The Study of Adolescent Development

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In the spring of 2015, the world watched closely as a young man named Dzhokhar Tsarnaev went on trial for the Boston Marathon bombing. The question before the jury was not whether Tsarnaev had committed this horrific crime—he had admitted as much—but whether he should receive a sentence of life in prison or the death penalty.

Tsarnaev was 19 when the bombing took place. Among the witnesses called by Tsarnaev's defense team was Jay Giedd, a prominent expert in adolescent brain development. Giedd testified that recent studies showed that the brain was still maturing during the late teens and early 20s. Building on Giedd's testimony, Tsarnaev's attorneys argued that people this age lacked the ability to stand up to a more powerful peer, like an older brother, and that this immaturity made Tsarnaev less than fully responsible for his behavior and, accordingly, less deserving of capital punishment.

Defense attorneys for Dzhokhar Tsarnaev, the admitted Boston Marathon bomber, used adolescent brain science to argue that he should be spared the death penalty. The jury disagreed.
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The jury rejected this argument. On May 15, 2015, Dzhokhar Tsarnaev was sentenced to death. It is almost certain that his defense attorneys will appeal this decision.

Although advances in adolescent brain science did not sway the jury in the Boston Marathon bombing case, the science of adolescent development is changing the way in which we think about this stage of life (Steinberg, 2014). Historically, and pretty much around the world, we have drawn a legal boundary between adolescence and adulthood at age 18 (even though in the United States there are some things people are permitted to do at an earlier age, like driving, and others that are prohibited until several years later, like purchasing alcohol). But what if the brain is still maturing in the early 20s? What if things like impulse control or the ability to fully think through the future consequences of one's decisions are still developing into the mid-20s? Should this change how we define adulthood under the law?

This question is one that I have been studying and writing about for the past 20 years, and I still don't have a simple answer. If science is our guide, where should we draw the line between adolescence and adulthood? It's not just an abstract, academic exercise. How we answer this question has far-reaching ramifications for society and, of course, for teenagers. At what age should a pregnant adolescent be able to obtain an abortion without her parents' permission? How old should individuals have to be to see a psychologist or have cosmetic surgery without their parents knowing? Have we picked the right ages in deciding who can drive, see R-rated movies, or buy cigarettes? And how should we respond to young offenders? "Do the adult crime, do the adult time" may sound fair from the perspective of crime victims, but does it make sense in light of what we know about adolescent development? When he committed the Boston Marathon bombing, was Dzhokhar Tsarnaev an adolescent or an adult?

making the practical connection

Studies of adolescent brain development have revealed that the brain continues to mature well into the mid-20s. This research was used in several U.S. Supreme Court cases, where the Court ruled that adolescents should not be as punished as severely as adults, even when they have been convicted of the same crimes. But some advocates for youth have worried that this same research can be used to limit what teenagers are allowed to do, such as drive or seek an abortion without their parents' knowledge. How would you respond to someone who, on the basis of this research, says that if adolescents are too young to be punished like adults, they are too young to be treated like adults in other ways as well?

What is the nature of adolescents' identity development in a changing world? How should society deal with problems of youth unemployment, underage drinking,

teenage pregnancy, and juvenile crime? What is the best way to prepare young people for adulthood?

Answering these questions requires a thorough understanding of adolescents' psychological development, and in this book we will examine how—and why—people's hopes and plans, fears and anxieties, and questions and concerns change as they develop from childhood to adulthood.

Answering these difficult questions requires more than an understanding of the ways in which individuals change psychologically as they move through adolescence, though. It also requires knowledge of how they develop physically, how their brain matures, how their relationships with others change, how as a group they are viewed and treated by society, how adolescence in our society differs from adolescence in other cultures, and how the nature of adolescence itself has changed over the years. In other words, a complete understanding of adolescence in contemporary society depends on being familiar with biological, social, sociological, cultural, and historical perspectives on the period (Dahl & Hariri, 2005).

The Boundaries of Adolescence

The word *adolescence* is derived from the Latin *adolescere,* which means "to grow into adulthood" (R. Lerner & Steinberg, 2009). In all societies, adolescence is a time of growing up, of moving from the immaturity of childhood into the maturity of adulthood, of preparation for the future (Larson, Wilson, & Rickman, 2009; Schlegel, 2009). **Adolescence** is a period of transitions: biological, psychological, social, economic. During adolescence, individuals become interested in sex and biologically capable of having children. They become wiser, more sophisticated, and better able to make their own decisions. They become more self-aware, more independent, and more concerned about what the future holds. Over time, they are permitted to work, to get married, to drive, and to vote. Think for a moment about how much you changed between when you finished elementary school and when you graduated from high school. I'm sure you'll agree that the changes you went through were remarkable.

adolescence
The stage of development that begins with puberty and ends when individuals make the transition into adult roles, roughly speaking, from about 10 until the early 20s.

As you can see in Table 1, there are a variety of boundaries we might draw between childhood and adolescence, and between adolescence and adulthood. Whereas a biologist would place a great deal of emphasis on the attainment and completion of puberty, an attorney would look instead at important age breaks designated by law, and an educator might draw attention to differences between students enrolled in different grades in school. Is a biologically mature fifth-grader an adolescent or a child? Is a 20-year-old college student who lives at home an adolescent or an adult? There are no right or wrong answers to these questions. It all depends on the boundaries we use to define the period. Determining the beginning and ending of adolescence is more a matter of opinion than of absolute fact.

Rather than argue about which boundaries are the correct ones, it makes more sense to think of development during adolescence as involving a *series* of transitions from immaturity into maturity (Howard & Galambos, 2011; Settersten et al., 2005; Trejos-Castillo & Vazsonyi, 2011). Some of these passages are long and some are short; some are smooth and others are rough.

Table 1 The boundaries of adolescence. Here are some examples of the ways in which adolescence has been distinguished from childhood and adulthood that we examine in this book. Which boundaries make the most sense to you?

Perspective	When Adolescence Begins	When Adolescence Ends
Biological	Onset of puberty	Becoming capable of sexual reproduction
Emotional	Beginning of detachment from parents	Attainment of separate sense identity
Cognitive	Emergence of more advanced reasoning abilities	Consolidation of advanced reasoning abilities
Interpersonal	Beginning of shift in interest from parental to peer relations	Development of capacity for intimacy with peers
Social	Beginning of training for adult work, family, and citizen roles	Full attainment of adult status and privileges
Educational	Entrance into junior high school	Completion of formal schooling
Legal	Attainment of juvenile status	Attainment of majority status
Chronological	Attainment of designated age of adolescence (e.g., 10 years)	Attainment of designated age of adulthood (e.g., 21 years)
Cultural	Entrance into period of training for ceremonial rite of passage	Completion of ceremonial rite of passage

early adolescence
The period spanning roughly ages 10–13, corresponding roughly to the junior high or middle school years.

middle adolescence
The period spanning roughly ages 14–17, corresponding to the high school years.

late adolescence
The period spanning roughly ages 18–21, corresponding approximately to the college years.

emerging adulthood
The period spanning roughly ages 18–25, during which individuals make the transition from adolescence to adulthood.

puberty
The biological changes of adolescence.

And not all of them occur at the same time. Consequently, it is quite possible—and perhaps even likely—that an individual will mature in some respects before he or she matures in others. The various aspects of adolescence have different beginnings and different endings for every individual. An individual can be a child in some ways, an adolescent in other ways, and an adult in still others.

For the purposes of this book, we'll define adolescence as beginning with puberty and ending when individuals make the transition into adult roles, roughly from age 10 until the early 20s. Although at one time "adolescence" may have been synonymous with the teenage years (from 13 to 19), the adolescent period has lengthened considerably in the past 100 years, both because physical maturation occurs earlier and because so many individuals delay entering into work and marriage until their mid-20s (Steinberg, 2014).

Early, Middle, and Late Adolescence

Because so much psychological and social growth takes place during adolescence, most social scientists and practitioners view adolescence as composed of a series of phases rather than one single stage (Samela-Aro, 2011). The 11-year-old whose time and energy is wrapped up in hip-hop, Facebook, and baseball, for example, has little in common with the 21-year-old who is involved in a serious romance, worried about pressures at work, and looking for an affordable apartment.

Social scientists who study adolescence differentiate among **early adolescence** (about ages 10–13), **middle adolescence** (about ages 14–17), and **late adolescence** (about ages 18–21). In discussing development during adolescence, we'll need to be sensitive not only to differences between adolescence and childhood, or between adolescence and adulthood, but also to differences among the various phases of adolescence itself. Some writers also have suggested that a new phase of life, called **emerging adulthood** (Arnett, 2004), characterizes the early and mid-20s. However, despite the popularity of this idea in the mass media, there is little evidence that "emerging adulthood" is a universal stage or that the majority of young people in their mid-20s are in some sort of psychological or social limbo (Côté & Bynner, 2008; Kloep & Hendry, 2014). Indeed, what is most striking about the transition from adolescence to adulthood today is just how many different pathways there are. Some individuals spend their 20s single, dependent on their parents, and bouncing from job to job, while others leave adolescence and go straight into marriage, full-time employment, and economic independence (Osgood, Ruth, Eccles, Jacobs, & Barber, 2005).

A Framework for Studying Adolescent Development

This book uses a framework for studying adolescence that is based on a model originally suggested by John Hill (1983). The model has three basic components: (1) the fundamental changes of adolescence, (2) the contexts of adolescence, and (3) the psychosocial developments of adolescence.

The Fundamental Changes of Adolescence

What, if anything, is distinctive about adolescence as a period in development? According to Hill, three features of adolescent development give the period its special flavor and significance: (1) the onset of puberty, (2) the emergence of more advanced thinking abilities, and (3) the transition into new roles in society. These three sets of changes—biological, cognitive, and social—are the *fundamental changes* of adolescence. Importantly, they are universal changes; virtually without exception, all adolescents in every society go through them.

Biological Transitions The chief elements of the biological changes of adolescence—which collectively are referred to as **puberty**—involve changes in the young person's physical appearance (including breast development in girls, the growth of facial hair in boys, and a dramatic increase in height for both sexes) and the development of the ability to conceive children (Bogin, 2011).

We'll look at the biological changes that occur in early adolescence and examine how puberty affects the adolescent's psychological development and social relationships.

Cognitive Transitions The word *cognitive* refers to the processes that underlie how people think. Changes in thinking abilities make up the second of the three fundamental changes of adolescence. Compared with children, adolescents are much better able to think about hypothetical situations (that is, things that have not yet happened

but might, or things that may not happen but could) and about abstract concepts, such as friendship, democracy, or morality (Keating, 2011). As you'll read, groundbreaking research on brain development is beginning to shed light on the ways in which these and other changes in thinking during adolescence result from the maturation of various brain regions and systems (Engle, 2013).

making the cultural connection

In contemporary industrialized society, we do not have formal ceremonies that designate when a person has become an "adult." Do we have more informal ways to let individuals know when they have made the transition? What were the most important events in your life that signaled your entrance into adulthood?

Social Transitions All societies distinguish between individuals who are viewed as children and those who are seen as ready to become adults. Our society, for example, distinguishes between people who are "underage," or minors, and people who have reached the age of majority. Not until adolescence are individuals permitted to drive, marry, and vote. Such changes in rights, privileges, and responsibilities constitute the third set of fundamental changes that occur at adolescence: social changes. In some cultures, the social changes of adolescence are marked by a formal ceremony—a **rite of passage.** In most contemporary industrialized societies, the transition is less clearly marked, but a change in social status is a universal feature of adolescence (Markstrom, 2011b).

The Contexts of Adolescence

Although all adolescents experience the biological, cognitive, and social transitions of the period, the *effects* of these changes are not uniform for all young people. Puberty makes some adolescents feel attractive and self-assured, but it makes others feel ugly and self-conscious. Being able to think in hypothetical terms makes some teenagers thankful that they grew up with the parents they have, but it prompts others to run away from home. Reaching 18 prompts some teenagers to enlist in the military or apply for a marriage license, but for others, becoming an adult is frightening and unsettling.

If the fundamental changes of adolescence are universal, why are their effects so varied? Why isn't everyone affected in the same ways by puberty, by advanced thinking abilities, and by changes in legal status? The answer is that the psychological impact of the biological, cognitive, and social changes of adolescence is shaped by the environment in which the changes take place. In other words, psychological development during adolescence is a product of the interplay between a set of three very basic, universal changes and the context in which these changes are experienced.

The implications of the cognitive changes of adolescence are far-reaching. © Fuse/Getty Images RF

Consider, for example, two 14-year-old girls growing up in neighboring communities. When Ashley went through puberty, around age 13, her parents' first reaction was to restrict her social life. They were afraid she would become too involved with boys and neglect her schoolwork. Ashley thought her parents were being ridiculous. She rarely had a chance to meet anyone she wanted to date, because all the older boys went to the high school across town. Even though she was in the eighth grade, she was still going to school with fifth-graders. Ashley reacted by pulling away from parents she felt were overprotective.

Kayla's adolescence was very different. When she had her first period, her parents did not panic about her developing sexuality. Instead, they took her aside and discussed sex and pregnancy with her. They explained how different contraceptives worked and made an appointment for Kayla to see a gynecologist in case she ever needed to discuss something with a doctor. This made perfect sense. Although she was still only 14, Kayla would probably begin dating soon, because in her community, the junior and senior high schools had been combined into one large school, and the older boys frequently showed interest in the younger girls. Puberty brought Kayla closer to her parents, not more distant.

Two teenage girls. Each goes through puberty, each grows intellectually, and each moves closer in age to adulthood. Yet each grows up under very different circumstances: in

rite of passage
A ceremony or ritual marking an individual's transition from one social status to another, especially marking the young person's transition to adulthood.

ecological perspective on human development
A perspective on development that emphasizes the broader context in which development occurs.

different families, in different schools, with different groups of peers, and in different communities. Both are adolescents, but their adolescent experiences are markedly different. And, as a result, each girl's psychological development will follow a different course.

Imagine how different your adolescence would have been if you had grown up a century ago and, instead of going to high school, had been expected to work full-time from the age of 15. Imagine how different it might be to grow up 100 years from today. And imagine how different adolescence is for a teenager from a very poor family than for one whose family is wealthy. It is impossible to generalize about the nature of adolescence without taking into account the surroundings and circumstances in which young people grow up.

For this reason, the second component of our framework is the *context* of adolescence. According to the **ecological perspective on human development,** whose main proponent was Urie Bronfenbrenner (1979), we cannot understand development without examining the environment in which it occurs. In modern societies, there are four main contexts in which young people spend time: families, peer groups, schools, and work and leisure settings.

Of course, these settings themselves are located within neighborhoods, which influence how they are structured and what takes place in them. It would be naive, for example, to discuss the impact that "school" has on adolescent development without recognizing that a school in an affluent suburb is likely very different from one in the inner city or in a remote rural area. And the community in which these settings are located is itself embedded in a broader context that is shaped by culture, geography, and history (Bronfenbrenner, 1979).

Although young people growing up in modern America share some experiences with young people all over the world, their development is different in many ways from that of young people in other societies, especially those in less affluent and less industrialized ones, because their families, peer groups, schools, work and leisure settings, and neighborhoods are different (Larson et al., 2009). In other words, the contexts of adolescence are themselves shaped and defined by the larger society in which young people live. In this book, we'll be especially interested in the contexts of adolescence in contemporary industrialized society and the ways in which they affect young people's development. Key contexts include the following:

Families Adolescence is a time of dramatic change in family relationships (Cox, Wang, & Gustafsson, 2011; Martin, Bascoe, & Davies, 2011). In addition, many changes in what constitutes a "family" have taken place over the past several decades, leading to tremendous diversity in family forms and household composition in modern society. It's important to understand how changes within the family, and in the broader context of family life, affect young people's psychological development.

Peer Groups Over the past 100 years, the peer group has come to play an increasingly important role in the socialization and development of teenagers (Dijkstra & Veenstra, 2011). But has the rise of peer groups in contemporary society been a positive or negative influence on young people's development? This is one of the many questions that has interested researchers who study the nature and function of adolescent peer groups and their effects on teenagers' psychological development.

Schools Contemporary society depends on schools to occupy, socialize, and educate adolescents. But how good a job are schools doing? What should schools do to help prepare adolescents for adulthood? And how should schools for adolescents be structured (Cortina & Arel, 2011)?

Work, Leisure, and the Mass Media Some of the most important influences on adolescent development are found outside of home and school: part-time jobs (Stone, 2011), extracurricular activities (Zarrett & Mahoney, 2011), and the mass media (Brown & Bobkowski, 2011a), including the Internet (Uhls, Espinoza, Greenfield, Subrahmanyam, & Šmahel, 2011). To what extent do these forces influence adolescents' attitudes, beliefs, and behavior?

One of the most important contexts for adolescent development is the peer group. © SW Productions/Getty Images RF

Psychosocial Development in Adolescence

The third, and final, component of our framework concerns the major *psychosocial developments* of adolescence—identity, autonomy, intimacy, sexuality, and achievement—as well as certain psychosocial problems that may arise in adolescence. Social scientists use the word **psychosocial** to describe aspects of development that are both psychological and social in nature. Sexuality, for instance, is a psychosocial issue because it involves both psychological change (that is, changes in the individual's emotions, motivations, and behavior) and changes in the individual's relationships.

Of course, it is not only during the adolescent years that concerns about identity, autonomy, intimacy, sexuality, and achievement arise, and psychological or social problems can and do occur during all periods of the life cycle. These psychosocial issues are present throughout the life span, from infancy through late adulthood. They represent basic developmental challenges that we face as we grow and change: (1) discovering and understanding who we are as individuals—**identity;** (2) establishing a healthy sense of independence—**autonomy;** (3) forming close and caring relationships with other people—**intimacy;** (4) expressing sexual feelings and enjoying physical contact with others—**sexuality;** and (5) being successful and competent members of society—**achievement.**

Although these concerns are not unique to adolescence, development in each of these areas takes a special turn during this stage. Understanding how and why such psychosocial developments take place during adolescence is a major interest of scientists who study this age period. We know that individuals form close relationships before adolescence, for example, but why is it that romantic relationships first develop during adolescence? We know that toddlers struggle with learning how to be independent, but why during adolescence do individuals need to be more on their own and make some decisions apart from their parents? We know that children fantasize about what they will be when they grow up, but why don't these fantasies become serious concerns until adolescence?

Identity In adolescence, a variety of important changes in the realm of identity occur (Harter, 2011; Thomaes, Poorthuis, & Nelemans, 2011). The adolescent may wonder, "Who am I, and what kind of life will I have?" Coming to terms with these questions may involve a period of experimentation—a time of trying on different personalities in an attempt to discover one's true self. The adolescent's quest for identity is not only a quest for a personal sense of self but also for recognition from others that he or she is a special, unique individual. Some of the most important changes of adolescence take place in the realms of identity, self-esteem, and self-conceptions.

Autonomy Adolescents' struggle to establish themselves as independent, self-governing individuals—in their own eyes and in the eyes of others—is a long and occasionally difficult process, not only for young people but also for those around them, especially their parents (Zimmer-Gembeck, Ducat, & Collins, 2011). Three aspects of autonomy are of special importance during adolescence: becoming less emotionally dependent on parents (McElhaney, Allen, Stephenson, & Hare, 2009), learning to function independently (Steinberg, 2014), and establishing a personal code of values and morals (Morris, Eisenberg, & Houltberg, 2011).

Intimacy During adolescence, important changes take place in the individual's capacity to be intimate with others, especially with peers. During adolescence, friendships emerge that involve openness, honesty, loyalty, and exchange of confidences, rather than simply a sharing of activities and interests (B. Brown & Larson, 2009; W. Collins & Steinberg, 2006). Dating takes on increased importance, and as a consequence, so does the

psychosocial
Referring to aspects of development that are both psychological and social in nature, such as developing a sense of identity or sexuality.

identity
The domain of psychosocial development involving self-conceptions, self-esteem, and the sense of who one is.

autonomy
The psychosocial domain concerning the development and expression of independence.

intimacy
The psychosocial domain concerning the formation, maintenance, and termination of close relationships.

sexuality
The psychosocial domain concerning the development and expression of sexual feelings.

achievement
The psychosocial domain concerning behaviors and feelings in evaluative situations.

Sexuality is a central psychosocial issue of adolescence.
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capacity to form romantic relationships that are trusting and loving (Shulman, Connolly, & McIssac, 2011).

Sexuality Sexual activity usually begins during the adolescent years (Diamond & Savin-Williams, 2011). Becoming sexual is an important aspect of development during adolescence—not only because it transforms the nature of relationships between adolescents and their peers but also because it raises a range of difficult questions for the young person. These concerns include efforts to incorporate sexuality into a still-developing sense of self, the need to resolve questions about sexual values and morals, and coming to terms with the sorts of relationships into which the adolescent is prepared—or not prepared—to enter.

Achievement Adolescence is a time of important changes in individuals' educational and vocational behavior and plans. Crucial decisions—many with long-term consequences—about schooling and careers are made during adolescence. Many of these decisions depend on adolescents' achievement in school, on their evaluations of their own competencies and capabilities, on their aspirations and expectations for the future, and on the direction and advice they receive from parents, teachers, and friends (Wigfield, Ho, & Mason-Singh, 2011).

Psychosocial Problems Although most adolescents move through the period without experiencing major psychological upheaval, this stage of life is the most common time for the first appearance of serious psychological difficulties (Kessler et al., 2005; Olfson Druss, & Marcus, 2015). Three sets of problems are often associated with adolescence: drug and alcohol use and abuse (Chassin, Hussong, & Beltran, 2009), delinquency and other "externalizing problems" (Farrington, 2009), and depression and other "internalizing problems" (Graber & Sontag, 2009). In each case, we examine the prevalence of the problem, the factors believed to contribute to its development, and approaches to prevention and intervention.

Theoretical Perspectives on Adolescence

The study of adolescence is based not just on empirical research but also on theories of development (Newman & Newman, 2011b). You will read more about different theories of adolescence throughout this book, but an overview of the major ones may be helpful.

It's useful to organize theoretical perspectives on adolescence around a question that has long dominated discussions of human development more generally: How much is due to "nature," or biology, and how much is due to "nurture," or the environment? Some theories of adolescence emphasize biology, others emphasize the environment, and still others fall somewhere between the two extremes (see Figure 1). We'll begin with a look at the most extreme biological perspectives and work our way across a continuum toward the other extreme—perspectives that stress the role of the environment.

Biosocial Theories

The fact that biological change during adolescence is noteworthy is not a matter of dispute—how could it be, when puberty is such an obvious part of adolescence? But experts on adolescence disagree about how important this biological change is in defining the psychosocial issues of the period. Theorists who have taken a biological or, more accurately, "biosocial" view of adolescence stress the hormonal and physical changes of puberty as driving forces. The most important biosocial theorist was G. Stanley Hall (1904), considered the "father" of the scientific study of adolescence.

Hall's Theory of Recapitulation G. Stanley Hall, who was very much influenced by Charles Darwin, the author of the theory of evolution, believed that the development of the individual paralleled the development of the human species, a notion referred to as his theory of recapitulation. Infancy, in his view, was equivalent to the time during our evolution when we were primitive, like animals. Adolescence, in contrast, was seen as a time that paralleled the evolution of our species into civilization. For Hall, the development of the individual through these stages was determined primarily by instinct—by biological and genetic forces within the person—and hardly influenced by the environment.

The most important legacy of Hall's view of adolescence is the notion that it is inevitably a period of "storm and stress." He believed that the hormonal changes of puberty cause upheaval, both for the individual and for those around him or her. Because this turbulence is

Theoretical Perspectives on Adolescence

Extremely biological — Extremely environmental

Biosocial (e.g., Hall, Dual Systems)	Organismic (e.g., Piaget, Erikson)	Learning (e.g., Bandura)	Sociological (e.g., Mannheim, Lewin)	Historical/Anthropological (e.g., Benedict)

Figure 1 **Theories of adolescence range from the extremely biological, like that of G. Stanley Hall, to the extremely environmental, like that of Ruth Benedict.**

biologically determined, it is unavoidable. The best that society can do is to find ways of managing the young person whose "raging hormones" invariably cause difficulties.

Although scientists no longer believe that adolescence is inherently problematic or that pubertal hormones themselves cause emotional problems, much contemporary work continues to emphasize the role that biological factors play in shaping the adolescent experience. More than 100 years ago, in fact, Hall speculated about brain maturation, hormonal influences on behavior, and changes in patterns of sleep during adolescence—all very hot topics in the study of adolescence today (Dahl & Hariri, 2005). Current work in the biosocial tradition, also influenced by Hall and his followers, explores the genetic bases of individual differences in adolescence and the evolutionary bases of adolescent behavior (Hollenstein & Lougheed, 2013).

Dual Systems Theories Recent advances in brain science have given rise to an alternative biosocial account of adolescent development, one that stresses changes in the anatomy and activity of the brain. Among the most prominent of these theories are so-called "dual systems" theories, which stress the simultaneous development of two different brain systems—one that governs the ways in which the brain processes rewards, punishments, and social and emotional information, and another that regulates self-control and advanced thinking abilities, like planning or logical reasoning (Steinberg, 2010). The arousal of this first system takes place early in adolescence, while the second system is still maturing. This creates a "maturational imbalance" (Casey et al., 2011), which has been compared to starting a car without having a good braking system in place. The main challenge of adolescence, according to this view, is to develop better self-regulation, so that this imbalance doesn't result in problems (Steinberg, 2014).

Organismic Theories

Our next stop on the continuum is what are called "organismic" theorists. Like biosocial theorists, organismic theorists recognize the importance of the biological changes of adolescence. But unlike their biosocial counterparts, organismic theories also take into account the ways in which contextual forces interact with and modify these biological forces.

If you have had previous course work in developmental psychology, you have undoubtedly encountered the major organismic theorists, for they have long dominated the study of human development. Three of these theorists, in particular, have had a great influence on the study of adolescence: Sigmund Freud (1938), Erik Erikson (1968), and Jean Piaget (Inhelder & Piaget, 1958). Although these theorists share in common an organismic orientation, the theories they developed emphasize different aspects of individual growth and development.

Freudian Theory For Freud, development was best understood in terms of the psychosexual conflicts that arise at different points in development. Like Hall, Freud saw adolescence as a time of upheaval. According to Freud, puberty temporarily throws the adolescent into a period of psychological crisis, by reviving old conflicts over uncomfortable sexual urges that had been buried in the unconscious (including feelings toward one's parents).

Sigmund Freud himself actually had very little to say specifically about adolescence. But his daughter, Anna Freud (1958), extended much of her father's thinking to the study of development during the second decade of life, emphasizing the need for adolescents to break away, or "detach," from their parents in order to develop normally. This work was carried on by neo-Freudians such as Peter Blos (1979).

Eriksonian Theory Erik Erikson, whose work built on Freud's, also believed that internal, biological developments moved the individual from one developmental stage to the next. But unlike Freud, Erikson stressed the psychosocial, rather than the psychosexual, conflicts faced by the individual at each point in time. Erikson proposed eight stages in psychosocial development, each characterized by a specific "crisis" that arises at that point in development because of the interplay between the internal forces of biology and the demands of society. In Erikson's theory, development in adolescence revolves around the identity crisis. According to Erikson, the challenge of adolescence is to resolve the identity crisis and to emerge with a coherent sense of who one is and where one is headed.

Piagetian Theory For Jean Piaget development could best be understood by examining changes in the nature of thinking. Piaget believed that, as children mature, they pass through distinct stages of cognitive development.

In Piaget's theory, adolescence marks the transition from concrete to abstract thought. Adolescence is the period in which individuals become capable of thinking in hypothetical terms, a development that permits a broad expansion of logical capabilities. The development of abstract thinking in adolescence is influenced both by the internal biological changes of the developmental period and by changes in the intellectual environment encountered by the individual.

Learning Theories

As we move across the theoretical continuum from extreme biological views to extreme environmental ones, we encounter a group of theories that shift the emphasis from biological forces to environmental ones. Whereas organismic theorists emphasize the interaction between biological change and environmental demands, learning theorists stress the context in which behavior