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Adolescent Development

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Adolescence typically refers to the period of life between the onset of puberty and adulthood. G. Stanley Hall (1844–1924) is usually credited with initiating scholarly interest in this developmental stage, which he viewed as a period of storm and stress (*Sturm und Drang*). For many theorists, adolescence represents a critical phase of human development as it does cover a period of demonstrable change, and many individuals have claimed that key aspects of their own thought and attitudes have taken root during adolescence. However, as Allan Wigfield, James Byrnes, and Jacquelynne Eccles (2006) have stressed, “Adolescence is very much a cultural phenomenon and the experiences adolescents have vary greatly across different cultures” (p. 88). This entry focuses on contributions to four main areas of adolescent development as studied in North American and Western contexts: (1) physical changes, (2) cognitive development, (3) social development, and (4) environmental changes that occur during adolescence.

Physical Changes

Puberty is the developmental process that is, perhaps, most closely associated with adolescence. Adolescence is often thought of as a period of storm and stress. Although these years are marked by substantial biological change, most scholarly work has determined that this “raging-hormones” view of adolescence is overstated. A key issue regarding puberty with respect to education is the timing of its onset. On average, the onset of puberty is about 18 months earlier for girls (usually starting around the age of 10 to 11 and lasting until they are 15 to 17) than for boys (who usually begin puberty at about the age of 11 to 12 and complete it by the age of 16 to 17, on average).

The prevailing school of thought has been that better outcomes result for girls who hit puberty later and for boys who hit puberty earlier. As boys and girls hit their growth spurts, early-developing boys may stand out as suddenly looking more like the cultural ideal of the strong, tall, broad-shouldered man. They may also reap advantages from their size in athletic domains. In contrast, girls who hit puberty early may be embarrassed by their larger size (which runs counter to the cultural ideal). Furthermore, their physical development may open doorways to older peer groups and expose them to a riskier array of activities.

However, recent research has found exceptions to these trends. One emerging line of thinking is that while the physical changes may cause minor problems for some students, the real issue for educators arises when students face multiple transitions simultaneously. For example, a girl who begins puberty ahead of most of her peers as she transitions to a new middle school with new teachers and new peers may face multiple risk factors.

Cognitive Development

Within the domain of cognitive development, Jean Piaget’s views have been particularly influential. Although less explicitly developmental, information processing views and Lev Vygotsky’s social learning approach have offered prominent and competing views of how cognitive development may progress during adolescence.

Jean Piaget

In Piaget's view, cognitive development takes place through four distinct phases. He described (1) from birth through age 2 as the *sensorimotor period*, (2) from 2 to 7 years of age as the *preoperational period*, (3) from 7 through 11 years of age as *concrete operations*, and (4) from 11 years into adulthood as the *formal operations* period. For adolescents, what makes formal operations a qualitatively distinct way of thinking is the capacity for abstract thought. Specifically, in this view, what emerges during adolescence is a capacity (a) to think systematically (e.g., by isolating variables); (b) to entertain hypothetical presuppositions, counterfactuals, or alternatives; and (c) to make logical deductions. For example, a problem such as the following would require formal operations: Dennis is taller than Denise but shorter than Phillip. Phillip is shorter than Phyllis. Who is taller, Dennis or Phyllis? Critique of Piaget's theory—specifically his work regarding formal operations—has come from three main sources. One line of questioning has raised the issue of whether changes in task performance that occur for youth transitioning into adolescence can actually be attributed to changes in logical thinking. A second line asks whether these changes really occur in stagelike fashion. Finally, questions about the universality of this stage have been raised—in other words, do all (or only some) late adolescents achieve formal operations and do they do so for all domains? Much of the evidence marshaled in support of these critiques has shown that, with proper training, much younger students can perform tasks requiring formal operations. Conversely, for novel domains, many late adolescents fail to successfully complete these types of tasks.

Information Processing

According to the information processing model, learners are like computers. Key functions of learners (and computers) are to receive and encode information from the environment, which must then be stored, organized, and remembered (as files must be saved). To use the information, people must recall it from memory (in the same way that old files may be reopened). These processes are controlled by executive functions—that is, *metacognitive skills*, such as attention regulation and rehearsal of information, and *elaboration* processes in which connections are made between pieces of information.

For the most part, scholars who adopt this general view of cognitive development see adolescence as a continuation of normal development. In other words, for adolescents, cognitive development occurs in much the same way as it does for younger students and adults. These scholars tend to find that development occurs differently in different domains—adolescents with substantial knowledge or experience in a domain may be able to perform much more sophisticated cognitive tasks than adolescents with little prior knowledge in the domain.

Lev Vygotsky

Although Vygotsky's theory of cognitive development does not focus on adolescents explicitly, several key ideas are regarded as especially important during this developmental phase. Vygotsky posited that a primary learning pathway occurs between people—specifically between relative novices within a domain (e.g., children) and more experienced learners (e.g., parents or teachers). By working with more advanced others within a given domain, a relative novice can progress within a *zone of proximal development*. This zone represents the gap between what the learner can do alone and what he or she can do with assistance from a more experienced partner. In

ongoing learning relationships, the more experienced partner provides *scaffolding* to help the novice with challenging tasks. As proficiency develops on those tasks, the scaffolding is removed so that the novice performs the task with increasing amounts of independence. During adolescence, improved metacognitive capacities allow youths to be better able to plan, monitor, and evaluate their learning. Thus, it becomes increasingly viable for adolescents to scaffold one another's learning and help advance each other's zone of proximal development rather than relying on adults.

Synthesis

Although burgeoning empirical evidence casts doubt on certain aspects of Piaget's theory, adolescents may appear to take a leap forward in their cognitive development because the combination of their increasing cognitive capacity (in terms of memory and abstract thinking) and executive functioning capabilities allows them to devote greater cognitive resources to problem solving in domains where they have background knowledge. In domains where adolescents are less experienced and less knowledgeable, they may require more scaffolding from more experienced others. Findings from neuroscientific examinations of cognitive development provide some support for this possibility—adolescents experience important changes in brain structure and neurotransmitter levels that help enhance their executive functioning.

Social Development

During adolescence, people begin to develop their own identities and work out who they are in relation to others. The key researchers in this area include Erik Erikson, James Marcia, and David Elkind.

Identity Development: Erik Erikson and James Marcia

One of the hallmark tasks of adolescence is that of identity development. According to Erikson's stage theory, a core issue for adolescents to work out is that of *identity versus role confusion*. In other words, adolescents should strive to begin to define themselves in terms of their values, vocational interests, political and religious views, and so on through the exploration of the "Who am I?" question.

Marcia extended Erikson's theory by positing four outcomes to explorations of this question. An adolescent in *foreclosure* status has insufficiently explored this question and, instead, usually adopts the views of parents or friends without questioning them in a meaningful way. Adolescents experiencing *identity diffusion*, by contrast, have begun exploring the "Who am I?" question; they simply have not reached many conclusions. *Moratorium* describes the status of adolescents who are deeply engaged in the exploration of their identity, though whatever conclusions they may have reached at this point are likely tentative. Adolescents in *identity achievement* have typically undergone more thorough explorations of who they are and have made decisions about several aspects of their identity.

Social Cognition: David Elkind

Perhaps because of the view that they are undergoing a period of self-exploration, adolescents have garnered a reputation for egocentrism. Elkind proposed two metaphors to describe the ways in which adolescents become particularly susceptible

to egocentric thought. Through the creation of an *imaginary audience*, adolescents think that others are thinking about and paying more attention to them than is actually occurring in reality. A particular consequence of this belief is the increased concern over appearance. By developing a *personal fable*, adolescents begin seeing themselves as special and unique. Believing too strongly in a personal fable can cause problems for an adolescent if it leads to feelings of invincibility or to feeling that nobody else can relate to him or her.

Although intuitively compelling, these metaphors—and the generalization that there is a peak in egocentrism during adolescence—have been questioned on several fronts. Most problematic for Elkind's theory is the view that adolescence is the time when youth develop the capacity to take the perspective of others in a sophisticated way.

Relationships

Two trends mark the progression of relationships during adolescence. First, adolescents tend to seek increased amounts of autonomy from their parents during this phase. Second, they typically invest more time and emotional energy in their peer friendships. In other words, as adolescence progresses, individuals seek more of their relational and belongingness needs through their friends and often rely less and less on their parents for intimacy needs and emotional support. Although the existence of these trends is widely agreed on, a contentious debate has emerged surrounding Judith Rich Harris's assertion that peers are a vastly more influential factor than parents with regard to youth outcomes. To the extent that her contention is correct, there are dramatic implications for parenting, schooling, and youth development more broadly.

Synthesis

In exploring their own identities, two tools might become particularly important for adolescents— (1) their relationships with others and (2) their capacity to think about themselves with respect to those relationships. A particularly useful approach to exploring the “Who am I?” question is through ascertaining what one values. Youth can explore different values by “trying on” different sets of beliefs and behaviors in the context of different peer groups or cliques. Through these types of interactions and concurrent discussions with friends, students can more easily explore different identities than they can with their parents (who presumably lack the diversity of identities or points of view a large peer group can provide). Thus, parents may perceive their adolescent children as egocentric in their behavior; however, their children may simply be more motivated to take the perspective of their peers than their parents. To facilitate the exploration of their identities, they may be particularly motivated to understand what their peers think about themselves.

Changes in Schooling and School Contexts

As adolescents are experiencing these physical, cognitive, and social changes, they are also frequently faced with a dramatic change in context. As students transition from elementary school to secondary school, they frequently confront a new approach to schooling in a starkly different context. Secondary school students tend to move between different teachers for different subjects rather than having a single teacher instruct them in most areas; they are introduced to a new, larger peer group; and the nature of the instruction in their classes often differs from elementary school.

This change in environment is associated with a significant drop across a constellation of motivation-related outcomes (e.g., adolescents' sense of confidence, levels of intrinsic interest, positive feelings toward school, etc.). In addition, academic achievement typically suffers. Although these drops in achievement and motivation are most severe at the transition from elementary to secondary school, declines tend to continue as students advance through the grades.

Stage–Environment Fit

A prominent theory that has been introduced to explain how adolescents cope with these changes and transitions is that of the stage–environment fit (attributed to Eccles). According to this view, part of the reason that adolescents are at risk for negative consequences is that they experience a mismatch between their developmental needs and the opportunities that they receive in their secondary school environments. For example, these early adolescents are increasingly seeking autonomy, may need increased support from teachers to the extent that they are relying less on their parents, and require novel cognitive challenges. Yet their school environments frequently provide them with more controlling teachers and classroom contexts, teachers who feel less competent and whom they only see for short amounts of time each day, and coursework that may be less complex than the tasks they received in elementary school.

An important note is that this theory rose to prominence at a time when most students transitioned from elementary schools to junior highs (usually containing seventh through ninth grades). At present, middle schools (usually containing sixth through eighth grades and attempting to provide a more personalized experience) and primary schools appear more prominent. Thus, the empirical support for this theory needs to be revisited in light of these changes.

See also [Cognitive Revolution and Information Processing Perspectives](#); [Metacognition](#); [Motivation](#); [Piaget, Jean](#); [School and Classroom Climate](#); [Social Constructionism](#); [Vygotsky, Lev](#)

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