others, 2016; Peng & Fuchs, 2016)

• Description of recent research in which children's verbal working memory was linked to these aspects of both first- and second-language learners: morphology, syntax, and grammar (Verhagen & Leseman, 2016)

• Inclusion of recent research in which aerobic endurance was linked to better working memory in older adults (Zettel- Watson & others, 2017)

• Discussion of recent research with young, middle-aged, and older adults that found all three age groups' working memory improved with training but that older adults improved less than young adults who received the training (Rhodes & Katz, 2017)

• Coverage of research in which episodic memory performance 10 years prior to clinical diagnosis of dementia predicted which individuals would have the disease (Boraxbekk & others, 2015)

• Description of a recent study in which planning strategies were associated with older adults' prospective memory (Wolff & others, 2016).

• Expanded and updated content on Mischel's longitudinal study of delay of gratification to include multiple outcomes in adolescence and adulthood (Mischel, 2014; Moffitt, 2012)

• Discussion of a recent study in which a social and emotional learning program focused on mindfulness and caring for others was effective in improving a number of cognitive processes in fourth-and fifth-grade students, including mindfulness and cognitive control (Schonert-Reichl & others, 2015)

• Coverage of recent research in which mindfulness training improved children's attention and self-regulation (Poehlmann-Tynan & others, 2016), achievement (Singh & others, 2016), and coping strategies in stressful situations (Dariotis & others, 2016)



Description of two recent studies that found mindfulness training reduced public school teachers' stress,
improved their mood at school and at home, and promoted better sleep (Crain, Schonert-Reichl, & Roeser,
2017; Taylor & others, 2016)

· Coverage of a recent study of young children that found executive function was associated with emergent literacy and vocabulary development (Becker & others, 2014)

• New coverage of developmental changes in executive function in early childhood, including recent research on executive function and school readiness (Willoughby & others, 2017)

• Inclusion of research in which secure attachment to mothers during the toddler years was linked to a higher level of executive function at 5 to 6 years of age (Bernier & others, 2015)

· Coverage of recent research in which experiencing peer problems in early childhood was linked to lower executive function later in childhood (Holmes, Kim-Spoon, & Deater- Deckard, 2016)

 Updated coverage of the fuzzy-trace theory dual-process model of adolescent decision making (Brust-Reneck & oth- ers, 2017; Rahimi-Golkhandan & others, 2017; Reyna & Zayas, 2014; Reyna & others, 2015)

• New research that indicated executive function predicted increases in self-rated health in communitydwelling older adults (McHugh & Lawlor, 2015)

• Discussion of a recent study in which executive dysfunction was a strong predictor of having a stroke in cognitively normal aging adults (Oveisgharan & Hachinski, 2015)

· Inclusion of recent research that found young adults made better decisions than older adults in unfamiliar domains, but not in familiar domains (Wayde, Black, & Gilpin, 2017)

• Coverage of a recent study in which older adults assessed in 2013–2014 engaged in a higher level of abstract reasoning than their counterparts who were assessed two decades earlier (Gerstorf & others, 2015)



• New discussion of a recent study of older adults working low-complexity jobs that found those who experienced novelty in their work (assessed through recurrent work-task changes) had better processing speed and working memory (Oltmanns & others, 2017)

New content on the Baltimore Experience Corps program in which older adults who volunteer in elementary schools have improved cognitive and brain functioning (Carlson & others, 2015; Parisi & others, 2012, 2014, 2015)

• Updated information on what is effective in reducing cognitive decline in older adults (Stanford Center for Longevity and Max Planck Institute for Human Development, 2014)

· Coverage of a recent study that found fish oil supplementation improved the working memory of older adults (Boespflug & others, 2016)

• Discussion of a recent research review in which Exergaming was linked to improved cognitive functioning in older adults (Ogawa, You, & Leveille, 2016)

• Description of recent research in which participating in physical activity in late adulthood was linked to less cognitive decline (Gow, Pattie, & Geary, 2017)

• Inclusion of recent research indicating that computerized cognitive training can improve some cognitive processes in older adults (Lampit, Hallock, & Valenzuela, 2014; Suo & others, 2016)

• New research indicating that fish oil supplement use was linked to higher cognitive scores and less atrophy in one or more brain regions (Daiello & others, 2015)

• New description of a study that revealed cognitive training using virtual-reality-based games with stroke patients improved their attention and memory (Gamito & others, 2017)

• Coverage of recent research in which cortical thickness in frontoparietal networks predicted executive function in older adults (Schmidt & others, 2016)



• Expanded and updated coverage of factors that influence children's theory of mind development: prefrontal cortex functioning (Powers, Chavez, & Hetherington, 2016) and various aspects of social interaction (Devine & Hughes, 2017), including secure attachment and mental state talk, parental engagement in mind-mindedness (Hughes, Devine, & Wang, 2017), having older siblings and friends who engage in mental state talk, and living in a higher-socioeconomic-status family

• New description of recent research indicating that children with an advanced theory of mind are more popular with their peers and have better social skills in peer relations than children without an advanced theory of mind (Peterson & others, 2016; Slaughter & others, 2014)

• Updated statistics on rising estimates of the percentage of children who have autism spectrum disorders (Christensen & others, 2016)

• Coverage of a recent study in which theory of mind predicted the severity of autism in children (Hoogenhout & Malcolm-Smith, 2017)

• New research focused on metacognition that found older adults were just as good at detecting errors in proofreading passages and judging their own performance as were younger adults (Hargis & others, 2017)

Chapter 8: Intelligence

• Description of the most recent revision of the Wechsler Intelligence Scale for Children—V—and its increased number of subtests and composite scores (Canivez, Watkins, & Dombrowski, 2017; Wechsler, 2014)

· New content on links between intelligence and school grades as well as achievement test performance

• Inclusion of recent research indicating that the collective IQ of a country's citizens is linked to its economic growth (Hafer, 2017)

· Coverage of recent research that found a significant link between children's general intelligence and their self-control (Meldrum & others, 2017)



• Description of a recent meta-analysis that revealed a correlation of +.54 between intelligence and school grades (Roth & others, 2015)

• Discussion of a recent two-year intervention with families living in poverty in which maternal scaffolding and positive home stimulation improved young children's intellectual functioning (Obradovic & others, 2016)

New content on stereotype threat in the section on cultural bias in intelligence tests (Pennington & others, 2016; Spencer, Logel, & Davies, 2016)

• New coverage of a study that found early language skills at 24 months of age predicted IQ at 6 years of age and were linked to intellectual disability (predicted from 8 months) and giftedness (predicted from 12 months of age (Peyre & others, 2017)

• New description of a study in which developmental mile- stones assessed at 3 years of age were linked to scores on the Wechsler Adult Intelligence Scale at 20 to 34 years of age, with the strongest associations occurring for the early developmental milestones of language and social interaction (Flensborg-Madsen & Mortensen, 2017)

• Inclusion of recent research comparing cross-sectional and longitudinal studies on the contribution of processing speed to cognitive decline in older adulthood (MacDonald & Stawski, 2015, 2016)

• Coverage of Timothy Salthouse's (2014, 2016) assertion that the main reason for different age trends in longitudinal and cross-sectional comparisons of cognitive functioning is prior experience, with test scores increasing each time a test is taken

• Description of a recent study of older adults in which wisdom was positively associated with perceived wellbeing, the association being stronger for those living in a nursing home or a hospice than for individuals living in the com- munity (Ardelt & Edwards, 2016)

• Update on the percentage of U.S. students who are classified as gifted (National Association for Gifted Children, 2017)

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• New discussion of how children who are gifted excel in various aspects of processing information (Ambrose & Sternberg, 2016a)

Coverage of a recent study in which the creativity of 1-year-olds was associated with that of their parents, including a description of the task that was used to assess the 1-year-olds' divergent thinking (Hoicka & others, 2016)

Chapter 9: Language Development

Inclusion of revisions and updates based on feedback from leading experts Roberta Golinkoff and Virginia
Marchman

• New opening commentary about the nature of language learning and how it involves comprehending a sound system (or sign system for individuals who are deaf), the world of objects, actions, and events, and how units such as words and grammar connect sound and world (Pace & others, 2016)

 \cdot Revised definition of infinite generativity to include comprehension as well as production

 \cdot New content on the language of Korean children being more verb friendly than noun friendly (Waxman & others, 2013)

 \cdot New discussion of Patricia Kuhl's (2015) findings that the period when baby's brain is most open to learning the sounds of a native language begins at age 6 months for vowels and 9 months for consonants

• Expanded description of how statistical regularity of information is involved in infant word learning (Pace & others, 2016)

New research on babbling onset predicting when infants would say their first words (McGillion & others, 2017)

· New commentary on why gestures such as pointing pro- mote further advances in language development

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• Description of recent research in which vocabulary development from 16 to 24 months of age was linked to vocabulary, phonological awareness, reading accuracy, and reading comprehension five years later (Duff & others, 2015)

• New content on the nature of the vocabulary spurt beginning at about 18 months, including how the spurt actually involves the rate at which words are learned and how vocabulary acquisition begins slowly and then takes off

• New coverage of how word meaning is learned more deeply through fast mapping, as in where the word can apply, and its nuances

• Inclusion of a recent study in which the conversational communicative duet between parent and child, which was set up well before children began to talk, mattered more to children's language development than how much language children heard (Hirsh-Pasek & others, 2015)

· Coverage of recent research in which 60 minutes of physical activity per day in preschool academic contexts improved young children's early literacy (Kirk & Kirk, 2016)

• New description of the rate at which bilingual and monolingual children learn language(s) (Hoff, 2015) and inclusion of a recent study that found by 4 years of age children who continued to learn Spanish and English languages had a total vocabulary growth that was greater than that of mono- lingual children (Hoff & others, 2014)

• Discussion of a recent strategy intervention with struggling second-grade readers and their teachers that provided positive results for a number of writing outcomes (Harris, Graham, & Atkins, 2015)

 Inclusion of a recent study involving joint attention in which infants' eye-gaze behaviors during Spanish tutoring sessions at 9.5 to 10.5 months of age predicted the infants' second- language phonetic learning at 11 months of age, indicating a strong influence of social interaction at the earliest ages of learning a second language (Conboy & others, 2015)



Revised and updated definition and description of child- directed speech (Houston & others, 2016; Kuhl, 2015)

• Expanded descriptions of the functions that child-directed speech serves, including providing infants with information about their native language and heightening differences with speech directed to adults (Golinkoff & others, 2015)

· Coverage of a recent study in which metalinguistic instruction improved the spelling and reading skills of children attending kindergarten (Schiff, Nur Ben-Shushan, & Ben-Artzi, 2015)

• Coverage of a recent study of 6- to 10-year-old children that found early bilingual exposure was a key factor in bilingual children outperforming monolingual children on phonological awareness and word learning (Jasinsksa & Petitto, 2017)

• Description of a recent study of Spanish-English bilingual children that revealed child-directed speech at 14 months of age was linked to productive vocabulary at 24 months of age (Ramirez-Esparza, Garcia-Sierra, & Kuhl, 2017)

• Discussion of research that documented bilingual children were better at theory of mind tasks than were monolingual children (Rubio-Fernandez, 2016)

• Inclusion of a recent study that revealed individuals with Alzheimer disease were less likely to use syntactic components in their language than those who did not have Alzheimer disease (Orimaye & others, 2017)

• Description of a recent study in which the lower working memory capacity of older adults compared with younger adults impaired their comprehension of sentences (Sung & others, 2017)

• New content on the work done by Ellen Bialystok and her colleagues (2016) leading to the conclusion that being bilingual may be one of the best ways to delay the onset of Alzheimer disease by up to four or five years



• Inclusion of recent research in which bilingual Alzheimer patients had better neural network functioning, especially involving executive function, than did monolingual Alzheimer patients (Perani & others, 2017)

• New emphasis on the importance of social cues in infant language learning (Pace & others, 2016)

• Discussion of how joint engagement and relevant responsiveness by a social partner in infancy predicts later growth in language, possibly because they improve the infant's mapping process that connects words and the world (Tamis- LeMonda & others, 2014)

 Inclusion of recent research indicating that the quality of early foundational communication between parent and child at age 2 accounted for more language variability at age 3 than did the amount of parent speech (Tamis-LeMonda, Kurchirko, & Pace, 2014)

· Revised definitions of recasting, expanding, and labeling

Chapter 10: Emotional Development and Attachment

· Revised content based on feedback from leading expert Ross Thompson

• New introductory comments about the important role played by cognitive processes, in addition to biological and experiential influences, in children's emotional development, both in the moment and across childhood (Calkins, Perry, & Dollar, 2016)

• Inclusion of a recent study in which mothers were more likely than fathers to use soothing techniques to reduce infant crying (Dayton & others, 2015)

• Expanded coverage of the importance of emotion regulation in childhood and links between emotion regulation and executive function (Blair, 2016, 2017; Calkins & Perry, 2016)

• Coverage of a recent study that found depressed mothers rocked and touched their crying infants less than non- depressed mothers did (Esposito & others, 2017)

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Revised definition of sympathy and inclusion of sympathy as a key term (Eisenberg, Spinrad, & Valiente, 2016)

• Description of a large-scale national study on a recent increase in depression in adolescence, as well as gender differences in adolescent depression (Mojtabai, Olfson, & Han, 2016)

• Discussion of a recent study in which older adults reacted with less anger about a personal memory than younger adults did (Kunzmann & others, 2017)

• New commentary by Laura Carstensen (2016) that when older adults focus on emotionally meaningful goals they are more satisfied with their lives, feel better, and experience fewer negative emotions

• Coverage of a recent large-scale examination of healthy living in different age groups by the Stanford Center for Longevity called the Sightlines Project in which social engagement with individuals and communities appeared to be weaker today than it was 15 years ago for 55- to 64-year-olds (Parker, 2016).

New recommendations on ways that older adults can become more socially engaged (Sightlines Project, 2016)

• New description of how the use of positive parenting, including high warmth and low levels of harsh control, increases children's effortful control (Bates & Pettit, 2015)

· Coverage of a recent study in which disinhibition in the toddler years was linked to career stability in middle adult- hood (Blatney & others, 2015)

• Inclusion of recent research indicating that a high level of emotionality at 6 years of age was associated with depression in emerging adulthood (Bould & others, 2015)

• New research that found positive affectivity, surgency, and self-regulation capacity assessed at 4 months of age was linked to school readiness at 4 years of age (Gartstein, Putnam, & Kliewer, 2016)



• Coverage of a recent study that found having an emotionally reactive temperament at age 1 was linked to having emotional problems at 5½ years of age (Abulizi & others, 2017)

• Description of a recent study that revealed if parents had a childhood history of behavioral inhibition, their children who also had a high level of behavioral inhibition were at risk for developing anxiety disorders (Stumper & others, 2017)

• Expanded discussion of differential susceptibility to include Jay Belsky's (2014) controversial proposal that intervention programs might try to target children who are more vulnerable to difficulty in adverse conditions because of the greater cost-effectiveness involved in their being more likely to flourish when given a lot of care and support

 Expanded and updated content on the increasing belief that babies are socially smarter than used to be thought, including information about research by Amanda Woodward and her colleagues (Krogh-Jespersen & Woodward, 2016; Shneidman & Woodward, 2016; Sodian & others, 2016) revealing how quickly infants understand and respond to others' meaningful intentions

• Coverage of a recent study that revealed insecure attachment to mothers was linked to becoming depressed and remaining depressed at 15 to 20 years of age (Agerup & others, 2015)

• Coverage of a recent study in which both paternal and maternal sensitivity assessed when the infant was 10 to 12 months old were linked to the child's cognitive development at 18 months of age and the child's language development at 36 months (Malmburg & others, 2016)

• Inclusion of recent research in Zambia, where siblings were substantially involved in caregiving activities, that revealed infants showed strong attachments to both their mothers and their sibling caregivers, with secure attachment being the most frequent attachment classification for both mother- infant and sibling-infant relationships (Mooya, Sichimba, & Bakermans-Kranenburg, 2017)



• Description of a recent study that did not find support for the view that genes influence mother-infant attachment (Leerkes & others, 2017b)

• Updated and expanded coverage of the neuroscience of attachment to include the role of the brain's neurotransmitter dopamine circuits that provide pleasure and reward when mothers care for their infant and are exposed to their infants' cues; these experiences and brain changes likely promote mother- infant attachment and sensitive parenting (Feldman, 2017; Kim, Strathearn, & Swain, 2016; Sullivan & Wilson, 2018)

• Discussion of a recent study that indicated that friendship quality was linked to the quality of romantic relationships in adolescence (Kochendorfer & Kerns, 2017)

 Inclusion of recent research in which having a supportive romantic relationship in adolescence was linked with positive outcomes for adolescents who had a negative relation- ships with their mother (Szwedo, Hessel, & Allen, 2017)

• Description of a recent study that found mother-daughter conflict in Mexican-American families was linked to an increase in adolescent daughters' romantic involvement (Tyrell & others, 2016)

• Discussion of a longitudinal study in which insecure avoidant attachment at 8 years of age was linked to negative social outcomes at 21 years of age (Fransson & others, 2016)

• Description of a recent study of adoptees that found higher maternal sensitivity in infancy and middle and late child- hood predicted more secure attachment representations in emerging adulthood (Schoenmaker & others, 2015)

 Inclusion of recent research that revealed young adults with an anxious attachment style were more likely to be characterized by higher negative affect, stress, and perceived social rejection; those with an avoidant attachment style were more likely to be characterized by less desire to be with others when alone (Sheinbaum & others, 2015)



• New research in which adults with a secure attachment style had fewer sleep disruptions than their counterparts with an insecure avoidant or insecure anxious attachment style (Adams & McWilliams, 2015)

• Coverage of a recent study in which insecurely attached adults had a higher level of social anxiety than their securely attached counterparts (Notzon & others, 2016)

• Discussion of recent research that found declaring a relationship on Facebook was associated with both romantic love and jealousy (Orosz & others, 2015)

• Inclusion of a large-scale study that revealed experiencing a romantic breakup lowered individuals' selfesteem but the effect disappeared one year after the breakup (Luciano & Orth, 2017)

Chapter 11: The Self, Identity, and Personality

· Updates based on feedback from leading expert Ross Thompson

• New description of recent research studies indicating that children and adolescents who do not have good perspective- taking skills are more likely to have difficulty in peer relations and engage in more aggressive and oppositional behavior (Morosan & others, 2017; Nilsen & Bacso, 2017; O'Kearney & others, 2017)

• New discussion of a research review that found reminiscence therapy was effective in reducing older adults' depressive symptoms (Apostolo & others, 2016)

• Coverage of a recent study which another variation of reminiscence therapy, attachment-focused reminiscence therapy, reduced the depressive symptoms, perceived stress, and emergency room visits of older African Americans (Sabir & others, 2016)

• Inclusion of a longitudinal study that revealed the quality of children's home environment (which involved assessment of parenting quality, cognitive stimulation, and the physical home environment) was linked to their self-esteem in early adulthood (Orth, 2017)



• Coverage of a recent study of individuals in the second half of life in which self-esteem peaked at 50 years of age and declined thereafter (Soest & others). In this study, emotion- ally stable individuals' self-esteem declined the least and not having a cohabiting partner, being unemployed, and having a disability were each associated with a lower level of self-esteem and a steeper decline in self-esteem across five years.

• New description of an app that is effective in improving children's self-control: www.selfregulationstation.com/sr-ipad-app/

New discussion of a recent study of more than 5,000 individuals from 10 to 30 years of age in 11 countries in Africa, Asia, Europe, and the Americas in which sensation seeking increased steadily from 11 years of age through adolescence, peaking at 19 years of age and declining through the twenties (Steinberg & others, 2017). However, in this study, self-regulation increased steadily from 11 years of age into emerging adulthood, reaching a plateau at 23 to 26 years of age.

• New commentary about developmental changes in the brain that are associated with self-regulation (Cohen & Casey, 2017; Monahan & others, 2017).

• Coverage of a recent study of individuals from 22 to 94 years of age (Teshale & Lachman, 2016). In this study, on days when middle-aged and older adults, as well as individuals who were less healthy, used more selective optimization with compensation strategies, they reported a higher level of happiness.

 \cdot Changes made based on recommendations from leading expert Kate McLean

 Inclusion of a recent study that examined identity domains using both identity status and narrative approaches, with the interpersonal domain (especially dating and friendship aspects) frequently mentioned (McLean & others, 2016). In the narrative approach, family stories were common.

• New commentary about the term "temperament" being used by many developmental psychologists in describing personality-like categories in infants and children (Gartstein, Putnam, & Kliewer, 2016; Janssen & others, 2017; Stifter & Dollar, 2016)



• Coverage of two recent studies that found a strong and positive ethnic identity was linked to a lower incidence of sub- stance abuse and psychiatric problems (Anglin & others, 2017; Grindal & Nieri, 2016)

• Description of recent research that found individuals high in openness to experience have superior cognitive functioning across the life span (Briley, Domiteaux, & Tucker-Drob, 2014), have better health and well-being (Strickhouser, Zell, & Krizan, 2017), experience less negative affect to stressors (Leger & others, 2016), and are more likely to eat fruits and vegetables (Conner & others, 2017)

 Inclusion of recent research that found conscientiousness was linked to better health and well-being (Strickhouser, Zell, & Krizan, 2017), a lower risk for alcohol addiction (Raketic & others, 2017), superior problem-focused coping (Sesker & others, 2016), greater success in accomplishing goals (McCabe & Fleeson, 2016), better cognitive status and less cognitive decline in older adults (Luchetti & others, 2016), and a lower risk of dementia (Terracciano & others, 2017)

• Coverage of recent research indicating that individuals high in extraversion are more satisfied with their relationships (Toy, Nai, & Lee, 2016) show less negative affect to stressors (Leger & others, 2016), and have a more positive sense of their future well-being (Soto & others, 2015)

• Discussion of recent research indicating that people high in agreeableness engage in more positive affect to stressors (Leger & others, 2016) and have a lower risk of dementia (Terracciano & others, 2017)

• Description of recent research in which individuals who were higher in neuroticism had a higher risk of dementia (Terracciano & others, 2017)

• Inclusion of recent research in which more pessimistic college students had more anxious mood and stress symptoms (Lau & others, 2017)

• New section on the personality-trait-like characteristic of optimism and recent research on its link to better health and physical functioning in middle age (Boelen, 2015)



• Inclusion of a recent study in which a higher level of optimism improved the likelihood that individuals who had just experienced an acute coronary event would engage in more physical activity and have fewer cardiac readmissions (Huffman & others, 2016)

• Description of a recent review of research involving the influence of optimism on positive outcomes for individuals with chronic diseases through direct and indirect pathways (Avvenuti, Baiardini, & Giardini, 2016)

• Discussion of a recent meta-analysis that revealed stressful life events were related to autoimmune diseases, such as arthritis and psoriasis (Porcelli & others, 2016)

• Inclusion of a recent research review in which the personality trait that changed the most as a result of psychotherapy was emotional stability, followed by extraversion (Roberts & others, 2017). In this study, the personality traits of individuals with anxiety disorders changed the most, and the traits of those with substance use disorders changed the least.

Chapter 12: Gender and Sex

· Revisions based on feedback from leading expert Stephanie Budge

• New commentary about research indicating that young children's gender-typing is often rigid but becomes more flexible in middle and late childhood (Halim & others, 2016). Also, in some studies girls' gender-typing becomes more flexible than boys' (Miller & others, 2009)

· Coverage of a recent study in Great Britain in which gender non-conforming boys were most at risk for peer rejection (Braun & Davidson, 2017)

• Discussion of a recent study that found 2-year-olds' knowledge of both genders increased gender stereotyping from 2 to 3 years of age but knowledge of only one or the other gender at 2 years of age did not (Zosuls, Ruble, & Tamis- LeMonda, 2014).



• Inclusion of recent research with eighth-grade students in 36 countries that revealed girls had more egalitarian attitudes about gender roles than boys did (Dotti Sani & Quaranta, 2017)

• Introduction of a recently created term functional flexibility to describe the importance of considering contexts when linking one's gender identity to adjustment and competence (Martin & others, 2017)

• New commentary about the multiple factors that may con- tribute to gender differences in academic achievement in areas such as reading and math (Wentzel & Miele, 2016)

· New section on gender-role classification

• Extensive new coverage of transgender individuals and their gender identity, including the complexity and variety of gender identity categories as well as a recommendation for use of an overarching category called trans (Moradi & others, 2016; Sangganjanavanich, 2016)

• Inclusion of a recent research review that concluded trans- gender youth are more likely to have depression, suicide attempts, and eating disorders than their non-transgender peers (Connolly & others, 2016). This discussion also highlights some of the reasons for higher rates of disorders in transgender individuals (Zucker, Lawrence, & Kreukels, 2016)

• Coverage of a recent study that found among older adult men those who were married were more likely to endorse stereotypical masculine traits but also to have higher androgyny scores than unmarried older men (Lemaster, Delany, & Strough, 2017)

• Updated data showing an increase in the percentage of U.S. adults who report being gay, lesbian, bisexual, or transsexual (Gallup, 2015)

• Updated data on the percentage of adolescents who report having been forced to have sexual intercourse (Kann & others, 2016a)

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• Updated data on the occurrence of various sexual activities among adolescents according to age, gender, and ethnicity, including updates for Figures 5 and 6 (Kann & others, 2016a)

• Updated data on the percentage of adolescent males and females who engage in oral sex (Child Trends, 2015)

• New commentary that while the majority of sexual minority adolescents have competent and successful developmental paths through adolescence, a recent large-scale study revealed that sexual minority youth engage in a higher prevalence of health-risk factors than heterosexual youth (Kann & others, 2016b)

• Coverage of a recent study of Latino and non-Latino White girls' preferred TV programs in which female characters were often portrayed in a sexualized manner more than were male characters (McDade-Montez, Wallander, & Cameron, 2017)

· Updated data on the global percentage of individuals who have AIDS (UNAIDS, 2015)

• Description of a recent study that linked early sexual debut to problems that included sexual risk taking, substance use, violent victimization, and suicidal thoughts and attempts in both sexual minority and heterosexual adolescents (Lowry & others, 2017)

• Discussion of a recent study of Korean girls in which early menarche was associated with earlier initiation of sexual intercourse (Kim & others, 2017)

 Inclusion of recent research in which adolescents who reported greater parental knowledge and more rules about dating as eighth-graders were less likely to initiate sex between the eighth and tenth grades (Ethier & others, 2016)

• Discussion of a recent study of a number of parenting practices in which the factor that best predicted a lower level of risky sexual behavior by adolescents was supportive parenting (Simons & others, 2016)



 New research indicating that adolescent males who play sports engage in more risky sexual behavior than average, while adolescent females who play sports engage in less risky sexual behavior (Lipowski & others, 2016)

• Coverage of a recent study of long-term outcomes of teen parenthood among African American youth (Assini-Meytim & Green, 2015)

• Discussion of a recent study in which a higher level of education for adolescent mothers improved the achievement of their children through the eighth grade (Tang & others, 2017)

• Description of a recent study that revealed when emerging adults drink alcohol, they are more likely to have casual sex and less likely to discuss possible risks (Johnson & Chen, 2015)

• Inclusion of a recent meta-analysis that revealed 60 percent of rape victims do not acknowledge their rape, with an especially high percentage not acknowledging rape in the college years (Wilson & Miller, 2016).

· Coverage of a recent study in which males and heavy drinkers were more likely to adhere to rape myths than were women and nondrinkers or light drinkers (Hayes, Abbott, & Cook, 2016)

• New research indicating that suicidal ideation was associated with entrance into a friends-with-benefits (FWB) relationship as well as continuation of the FWB relationship (Dube & others, 2017)

• Revised and updated conclusions about the benefits and risks of HRT for bone loss, bone fractures (de Villiers & others, 2016), cardiovascular disease (Langer, 2017), and breast cancer (www.breastcancer.org), as well as the risk- benefit balance of HRT in healthy women 50 to 60 years of age (Lobo, 2017)

• New discussion of testosterone replacement therapy (TRT), including a recent large-scale study of more than 80,000 men that linked testosterone replacement therapy with a reduction in cardiovascular disease and all-cause mortality (Sharma & others, 2015)



• Description of a recent study in which TRT was associated with increased longevity in men with a low level of testosterone (Comhaire, 2016)

• Updated data on the percentage of men 40 to 70 years of age and over 70 years of age who have erectile dysfunction (Mola, 2015)

Chapter 13: Moral Development, Values, and Religion

• Expanded and updated discussion of Darcia Narváez's view on how we need to make better progress in dealing with an increasing array of temptations and possible wrongdoings in a human social world in which complexity is accumulating over time (Christen, Narváez, & Gutzwiller, 2017)

• New research with 14- to 65-year-olds in which moral identity increased in the adult years (Krettenauer, Urua, & Jia, 2016). In this study, self-direction involving value orientations and conformity to rules became more important in the adult years.

· Coverage of a recent study that found 3-year-olds were more likely to engage in conformity on a socialconventional task than on moral and visual tasks (Kim & others, 2016)

• New commentary about connections between different emotions and how they may influence development, including a recent study in which increased prosocial behavior was attributed to participants' guilt proneness combined with their empathy (Torstevelt, Sutterlin, & Lugo, 2016)

Revised definition of sympathy and inclusion of sympathy as a key term (Eisenberg, Spinrad, & Valiente, 2016)

Discussion of a recent study of 7-month-old infants in which parents participated in an intervention that involved encouraging their infants to release toys into a bucket or share them with their parents (Xu, Saether, & Sommerville, 2016). Subsequently, infants in the sharing condition shared more than infants in the bucket condition, and parental empathy influenced the amount of sharing.



• New description of research linking authoritative parenting to children's and youth's higher levels of prosocial behavior (Carlo & others, 2017)

• Inclusion of recent research in which responsible behavior by mothers was linked to 18-month-olds' prosocial behavior (Schuhmacher, Collard, & Kartner, 2017)

· Coverage of a recent study of young adolescent Chinese students that revealed when they engaged in more gratitude their well-being at school was better (Exema-Agba, McCutchen, & Geller, 2016)

• New research in which volunteering by older adults was linked to a lower risk of cognitive impairment (Infuma, Okun, & Grimm, 2016)

• New discussion of a recent study of more than 20,000 individuals that found low childhood SES, low maternal closeness, and history of harsh discipline were associated with life course persistence of conduct disorder and an increased risk of sub- stance use problems in adulthood (Moore & others, 2017)

• Description of a recent study in which family therapy improved juvenile court outcomes beyond what was achieved in nonfamily-based treatment (Dakof & others, 2015)

 Inclusion of a recent study of more than 10,000 children and adolescents revealing that a family environment characterized by poverty and child maltreatment was linked to entering the juvenile justice system in adolescence (Vidal & others, 2017)

• Coverage of a recent study in which having friends who engage in delinquency was associated with early onset and more persistent delinquency (Evans, Simons, & Simons, 2016)

• New content on the link between low academic success and delinquency (Mercer & others, 2016) and the association of cognitive factors, such as low self-control, with delinquency (Fine & others, 2016)

• Inclusion of recent research in which having callous- unemotional traits predicted an increased risk of engaging in delinquency among adolescent males (Ray & others, 2017b)



• Updated data on the goals of first-year college students in relation to the relative importance they assign to developing a meaningful philosophy of life versus becoming very well- off financially (Eagan & others, 2016)

• Description of a recent study that revealed adolescents who had a lower level of spirituality were more likely to engage in substance use (Debnam & others, 2016)

• Updated data on the continuing decrease in college freshmen who say they have attended religious services occasionally or frequently in the past year (Eagan & others, 2016)

· New section on religion and sexuality in adolescence and emerging adulthood

• Discussion of recent research on African American adolescent girls that found those who reported that religion was of low or moderate importance to them had an earlier sexual debut than did their counterparts who indicated that religion was extremely important to them (George Daimada & others, 2017)

• Updated data indicating a modest decline in the percentage of Americans who believe in God and think religion is very important in their lives (Pew Research Center, 2015)

• New data on the percentage of women (60 percent) and men (47 percent) who say religion is very important in their lives (Pew Research Center, 2016)

• Discussion of a recent study that found spiritual well-being predicted which heart failure patients would still be alive five years later (Park & others, 2016)

• New research indicating that adults who volunteered had lower resting pulse rates and their resting pulse rate improved when they were deeply committed to religion (Krause, Ironson, & Hill, 2017)

• Coverage of a recent study of veterans with combat expo- sure in which those who engaged in negative religious coping were more likely to have posttraumatic stress disorder (PTSD) symptoms, while those who engaged in positive religious coping were more likely to have perceived post- traumatic growth (PPTG) symptoms (Park & others, 2017)



• Inclusion of a recent study in which dementia caregivers who had a higher level of religiosity/spirituality had fewer depressive symptoms than their counterparts who had a lower level of religiosity/spirituality (Yoon & others, 2016)

• Description of a recent study of 57- to 85-year-olds that revealed religious attendance was linked to a lower incidence of physiological problems and negative health outcomes of events such as the death of a spouse (Das & Nairn, 2016)

Chapter 14: Families, Lifestyles, and Parenting

· Expanded coverage of the types of behaviors infants and parents engage in during reciprocal socialization

• Discussion of a recent study that found when adults used scaffolding infants were twice as likely to engage in helping behavior (Dahl & others, 2017)

• Coverage of a recent study of disadvantaged families in which an intervention involving improving early maternal scaffolding was linked to improvement in children's cognitive skills at 4 years of age (Obradovic & others, 2016)

 \cdot Updated information about the continuing sharp increase in cohabitation in the United States

Updated data on the continuing decline of U.S. marriage rates (Centers for Disease Control and Prevention, 2014)

• Updated data on the continuing rise in the age at which U.S. men and women get married (U.S. Census Bureau, 2015b)

· Coverage of a recent study that explored what U.S. never- married men and women are looking for in a potential spouse (Wang, 2014)

 \cdot New discussion of the marriage paradox including research showing that emerging adults may not be abandoning marriage because they don't like marriage or are disinterested in it, but are delaying marriage



because they want to position themselves in the best possible way for developing a healthy marital relationship (Willoughby, Hall, & Goff, 2015; Willoughby & James, 2017)

• Inclusion of a recent research review that concluded the experience of divorce or separation confers risk for poor health outcomes, including a 23 percent higher mortality rate (Sbarra, 2015)

• Description of a recent large-scale study in the United States and six European countries on the buffering effect of marriage on mortality for individuals who are not in the labor force (Van Hedel & others, 2015)

• Coverage of a recent study of married, divorced, widowed, and single adults that revealed married individuals had the best cardiovascular profile, single men the worst (Manfredini & others, 2017).

• Description of a study of life course partnership in which remaining unpartnered (experiencing divorce, never being married, or never cohabiting) was linked to heavy drinking and smoking in middle-aged men and women (Keenan & others, 2017)

 Inclusion of a recent study in Great Britain that found no differences in the causes of breakdowns in marriage and cohabitation (Gravningen & others, 2017). In this study, "grew apart," "arguments," "unfaithfulness/adultery," "lack of respect, appreciation," and "domestic violence" were the most frequent reasons given for such breakdowns.

• Coverage of a recent research review concluding that divorced men and women are more likely to commit suicide than their married counterparts (Yip & others, 2015)

• Discussion of a recent study on increased risk of heart attack among divorced adults, especially female divorced adults (Dupre & others, 2015)

• Updated data on the percentage of U.S. adults who remarry and the gender remarriage gap with men almost twice as likely to remarry in a recent year as women were (Payne, 2015)

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• Inclusion of recent study in which remarried adults had less frequent sex than those in their first marriage (Stroope, McFarland, & Uecker, 2015)

• Inclusion of content from a recent study that found greater sharing of responsibilities in same-sex than in different-sex couples (Matos & others, 2015)

• Discussion of a recent study in which middle-aged married individuals had a lower likelihood of work-related health limitations (Lo, Cheng, & Simpson, 2016)

• Inclusion of recent research with middle-aged adults that linked positive marital quality to better health for both spouses (Choi, Yorgason, & Johnson, 2016)

• New discussion of the increasing divorce rate in middle- aged adults and the reasons for the increase (Stepler, 2017)

· Updated information about the percentage of older adults who are married (U.S. Census Bureau, 2015)

• Description of a recent study of married and cohabiting older adults that indicated negative relationship quality predicted a higher level of blood pressure when both members of the couple reported having negative relationship quality (Birditt & others, 2016)

• Description of a recent study in which more frequent negative (but not positive) marital experiences were linked to a slower increase in older adults' cognitive limitations over time (Xu, Thomas, & Umbersom, 2016)

• Coverage of a recent study in which spousal support was linked to an important biomarker of biological aging, telomere length (Barger & Cribbet, 2016)

· Updated data on the average age at which U.S. women have their first child (Martin & others, 2015

• Inclusion of a recent national study of U.S. adolescents that revealed adolescents whose parents engaged in authoritarian parenting were more likely to have depressive symptoms than their counterparts who experienced authoritative parenting (King, Vidourek, & Marianos, 2016)



• New commentary about how in many traditional cultures, fathers use an authoritarian style; in such cultures, children benefit more when mothers use an authoritative parenting style

• Discussion of a recent meta-analysis that found when physical punishment was not abusive, physical punishment still was linked to detrimental child outcomes (Gershoff & Grogan-Kaylor, 2016)

• Discussion of a recent study in which parental divorce, as well as child maltreatment, during childhood was linked to midlife suicidal ideation (Stansfield & others, 2017)

• Coverage of recent research in which a bicultural orientation of both adolescents and their parents supported the adolescents' academic achievement (Kim & others, 2015)

• Inclusion of recent research with fifth- to eighth-graders in which a higher level of parental monitoring was associated with higher grades (Tip, Liew, & Luo, 2017)

• Description of recent research in which higher parental monitoring reduced negative peer influence on adolescent risk-taking (Wang & others, 2016)

• New research on 10- to 18-year-olds in which lower disclosure to parents was linked to antisocial behavior (Chriss & others, 2015)

• Discussion of recent research that found snooping was a relatively infrequent parental monitoring technique (com- pared with solicitation and control) but was a better indicator of problems in adolescent and family functioning (Hawk, Becht, & Branje, 2016)

• Coverage of a recent meta-analysis that found higher levels of parental monitoring and rule enforcement were linked to later initiation of sexual intercourse and greater use of condoms by adolescents (Dittus & others, 2015)

• Discussion of a recent study the revealed from 16 to 20 years of age, adolescents perceived that they had increasing independence and a better relationship with their parents (Hadiwiya & others, 2017)



• Coverage of recent research indicating that most adolescents had a fairly stable attachment style but that attachment stability increased in adulthood (Jones & others, 2017). Also

in this study, family conflict and parental separation/divorce were likely candidates for undermining attachment stability.

• Discussion of a recent study of Latino families that revealed a higher level of secure attachment with mothers during adolescence was linked to a lower level of heavy drug use (Gattamorta & others, 2017)

•Description of a study in which high parent-adolescent conflict was associated with a lower level of empathy across a six-year period (Van Lissa & others, 2015)

• Inclusion of a recent study that found a higher level of parent-adolescent conflict was linked to higher anxiety, depression, and aggression, and lower self-esteem (Smokowski & others, 2016)

New research on Chinese American families that revealed parent-adolescent conflict was linked to a sense of alienation between parents and adolescents, which in turn was relate to more depressive symptoms, delinquent behavior, and lower academic achievement (Hou, Kim, & Wang, 2016)

• Coverage of recent research indicating that enriched work- family experiences were positively linked to better parenting quality, which in turn was associated with better child out- comes; by contrast, conflictual work-family experiences were related to poorer parenting quality, which in turn was linked to more negative child outcomes (Vieria & others, 2016)

• Inclusion of recent research in which maladaptive marital conflict when children were 2 years old was associated with increased internalizing problems eight years later due to an undermining of attachment security in girls, while a negative emotional aftermath of conflict increased both boys' and girls' internalizing problems (Brock & Kochanska, 2016)

• Coverage of a longitudinal study that revealed parental divorce experienced prior to 7 years of age was linked to a lower level of health through 50 years of age (Thomas & Hognas, 2015)



• Description of recent research on non-residential fathers in divorced families that linked high father-child involvement and low interparental conflict to positive child outcomes (Flam & others, 2016)

• Discussion of a recent study that found co-parenting following divorce was positively associated with better mental health and higher self-esteem and academic achievement (Lamela & Figeiredo, 2016)

 Coverage of a recent research review of internationally adopted adolescents in which a majority were well adjusted, but adoptees had a higher level of mental health problems than their non-adopted counterparts (Askeland & others, 2017)

 \cdot Updated data on the percentage of gay and lesbian parents who are raising children

• Inclusion of recent research that revealed no differences in the adjustment of school-aged children adopted in infancy by gay, lesbian, and heterosexual parents (Farr, 2017).

• Description of a recent study of lesbian and gay adoptive families indicating that 98 percent of the parents reported their children had adjusted well to school (Farr, Oakley, & Ollen, 2017)

 \cdot Updated information about the percentage of children who are living with at least one grandparent in the United States (U.S. Census Bureau, 2015)

• Coverage of a recent study of adult grandchildren in which grandparents provided more frequent emotional support to the grandchildren when parents were having life problems and more frequent financial support when parents were unemployed (Huo & others, 2017)

• Discussion of recent research in which 40- to 60-year-olds reported that their relationships with their children were more important than those with their parents but that their relation- ships with their children were more negative than relation- ships with their parents (Birditt, Kim, & others, 2016)

Chapter 15: Peers and the Sociocultural World



• Coverage of a recent study of young adolescents in which peer rejection predicted increases in aggressive and rule- breaking behavior (Janssens & others, 2017)

• Substantial expansion and updating of discussion of bullying and cyberbullying (Hall, 2017; Muijs, 2017; Zarate- Garza & others, 2017)

• Discussion of longitudinal research that found children who were bullied at 6 years of age were more likely to show excessive weight gain at 12 to 13 years of age (Sutin & others, 2016)

• Description of recent longitudinal studies that indicated victims of bullying in childhood and adolescence have higher rates of agoraphobia, depression, anxiety, panic disorder, and suicidality in the early to midtwenties (Arseneault, 2017; Copeland & others, 2013)

• Inclusion of a longitudinal study that revealed being a victim of bullying in childhood was linked to increased use of mental health services five decades later (Evans-Lacko & others, 2017; Flannery & others, 2016)

• Coverage of recent research in which adolescents who were bullied in both a direct way and through cyberbullying had more behavioral problems and lower self-esteem than their counterparts who were only bullied in one of these two ways (Wolke, Lee, & Guy, 2017)

• Description of a recent teacher intervention in elementary and secondary schools to decrease bullying that focused on increasing bullies' empathy and condemning their behavior; the intervention was effective in increasing the bullies' intent to stop bullying, but blaming the bully had no effect (Garandeau & others, 2016)

• Discussion of a recent study in which boys were more likely to be influenced by peer pressure involving sexual behavior than were girls (Widman & others, 2016)

• Description of a recent study that revealed adolescents adapted their smoking and drinking behavior to that of their best friends (Wang & others, 2016)

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• Inclusion of recent research on adolescent girls that found friends' dieting predicted whether adolescent girls would engage in dieting or extreme dieting (Balantekin, Birch, & Savage, 2017)

• Description of a recent study that revealed compared with younger adults, older adults reported fewer problems with friends, fewer negative friendship qualities, less frequent contact with friends, and more positive friendship qualities with a specific friend (Schlosnagle & Strough, 2017)

· Coverage of a recent study in which a higher level of social support was associated with older adults' increased life satisfaction (Dumitrache, Rubio, & Rubio-Herrera, 2016)

• Discussion of recent research analyses that revealed 80 per- cent of supportive care for older adults with some form of limitation was provided by family members or informal care- givers (Antonucci & others, 2016; Sherman, Webster, & Antonucci, 2016)

• Inclusion of recent research on 90- to 91-year-olds that found living circumstances, independence, health, and a good death were associated with successful aging (Nosraty & others, 2015)

• Coverage of Laura Carstensen's (2015, 2016) recent commentary about the challenges and opportunities involved in the dramatic increase in life expectancy that has been occurring and continues to occur

• Expanded discussion of socioemotional selectivity theory to include the role of a decreasing amount of time to live as an explanation of prioritizing meaningful relationships when people get old (Moss & Wilson, 2017; Segerstrom & others, 2016)

• Description of recent research that found engaging in physical and cognitive leisure activities after retirement decreased cognitive decline for individuals who worked in less cognitively challenging jobs prior to retirement (Andel, Finkel, & Pedersen, 2015)

• Coverage of recent research that revealed having an activity-based lifestyle was linked to lower levels of depression in older adults (Juang & others, 2017)

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• Inclusion of recent research in which middle-aged individuals who engaged in active leisure pursuits had a higher level of cognitive performance in late adulthood (Ihle & others, 2015)

· Coverage of a recent study that revealed individuals who engaged in a greater amount of sedentary screenbased lei- sure activity had shorter telomere lengths (Loprinzi, 2015)

• Inclusion of a recent study that found older adults who increased their leisure time activity were three times more likely to have a slower progression to developing a functional disability (Chen & others, 2016)

• Coverage of a recent Chinese study that found when older adults spent more time in leisure activities they had a higher level of subjective well-being (Zhang & others, 2017)

• Description of a recent study in which middle-aged individuals who engaged in higher levels of leisure-time physical activity were less likely to have Alzheimer disease 28 years later (Tolppanen & others, 2015)

• Inclusion of a recent study in which 18 percent of older adults stated that they were often or frequently lonely (Due, Sandholt, & Waldorff, 2017

 Description of a recent study that revealed four factors emerged as best characterizing successful aging: proactive engagement, wellness resources, positive spirit, and valued relationships (Lee, Kahana, & Kahana, 2017)

 Discussion of a recent study in which heavy media multi- taskers were less likely to delay gratification and more likely to endorse intuitive, but wrong, answers on a cognitive reflection task (Schutten, Stokes, & Arnell, 2017)

• Inclusion of a recent research review that concluded higher screen time was associated with a lower level of cognitive development in early childhood (Carson & others, 2015)



 Inclusion of recent research on children in which higher viewing of TV violence, videogame violence, and music video violence was independently associated with a higher level of physical aggression (Coker & others, 2015)

• Description of a recent research review in which a higher level of media multitasking was linked to lower levels of school achievement, executive function, and growth mindset in adolescents (Cain & others, 2016)

• New information from a research review with details about the complexities of why media multitasking can interfere with learning and driving (Courage & others, 2015)

• Updated data on the percentage of adolescents who use social networking sites and engage in text messaging daily (Lenhart, 2015a, b)

• Inclusion of recent research on 65-year and older adults that found having an iPad increased their family ties and sense of having a greater overall connection to society (Delello & McWhorter, 2017)

• Coverage of a recent study of preschool children in which each additional hour of screen time was linked to less nightly sleep, later bedtime, and less likelihood of sleeping 10 or more hours per night (Xu & others, 2016)

• New coverage of recommendations by Kathy Hirsh-Pasek and her colleagues (2015) regarding the best types of educational applications (apps) for young children. In this regard, they recommend apps that are characterized by active involvement, engagement, meaningfulness, and social interaction.

• Updated statistics on the recent increase in the percentage of U.S. children and adolescents under 18 years of age living in poverty, including data reported separately for African American and Latino families, as well as new poverty data based on educational attainment (DeNavas-Walt & Proctor, 2015)

• Update on the dramatic increase in Latino and Asian American children and adolescents in the United States with projections from 2014 to 2060 (Colby & Ortman, 2015)



• Coverage of a recent intervention (City Connects program) with first-generation immigrant children attending high-poverty schools that was successful in improving the children's reading and math skills (Dragoset & others, 2017)

· Updated data on the increasing number of older adults living in poverty (U.S. Census Bureau, 2016)

 \cdot Coverage of recent research in which a bicultural orientation of both adolescents and their parents benefitted the adolescents' academic achievement (Kim & others, 2015)

• Inclusion of a recent analyses that found non-Latino White men and women with 16 or more years of schooling had a life expectancy that was 14 years higher than that of African Americans with fewer than 12 years of education (Antonucci & others, 2016; Olshansky & others, 2012)

• Description of a recent study comparing Asian, Latino, and non-Latino immigrant adolescents in which immigrant Asian adolescents experienced the most discrimination and had the highest levels of depression and lowest self-esteem (Lo & others, 2017)

Chapter 16: Schools, Achievement, and Work

· Updates in the discussion of motivation based on feedback from leading expert Carol Dweck

New content on the Every Student Succeeds Act (ESSA) that became U.S. law in December 2015 (Rothman, 2016). This law replaces No Child Left Behind and while not totally eliminating state standards for testing students, reduces their influence. The new law also allows states to opt out of Common Core standards.

 \cdot 2017 update on ESSA with the Trump administration planning to go forward with ESSA but giving states much more flexibility in its implementation (Klein, 2017)

• Updated information about the dramatic increase in Montessori schools in the United States and the estimated number worldwide (North American Montessori Teachers' Association, 2016)



• Revised and updated discussion of Project Head Start, including recent research showing mixed results for Head Start (Lee & others, 2014; Miller, Farkas, & Duncan, 2016)

• Greatly expanded discussion of high school education, including problems in making the transition to high school (Eccles & Roeser, 2015; Wigfield, Rosenzweig, & Eccles, 2017)

• Updated data on the percentage of first-year college students who feel overwhelmed with all they have to do (Eagan & others, 2016)

• Updated statistics on the percentage of U.S. children who have different types of disabilities and updated Figure 1 (National Center for Education Statistics, 2016)

 Coverage of a recent research review that concluded stimulant medications are effective in treating children with ADHD in the short term, but that long-term benefits of such medications are not clear (Rajeh & others, 2017)

• Description of a recent study that found an 8-week yoga program was effective in improving the sustained attention of children with ADHD (Chou & Huang, 2017)

• Inclusion of recent research in which a higher level of physical activity in adolescence was linked to a lower level of ADHD in emerging adulthood (Rommel & others, 2015)

• Updated statistics on the percentage of U.S. children who have ever been diagnosed with ADHD (Centers for Disease Control and Prevention, 2016)

• New research that revealed the dopamine transporter gene DAT 1 was involved in decreased cortical thickness in the prefrontal cortex of children with ADHD (Fernandez-Jaen & others, 2015)

• Description of a recent research review that found girls with ADHD had more problematic peer relations than typically developing girls in a number of areas (Kok & others, 2016)



• Coverage of a recent research review that concluded ADHD in childhood is linked to a number of long-term outcomes (Erksine & others, 2016)

• Description of a recent meta-analysis that concluded short- term aerobic exercise is effective in reducing symptoms of ADHD such as inattention, hyperactivity, and impulsivity (Cerillo-Urbina & others, 2015)

• Discussion of a recent study that found childhood ADHD was associated with long-term underachievement in math and reading (Voight & others, 2017)

• Inclusion of a recent meta-analysis that concluded physical exercise is effective in reducing cognitive symptoms of ADHD in individuals 3 to 25 years of age (Tan, Pooley, & Speelman, 2016)

• Description of a recent study in which an 8-week yoga pro- gram improved the sustained attention of children with ADHD (Chou & Huang, 2017)

• Updated data on the increasing percentage of children being diagnosed with autism spectrum disorder (Christensen & others, 2016)

• Coverage of a recent meta-analysis in which exercise was associated with better executive function in children with ADHD (Vysniauske & others, 2017)

 New discussion of the recent interest in mindfulness training for children with ADHD including a recent metaanalysis in which mindfulness training significantly improved the attention of children with ADHD (Cairncross & Miller, 2016)

• Inclusion of a recent study that revealed a lower level of working memory was the executive function most strongly associated with autism spectrum disorders (Ziermans & others, 2017)

• New coverage of two recent surveys in which only a minority of parents reported that their child's autism spectrum disorder was identified prior to 3 years of age and that one-third to one-half of the cases were identified after 6 years of age (Sheldrick, Maye, & Carter, 2017)



• Description of a recent survey that documented the percentage of children with autism spectrum disorders who were receiving special education services (Condition of Education, 2015)

• Updated data on the continuing decline in school dropout rates, include recent rates for different ethnic groups (National Center for Education Statistics, 2016)

• New coverage of contextual factors that influence students' interest and achievement motivation (Linnenbrink-Garcia & Patall, 2016)

Description of a recent study of minority low-SES youth in which their intrinsic motivation (but not their extrinsic motivation) predicted their intention to pursue a health-science-related career (Boekeloo & others, 2015)

• Inclusion of recent research that found students from lower- income families were less likely to have a growth mindset than were students from wealthier families but the achievement of students from lower-income families was more likely to be protected if they had a growth mindset (Claro, Paunesku, & Dweck, 2016)

• Discussion of a recent study that found pre-service elementary school teachers had lower expectations for girls' math achievement (Mizala, Martinez, & Martinez, 2015)

• New coverage of a recent research review that concluded increases in family income for children in poverty were linked to increased achievement in middle school as well as higher educational attainment in adolescence and emerging adulthood (Duncan, Magnuson, & Votruba-Drzal, 2017)

• Updated data comparing math and science achievement of U.S. students with that of their counterparts in other countries (Desilver, 2017; PISA, 2015: TIMMS, 2015)

• Discussion of a recent study in China that found young adolescents with authoritative parents showed better adjustment than their counterparts with authoritarian parents (Zhang & others, 2017)



• Update on the percentages of college students who work full-time and part-time (National Center for Education Statistics, 2015)

Inclusion of recent data on the number of hours fully employed U.S. individuals 18+ years old worked (Gallup, 2014)

• Updated discussion of the job categories most likely to have an increase in openings through 2024 (Occupational Outlook Handbook, 2016/2017)

• Inclusion of recent research in which elevated levels of job strain increased workers' insomnia while reduced levels of job strain decreased their insomnia (Halonen & others, 2017)

• Description of a recent study that found depression following job loss predicted increased risk of continued unemployment (Stolove & others, 2017)

• Updated statistics on the percentage of U.S. older adults in different age groups in the work force, including 2017 data (Mislinski, 2017)

· Updated data on the average age of retirement in the United States, including 2017 data (Anspach, 2017)

• Inclusion of a recent study that revealed baby boomers expect to continue working to older ages than their predecessors from prior generations (Dong & others, 2017)

· Updated data (2017) on the percentage of American workers who are very confident that they will have a comfort- able retirement (Greenwald, Copeland, & VanDerhei, 2017)

• Expanded and updated content on the diverse mix of path- ways of work and retirement that individuals now pursue (Kojola & Moen, 2016)

Chapter 17: Death, Dying, and Grieving

· Revisions made based on feedback from leading expert Crystal Park

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· New inclusion of Canada on the list of countries that allowed assisted suicide in 2016

• Discussion of recent research that found 61 percent of dying patients were in pain in their last year of life and almost one-third had symptoms of depression and confusion prior to death (Singer & others, 2015)

 Description of a recent review that concluded the three most frequent themes in articles on a good death involved (1) preference for dying process, (2) pain-free status, and (3) emotional well-being (Meier & others, 2016)

• Updated data on the percentage of adolescents who seriously thought about committing suicide, including new data in Figure 3 (Kann & others, 2016)

· Coverage of a recent study that found child maltreatment was linked to adolescent suicide attempts (Hadland & others, 2015)

 Discussion of recent research indicating that the most significant factor in a first suicide attempt during adolescence was major depressive episode, while for children it was child maltreatment (Peyre & others, 2017)

• Description of two recent studies that revealed child maltreatment during the childhood years was linked with suicide attempts in adulthood (Park, 2017; Turner & others, 2017)

 New research in which a lower level of school connected- ness was associated with increased suicidal ideation in female and male adolescents, and with suicide attempts by female adolescents (Langille & others, 2015)

• Updated statistics, as well as breakdowns for various adult age groups, indicating that the highest rate of suicide occurs in 45- to 64-year-olds, with the second highest in 85-and-older adults (Centers for Disease Control and Prevention, 2015)



• Inclusion of recent research on suicide in older adults with content on triggers for suicidal ideation, psychological factors in suicide, and protective factors (Huang & others, 2017)

 \cdot New research on the percentage of adult bereavement cases that involve prolonged grief disorder and ages at which this disorder is more likely to occur (Lundorff & others, 2017)

• Coverage of recent research that found four meaning- making processes (sense making, benefit finding, continuing bonds, and identity reconstruction) present in parent- physician bereavement meetings following a child's death (Meert & others, 2015)

• Updated data on the percentage of U.S. adult women and men 65 years and older who are widowed (Administration on Aging, 2015)

• Discussion of a recent study that found Mexican American older adults experienced a significant increase in depressive symptoms during the transition to widowhood (Monserud & Markides, 2016). In this study, frequent church attendance served as a protective buffer against increases in depressive symptoms.

• Description of a recent cross-cultural study indicating that depression peaked in the first year of widowhood for both men and women, but that depression continued to be present in widowed men for 6 to 10 years post-widowhood (Jadhav & Weir, 2017)

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