

Module 50

Parents, Peers, and Early Experiences

Module Learning Objectives

50-1 Describe how early experiences can modify the brain.

50-2 Describe the ways in which parents and peers shape children's development.



Our genes, as expressed in specific environments, influence our developmental differences. We are not “blank slates,” note Douglas Kenrick and his colleagues (2009). We are more like coloring books, with certain lines predisposed and experience filling in the full picture. We are formed by nature *and* nurture. But what are the most influential components of our nurture? How do our early experiences, our family and peer relationships, and all our other experiences guide our development and contribute to our diversity?

Experience and Brain Development

50-1 How do early experiences modify the brain?

The formative nurture that conspires with nature begins at conception, as we have seen, with the prenatal environment in the womb. Embryos receive differing nutrition and varying levels of exposure to toxic agents. Nurture then continues outside the womb, where our early experiences foster brain development.

Our genes dictate our overall brain architecture, but experience fills in the details, developing neural connections and preparing our brain for thought and language and other later experiences. So how do early experiences leave their “marks” in the brain? Mark Rosenzweig, David Krech, and their colleagues (1962) opened a window on that process when they raised some young rats in solitary confinement and others in a communal playground. When they later analyzed the rats’ brains, those raised in the enriched environment, which simulated a natural environment, usually developed a heavier and thicker brain cortex (**FIGURE 50.1**).

Rosenzweig was so surprised by this discovery that he repeated the experiment several times before publishing his findings (Renner & Rosenzweig, 1987; Rosenzweig, 1984). So great are the effects that, shown brief video clips of rats, you could tell from their activity and curiosity whether their environment had been impoverished or enriched (Renner & Renner, 1993). After 60 days in the enriched environment, the rats’ brain weights increased 7 to 10 percent and the number of synapses mushroomed by about 20 percent (Kolb & Whishaw, 1998).



Stringing the circuits young
String musicians who started playing before age 12 have larger and more complex neural circuits controlling the note-making left-hand fingers than do string musicians whose training started later (Elbert et al., 1995).

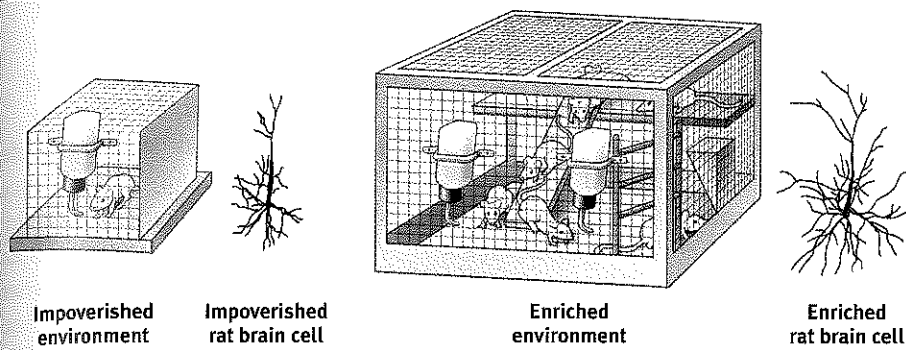


Figure 50.1

Experience affects brain development Mark Rosenzweig, David Krech, and their colleagues raised rats either alone in an environment without playthings, or with other rats in an environment enriched with playthings changed daily. In 14 of 16 repetitions of this basic experiment, rats in the enriched environment developed significantly more cerebral cortex (relative to the rest of the brain's tissue) than did those in the impoverished environment.

Such results have motivated improvements in environments for laboratory, farm, and zoo animals—and for children in institutions. Stimulation by touch or massage also benefits infant rats and premature babies (Field et al., 2007). “Handled” infants of both species develop faster neurologically and gain weight more rapidly. By giving preemies massage therapy, neonatal intensive care units now help them to go home sooner (Field et al., 2006).

Both nature and nurture sculpt our synapses. After brain maturation provides us with an abundance of neural connections, our experiences trigger a pruning process. Sights and smells, touches and tugs activate and strengthen connections. Unused neural pathways weaken. Like forest pathways, popular tracks are broadened and less-traveled ones gradually disappear. The result by puberty is a massive loss of unemployed connections.

Here at the juncture of nurture and nature is the biological reality of early childhood learning. During early childhood—while excess connections are still on call—youngsters can most easily master such skills as the grammar and accent of another language. Lacking any exposure to language before adolescence, a person will never master any language (see Module 36). Likewise, lacking visual experience during the early years, those whose vision is restored by cataract removal never achieve normal perceptions (see Module 19). The brain cells normally assigned to vision have died or been diverted to other uses. The maturing brain's rule: Use it or lose it.

Although normal stimulation during the early years is critical, the brain's development does not end with childhood. As we saw in Module 12's discussion of brain plasticity, our neural tissue is ever changing and new neurons are born. If a monkey pushes a lever with the same finger several thousand times a day, brain tissue controlling that finger changes to reflect the experience. Human brains work similarly (**FIGURE 50.2**). Whether learning to keyboard or skateboard, we perform with increasing skill as our brain incorporates the learning (Ambrose, 2010).

“Genes and experiences are just two ways of doing the same thing—wiring synapses.” —JOSEPH LEDOUX, *THE SYNAPTIC SELF*, 2002

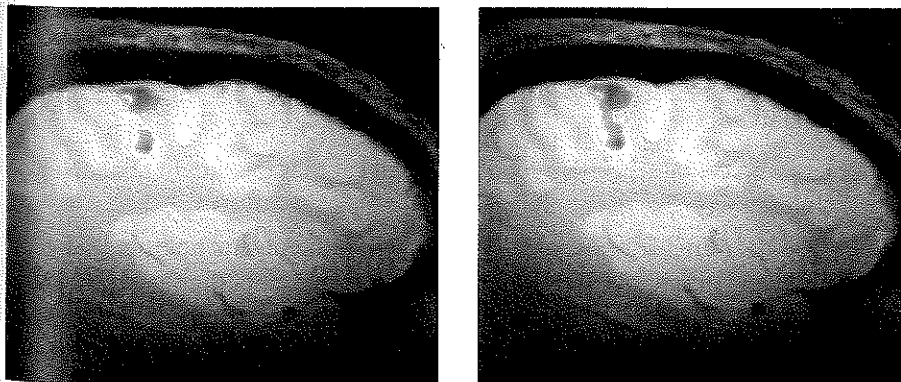


Figure 50.2

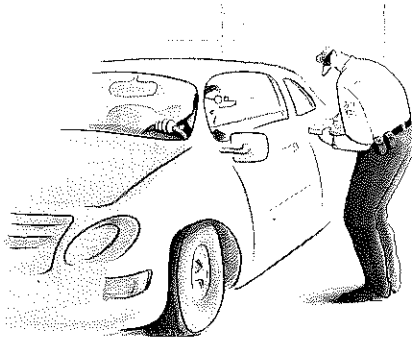
A trained brain A well-learned fingertapping task activates more motor cortex neurons (orange area, right) than were active in the same brain before training (left). (From Karni et al., 1998.)

How Much Credit or Blame Do Parents Deserve?

50.2

In what ways do parents and peers shape children's development?

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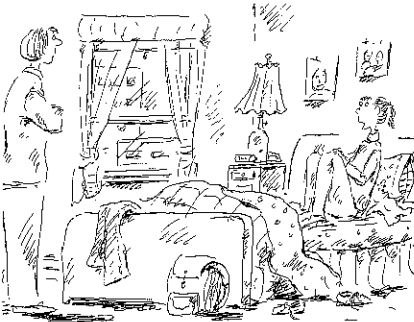


"To be frank, officer, my parents never set boundaries."

EVI

Even among chimpanzees, when one infant is hurt by another, the victim's mother will often attack the offender's mother (Goodall, 1968).

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"So I blame you for everything—whose fault is that?"

"If you want to blame your parents for your own adult problems, you are entitled to blame the genes they gave you, but you are not entitled—by any facts I know—to blame the way they treated you. . . . We are not prisoners of our past." -MARTIN SELIGMAN, *WHAT YOU CAN CHANGE AND WHAT YOU CAN'T*, 1994

In procreation, a woman and a man shuffle their gene decks and deal a life-forming hand to their child-to-be, who is then subjected to countless influences beyond their control. Parents, nonetheless, feel enormous satisfaction in their children's successes, and feel guilt or shame over their failures. They proudly display their "my child is on the honor roll" bumper sticker. And they wonder where they went wrong with the teenager who is repeatedly suspended from school. Freudian psychiatry and psychology have been among the sources of such ideas, by blaming problems from asthma to schizophrenia on "bad mothering." Society has reinforced such parent blaming: Believing that parents shape their offspring as a potter molds clay, people readily praise parents for their children's virtues and blame them for their children's vices. Popular culture endlessly proclaims the psychological harm toxic parents inflict on their fragile children. No wonder having and raising children can seem so risky.

But do parents really produce future adults with an inner wounded child by being (take your pick from the toxic-parenting lists) overbearing—or uninvolved? Pushy—or ineffectual? Overprotective—or distant? Are children really so easily wounded? If so, should we then blame our parents for our failings, and ourselves for our children's failings? Or does talk of wounding fragile children through normal parental mistakes trivialize the brutality of real abuse?

Parents do matter. The power of parenting is clearest at the extremes: the abused children who become abusive, the neglected who become neglectful, the loved but firmly handled who become self-confident and socially competent. The power of the family environment also appears in the remarkable academic and vocational successes of children of people who fled from Vietnam and Cambodia—successes attributed to close-knit, supportive, even demanding families (Caplan et al., 1992).

Yet in personality measures, shared environmental influences from the womb onward typically account for less than 10 percent of children's differences. In the words of behavior geneticists Robert Plomin and Denise Daniels (1987; Plomin, 2011), "Two children in the same family are [apart from their shared genes] as different from one another as are pairs of children selected randomly from the population." To developmental psychologist Sandra Scarr (1993), this implied that "parents should be given less credit for kids who turn out great and blamed less for kids who don't." Knowing children are not easily sculpted by parental nurture, perhaps parents can relax a bit more and love their children for who they are.

Peer Influence

As children mature, what other experiences do the work of nurturing? At all ages, but especially during childhood and adolescence, we seek to fit in with our groups and are influenced by them (Harris, 1998, 2000):

- Preschoolers who disdain a certain food often will eat that food if put at a table with a group of children who like it.
- Children who hear English spoken with one accent at home and another in the neighborhood and at school will invariably adopt the accent of their peers, not their parents. Accents (and slang) reflect culture, "and children get their culture from their peers," notes Judith Rich Harris (2007).

- Teens who start smoking typically have friends who model smoking, suggest its pleasures, and offer cigarettes (J. S. Rose et al., 1999; R. J. Rose et al., 2003). Part of this peer similarity may result from a *selection effect*, as kids seek out peers with similar attitudes and interests. Those who smoke (or don't) may select as friends those who also smoke (or don't).

"Men resemble the times more than they resemble their fathers."
-ANCIENT ARAB PROVERB

Howard Gardner (1998) has concluded that parents and peers are complementary:

Parents are more important when it comes to education, discipline, responsibility, orderliness, charitableness, and ways of interacting with authority figures. Peers are more important for learning cooperation, for finding the road to popularity, for inventing styles of interaction among people of the same age. Youngsters may find their peers more interesting, but they will look to their parents when contemplating their own futures. Moreover, parents [often] choose the neighborhoods and schools that supply the peers.

This power to select a child's neighborhood and schools gives parents an ability to influence the culture that shapes the child's peer group. And because neighborhood influences matter, parents may want to become involved in intervention programs that aim at a whole school or neighborhood. If the vapors of a toxic climate are seeping into a child's life, that climate—not just the child—needs reforming. Even so, peers are but one medium of cultural influence. As a purported African proverb declares, and former U.S. Secretary of State Hillary Clinton has popularized, "It takes a village to raise a child."



Peer power. As we develop, we play, date, and partner with peers. No wonder children and youths are so sensitive and responsive to peer influences.

Before You Move On

► ASK YOURSELF

To what extent, and in what ways, have your peers and your parents helped shape who you are?

► TEST YOURSELF

To predict whether a teenager smokes, ask how many of the teen's friends smoke. One explanation for this correlation is peer influence. What's another?

Answers to the Test Yourself questions can be found in Appendix E at the end of the book.

Module 50 Review

50-1

How do early experiences modify the brain?

- As a child's brain develops, neural connections grow more numerous and complex. Experiences then trigger a pruning process, in which unused connections weaken and heavily used ones strengthen.
- Early childhood is an important period for shaping the brain, but throughout our lives our brain modifies itself in response to our learning.

50-2

In what ways do parents and peers shape children's development?

- Parents influence their children in areas such as manners and political and religious beliefs, but not in other areas, such as personality.
- As children attempt to fit in with their peers, they tend to adopt their culture—styles, accents, slang, attitudes.
- By choosing their children's neighborhoods and schools, parents exert some influence over peer group culture.

Multiple-Choice Questions

1. According to Plomin and Daniels, "Two children in the same family are [apart from their shared genes] as different from _____ as are pairs of children selected randomly from the population."
 - a. their parents
 - b. their grandparents
 - c. their friends
 - d. one another
 - e. their cousins
2. Compared with rats raised in an enriched environment, which of the following is true of rats raised in isolation?
 - a. Their brain cortex is less developed.
 - b. Though neurologically similar, they fear other rats.
 - c. Their brains have more connections.
 - d. They have a thicker brain cortex.
 - e. The differences between the two groups are not statistically significant.
3. What is the *primary* means by which parents influence the behavior of their children?
 - a. Parenting style
 - b. Genetic contributions
 - c. Prenatal environment
 - d. Teaching cooperation
 - e. Rewarding achievement
4. Neurologically, what is the function of pruning?
 - a. Pruning creates new connections between synapses through repeated experiences.
 - b. Pruning reduces the negative effects of teratogens by eliminating neural waste.
 - c. Pruning increases the weight of the brain through enriching experiences.
 - d. Pruning creates areas in the brain used in learning mathematics.
 - e. Pruning eliminates unused neural pathways.

Practice FRQs

1. Compare and contrast the influence parents and peers have on a child's development, giving one example for each.
2. Provide two examples of how children seek to fit in with their groups and are influenced by them.

(2 points)

Answer

2 points: Parents influence a child's (1) quality of life, (2) attachments and beliefs, (3) exposure to peer culture via neighborhood and schools.

2 points: Peers influence a child's (1) tastes and styles, (2) accents and slang, and (3) substance use.

Module 51

Adolescence: Physical and Cognitive Development

Module Learning Objectives

- 51-1** Define *adolescence*, and identify the major physical changes during this period.
- 51-2** Describe adolescent cognitive and moral development, according to Piaget, Kohlberg, and later researchers.

- 51-1** How is *adolescence* defined, and what physical changes mark this period?

Many psychologists once believed that childhood sets our traits. Today's developmental psychologists see development as lifelong. As this *life-span perspective* emerged, psychologists began to look at how maturation and experience shape us not only in infancy and childhood, but also in adolescence and beyond. Your story is still being written. **Adolescence**—the years spent morphing from child to adult—starts with the physical beginnings of sexual maturity and ends with the social achievement of independent adult status. In some cultures, where teens are self-supporting, this means that adolescence hardly exists.

G. Stanley Hall (1904), one of the first psychologists to describe adolescence, believed that the tension between biological maturity and social dependence creates a period of "storm and stress." Indeed, after age 30, many who grew up in independence-fostering Western cultures look back on their teenage years as a time they would not want to relive, a time when their peers' social approval was imperative, their sense of direction in life was in flux, and their feeling of alienation from their parents was deepest (Arnett, 1999; Macfarlane, 1964).

But for many, adolescence is a time of vitality without the cares of adulthood, a time of rewarding friendships, heightened idealism, and a growing sense of life's exciting possibilities.

Physical Development

Adolescence begins with *puberty*, the time when we mature sexually. Puberty follows a surge of hormones, which may intensify moods and which trigger a series of bodily changes, described in Module 53.

Just as in the earlier life stages, the *sequence* of physical changes in puberty (for example, breast buds and visible pubic hair before *menarche*—the first menstrual period) is far more predictable than their *timing*. Some girls start their growth spurt at 9, some boys as late as age 16. Though such variations have little effect on height at maturity, they may have psychological consequences: It is not only when we mature that counts, but how people react to our physical development.

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adolescence the transition period from childhood to adulthood, extending from puberty to independence.

Try This

How will you look back on your life 10 years from now? Are you making choices that someday you will recollect with satisfaction?