Module 78

Aggression


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Module Learning Objectives

78-1 Explain how psychology's definition of *aggression* differs from everyday usage, and identify the biological factors that make us more prone to hurt one another.

78-2 Outline psychological and social-cultural triggers of aggression.

78-1 How does psychology's definition of *aggression* differ from everyday usage? What biological factors make us more prone to hurt one another?

aggression any physical or verbal behavior intended to hurt or destroy.

Prejudice hurts, but aggression often hurts more. In psychology, **aggression** is any physical or verbal behavior intended to hurt or destroy, whether done out of hostility or as a calculated means to an end. The assertive, persistent salesperson is not aggressive. Nor is the dentist who makes you wince with pain. But the person who passes along a vicious rumor about you, the person who verbally assaults you, and the attacker who mugs you for your money are aggressive.

Aggressive behavior emerges from the interaction of biology and experience. For a gun to fire, the trigger must be pulled; with some people, as with hair-trigger guns, it doesn't take much to trip an explosion. Let's look first at some biological factors that influence our thresholds for aggressive behavior, then at the psychological factors that pull the trigger.

FYI

In the last 40 years in the United States, well over 1 million people—more than all deaths in all wars in American history—have been killed by firearms in nonwar settings. Compared with people of the same sex, race, age, and neighborhood, those who keep a gun in the home (ironically, often for protection) are almost three times more likely to be murdered in the home—nearly always by a family member or close acquaintance. For every self-defense use of a gun in the home, there have been 4 unintentional shootings, 7 criminal assaults or homicides, and 11 attempted or completed suicides (Kellermann et al., 1993, 1997, 1998; see also Branas et al., 2009).

The Biology of Aggression

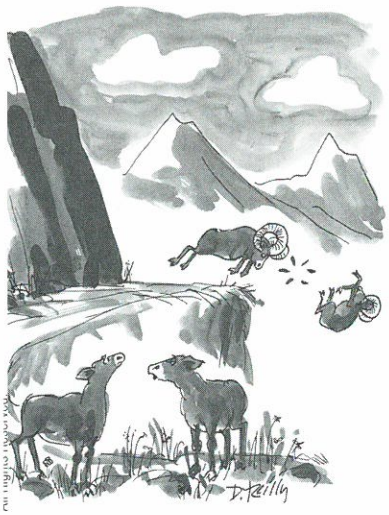
Aggression varies too widely from culture to culture, era to era, and person to person to be considered an unlearned instinct. But biology does *influence* aggression. We can look for biological influences at three levels—genetic, neural, and biochemical.

Genetic Influences

Genes influence aggression. We know this because animals have been bred for aggressiveness—sometimes for sport, sometimes for research. The effect of genes also appears in human twin studies (Miles & Carey, 1997; Rowe et al., 1999). If one identical twin admits to "having a violent temper," the other twin will often independently admit the same. Fraternal twins are much less likely to respond similarly. Researchers continue to search for genetic markers in those who commit the most violence. (One is already well known and is carried by half the human race: the Y chromosome.)

AP® Exam Tip

Notice that you're back to a nature and nurture analysis again. The biology section is, of course, the nature component. When you get to the psychological and social-cultural factors coming up, that's nurture.



"It's a guy thing."

Neural Influences

There is no one spot in the brain that controls aggression. Aggression is a complex behavior, and it occurs in particular contexts. But animal and human brains have neural systems that, given provocation, will either inhibit or facilitate aggressive behavior (Denson, 2011; Moyer, 1983). Consider:

- Researchers implanted a radio-controlled electrode in the brain of the domineering leader of a caged monkey colony. The electrode was in an area that, when stimulated, inhibits aggression. When researchers placed the control button for the electrode in the colony's cage, one small monkey learned to push it every time the boss became threatening.
- A neurosurgeon, seeking to diagnose a disorder, implanted an electrode in the amygdala of a mild-mannered woman. Because the brain has no sensory receptors, she was unable to feel the stimulation. But at the flick of a switch she snarled, "Take my blood pressure. Take it now," then stood up and began to strike the doctor.
- Studies of violent criminals have revealed diminished activity in the frontal lobes, which play an important role in controlling impulses. If the frontal lobes are damaged, inactive, disconnected, or not yet fully mature, aggression may be more likely (Amen et al., 1996; Davidson et al., 2000; Raine, 1999, 2005).

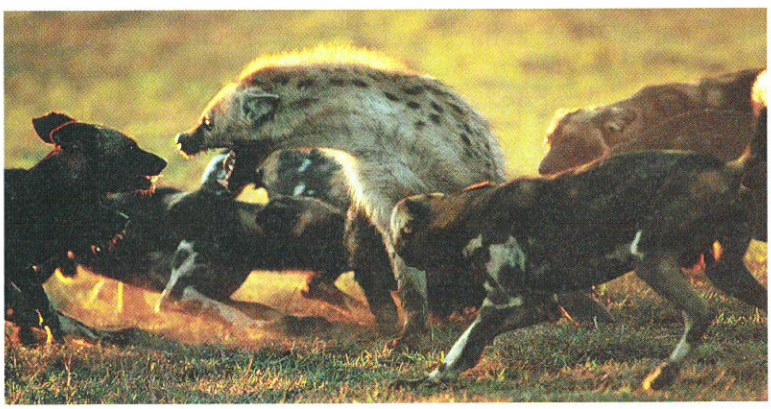
Biochemical Influences

Our genes engineer our individual nervous systems, which operate electrochemically. The hormone testosterone, for example, circulates in the bloodstream and influences the neural systems that control aggression. A raging bull will become a gentle Ferdinand when castration reduces its testosterone level. The same is true of mice. When injected with testosterone, gentle, castrated mice once again become aggressive.

Humans are less sensitive to hormonal changes. But as men age, their testosterone levels—and their aggressiveness—diminish. Hormonally charged, aggressive 17-year-olds mature into hormonally quieter and gentler 70-year-olds. Also, violent criminals tend to be muscular young males with higher-than-average testosterone levels, lower-than-average intelligence scores, and low levels of the neurotransmitter serotonin (Dabbs et al., 2001a; Pendick, 1994). Men more than women tend to have wide faces, a testosterone-linked trait, rather than roundish or long faces. And men's facial width is a predictor of their aggressiveness (Carré et al., 2009; Stirrat & Perrett, 2010).

"We could avoid two-thirds of all crime simply by putting all able-bodied young men in cryogenic sleep from the age of 12 through 28." -David T. Lykken, *The Antisocial Personalities*, 1995

High testosterone correlates with irritability, assertiveness, impulsiveness, and low tolerance for frustration—qualities that predispose somewhat more aggressive responses to provocation or competition for status (Dabbs et al., 2001b; Harris, 1999; McAndrew, 2009). Among both teenage boys and adult men, high testosterone levels correlate with delinquency, hard drug use, and aggressive-bullying responses to frustration (Berman et al., 1993; Dabbs & Morris, 1990; Olweus et al., 1988). Drugs that sharply reduce testosterone levels subdue men's aggressive tendencies.



Ocean/Corbis

A lean, mean fighting machine—the testosterone-laden female hyena The hyena's unusual embryology pumps testosterone into female fetuses. The result is revved-up young female hyenas who seem born to fight.

Another drug that sometimes circulates in the bloodstream—alcohol—*unleashes* aggressive responses to frustration. In police data and prison surveys, as in experiments, aggression-prone people are more likely to drink, and they are more likely to become violent when intoxicated (White et al., 1993). People who have been drinking commit 4 in 10 violent crimes and 3 in 4 acts of spousal abuse (Karberg & James, 2005). Alcohol's effects are both biological and psychological (Bushman, 1993; Ito et al., 1996; Taylor & Chermack, 1993). Those who only *think* they've imbibed alcohol will be somewhat affected, but so, too, will those who have had alcohol unknowingly slipped into a drink. Unless people are distracted, alcohol tends to focus their attention on a provocation rather than on inhibitory cues (Giancola & Corman, 2007). Alcohol also inclines people to interpret ambiguous acts (such as a bump in a crowd) as provocations (Bègue et al., 2010).

Psychological and Social-Cultural Factors in Aggression

78-2 What psychological and social-cultural factors may trigger aggressive behavior?

Biological factors influence the ease with which aggression is triggered. But what psychological and social-cultural factors pull the trigger?

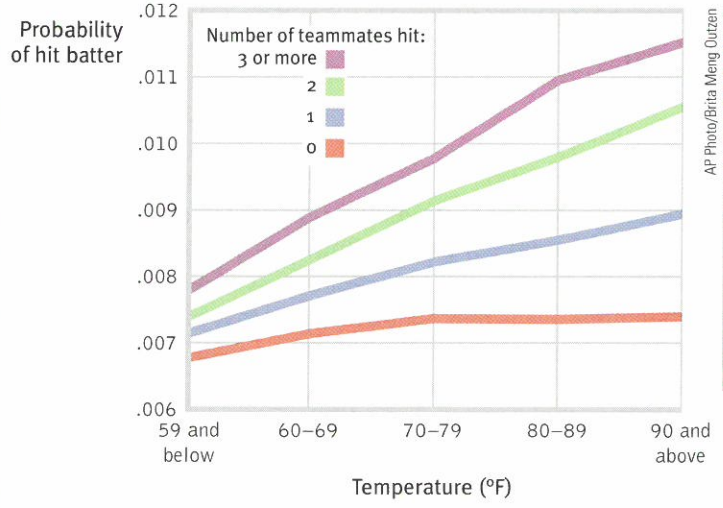
Aversive Events

Suffering sometimes builds character. In laboratory experiments, however, those made miserable have often made others miserable (Berkowitz, 1983, 1989). This phenomenon is called the **frustration-aggression principle:** Frustration creates anger, which can spark aggression. One analysis of 27,667 hit-by-pitch Major League Baseball incidents between 1960 and 2004 revealed this link (Timmerman, 2007). Pitchers were most likely to hit batters when

frustration-aggression principle the principle that frustration—the blocking of an attempt to achieve some goal—creates anger, which can generate aggression.

- they had been frustrated by the previous batter hitting a home run.
- the current batter had hit a home run the last time at bat.
- a teammate had been hit by a pitch in the previous half-inning.

Other aversive stimuli—hot temperatures, physical pain, personal insults, foul odors, cigarette smoke, crowding, and a host of others—can also evoke hostility. In laboratory experiments, when people get overheated, they think, feel, and act more aggressively. In baseball games, the number of hit batters rises with the temperature (Reifman et al., 1991; see **FIGURE 78.1**). And in the wider world, violent crime and spousal abuse rates have been higher during hotter years, seasons, months, and days (Anderson & Anderson, 1984).



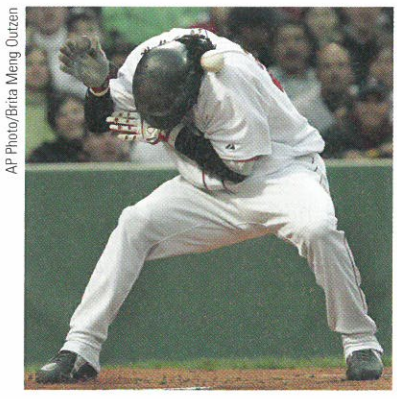

AP Photo/Brita Meng Outzen

Figure 78.1
Temperature and retaliation
Richard Larrick and his colleagues (2011) looked for occurrences of batters hit by pitchers during 4,566,468 pitcher-batter matchups across 57,293 Major League Baseball games since 1952. The probability of a hit batter increased if one or more of the pitcher's teammates had been hit, and also with temperature.

From the available data, Craig Anderson and his colleagues (2000; 2011) have projected that, other things being equal, global warming of 4 degrees Fahrenheit (about 2 degrees centigrade) would induce tens of thousands of additional assaults and murders—and that's before the added violence inducement from climate-change-related drought, poverty, food insecurity, and migration.

Reinforcement and Modeling

AP® Exam Tip

David Myers points out that this section is an application of material that was introduced in Unit VI. You should go back there for a quick review if you don't recognize the basic components of operant conditioning and observational learning in this material.

Aggression may be a natural response to aversive events, but learning can alter natural reactions. As Unit VI explained, we learn when our behavior is reinforced, and we learn by watching others.

In situations where experience has taught us that aggression pays, we are likely to act aggressively again. Children whose aggression has successfully intimidated other children may become bullies. Animals that have successfully fought to get food or mates become increasingly ferocious. To foster a kinder, gentler world we had best model and reward sensitivity and cooperation from an early age, perhaps by training parents to discipline without modeling violence.

Parents of delinquent youth frequently cave in to (reward) their children's tears and temper tantrums. Then, exasperated, they discipline with beatings (Patterson et al., 1982, 1992).

Parent-training programs often advise parents to avoid modeling violence by screaming and hitting. Instead, parents should reinforce desirable behaviors and frame statements positively. ("When you finish loading the dishwasher you can go play," rather than "If you don't load the dishwasher, there'll be no playing.")

One *aggression-replacement program* worked with juvenile offenders and gang members and their parents. It taught both generations new ways to control anger, and more thoughtful approaches to moral reasoning (Goldstein et al., 1998). The result? The youths' re-arrest rates dropped.

Different cultures model, reinforce, and evoke different tendencies toward violence. For example, crime rates are higher (and average happiness is lower) in countries marked by a great disparity between rich and poor (Triandis, 1994). In the United States, cultures and families that experience minimal father care also have high violence rates (Triandis, 1994). Even after controlling for parental education, race, income, and teen motherhood, American male youths from father-absent homes have double their peers' incarceration rate (Harper & McLanahan, 2004).

Violence can also vary by culture within a country. Richard Nisbett and Dov Cohen (1996) analyzed violence among White Americans in southern towns settled by Scots-Irish herders whose tradition emphasized "manly honor," the use of arms to protect one's flock, and a history of coercive slavery. Compared with their White counterparts in New England towns settled by the more traditionally peaceful Puritan, Quaker, and Dutch farmer-artisans, the cultural descendants of those herders have triple the homicide rates and are more supportive of physically punishing children, of warfare initiatives, and of uncontrolled gun ownership. "Culture-of-honor" states also have higher rates of students bringing weapons to school and of school shootings (Brown et al., 2009).

Media Models for Violence

Parents are hardly the only aggression models. In the United States and elsewhere, TV shows, films, video games, and YouTube offer supersized portions of violence. Repeatedly viewing on-screen violence teaches us **social scripts**—culturally provided mental files for how to act. When we find ourselves in new situations, uncertain how to behave, we rely on social scripts. After so many action films, teens may acquire a script that plays in their head when they face real-life conflicts. Challenged, they may "act like a man" by intimidating or eliminating the threat. Likewise, after viewing the multiple sexual innuendoes and acts found in most prime-time TV shows—often involving impulsive or short-term relationships—youths may acquire sexual scripts they later enact in real-life relationships (Kunkel et al., 2001; Sapolsky & Tabarlet, 1991).

social script culturally modeled guide for how to act in various situations.

Music lyrics also write social scripts. In one set of experiments, German university men administered hotter chili sauce to a woman and recalled more negative feelings and beliefs about women after listening to woman-hating song lyrics. Man-hating song lyrics had a similar effect on the aggressive behavior of women listeners (Fischer & Greitemeyer, 2006).

Sexual aggression is sometimes modeled in X-rated films and pornography. Content analyses have revealed that most X-rated films depict quick, casual sex between strangers, but sometimes also provide scenes of rape and sexual exploitation of women by men (Cowan et al., 1988; NCTV, 1987; Yang & Linz, 1990). These scenes often include enactments of the *rape myth*—the idea that some women invite or enjoy rape and get "swept away" while being "taken." (In actuality, rape is traumatic, and it frequently harms women's reproductive and psychological health [Golding, 1996].) Most rapists accept this myth (Brinson, 1992). So do many men and women who watch a great deal of TV: Compared with those who watch little television, heavy viewers are more accepting of the rape myth (Kahlor & Morrison, 2007). Might sexually explicit media models in the $97 billion global pornography business contribute to sexually aggressive tendencies (D'Orlando, 2011)?

Most consumers of child and adult pornography commit no known sexual crimes (Seto, 2009). But they are more likely to accept the rape myth as reality (Kingston et al., 2009). Canadian and U.S. sex offenders acknowledge a greater-than-usual appetite for sexually explicit and sexually violent materials—materials typically labeled as pornography (Kingston et al., 2009; Marshall, 1989, 2000; Oddone-Paolucci et al., 2000). The Los Angeles Police Department, for example, reported that pornography was "conspicuously present" in 62 percent of its extrafamilial child sexual abuse cases during the 1980s (Bennett, 1991). High pornography consumption also has predicted greater sexual aggressiveness among university men, even after controlling for other predictors of antisocial behavior (Vega & Malamuth, 2007). But critics object. Since 1990, the reported U.S. rape rate has declined while pornography consumption has increased (Ferguson & Hartley, 2009). And aren't many sexual aggressors merely, as sex researcher John Money (1988) suspected, using pornography "as an alibi to explain to themselves what otherwise is inexplicable"?

People heavily exposed to televised crime see the world as more dangerous. People heavily exposed to pornography see the world as more sexual. Repeatedly watching X-rated films, even nonviolent films, has many effects (Kingston et al., 2009). One's own partner seems less attractive (Module 39). Extramarital sex seems less troubling (Zillmann, 1989). A woman's friendliness seems more sexual. Sexual aggression seems less serious (Harris, 1994; Zillmann, 1989). These effects feed the ingredients of coercion against women.

In one experiment, undergraduates viewed six brief, sexually explicit films each week for six weeks (Zillmann & Bryant, 1984). A control group viewed nonerotic films during the same six-week period. Three weeks later, both groups read a newspaper report about a man convicted but not yet sentenced for raping a hitchhiker. When asked to suggest an appropriate prison term, viewers of the sexually explicit films recommended sentences half as long as those recommended by the control group.

Experiments cannot elicit actual sexual violence, but they can assess a man's willingness to hurt a woman. Often the research gauges the effect of violent versus nonviolent erotic films on men's willingness to deliver supposed electric shocks to women who had earlier provoked them. These experiments suggest that it's less the eroticism than the depictions of sexual *violence* (whether in R-rated slasher films or X-rated films) that most directly affect men's acceptance and performance of aggression against women.

To a lesser extent, nonviolent pornography can also influence aggression. In a series of studies, Nathaniel Lambert and his colleagues (2011) used various methods to explore pornography's effects on aggression against relationship partners. They found that pornography consumption predicted both self-reported aggression and laboratory noise blasts to their partner, and that abstaining from customary pornography consumption decreased aggression (while abstaining from their favorite food did not).

AP® Exam Tip

In the experiment described here, can you identify the independent and dependent variables? It's great practice to do this every time you read about an experiment.

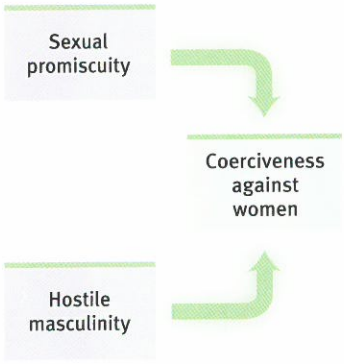


Figure 78.2
Men who sexually coerce women The recipe for coercion against women combines an impersonal approach to sex with a hostile masculinity. (Adapted from Malamuth, 1996.)

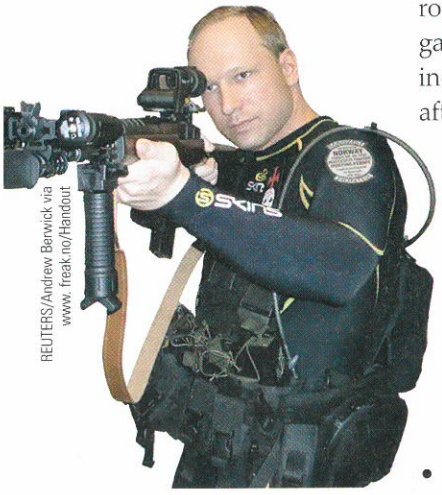
Neil Malamuth (1996) has shown that sexually coercive men typically are sexually promiscuous and hostile in their relationships with women (**FIGURE 78.2**). Several factors can create a predisposition to sexual violence (Malamuth et al., 1991, 1995). They include media influences but also dominance motives, disinhibition by alcohol, and a history of child abuse. Still, media depictions of violence can disinhibit and desensitize; viewing sexual violence fosters hostile, domineering attitudes and behaviors; and viewing pornography leads viewers to trivialize rape, devalue their partners, and engage in uncommitted sex. Media influence is not a minor issue.

Might public consciousness be raised by making people aware of the information you have just been reading? In the 1940s, movies often depicted African-Americans as childlike, superstitious buffoons, images we would not tolerate today. Many hope that entertainers, producers, and audiences might someday look back with embarrassment on the days when movies "entertained" us with scenes of sexual coercion, torture, and mutilation.

Do Violent Video Games Teach Social Scripts for Violence?

Violent video games became an issue for public debate after teenagers in more than a dozen places seemed to mimic the carnage in the shooter games they had so often played (Anderson, 2004a). In 2002, two Grand Rapids, Michigan, teens and a man in his early twenties spent part of a night drinking beer and playing *Grand Theft Auto III*. Using simulated cars, they ran down pedestrians, then beat them with fists, leaving a bloody body behind (Kolker, 2002). The same teens and man then went out for a real drive. Spotting a 38-year-old man on a bicycle, they ran him down with their car, got out, stomped and punched him, and returned home to play the game some more. (The victim, a father of three, died six days later.)

As we noted in Module 30, observing media violence tends to desensitize people to cruelty and prime them to respond aggressively when provoked. Does this violence-viewing effect extend to playing violent video games? Should parents worry about the ways actively role-playing aggression will affect their children? Experiments indicate that playing positive games has positive effects. For example, playing *Lemmings*, where a goal is to help others, increases real-life helping (Greitemeyer & Osswald, 2010). So, might a parallel effect occur after playing games that enact violence?


REUTERS/Andrew Berwick via www.freak.no/Handout

Coincidence or cause? In 2011, Norwegian Anders Behring Breivik bombed government buildings in Oslo, and then went to a youth camp where he shot and killed 69 people, mostly teens. As a player of first-person shooter games, Breivik stirred debate when he commented that "I see MW2 *[Modern Warfare 2]* more as a part of my training-simulation than anything else." Did his violent game playing contribute to his violence, or was it a mere coincidental association? To explore such questions, psychologists experiment.

When combining data from 400 studies with 130,296 participants, Craig Anderson and his colleagues (2010) found such an effect: Playing violent video games increased aggression. The finding held for youth and for young adults; in North America, Japan, and Western Europe; and with each of three major research designs (correlational, experimental, and longitudinal). In a 2010 statement submitted for a U.S. Supreme Court case, Anderson was joined by more than 100 social scientists in explaining that "the psychological processes underlying such effects are well understood and include: imitation; observational learning; priming of cognitive, emotional, and behavioral scripts; physiological arousal; and emotional desensitization."

Consider some evidence:

- University men who spent the most hours playing violent video games tended to be the most physically aggressive (for example, more likely to acknowledge having hit or attacked someone else) (Anderson & Dill, 2000).
- People randomly assigned to play a game involving bloody murders with groaning victims (rather than to play nonviolent *Myst*) became more hostile. On a follow-up task, they also were more likely to blast intense noise at a fellow student.
- People with extensive experience in violent video gaming display desensitization to violence, as shown by blunted brain responses; they also are less likely to help an injured victim (Bartholow et al., 2006; Bushman & Anderson, 2009).
- After playing a violent rather than a neutral or prosocial video game, people become more likely to express dehumanized perceptions of immigrant outgroups (Greitemeyer & McLatchie, 2011).

Young adolescents who play a lot of violent video games see the world as more hostile. Compared with nongaming kids, they get into more arguments and fights and get worse grades (Gentile, 2009). Ah, but is this merely because naturally hostile kids are drawn to such games? Apparently not. Comparisons of gamers and nongamers who scored low in hostility revealed a difference in the number of reported fights: 38 percent of the violent-game players had been in fights, versus only 4 percent of the nongamers. Over time, the nongamers became more likely to have fights only if they started playing the violent games (Anderson, 2004a). Another study, with German adolescents, found that today's violent game playing predicts future aggression, but today's aggression does not predict future game playing (Möller & Krahé, 2008). Some researchers believe that, due partly to the more active participation and rewarded violence of game play, violent video games have even greater effects on aggressive behavior and cognition than do violent TV shows and movies (Anderson et al., 2007). The effects of violent gaming, some say, are comparable to the toxic effects of asbestos or second-hand smoke exposure (Bushman et al., 2010). "Playing violent video games probably will not turn your child into a psychopathic killer," acknowledges researcher Brad Bushman (2011), "but I would want to know how the child treats his or her parents, how they treat their siblings, how much compassion they have."

Others are unimpressed by violent-game-effect findings (Ferguson & Kilburn, 2010). They note that from 1996 to 2006, youth violence was declining while video game sales were increasing. Moreover, some point out that avid game players are quick and sharp: they develop speedy reaction times and enhanced visual skills (Dye et al., 2009; Green et al., 2010). The focused fun of game playing can satisfy basic needs for a sense of competence, control, and social connection (Przbylski et al., 2010). That helps explain why, in one experiment, elementary school boys randomly selected to receive a game system spent enormous amounts of time on it over the next four months, with diminished time spent on schoolwork and with more academic problems (Weis & Cerankosky, 2010).

This much seems clear. Aggressive thoughts can lead to violent behavior and role playing can increase aggressive thoughts and emotions. As the Greek philosopher Aristotle observed, "We are what we repeatedly do."

Nevertheless, a 2011 Supreme Court decision overturned a California state law that banned violent video game sales to children (much like the ban on sales of sexually explicit materials to children). The First Amendment's free speech guarantee protects even offensive games, said the court's majority, which was unpersuaded by the evidence of harm. But the debate goes on. "What sense does it make to forbid selling to a 13-year-old a magazine with an image of a nude woman," wrote Justice Stephen Breyer, in a dissenting opinion, "while protecting the sale to that 13-year-old of an interactive video game in which he actively, but virtually, binds and gags the woman, then tortures and kills her?"

* * *

To sum up, significant behaviors, such as violence, usually have many determinants, making any single explanation an oversimplification. Asking what causes violence is therefore like asking what causes cancer. Asbestos exposure, for example, is indeed a cancer cause, albeit only one among many. Research reveals many different biological, psychological, and social-cultural influences on aggressive behavior. Like so much else, aggression is a biopsychosocial phenomenon (**FIGURE 78.3**).

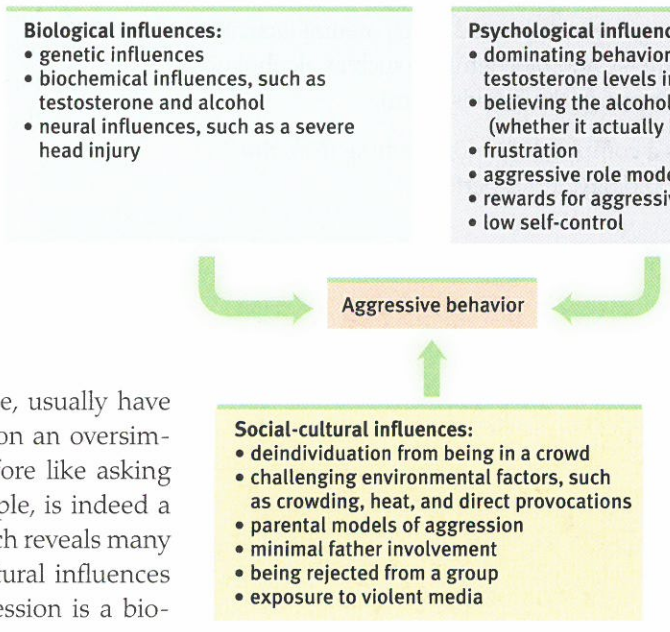


Figure 78.3

Biopsychosocial understanding of aggression Because many factors contribute to aggressive behavior, there are many ways to change such behavior, including learning anger management and communication skills, and avoiding violent media and video games.

It is also important to note that many people are leading gentle, even heroic lives amid personal and social stresses, reminding us again that individuals differ. The person matters. That people vary over time and place reminds us that environments also differ. Yesterday's plundering Vikings have become today's peace-promoting Scandinavians. Situations matter. Like all behavior, aggression arises from the interaction of persons and situations.

Before You Move On

▶ ASK YOURSELF

Do you think there should be laws to prevent children's exposure to violent media? Why or why not?

▶ TEST YOURSELF

What psychological, biological, and social-cultural influences interact to produce aggressive behaviors?

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

Module 78 Review

78-1 How does psychology's definition of *aggression* differ from everyday usage? What biological factors make us more prone to hurt one another?

- In psychology, *aggression* is any physical or verbal behavior intended to hurt or destroy.
- Biology influences our threshold for aggressive behaviors at three levels: genetic (inherited traits), neural (activity in key brain areas), and biochemical (such as alcohol or excess testosterone in the bloodstream).
- Aggression is a complex behavior resulting from the interaction of biology and experience.

78-2 What psychological and social-cultural factors may trigger aggressive behavior?

- Frustration *(frustration-aggression principle)*, previous reinforcement for aggressive behavior, and observing an aggressive role model can all contribute to aggression.
  - Media portrayals of violence provide *social scripts* that children learn to follow.
  - Viewing sexual violence contributes to greater aggression toward women.
  - Playing violent video games increases aggressive thoughts, emotions, and behaviors.