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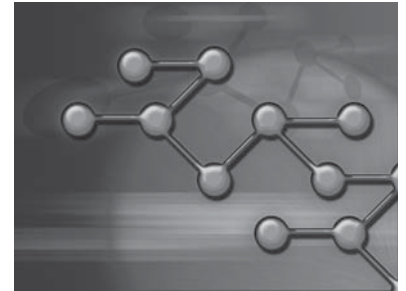
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# Interpersonal Aggression

# 10

*To live without killing is a thought which could electrify the world, if men were only capable of staying awake long enough to let the idea soak in.*

—Henry Miller



On October 2, 2002, at around 6:00 P.M., James D. Martin was standing in the parking lot of a Wheaton, Maryland, grocery store. He was there to buy groceries for his church. From out of nowhere came the crack of a rifle and moments later Martin lay dying on the ground in the parking lot. Just a few hours later at 7:40 A.M. on October 3, 2003, James Buchanan was gunned down in the same way while he was cutting the grass at an automobile dealership in White Flint, Maryland. So began a shooting spree that would claim the lives of seven more unsuspecting victims and seriously wound several others. The only connection between the victims was that they were victims of the “Beltway Sniper.” The victims were seemingly chosen at random. For 3 weeks the Beltway Sniper terrorized residents of Maryland, Virginia, and Washington, D.C.

As one might expect, the police mounted a massive hunt for the sniper. Early on, unreliable reports and profiles led police to look for someone in a white van, most likely a white male. For three weeks, police were stumped as the shooting spree continued. Finally, a break in the case came when police received a tip from a truck driver who spotted a car matching one the police were seeking in connection with the sniper attacks. The car had a hole bored into the trunk through which the sniper could shoot and then quickly leave the scene. The car was a mobile sniper’s nest. Based on the tip, police arrested two individuals: John Allen Muhammad and Lee Boyd Malvo. Muhammad was a 41-year-old Gulf War veteran who was highly rated as a marksman. Malvo was 17 years old at the time of the shooting. Police found a Bushmaster XM-15 rifle in Muhammad’s car and ballistic tests showed that the rifle was used in the beltway shooting spree.

## Key Questions

As you read this chapter, find the answers to the following questions:

1. How do social psychologists define aggression?
2. What are the different types of aggression?
3. What are the gender differences in aggression?
4. How can we explain aggression?
5. What are the ethological, sociobiological, and genetic explanations for aggression?
6. What role do brain mechanisms play in aggression?
7. How does alcohol consumption relate to aggression?
8. What is the frustration-aggression hypothesis?
9. How does anger relate to frustration and aggression, and what factors contribute to anger?

10. How does social learning theory explain aggression?
11. What are aggressive scripts, and how do they relate to aggression?
12. How does the family socialize a child into aggression?
13. What is the role of culture in aggression?
14. What role do the media play in aggression?
15. What are the effects of playing violent video games on aggressive behavior?
16. What is the link between sexual violence portrayed in the media and sexual aggression toward women?
17. How can aggression be reduced?

**aggression** Any behavior intended to inflict either psychological or physical harm on another organism or object.

### hostile aggression

Aggressive behavior stemming from angry or hostile impulses, with a primary goal to inflict injury on some person or object.

As police began to unravel the case they discovered that there may have been more than one motive for the killings. One motive was to extort 10 million dollars from the U.S. government. Another was that Muhammad was going to use the random killings to set up the murder of his ex-wife with whom he was having a custody dispute. Whatever the motive or motives, the results remain the same: nine people dead and several more wounded.

What possessed Muhammad and Malvo to murder nine innocent, unsuspecting people? Were they disturbed individuals, or were they a product of their environment? Were they frustrated? Had they somehow learned that violence was an acceptable way to solve one's problems?

The Beltway Sniper case also raises other important questions. For example, what can be done to lessen the use of violence and aggression as a form of conflict resolution? What steps can individuals and a society take to prevent such a tragic event from occurring again? These are some of the questions addressed in this chapter.

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## What Is Aggression?

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What exactly is aggression? The term tends to generate a certain amount of confusion, because a layperson's concept of aggression differs somewhat from what social psychologists study. In day-to-day life we hear about the aggressive salesperson who will not take no for an answer and the aggressive businessperson who stops at nothing to win a promotion. These usages convey forceful, overbearing, or overly assertive behavior.

Social psychologists, however, define **aggression** as any behavior that is intended to inflict harm (whether psychological or physical) on another organism or object. There are several important things to note about this definition. First, a crucial element of the definition is intent: A person must have intended to harm in order for the act to be classified as aggressive. If someone deliberately hits a neighbor with a baseball bat during an argument, it is considered aggressive. If the person accidentally hits the neighbor with a baseball bat while playing ball in the yard, it is not considered aggressive.

Note, too, that the harm intended by an aggressive act need not be physical. A navy commander who continually sexually harasses a female subordinate, causing stress, anxiety, and depression, may not be doing her any overt physical harm; he is, however, causing her psychological harm. Third, aggression is not limited to actions directed toward living organisms. Aggression also can be directed toward inanimate objects. A person might smash the window of a neighbor's car in retaliation for some real or imagined conflict with that neighbor.

This broad definition covers a great deal of ground, but it requires further elaboration. Using this definition, we would be tempted to liken the actions of a police officer who kills a murder suspect in the line of duty with those of a paid assassin who kills for profit. Because such a wide range of behavior can be called aggressive, psychologists have defined several different types of aggression, which we look at next.

### Levels and Types of Aggression

Clearly, aggression exists on many different levels and is made up of several types of behavior. All aggression, for example, does not stem from the same underlying motives and intentions. Some, referred to as **hostile aggression**, stems from angry and hostile

impulses (Feshbach, 1964), and its primary goal is to inflict injury on some person or object. For example, when a gay man named Matthew Shepard was murdered, one of his assailants, Aaron McKinney, was apparently angry over a purported “pass” made by Shepard toward McKinney. Acts of aggression that stem from such emotional states are examples of hostile aggression. **Instrumental aggression** stems from the desire to achieve a goal. For example, such aggression could be involved in the desire to get rid of a rival.

Hostile aggression and instrumental aggression are not mutually exclusive. One can commit an aggressive act having both underlying motives. In 1994, when Baruch Goldstein killed over 30 Palestinians in a mosque in Hebron, he had two motives. He was motivated by intense hatred of Palestinians, whom he perceived as trying to take away land that rightfully belonged to Jews. He also was motivated by the hope of derailing the fragile peace talks between the Palestine Liberation Organization and the Israeli government. His act, thus, had a hostile component (hatred) and an instrumental component (derailing the peace talks).

Another distinction can be made between direct aggression and indirect aggression. (The origin of these terms is difficult to trace, so we shall not attempt to specifically identify who coined these terms. Suffice it to say that this is a distinction made by a variety of aggression researchers.) **Direct aggression** refers to overt forms of aggression such as physical aggression (hitting, punching, kicking, etc.) and verbal aggression (name calling, denigration, etc.). **Indirect aggression** is aggression that is social in nature (social ostracism, deliberate social exclusion).

A form of aggression that has elements of both direct and indirect aggression is **relational aggression** (Archer, 2004). This form of aggression involves using social ostracism and rejection (indirect aggression), but can also be directly confrontational (direct aggression). An example of the direct aspect of relational aggression is when a child tells another child that she will stop liking her unless the other child does what she wants (Archer, 2004).

In some forms of aggression the target is harmed verbally through gossip, character assassination, damage to the victim’s property (Moyer, 1987), or interference with the victim’s advancement toward a goal. This form of aggression is called **symbolic aggression**. For example, if a person spreads rumors about a coworker in order to keep her from being promoted, the person has used symbolic aggression. Although no physical harm was done, the coworker was blocked from achieving a goal.

The forms of aggression just noted can be either hostile or instrumental. The office worker may have spread rumors because she was angry at her coworker—a case of hostile aggression. Alternatively, she may have spread rumors to secure the promotion for herself at her coworker’s expense—a case of instrumental aggression.

Yet another form of aggression is **sanctioned aggression**. A soldier taking aim and killing an enemy soldier in battle engages in sanctioned aggression. Self-defense, which occurs when a person uses aggression to protect himself or herself or others from harm, is another example of sanctioned aggression. Society declares that in certain situations, aggression is acceptable, even mandatory. A soldier who refuses to engage in aggressive behavior may be subject to disciplinary action or even have his or her military service abruptly ended. Typically, sanctioned aggression is instrumental in nature. Soldiers kill each other to save their own lives, to follow orders, to help win a war. There need not be anger among enemy soldiers for them to try to kill one another.

### **instrumental aggression**

Aggressive behavior stemming from a desire to achieve a goal.

### **direct aggression**

Overt forms of aggression such as physical aggression (hitting, punching, kicking, etc.) and verbal aggression (name calling, denigration, etc.).

### **indirect aggression**

Aggression that is social in nature, such as social ostracism and deliberate social exclusion.

### **relational aggression**

A form of aggression having direct and indirect components involving the use of social ostracism and rejection (indirect aggression) and direct confrontation (direct aggression).

### **symbolic aggression**

Aggressive behavior that interferes with a victim’s advancement toward a goal.

### **sanctioned aggression**

Aggressive behavior that society accepts or encourages.



## Gender Differences in Aggression

One of the most striking features of aggression is the difference in its expression by males and females. Certainly females can be aggressive, but males show higher levels of physical aggression (Archer, Pearson, & Westeman, 1988). This is true among humans (Eagly & Steffen, 1986) as well as animals (Vallortigara, 1992). A meta-analysis by John Archer (2004) on studies investigating “real-world aggression” (i.e., self-reported aggression, peer ratings of aggression, and observational methods) confirmed that males are more aggressive than females, especially for direct aggression (e.g., physical aggression). This gender difference was consistent across age and peaked between 20 and 30 years of age. The gender difference was also consistent across cultures. Archer also found that females used more indirect aggression (e.g., social ostracism), but only during late childhood and adolescence and when an observational method was used.

That males use more direct, physical forms of aggression is clear. However, the role of gender in the use of indirect, relational aggression is still an open question. As noted, greater female use of indirect aggression was shown only for a limited age range of females. Another study suggests that the difference between males and females in the use of indirect aggression is small (Salmivalli & Kaukiainen, 2004). In only one subgroup of females was indirect aggression predominant: highly aggressive females. In a study using an observational method (that is, children were observed during free-play situations and aggression was measured), preschool-aged females showed more indirect aggression than males (Ostrove & Keating, 2004).

Males and females did not differ on the levels of anger underlying aggression. Additionally, males tend to favor aggression, verbal or physical, as a method of conflict resolution (Bell & Forde, 1999; Reinisch & Sanders, 1986). They also are more likely to be the target of physical aggression (Archer et al., 1988).

There are further gender differences in the cognitive aspects of using aggression. Females report more guilt over using aggression than do males and are more concerned about the harm their aggression may inflict on others (Eagly & Steffen, 1986). This difference is especially pronounced when physical aggression is used.

Why do these differences exist? Possible causes fall into two major areas: biological factors and social factors. Biological factors include both brain mechanisms and hormones. Most research in this area centers on the male hormone testosterone. Higher levels of this hormone are associated with heightened aggression in both humans and animals. There is also evidence that there is a gender difference in brain neurochemistry related to aggression (Suarez & Krishnan, 2006). Suarez and Krishnan found that for both males and females, the predisposition of expressing anger verbally was related to higher levels of “free plasma tryptophan” (TRP), which is a precursor to a serotonin-related neurotransmitter. However, elevated levels of TRP were associated with a greater predisposition toward hostility and an outward expression of anger among females, but not males.

Despite hormonal and other physiological differences between males and females, differences in aggressive tendencies and expression may relate more closely to gender roles than to biology (Eagly & Steffen, 1986). Both boys and girls are encouraged to engage in gender-typed activities, and activities deemed appropriate for boys are more aggressive than those for girls (Lytton & Romney, 1991). For example, parents, especially fathers, encourage their sons to play with war toys such as GI Joe figures and their daughters to play with Barbie dolls. Socialization experiences probably further reinforce the inborn male push toward being more aggressive.

Yet another possible reason for the observed differences in aggression between males and females is that females tend to be more sympathetic and empathic (Carlo, Raffaelli, Laible, & Myer, 1999). Carlo and colleagues studied the relationship between

sympathy, parental involvement, and aggression (Carlo et al., 1999). They found that individuals with high levels of sympathy and empathy were less likely to be aggressive. Males scored lower on these dimensions but higher on aggressiveness. Additionally, if an individual perceived that his or her parents were highly involved in childrearing, aggression was lower for both males and females. Thus, prosocial motives (on which females tend to outscore males) and level of parental involvement are important mediators of physical aggression.

It is important to note that although social psychological research (both in the laboratory and in the field) shows a consistent difference between males and females in aggression, this difference is very small (Eagly & Steffen, 1986; Hyde, 1984). Further, gender differences in aggression appear to be situation dependent. Males are more aggressive than females when they are unprovoked, but males and females show equivalent levels of aggression when provoked (Bettencourt & Miller, 1996). Males and females also respond differently to different types of provocation. Bettencourt and Miller (1996) report a large gender difference when different forms of provocation are used. If provocation involves an attack on one's intellectual ability, then males are much more aggressive than females. However, if provocation takes the form of a physical attack or a negative evaluation of one's work, males and females respond similarly. In other words, although males and females differ in levels of aggression, we should not conclude that gender is the only—or even a predominant—factor in aggression. It is evident that the relationship between gender and aggression is more complex than meets the eye.

Nevertheless, we must also note that there are relatively large gender differences in real-life expressions of aggression. Statistics for violent crimes show that males are far more likely to commit violent offenses than females by a wide margin. According to statistics compiled by the FBI, in 2004, 88.5% of individuals arrested for murder were male. Similarly, 79.2% of arrestees for aggravated assault were male. With respect to murder, the gap between males and females has widened over the years. In 1976, males committed 83.4% of murders compared to 16.6% for females, and in 1988, males committed 88% of murders compared to 12% for females (Flanagan & Maguire, 1992). So, even though the difference between the genders in measurable acts of aggressiveness is small, in any specific real-world situation, this difference is magnified and elaborated.

## Explanations for Aggression

We turn now to the broad question, What causes aggression? As suggested here, both biological and social factors contribute to aggressive behavior. Additionally, research shows that frustration often leads to aggression. These factors are considered in the next sections.

## Biological Explanations for Aggression

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Biological explanations for aggression occur on two levels, the macro and the micro. On the macro level, aggression is considered for its evolutionary significance, its role in the survival of the species. On the micro level, aggression is investigated as a function of brain and hormonal activity. We consider here two theories of aggression on the macro level—the ethological and sociobiological approaches—and then turn to the physiology and genetics of aggression. We also consider the effects of alcohol on aggression.

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**ethology** A theoretical perspective that views behavior within the context of survival and emphasizes the role of instincts and genetic forces.

## Ethology

**Ethology** is the study of the evolution and functions of animal behavior (Drickamer & Vessey, 1986). Ethological theory views behavior in the context of survival; it emphasizes the role of instincts and genetic forces in shaping how animals behave (Lorenz, 1963). From an ethological perspective, aggression is seen as behavior that evolved to help a species adapt to its environment. Aggression is governed by innate, instinctual motivations and triggered by specific stimuli in the environment. Aggressive behavior helps establish and maintain social organization within a species.

For example, many species mark and defend their territories, the space they need to hunt or forage. If they didn't do this, they wouldn't survive. Territorial defense occurs when one member of a species attacks another for crossing territorial boundaries. The intruder is driven off by aggressive displays or overt physical attacks—or loses his territory to the intruder. Aggression also is used to establish dominance hierarchies within groups of animals. Within a troop of baboons, for example, the dominant males enjoy special status, ascending to their positions of power by exercising physical aggression.

Although animals use aggression against each other, few species possess the power to kill a rival with a single blow (Lorenz, 1963). In most species, furthermore, there are biological inhibitions against killing another member. When a combatant makes a conciliatory gesture, such as rolling over and exposing its neck, the aggressive impulse in the other animal is automatically checked. Thus, aggression may involve merely exchanging a few violent actions; the fight soon ends with no major harm done.

How does ethological theory relate to the human animal? First of all, humans display territorial behavior just as animals do. Konrad Lorenz, the foremost ethologist of the century, believed that aggression had little to do with murderous intent and a lot to do with territory (Lorenz, 1963). Ethologists, for example, see aggressive behaviors among gang members as a matter of protecting one's turf, such as when members of urban street gangs physically attack members of rival gangs who cross territorial boundaries (Johnson, 1972).

Second, there is evidence that aggression plays a role in the organization of dominance hierarchies in human groups just as it does among animals. In one study, researchers organized first- and third-grade children into play groups and observed the development of dominance hierarchies within those groups (Pettit, Bakshi, Dodge, & Cole, 1986). Aggression was found to play a significant role in establishing dominance among both groups. Interestingly, however, among the older children, another variable emerged as important in establishing dominance: leadership skills. Leaders did not always have to use aggression to control the group.

Finally, ethological theory points out that humans still possess the instinct to fight. Unlike most animals, however, humans can make the first blow the last. Technology has given us the power to make a single-blow kill (Lorenz, 1963). According to Lorenz (1963), human technological evolution has outpaced biological evolution. We have diminished the importance of conciliatory cues; bombs dropped from 30,000 feet cannot respond to a conciliatory gesture.

## Sociobiology

Like ethology, **sociobiology** is the study of the biological basis of behavior. Sociobiologists, however, focus on the evolution and function of social behavior (Drickamer & Vessey, 1986; Reiss, 1984). Like ethological theory, sociobiology emphasizes the biological origins and causes of behavior and views aggression as a

**sociobiology** A theoretical perspective that views social behavior as helping groups of organisms within a species survive.



behavior with survival value for members of a species. For sociobiologists, aggression, like many other behaviors, plays a natural role in the intricate balance that keeps species alive and growing.

Sociobiologist E. O. Wilson (1975) suggested that the principal function of aggression within and between species is to resolve disputes over a common limited resource. Competition can be divided into two categories: sexual competition and resource competition. Sexual competition occurs when males compete for females at mating time. The stronger male drives the weaker male off and then mates with the female. As a result, the species becomes stronger. Resource competition occurs when animals must vie for environmental resources such as food, water, and shelter. Again, the stronger animals are able to win these competitive situations with the use of aggression.

Aggression, then, is one of many behaviors that are genetically programmed into a species and passed along from generation to generation, according to sociobiologists. Patterns of aggression (often mere displays of pseudoaggression) steer the course of natural selection. Also programmed into a species are behaviors and gestures of submission. An animal can choose not to fight or to withdraw from a competitive situation. There is, thus, a natural constraint on aggression within a species. It is kept at an “optimal level,” allowing the species to secure food and shelter and to resolve disputes over mating partners. Aggression, a potentially destructive behavior, actually contributes to the biological health of a species, according to sociobiologists (Wilson, 1975).

In both ethology and sociobiology, then, aggression is viewed as a genetically programmed behavior with evolutionary significance. Human beings display aggression under various circumstances because it is part of their biological heritage. However, as noted earlier, biology plays another role in aggression. We next consider another biological approach to aggression that focuses on physiological forces within the individual that cause aggressive behavior.

## Genetics and Aggression

Later in this chapter we shall discuss extensively the social learning explanation for aggression. Briefly, this approach suggests that aggression is a behavior that is learned during childhood primarily through the mechanism of observational learning. The social learning approach places a great deal of emphasis on the role of various aspects of the environment (e.g., parents, peers, media sources) in the formation of aggressive behaviors. However, it does not leave much room for the possibility that genetics also may influence aggressive behavior. In this section we shall explore the role of genetics in aggressive behavior.

The extant research on genetic influences on aggressive behavior suggests that there is a genetic component to aggression that operates along with the environment. For example, a meta-analysis by Miles and Carey (1997) found that both genetics and common environment (e.g., aspects of the social environment shared by siblings) account for individual differences in aggressive behavior. They also reported that genetic factors were slightly more important for males than females and that genetic factors were less powerful among younger subjects. In a study comparing monozygotic twins (twins that develop from a single egg and share genetic material) and dizygotic twins (twins that develop from two separate eggs and share less genetic material), Hines and Saudino (2004) found that “intimate partner aggression” (physical and psychological) has a genetic component. Hines and Saudino concluded that “familial resemblance in psychological aggression arises because members share the genes that influence this behavior” (p. 714). They suggest that children inherit genes from their parents that

predispose the children for aggression. Interestingly, Hines and Saudino suggest that whether the aggressive behavior is expressed overtly may be more strongly related to affiliation with aggressive peer groups than parental use of partner aggression.

In addition to the two studies just discussed, other studies also support the idea that aggression is at least partially determined by one's genetic makeup (e.g., Vierikko, Pulkkinen, Kaprio, Viken, & Rose, 2003). However, we need to be cautious when interpreting the results from these studies for a number of reasons. First, the number of studies establishing the genetic-aggression link is relatively small. Clearly, more research is needed in this area. Second, the degree of contribution of genetics depends on the methodology used. For example, observational studies tend to show stronger links between heredity and aggression than do laboratory studies (Miles & Carey, 1997). Finally, we must underscore that it is important to keep results that show a genetic influence in their proper perspective. There is little evidence that genetics has a direct effect on aggression. Instead, genetics appears to influence characteristics (e.g., personality characteristics) that predispose a person to aggression. Just because someone has a genetic predisposition toward aggression does not mean that the person will behave aggressively.

## The Physiology of Aggression

The brain and endocrine systems of humans and animals play an intricate role in mediating aggression. Research on the physiology of aggression has focused on two areas: brain mechanisms and hormonal influences. The sections that follow explore each of these.

### Brain Mechanisms

Research on brain mechanisms has focused on the brain structures that mediate aggressive behavior. Researchers have found, for example, that aggressive behavior is elicited when parts of the **hypothalamus** are stimulated. The hypothalamus is part of the limbic system, a group of brain structures especially concerned with motivation and emotion. Stimulation of different parts of the hypothalamus (called nuclei) produce different forms of aggressive behavior.

In one study, researchers implanted electrodes in the brains of cats in various parts of the hypothalamus (Edwards & Flynn, 1972). A small electric current was then passed through these structures. When one part of the hypothalamus was stimulated, the cats displayed the characteristic signs of anger and hostile aggression: arched back, hissing and spitting, fluffed tail. This reaction was nondiscriminating; the cats attacked anything placed in their cage, whether a sponge or a live mouse. When another part of the hypothalamus was stimulated, the cats displayed selective predatory aggression. They went through the motions of hunting; with eyes wide open, they stalked and pounced on a live animal, but they ignored the sponge.

Research shows that other parts of the brain are also involved in aggression. There is a neural circuit in the brain, including parts of the limbic system and the cortex, that organizes aggressive behavior. No single brain structure is the master controller of aggression.

Furthermore, brain stimulation does not inevitably lead to aggression. In one study, brain stimulation led to an aggressive response if a monkey was restrained in a chair (Delgado, 1969). But if the monkey was placed in a cage with another docile monkey, the same brain stimulation produced a different behavior: The monkey ran across the cage making repeated high-pitched vocalizations. The expression of aggressive behavior also depended on a monkey's status within a group. If a more dominant monkey was present, brain stimulation did not lead to aggression. If a less dominant

**hypothalamus** A structure in the limbic system of the brain associated with aggressive behavior.

monkey was present, stimulating the same part of the brain did lead to aggression. Thus, even with brain stimulation, aggressive behavior occurred only under the “right” social conditions.

### Hormonal Influences

Researchers also have investigated the role of hormones in aggressive behavior. As mentioned earlier, high levels of the male hormone testosterone are generally associated with increased aggression (Christiansen & Knusmann, 1987). However, the influence of testosterone on aggressive behavior—like the effect of brain stimulation—is complex.

Hormones come into play twice during the normal course of development in humans: first, during prenatal development, and later, at puberty. Prenatally, testosterone influences the sex organs and characteristics of the unborn child. Testosterone levels are higher for a genetic male than for a genetic female. The hormone permeates the entire body, including the brain, making it possible that the male brain is “wired” for greater aggression. Early in life, testosterone exposure serves an *organization function*, influencing the course of brain development. Later in life, it serves an *activation function* (Carlson, 1991), activating behavior patterns, such as aggression, that are related to testosterone levels.

These two effects were shown clearly in an experiment conducted by Conner and Levine (1969). Conner and Levine castrated rats either neonatally (immediately after birth) or as weanlings (about 3 weeks after birth). (In rats, the critical period for exposure to testosterone is within a day or so after birth. Castrating males immediately after birth effectively prevents exposure to the necessary levels of testosterone for normal masculinization. The rats castrated as weanlings were exposed to the early necessary levels of testosterone and were masculinized normally.) Other rats were not castrated. Later, as adults, the castrated rats were exposed either to testosterone or to a placebo.

The experiment showed that for the rats castrated neonatally, the levels of aggression displayed after exposure to testosterone as adults did not differ significantly from the levels displayed after exposure to a placebo. For the weanling rats, exposure to testosterone as adults increased the level of aggression compared to that of the rats receiving the placebo. The levels of aggression after exposure to the testosterone or placebo did not differ for noncastrated rats.

This study showed that early exposure to male hormones is necessary in order for later exposure to a male hormone to increase aggression. Those rats castrated at birth missed the “organizing function” of the male hormone; the normal process of masculinization of the brain did not occur. Later injections of testosterone (activation function) thus had little effect. Rats castrated as weanlings were subjected to the organization function of the male hormone. Their brains were normally masculinized and more receptive to the activation function of the testosterone injections received later in life. We can conclude that high testosterone levels are effective in elevating levels of aggression only if there is normal exposure to male hormones early in life.

Another experiment demonstrated that hormonal influences interact with social influences to affect aggression. In this experiment, male rats were castrated and then implanted with a capsule (Albert, Petrovic, & Walsh, 1989a). For some rats the capsule was empty; for others it contained testosterone. These rats were then housed with another rat under one of two conditions. Half the rats were housed with a single feeding tube, requiring the animals to compete for food. The other half were housed with two feeding tubes, so no competition was necessary. The treated rats were then tested for aggression.



The results were striking. Testosterone increased aggression only if the rats competed for food. If the rats were not required to compete, the levels of aggression were quite low, about the same as those for the rats implanted with the empty capsule.

Another example of how situational factors can affect testosterone levels and aggression is provided by Kleinsmith, Kasser, and McAndrew (2006), who conducted an experiment to see if handling a gun would increase testosterone levels and aggression. Kleinsmith et al. informed male participants that they would be taking part in an experiment on how taste sensitivity is affected by attention to detail. Kleinsmith et al. obtained a saliva sample as soon as participants arrived at the lab. Testosterone levels were measured with the saliva sample. Then participants were led into another room where they would perform an attention task. Some participants were given a pellet gun that was a model of a Desert Eagle automatic pistol. Other participants were given the child's game *Mousetrap*. Both groups of participants were instructed to write a set of instructions on how to assemble or disassemble the gun or game. Following this task another saliva sample was obtained. Next, participants were given a cup of water that had a drop of hot sauce in it. Participants were told that a previous participant had prepared the sample. After drinking the water sample, participants rated the sample. Finally, participants were told to prepare a water sample for the next participant. They were provided with a small cup of water and a bottle of hot sauce and told to add as much hot sauce to the water as they wished. The results of the experiment showed that participants who handled the gun showed a large increase in testosterone level when pre- and post-manipulation saliva samples were analyzed (average change was 62 pg/ml). Participants who handled the game showed a negligible increase (average change was .68 pg/ml). Additionally, participants who handled the gun added far more hot sauce to the water (average was 13.61 grams) than participants who handled the game (average was 4.23 grams).

Female aggression may also be mediated by hormones. In another study, the ovaries were removed from some female rats but not from others (Albert, Petrovic, & Walsh, 1989b). The rats were then housed with a sterile yet sexually active male rat. Weekly, the male rat was removed and an unfamiliar female rat was introduced into the cage. Female rats whose ovaries had been removed displayed less aggression toward the unfamiliar female than those whose ovaries had not been removed, suggesting a role of female hormones in aggression among female rats.

## Alcohol and Aggression

Our final topic relating physiology and aggression is to explore the relationship between alcohol (a powerful drug affecting the nervous system) and aggression. There is ample evidence showing a connection between alcohol consumption and aggression (Bushman & Cooper, 1990; Quigley & Leonard, 1999). What is it about alcohol that increases violent behavior? Is there something about the drug effects of alcohol, or is it a function of the social situations in which alcohol is used?

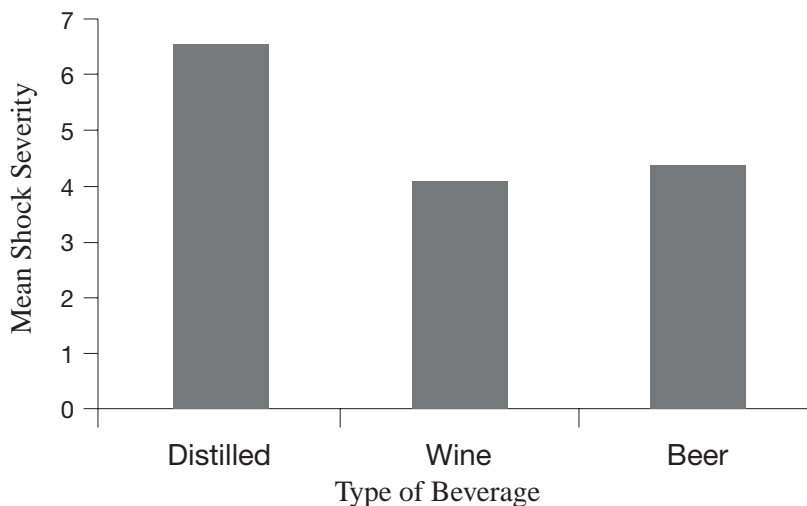
There is no question that alcohol has pharmacological (drug-related) effects on the body, especially on the brain. Alcohol becomes concentrated in organs with a high water content, and the brain is one such organ. Alcohol lowers reaction time, impairs judgment, and weakens sensory perception and motor coordination. Under the influence of alcohol, people focus more on external cues, such as people or events in the situation that seem to encourage them to take action, and less on internal ones, such as thoughts about risks and consequences.

Although alcohol is a central nervous system depressant, it initially seems to act as a stimulant. People who are drinking at first become more sociable and assertive. This is because alcohol depresses inhibitory brain centers (Insel & Roth, 1994). As more

alcohol is consumed, however, the effects change. Drinkers often become irritable and are easily angered. Levels of hostility and aggressiveness increase. Considering all the effects of alcohol, it is not surprising that it is a major factor not only in automobile crashes and fatal accidents of other kinds (such as drownings, falls, and fires) but also in homicides, suicides, assaults, and rapes.

Research confirms that levels of aggression increase with the amount of alcohol consumed (Kreutzer, Schneider, & Myatt, 1984; Pihl & Zacchia, 1986; Shuntich & Taylor, 1972). In one study, participants who consumed 1.32 g/kg of 95% alcohol were more aggressive than participants receiving a placebo (nonalcoholic) drink or no drink at all (Pihl & Zacchia, 1986). The type of beverage consumed affects aggression as well (Gustafson, 1999; Pihl, Smith, & Farrell, 1984). As shown in Figure 10.1, participants who consumed a distilled beverage gave more severe shocks to a target than those who consumed wine or beer (Gustafson, 1999). Gustafson also found that longer shocks were given after consuming a distilled beverage compared to wine and beer. In another study, participants in a bar were approached and asked a series of annoying questions. In this natural setting, bar patrons drinking distilled beverages displayed more verbal aggression toward the interviewer than those drinking beer (Murdoch & Pihl, 1988).

How does alcohol increase aggression? Most likely, alcohol has an indirect effect on aggression by reducing a person's ability to inhibit behaviors that are normally suppressed by fear, such as aggression (Pihl, Peterson, & Lau, 1993). Although the precise brain mechanisms that are involved in this process are not fully known, there is evidence that alcohol is associated with a significant drop in the amount of brain serotonin (a neurotransmitter), which makes individuals more likely to engage in aggression in response to external stimuli (Badaway, 1998; Pihl & Lemarquand, 1998). Serotonin, when it is operating normally, inhibits antisocial behaviors such as aggression through the arousal of anxiety under threatening conditions (Pihl & Peterson, 1993). When serotonin levels are reduced, anxiety no longer has its inhibitory effects, but intense emotional arousal remains, resulting in increased aggression under conditions of threat (Pihl & Peterson, 1993).



**Figure 10.1** Mean shock severity as a function of type of alcoholic beverage consumed.

Based on data from Gustafson (1999).

Alcohol has also been found to influence the functioning of the prefrontal cortex of the brain, disrupting executive cognitive functioning (ECF), or functions that help one use higher cognitive processes such as attention, planning, and self-monitoring (Hoaken, Giancola, & Pihl, 1998; Pihl, Assad, & Hoaken, 2003). These executive functions play a major role in one's ability to effectively regulate goal-directed behavior (Hoaken et al., 1998). In individuals with low-functioning ECF, aggression is more likely than among individuals with high-functioning ECF, regardless of alcohol consumption (Hoaken et al., 1998). If the ECF remains active after alcohol consumption, alcohol-related aggression is lower than if the ECF is inhibited (Giancola, 2004). It is apparent, then, that the inhibitory effect of alcohol on ECF is one factor contributing to increased aggression after alcohol consumption.

When in an intoxicated state, one can override the effects of alcohol if properly motivated (Hoaken, Assaad, & Pihl, 1998). Hoaken and his associates (1998) placed intoxicated and sober individuals into a situation where they could deliver electric shocks to another person. Half the participants in each group received an incentive to deliver low levels of shocks (the promise of money). The results showed that intoxicated participants were just as able as their sober counterparts to reduce the severity of shocks delivered when the incentive was provided. However, when no incentive was provided, intoxicated participants delivered higher shock levels than the sober participants.

Although the amount and type of alcohol consumed affect aggression, research shows that one's expectations about the effects of alcohol also have an impact on aggression (Lang, Goeckner, Adesso, & Marlatt, 1975; Leonard, Collins, & Quigley, 2003; Kreutzer, Schneider, & Myatt, 1984; Rohsenow & Bachorowski, 1984). Generally, participants in experiments who believe they are drinking alcohol display elevated levels of aggression, even if in reality they are drinking a nonalcoholic placebo. The mere belief that one has consumed alcohol is enough to enhance aggression. In fact, even the experimenter's knowledge of who has consumed alcohol can affect the level of aggression observed in experiments like this. An analysis of the literature shows that the effects of alcohol on aggression are smaller when the experimenter is blind to the conditions of the experiment (Bushman & Cooper, 1990). This relationship also holds outside the laboratory. Leonard, Collins, and Quigley (2003) conducted a study in which male participants were asked about aggressive events that happened to them in bars. Leonard et al. measured several personality and situational variables. They found that a belief that alcohol was the cause for aggression was related to the occurrence (but not severity) of an aggressive encounter in a bar.

Expectations cannot account for the entire effect of alcohol, however. In some cases even when there is an expectation that alcohol may lead to aggression, such an expectation does not increase aggression, whereas actual alcohol consumption does (Quigley & Leonard, 1999). Social cues, expectations, and attitudes play some part in mediating alcohol-induced aggression. However, the pharmacological effects of alcohol on the body and brain are real. Probably through a combination of reducing inhibitions and increasing irritability and hostility on the one hand, and giving the drinker "permission" to act out in social situations on the other, alcohol has the net effect of enhancing aggressive behavior.

Finally, the alcohol-aggression link is mediated by individual characteristics and the social situation. Individuals, especially men, who are high on a characteristic known as *dispositional empathy* (an emotion associated with helping behavior) are less likely to behave aggressively after alcohol consumption than those low on this characteristic (Giancola, 2003). Cheong and Nagoshi (1999) had participants engage in a competitive



game with a bogus participant. The game was played under one of three conditions. In one condition, the real participant was told that his opponent could deliver a loud noise in an attempt to disrupt his performance (aggression). In the second condition, the real participant was told that his opponent would use the loud noise to keep the real participant alert during the boring task (altruism). In the third condition, the real participant was given ambiguous information about his opponent's motives (maybe aggression or maybe altruism). Furthermore, before engaging in the task, participants consumed either alcoholic drinks or a placebo. One-half of the placebo participants were told they were consuming an alcoholic beverage (expectancy for alcohol) and the other half were told their drinks were placebos. Finally, participants completed a personality measure of their impulsiveness and sensation-seeking tendencies.

The results of this experiment showed that alcohol-mediated aggression depended on the nature of the situation (aggression vs. altruism), personality, and alcohol consumption. Specifically, participants who scored highly on the measure of impulsiveness/sensation-seeking were the most aggressive after consuming alcohol, but only when they believed their opponent was using the loud noise aggressively. When the opponent's motive was either altruistic or ambiguous, this effect did not occur. Thus, whether an individual behaves aggressively after consuming alcohol depends on the nature of the situation and one's predisposition toward impulsive behavior or sensation-seeking.

### **Physiology and Aggression: Summing Up**

What can we learn from this research on the physiological aspects of aggression in animals? How much of it can be applied to human beings? Not many people would attribute John Muhammad and Lee Malvo's murderous behavior to an overabundance of testosterone or abnormal brain circuitry. Research with animals supports the general conclusion that aggression does have a physiological component. However, in humans, biological forces cannot account for all, or even most, instances in which aggression is displayed (Huesmann & Eron, 1984). The human being is a profoundly cultural animal. Although aggression is a basic human drive, the expression of that drive depends on forces operating in a particular society at a particular time. Muhammad and Malvo's behavior was the product not only of their biology but also of their social world, which included playing violent video games and hanging around with a group that supported violence. Laws and social and cultural norms serve as powerful factors that can inhibit or facilitate aggressive behavior.

### **The Frustration-Aggression Link**

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Imagine for a moment that you are standing in front of a snack machine. You dig into your pocket and come up with your last 75 cents. You breathe a sigh of relief. You are very hungry and have just enough money to get a bag of chips. You put your money into the machine and press the button. You watch and wait for the mechanism to operate and drop your bag of chips. Instead, the mechanism grinds away and your bag of chips gets hung up in the machine. You mutter a few choice words, kick the machine, and walk away in a huff.

Analysis of this incident gives us some insight into a factor that social psychologists believe instigates aggression. In the example, a goal you wished to obtain—satisfying your hunger—was blocked. This produced an emotional state that led to aggression

**frustration-aggression hypothesis** A hypothesis that frustration and aggression are strongly related, suggesting that aggression is always the consequence of frustration and frustration leads to aggression.

(kicking the vending machine). Your reaction to such a situation illustrates the general principles of a classic formulation known as the **frustration-aggression hypothesis** (Dollard, Doob, Miller, Mowrer, & Sears, 1939).

In its original form, the frustration-aggression hypothesis stated that “aggression is always a consequence of frustration, the occurrence of aggressive behavior always presupposes the existence of frustration and, contrariwise . . . the existence of frustration leads to some form of aggression” (Dollard et al., 1939, p. 1). In other words, according to the frustration-aggression hypothesis, when we are frustrated, we behave aggressively.

### Components of the Frustration-Aggression Sequence

What are the components of the frustration-aggression sequence? An assumption of the frustration-aggression hypothesis is that emotional arousal occurs when goal-directed behavior is blocked. Frustration occurs, then, when two conditions are met. First, we expect to perform certain behaviors, and second, those behaviors are blocked (Dollard et al., 1939).

Frustration can vary in strength, depending on three factors (Dollard et al., 1939). The first is the strength of the original drive. If you are very hungry, for example, and are deprived of a snack, your frustration will be greater than if you are only slightly hungry. The second factor is the degree to which the goal-directed behavior is thwarted. If your kicking of the machine dislodged a smaller snack, for example, you would be less frustrated than if you received no snack at all. The third factor is the number of frustrated responses. If your thwarted attempt to get a snack came on the heels of another frustrating event, your frustration would be greater.

Once we are frustrated, what do we choose as a target? Our first choice is the source of our frustration (Dollard et al., 1939)—the vending machine, in our example. But sometimes aggression against the source of frustration is not possible. The source may be a person in a position of power over us, such as our boss. When direct aggression against the source of aggression is blocked, we may choose to vent our frustration against another safer target—a son, perhaps. If we have a bad day at work or school, we may take it out on an innocent roommate or family member when we get home. This process is called *displaced aggression* (Dollard et al., 1939). Displaced aggression is influenced by the following factors (Marcus-Newhall, Pederson, Carlson, & Miller, 2000):

1. Intensity of the original provocation. The higher the intensity, the less the displacement.
2. Similarity between the original and displaced target. The higher the similarity, the greater the displacement.
3. The negativity of the interaction between the individual and original target. The more negative the interaction, the greater the displacement.

Although the original frustration-aggression hypothesis stated categorically that frustration always leads to aggression, acts of frustration-based aggression can be inhibited (Dollard et al., 1939). If there is a strong possibility that your aggressive behavior will be punished, you may not react aggressively to frustration. If a campus security guard were standing beside the vending machine, for example, you probably wouldn't kick it for fear of being arrested.

## Factors Mediating the Frustration-Aggression Link

The frustration-aggression hypothesis stirred controversy from the moment it was proposed. Some theorists questioned whether frustration inevitably led to aggression (Miller, 1941). Others suggested that frustration leads to aggression only under specific circumstances, such as when the blocked response is important to the individual (Blanchard & Blanchard, 1984).

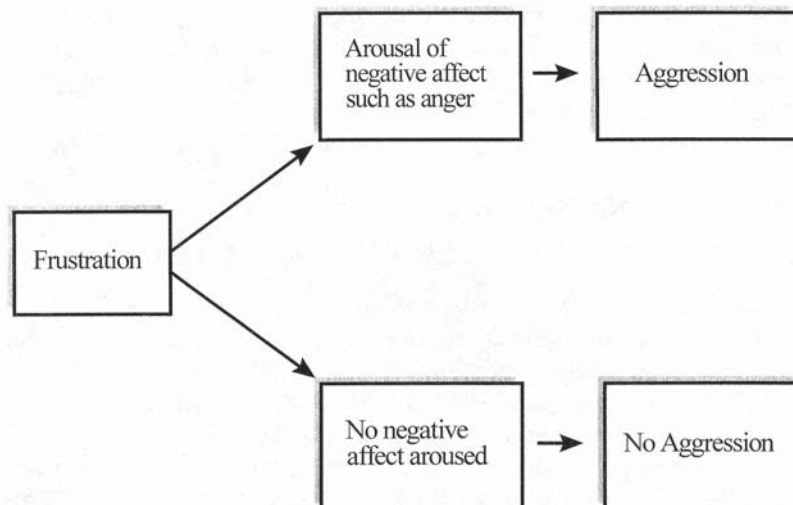
As criticisms of the original theory mounted, modifications were made. For example, Berkowitz (1989) proposed that frustration is connected to aggression by negative affect, such as anger. If, as shown in Figure 10.2, the frustration of goal-directed behavior leads to anger, then aggression will occur. If no anger is aroused, no aggression will result. If anger mediates frustration, we must specify which frustrating conditions lead to anger. Theoretically, if the blocking of goal-directed behavior does not arouse anger, then the frustrated individual should not behave aggressively. Let's consider other factors that mediate the frustration-aggression link.

### Attributions about Intent

Recall from Chapter 4 that we are always interpreting people's behavior, deciding that they did something because they meant it (an internal attribution) or because of some outside situational factor (an external attribution). The type of attribution made about a source of frustration is one important factor contributing to aggression. If someone's behavior frustrates us and we make an internal attribution, we are more likely to respond with aggression than if we make an external attribution.

Research shows that the intent behind an aggressive act is more important in determining the degree of retaliation than the actual harm done (Ohbuchi & Kambara, 1985). Individuals who infer negative intent on the part of another person are most likely to retaliate. The actual harm done is not so important as the intent behind the aggressor's act (Ohbuchi & Kambara, 1985).

There is additional evidence about the importance of attributions for aggression. Research shows that if we are provided with a reasonable explanation for the behavior of someone who is frustrating us, we will react less aggressively than if no explanation



**Figure 10.2** The relationship among frustration, anger, and aggression. Frustration leads to aggression only if it arouses negative affect, such as anger.



is given (Johnson & Rule, 1986; Kremmer & Stephens, 1983). Moreover, if we believe that aggression directed against us is typical for the situation in which it occurs, we are likely to attribute our attacker's actions to external factors. Thus, we will retaliate less than if we believe the attacker was choosing atypical levels of aggression (Dyck & Rule, 1978). In this case, we would be more likely to attribute the attacker's aggression to internal forces and to retaliate in kind if given the opportunity.

### Perceived Injustice and Inequity

Another factor that can contribute to anger and ultimately to aggression is the perception that we have been treated unjustly. The following account of a violent sports incident illustrates the power of perceived injustice to incite aggression (Mark, Bryant, & Lehman, 1983, pp. 83–84):

In November 1963, a riot occurred at Roosevelt Raceway, a harness racing track in the New York metropolitan area. Several hundred fans swarmed onto the track. The crowd attacked the judges' booth, smashed the tote board, set fires in program booths, broke windows, and damaged cars parked in an adjacent lot. Several hundred police officers were called to the scene. Fifteen fans were arrested, 15 others hospitalized.

What incited this riot? The sixth race was the first half of a daily double, in which bettors attempt to select the winners of successive races, with potentially high payoffs. During the sixth race, six of the eight horses were involved in an accident and did not finish the race. In accordance with New York racing rules, the race was declared official. All wagers placed on the six nonfinishing horses were lost, including the daily double bets. Many fans apparently felt that they were unjustly treated, that the race should have been declared no contest.

This incident is not unique. Frequently, we read about fans at a soccer match who riot over a "bad call" or fans at a football game who pelt officials with snowballs or beer cans following a call against a home team. In each case, the fans are reacting to what they perceive to be an injustice done to the home team.

Aggression is often seen as a way of restoring justice and equity in a situation. The perceived inequity in a frustrating situation, as opposed to the frustration itself, leads to aggression (Sulthana, 1987). For example, a survey of female prison inmates who had committed aggravated assault or murder suggested that an important psychological cause for their aggression was a sense of having been treated unjustly (Diaz, 1975). This perception, apparently rooted in an inmate's childhood, persisted into adulthood and resulted in aggressive acts.

Of course, not all perceived injustice leads to aggression. Not everyone rioted at the New York race track, and most sports fans do not assault referees for bad calls. There may be more of a tendency to use aggression to restore equity when the recipient of the inequity feels particularly powerless (Richardson, Vandenberg, & Humphries, 1986). In one study, participants with lower status than their opponents chose higher shock levels than did participants with equal or higher status than their opponents (Richardson et al., 1986). We can begin to understand from these findings why groups who believe themselves to be unjustly treated, who have low status and feel powerless, resort to aggressive tactics, especially when frustrated, to remedy their situation. Riots and terrorism are often the weapons of choice among those with little power.

### The Heat Effect

For centuries it has been the belief that aggression is more likely to occur when it is hot than when it is cool. The **heat effect** refers to the observation that aggression is more likely when people are hot than when they are cool (Anderson, 1989, 2001). For example, as shown in Table 10.1, most major riots in the United States have occurred

**heat effect** The observation that aggression is more likely when people are hot than when they are cool.

**Table 10.1** Riots in the United States and Heat

State	Dates	City
New York	July 24–26, 1964	Rochester
New Jersey	August 2, 11, 12, 1964	Jersey City, Patterson, Elizabeth
Pennsylvania	August 28–30, 1964	Philadelphia
Illinois	August 16–17, 1964	Dixmoor riot, Chicago
California	August 11–17, 1965	Los Angeles
Michigan	July 23–24, 1967	12th St. Riot, Detroit
New Jersey	July 12–16, 1967	Newark
Washington, DC	April 4–7, 1968	Washington (MLK death)
Illinois	August 26–29, 1968	Chicago (Democratic Convention)
New York	June 27, 1969	Stonewall
New York	September 9, 1971	Attica Prison
California	April 29–30, 1992	Los Angeles (R. King)

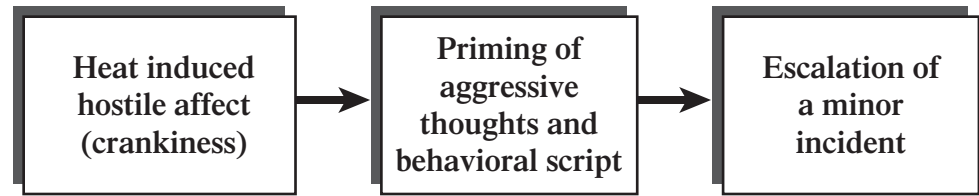
during months when the weather is hot. Incidents of homicides, assaults, rapes, and family disturbances all peak during summer months, especially during the month of July (Anderson, 1989). Anderson (2001) has reviewed the research (field and laboratory) and has concluded that the heat effect is real and is most likely due to the fact that when it is hot, people get more cranky (Berkowitz, 1993). According to Berkowitz, heat distorts assessments of social interactions so that what might ordinarily be passed off as a minor incident gets blown out of proportion and becomes a cause for aggression. Anderson and his colleagues (2000) have proposed the *General Affective Aggression Model (GAAM)* that draws on this idea to account for the effects of heat on aggression. As shown in Figure 10.3, heat-induced negative affect (crankiness) primes aggressive thoughts and perceptions, which then cause the escalation of a minor incident.

## The Social Learning Explanation for Aggression

The frustration-aggression hypothesis focuses on the responses of individuals in particular, frustrating situations. But clearly, not all people respond in the same ways to frustrating stimuli. Some respond with aggression, whereas others respond with renewed determination to overcome their frustration. It appears that some people are more pre-disposed to aggression than others. How can we account for these differences?

Although there are genetically based, biological differences in aggressiveness among individuals, social psychologists are more interested in the role of socialization in the development of aggressive behavior (Huesmann, 1988; Huesmann & Malamuth, 1986). Socialization, as mentioned earlier, is the process by which children learn the behaviors, attitudes, and values of their culture. Socialization is the work of many agents, including parents, siblings, schools, churches, and the media. Through the socialization process, children learn many of the behavior patterns, both good and bad, that will stay with them into adulthood.

**Figure 10.3** Figure 10.3. GAAM model explanation for heat effect.



Aggression is one behavior that is developed early in life via socialization and persists into adulthood (Huesmann, Eron, Lefkowitz, & Walder, 1984). In fact, a long-term study of aggressive behavior found that children who were rated by their peers as aggressive at age 8 were likely to be aggressive as adults, as measured by self-ratings, ratings by participants' spouses, and citations for criminal and traffic offenses (Huesmann et al., 1984).

The stability of aggression over time applies to both males and females (Pulkkinen & Pitkanen, 1993). However, the age at which early aggressiveness predicts later aggressive behavior differs for males and females. In one study, researchers investigated the relationship between Swedish children's aggressiveness (measured by teacher ratings) at two ages (10 and 13) and crime rates through age 26 (Stattin & Magnusson, 1989). For males, aggressiveness ratings at both age levels were significant predictors of serious crimes committed later in life. However, for females, only aggressiveness ratings at age 13 predicted later criminal behavior. For males and females, early aggressiveness was most closely related to crimes of the "acting out" type, such as violent crimes against property and other people, rather than drug offenses, traffic offenses, or crimes committed for personal gain (Stattin & Magnusson, 1989).

Taken together, these studies show a clear pattern of early aggression being significantly related to aggression later in life (as measured by crime statistics). Although there is some difference between males and females (at least in terms of the age at which the relationship between early aggression and later aggression begins), it is clear that the relationship between childhood aggression and adulthood aggression is true for both males and females.

What happens during these early years to increase aggression among some children? In the sections that follow, we look at how socialization relates to the development of aggressive behavior patterns.

### The Socialization of Aggression

Unlike the biological approaches to aggression, Albert Bandura's (1973) **social learning theory** maintains that aggression is learned, much like any other human behavior. Aggression can be learned through two general processes: direct reinforcement and punishment, and **observational learning** or learning by watching others. Often, individuals who commit violent acts grew up in a neighborhood where violence was commonplace. These individuals saw that aggression was a method of getting one's way. They probably even tried it for themselves and obtained some goal. If aggression pays off, one is then more likely to use aggressive behavior again, learning through the process of direct reinforcement. If the aggression fails, or one is punished for using aggression, aggression is less likely to be used in the future.

#### social learning theory

A theory that social behavior is acquired through direct reinforcement or punishment of behavior and observational learning.

#### observational learning

Learning through watching what people do and whether they are rewarded or punished and then imitating that behavior.



Although the processes of direct reinforcement and punishment are important, social learning theory maintains that its primary channel is through observational learning, or modeling. This occurs when, for example, a young man standing in a playground sees a person get money by beating up another person. People quickly learn that aggression can be effective. By watching others, they learn new behaviors, or they have existing behaviors encouraged or inhibited.

Bandura and his colleagues (Bandura, Ross, & Ross, 1963) provided powerful evidence in support of the transmission of aggression through observational learning. They showed that children who watch an aggressive model can learn new patterns of behavior and will display them when given the opportunity to do so. Bandura and his colleagues designed an ingenious experiment to test this central principle of social learning theory.

In this experiment, children were exposed to a model who behaved aggressively against a “Bobo doll,” a large, inflatable, plastic punching doll. The model engaged in some specific behavior, such as kicking and punching the doll while screaming, “Sock him in the nose” (Bandura, Ross, & Ross, 1961). After the child observed the model engage in this behavior, he or she was taken to a room with several toys. After a few minutes, the experimenter went in and told the child that he or she could not play with the toys because they were being saved for another child (this was to frustrate the child). The child was then taken to another room with several other toys, including the Bobo doll.

Bandura performed a number of variations on this basic situation. In one experiment, for example, the children saw the model being rewarded, being punished, or receiving no consequences for batting around the Bobo doll (Bandura, 1965). In another, children observed a live model, a filmed model, or a cartoon model (Bandura, Ross, & Ross, 1963). In all the variations, the dependent variable was the same—the number of times the child imitated the aggressive behaviors the model displayed.

Bandura found that when the children saw aggression being rewarded, they showed more imitative responses than when it was punished. Live models evoked the most imitative responses, followed by film models and then cartoon models, but any aggressive model increased imitative responses over the nonaggressive or no-model conditions. Exposure to the aggressive model elicited other aggressive responses that the child had not seen from the model (Bandura et al., 1963). Apparently, an aggressive model can motivate a child to behave aggressively in new, unmodeled ways.

Bandura (1973) concluded that observational learning can have the following effects. First, a child can learn totally new patterns of behavior. Second, a child’s behavior can be inhibited (if the model is punished) or disinhibited (if the model is rewarded). Disinhibition in this context means that a child already knows how to perform a socially unacceptable behavior (such as hitting or kicking) but is not doing it for a reason. Seeing a model rewarded removes inhibitions against performing the behavior. Bandura calls this process vicarious reinforcement. And third, a socially desirable behavior can be enhanced by observing models engaged in prosocial activities.

Bandura’s findings have been observed across cultures. McHan (1985) replicated Bandura’s basic experiment in Lebanon. Children were exposed either to a film showing a child playing aggressively with a bobo doll or to a film showing a boy playing non-aggressively with some toys. McHan found that the children who were exposed to the aggressive film were more aggressive in a subsequent play situation. They also exhibited more novel aggressive behaviors than children who had seen the nonaggressive film. These results exactly replicate Bandura’s original findings and offer additional support for the social learning approach to aggression.

We have established that exposing children to filmed aggressive models contributes to increased physical aggression. Is there any evidence that exposure to violence in naturalistic settings relates to levels of aggression? According to a study by Gorman-Smith and Tolan (1998), the answer to this question is yes. Gorman-Smith and Tolan investigated the relationship between exposure to community violence and aggression in a sample of minority males growing up in high-crime neighborhoods. Their results showed that exposure to violence in the community was related to an increase in aggression and feelings of depression. They also reported that the increase in aggression is specific to exposure to violence in the neighborhood and not to general levels of stress. Finally, Gorman-Smith and Tolan reported that the number of people who are exposed to community violence does not relate significantly to parental discipline practices but may relate more strongly to peer influences and other community-related factors.

### Aggressive Scripts: Why and How They Develop

#### aggressive script

An internalized representation of an event that leads to increased aggression and the tendency to interpret social interactions aggressively.

One mechanism believed to underlie the relationship between observation and aggression is the formation of **aggressive scripts** during the socialization process. Scripts are internalized representations of how an event should occur. Another term for a script is *event schema*. You may, for example, have a script about what goes on at a college basketball game: You go to the arena, sit in your seat, and cheer for your team. Such scripts influence how people behave in a given social situation.

Exposing a child to aggressive models—parents, peers, television characters, video games—during socialization contributes to the development of aggressive scripts (Huesmann, 1986; Huesmann & Malamuth, 1986). These scripts, in turn, lead to increased aggression and a tendency to interpret social interactions aggressively. And they can persist, greatly influencing levels of aggression in adulthood.

Aggressive scripts develop through three phases (Huesmann & Malamuth, 1986). During the acquisition and *encoding phase*, the script is first learned and placed into the child's memory. Much like a camcorder, a child who sees violence—or is reinforced directly for violence—records the violent scenes into memory. A script will be most easily encoded into memory if the child believes the script-related behavior is socially acceptable (Huesmann, 1988). When one grows up in a violent neighborhood, for example, one will undoubtedly acquire and encode an aggressive script based on his or her experiences.

The stored script is strengthened and elaborated on during the *maintenance phase*. Strengthening and elaboration occur each time a child thinks about an aggressive event, watches an aggressive television show, plays aggressively, or is exposed to violence from other sources (Huesmann, 1988; Huesmann & Malamuth, 1986). Research shows, for example, that children who are exposed to high levels of violence in their communities tend to develop aggressive behaviors (Gorman-Smith & Tolan, 1998).

Initially, during the *retrieval and emission phase*, the internalized script guides the child's behavior whenever a situation similar to the one in the script occurs. If the child has watched too many Clint Eastwood movies, for example, competition with another child for a toy may lead to a “make my day” scenario. The script may suggest to young Clint that competition is best resolved using aggression. Often aggressive behavior certainly fits with this model. Those who are exposed to violence on a day-to-day basis and feel threatened may turn to violence as a way to resolve conflicts. Aggressive scripts are played out to their bloody conclusions.



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## The Role of the Family in Developing Aggressive Behaviors

Although children are exposed to many models, the family provides the most immediate environment and is the most influential agent of socialization. It makes sense, then, that aggressive behavior is closely linked with family dynamics.

One developmental model proposed to explain the evolution of aggressive behavior is the **social-interactional model** (Patterson, DeBaryshe, & Ramsey, 1989). According to this model, antisocial behavior (such as aggression) arises early in life as a result of poor parenting, such as harsh, inconsistent discipline and poor monitoring of children. Poor parenting leads to a child's behavior problems, which in turn contribute to rejection by peers and academic problems in school. Such children often become associated with deviant peer groups in late childhood and adolescence. In many cases, delinquency results.

### Aggressive Parenting

Key to the social-interactional model is the disciplinary style adopted by parents and the parent-child interaction style that results. Some parents have an antisocial parenting style, according to the model. Several factors contribute to such parental behavior. As shown in Figure 10.4, these factors include antisocial behavior and poor family management by their own parents, family demographics, and family stressors. Parents' antisocial behavior contributes to disruptions in their family management practices and, ultimately, to antisocial behavior from the child.

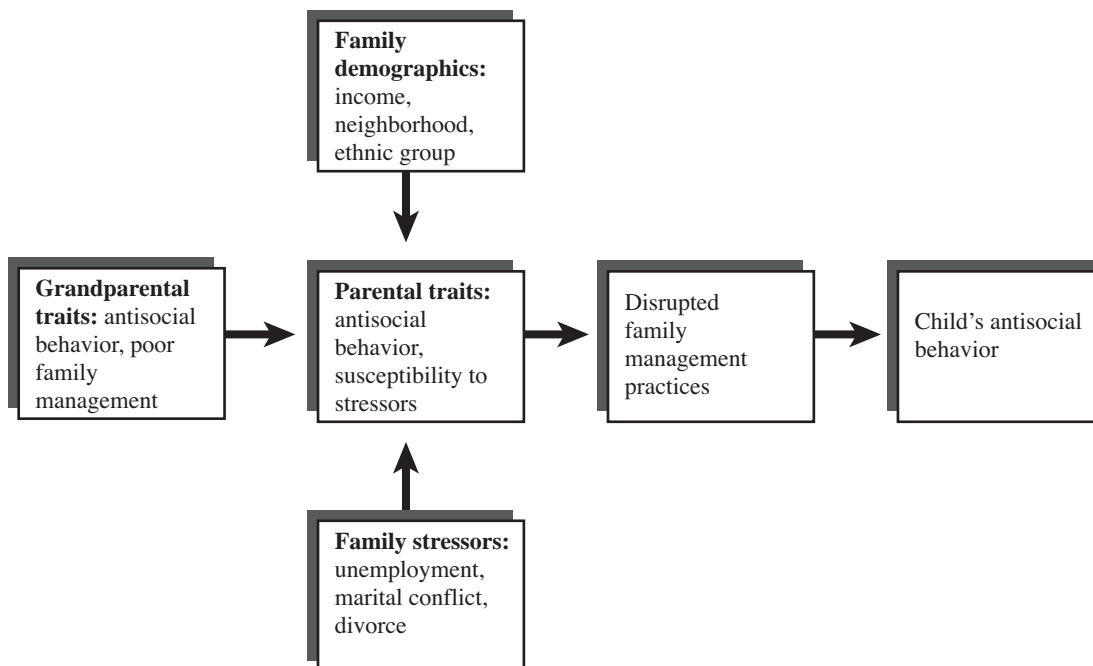
Parents who fall into a harmful cycle of parenting generally rely heavily on the use of power or harsh measures designed to control the child's behavior. They also use physical and/or verbal punishment. Do these techniques encourage children to act aggres-

### social-interactional model

A model suggesting that antisocial behavior arises early in life and is the result of poor parenting, leading a child to develop conduct problems that affect peer relations and academic performance.

**Figure 10.4** The social-interaction model of antisocial behavior. According to this model, antisocial parenting gives rise to disrupted family management and an increase in a child's antisocial behavior. Antisocial parenting relates to three factors: family demographics, grandparental traits, and family stressors.

From Patterson, DeBaryshe, and Ramsey (1989).





sively themselves? The answer is a firm yes! Although parents use power assertion and punishment with their children to make them comply, research shows that it actually reduces children's compliance (Crockenberg & Litman, 1986). This noncompliance may, in turn, cause parents to adopt an even more coercive disciplinary style.

Straus conducted a series of correlational studies (summarized in Straus, 1991) on the relationship between the use of physical punishment and aggressive behavior. Straus obtained information from adolescents and adults about the frequency with which they experienced physical punishment while they were children. Straus reported, first, that almost 90% of U.S. parents of children aged 3 to 4 used some form of physical punishment. The rate of physical punishment declined slowly after age 4 but remained at a relatively high level—60% or above—until the child was 13 years old. Thus, physical punishment as a parenting technique is widespread in our society.

Straus also found that as the frequency of physical punishment used during socialization increased, so did the rate of physical aggression used outside the family later on in adulthood. More ominously, as the frequency of physical punishment increased, so did homicide rates. The negative effects of punishment apply to other cultures as well. One study conducted in Singapore found that parental use of physical punishment (caning or slapping) was related to higher levels of aggression among preschool-aged children (Sim & Ong, 2005). Other results from this study showed that caning by fathers increased aggression among both male and female children. However, there was a cross-sex relationship for fathers and mothers who slapped their children. Father slapping had the greatest effect on female children, whereas mother slapping had the greatest effect on male children. Finally, physical punishment is significantly associated with a variety of negative outcomes, including aggressive behavior, lower levels of moral internalization of behavior, degraded parent-child relationships, and poorer mental health (Gershoff, 2002). The only positive behavior associated with physical punishment is immediate compliance on the part of the child (Gershoff, 2002).

Physical punishment is not the only form of parental behavior associated with heightened aggression. Parents also subject their children to verbal and symbolic aggression, which can include these behaviors (Vissing, Straus, Gelles, & Harrop, 1991, p. 228):

- Insulting or swearing at the child.
- Sulking or refusing to talk about a problem.
- Stomping out of the room or house.
- Doing or saying something to spite the child.
- Threatening to throw something at or hit the child.
- Throwing, smashing, hitting, or kicking something.

Like physical aggression, verbal or symbolic aggression is commonly directed at children and can contribute to “problems with aggression, delinquency, and interpersonal relationships” on the part of the children (Vissing et al., 1991, p. 231). This relationship holds even when the effects of other variables—such as physical aggression, age and gender of the child, socioeconomic status, and psychosocial problems of the child—are held constant. Moreover, parents' use of verbal or symbolic aggression as part of their parenting style is more highly associated with aggression in children than is physical

aggression. One possible explanation for the pernicious effects of verbal aggression on children is that name calling and similar parental behaviors have implications for the child's self-esteem, with children experiencing verbal aggression showing lower levels of self-esteem (Ruth & Francoise, 1999).

Supporting evidence comes from a 22-year study of the relationship between the parental behaviors of rejection, punishment, and low identification with their children and aggression in children (Eron, Huesmann, & Zelli, 1991). This study suggests that parental rejection and punitiveness are significantly correlated with aggression in childhood and later in adulthood. Children whose parents rejected them at age 8, for example, showed a greater tendency toward aggression as adults than nonrejected children, and harsh parental punishment, particularly for girls, led to increased aggression. Generally, parental rejection and punitiveness were found to have their most enduring relationship with aggression if the rejection and punitiveness began before age 6. Similar effects were reported with a sample of Dutch adolescents (Hale, Van Der Valk, Engels, & Meeus, 2005). Hale et al. also found that parental rejection operates through depression to produce aggression. That is, parental rejection contributes to adolescent depression, which relates to elevated levels of aggression.

The picture, however, is quite complex. For example, rejected children tend to behave in ways that lead parents to reject them (Eron et al., 1991). So, parental rejection that is related to aggression later in life may be partly caused by the child's behavior—a vicious cycle.

Exposure to high levels of family aggression also relates to aggression used in a wide variety of relationships (Chermack & Walton, 1999; Murphy & Blumenthal, 2000). For example, Chermack and Walton (1999) studied the relationship between family aggression (parent-to-parent aggression, parent-to-child aggression) and the use of aggression in several types of relationships (dating, marital, etc.). They found that if participants saw their parents behaving aggressively toward each other and were the recipients of parental aggression themselves, the participants were more likely to use aggression in their own dating relationships. Interestingly, general aggression related positively only to being the actual target of parental aggression. Additionally, seeing one's parents behave aggressively also contributes to heightened feelings of psychological stress among both men and women (Julian, McKenry, Gavazzi, & Law, 1999). However, the psychological stress was most likely to be transformed into verbal or physical aggression among men as opposed to women (Julian et al., 1999). Thus, exposure to aggression in the family appears to influence adult aggression through the arousal of negative psychological symptoms. In any event, the evidence is clear: Exposure to family violence as a child contributes significantly to aggression later in life.

### **Role Modeling of Aggressive Behavior**

What is the link between parental aggression and child aggression? The most likely explanation is role modeling. Whenever parents use physical or verbal aggression, they are modeling that behavior for their children. This is a special case of observational learning. Children observe their parents behaving aggressively; they also see that the aggressive behavior works, because ultimately the children are controlled by it. Because the behavior is reinforced, both parents and children are more likely to use aggression again. The message sent to the child is loud and clear: You can get your way by using physical or verbal aggression. Through these processes of learning, children develop aggressive scripts (Eron et al., 1991), which organize and direct their aggressive behavior in childhood and in adulthood.

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## Child Abuse and Neglect

Parental discipline style is not the only family-related factor related to increases in aggression. Child abuse has also been linked to aggressive behavior later in life, especially among children who also have intrinsic vulnerabilities, such as cognitive, psychiatric, and neurological impairments (Lewis, Lovely, Yeager, & Della Femina, 1989). Research shows that being abused or witnessing abuse is strongly related to highly violent behavior patterns. But physical abuse is not the only kind of abuse that contributes to increased aggressive behavior. Abused and neglected children are more likely to be arrested for juvenile (26%) and adult (28.6%) violent criminal behavior compared to a nonabused, nonneglected control group (16.8% and 21.1% arrest rates for juvenile and adult violent crime, respectively; Widom, 1992). Children who were only neglected had a higher arrest rate for violent crime (12.5%) than nonneglected children had (7.9%).

Being the victim of child abuse has another pernicious effect. Exposure to abusive situations desensitizes one to the suffering of others. In one study (Main & George, 1985), for example, abused and nonabused children were exposed to a peer showing distress. Nonabused children showed concern and empathy for the distressed peer. Abused children showed a very different pattern. These children did not respond with concern or empathy but rather with anger, including physical aggression. Thus, child abuse and neglect are major contributors not only to aggressive behavior later in life but also to an attitude of less caring for another person's suffering.

## Family Disruption

Yet another family factor that contributes to aggressive behavior patterns is family disruption—for example, disruption caused by an acrimonious divorce. Research shows that disruption of the family is significantly related to higher rates of crime (Mednick, Baker, & Carothers, 1990; Sampson, 1987). One study investigated the relationship between several family variables, such as family income, male employment, and family disruption (defined as a female-headed household with children under age 18), and homicide and robbery rates among blacks and whites (Sampson, 1987). The study found that the single best predictor of African American homicide was family disruption.

A similar pattern emerged for robbery committed by blacks and whites. Family disruption, which was strongly related to living under economically deprived conditions, was found to have its greatest effect on juvenile crime, as opposed to adult crime. It was found that, at least for robbery, the effects of family disruption cut across racial boundaries. Family disruption was equally harmful to blacks and whites.

Another study looked at family disruption from a different perspective: the impact of divorce on children's criminal behavior (Mednick et al., 1990). The study examined Danish families that had divorced but were stable after the divorce (the divorce solved interpersonal problems between the parents); divorced but unstable after the divorce (the divorce failed to resolve interpersonal problems between the parents); and not divorced. The study showed the highest crime rates among adolescents and young adults who came from a disruptive family situation. The crime rate for those whose families divorced but still had significant conflict was substantially higher (65%) than for those whose families divorced but were stable afterward (42%) or for families that did not divorce (28%).

Clearly, an important contributor to aggression is the climate and structure of the family in which a child grows up. Inept parenting, in the form of overreliance on physical or verbal punishment, increases aggression. Child abuse and neglect, as well as



family disruption, also play a role in the development of aggressive behavior patterns. Children learn their aggressive behavior patterns early as a result of being in a family environment that supports aggression. And, as we have seen, these early aggressive behavior patterns are likely to continue into adolescence and adulthood.

## The Role of Culture in Violent Behavior

In addition to the influence of the immediate family on the socialization of aggression, social psychologists have also investigated the role that culture plays. Cross-cultural research (Bergeron & Schneider, 2005) suggests that aggression is less likely to be seen in cultures that show the following characteristics:

1. Collectivist values
2. High levels of moral discipline
3. Egalitarian values
4. Low levels of avoiding uncertainty
5. Confucian values

There are also cultural differences with respect to the expression of verbal aggression through the use of different invectives (De Raad, Van Oudenhoven, & Hofstede, 2005). De Raad et al. found that invectives referring to social relationships (e.g., “son of a whore,” “good for nothing”) were most common among Spanish participants. Participants from the Netherlands seem to prefer invectives relating to the genital region (e.g., “prick,” “scrotum cleaner”), and participants from Germany prefer invectives targeting the anal region (e.g., “asshole”) and social inadequacy (e.g., “spastic”). Participants from all three countries used references to abnormality to insult others.

Another cultural difference can be seen among different segments of culture in the United States. Nisbett and his colleagues have been studying this issue by comparing southern and northern regions of the United States. In a series of studies that include examining homicide statistics (Nisbett, 1993), field experiments (Nisbett, Polly, & Lang, 1995), and laboratory experiments (Cohen, 1998), a clear trend toward greater violence among southern than northern Americans emerges.

To what can we attribute the regional differences in violence? Nisbett (1993) suggested that there are a variety of explanations for regional differences. These include traditional explanations suggesting that the South has more poverty, higher temperatures, and a history of slavery as well as the possibility that whites have imitated aggressive behavior seen among the black population. Nisbett suggested that there is another more plausible explanation for the regional differences observed. He hypothesized that in the South (and to some extent in the frontier West) a **culture of honor** has evolved in which violence is both more widely accepted and practiced than in the North, where no such culture exists. Nisbett suggested that this culture of honor arose because of the different peoples who settled in the North and South in the 17th and 18th centuries.

The South was largely settled by people who came from herding economies in Europe, most notably from borderlands of Scotland and Ireland (Nisbett, 1993). The North, in contrast, was settled by Puritans, Quakers, and Dutch farmers, who developed a more agriculturally based economy (Nisbett, 1993). According to Nisbett, violence is more endemic to herding cultures, because it is important to be constantly vigilant for theft of one’s livestock. It was important in these herding economies to respond to any threat to one’s herd or grazing lands with sufficient force to drive away intruders

**culture of honor** An evolved culture in the southern and western United States in which violence is more widely accepted and practiced than in the northern and eastern United States, where no such culture exists.

or potential thieves. Nisbett maintains that from this herding economy arose the culture of honor that persists in the South to this day. This culture of honor primes southern individuals for greater violence than their northern counterparts.

Is there any evidence to support the supposition that individuals from a herding economy are more predisposed to honor-related aggression than those from other economies? One study provides some support for this relationship (Figueredo, Tal, McNeil, & Guillen, 2004). Figueredo et al. looked at whether herding and farming populations differ in their adherence to a culture of honor, using participant samples from Mexico and other Central American countries. Consistent with the hypothesis stated by Nisbett and his colleagues, individuals from herding populations were more likely to adhere to the culture of honor (e.g., more likely to endorse revenge) than those making up farming communities.

What evidence do we have that such a culture of honor exists and that it affects violence levels in the South? Nisbett (1993) reported that when southern and northern cities of equal size and demographic makeup are compared, there is a higher homicide rate among southern white males than among northern white males. This difference is only true for argument-related homicides, not for homicides resulting from other felonies (e.g., robbery; Cohen, Nisbett, Bowdle, & Schwartz, 1996). Interestingly, this regional difference holds only for white males and not African American males (Nisbett, Polly, & Lang, 1995). Additionally, Nisbett found a greater acceptance of violence to solve interpersonal conflicts and to respond to a perceived insult among southern than among northern white males. The differences between southern and northern white males is most pronounced for behaviors that receive moderate to low support from the general public (Hayes & Lee, 2005). Hayes and Lee found that differences emerged between northern and southern white males on the following behaviors (p. 613):

1. If an adult male stranger hit a man's child after accidentally damaging the stranger's car,
2. If a drunk adult male stranger bumped into a man and his wife on the street,
3. If an adult male stranger was encountered by a man at a protest rally showing opposition to the man's views.

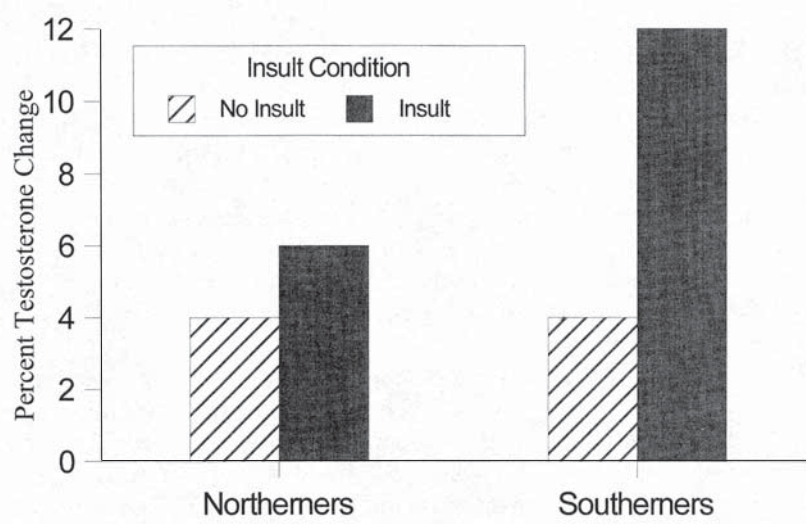
No difference was found between northerners and southerners for behaviors receiving more widespread approval. For example, no difference was found for a scenario involving an adult male punching a woman.

Findings, based on homicide rates, were verified by Nisbett and his colleagues in a series of experiments. In a field experiment (Cohen & Nisbett, 1997), employers in various parts of the United States were sent a letter from a potential job applicant who committed either an honor-based homicide (killing someone who was having an affair with his fiancé) or an auto theft. Each response was analyzed for whether an application was sent to the potential employee and the tone of the return letter. Cohen and Nisbett found that more southern-based companies sent a job application to the employee convicted of manslaughter than did northern-based companies. However, there was no difference between southern and northern companies in the rate of compliance to the employee who stole a car. Additionally, the tone of the letters coming from southern companies was warmer and more understanding of the homicide than was the tone of the letters from northern companies. Again, there was no difference in warmth or understanding between northern and southern companies for the theft letter.

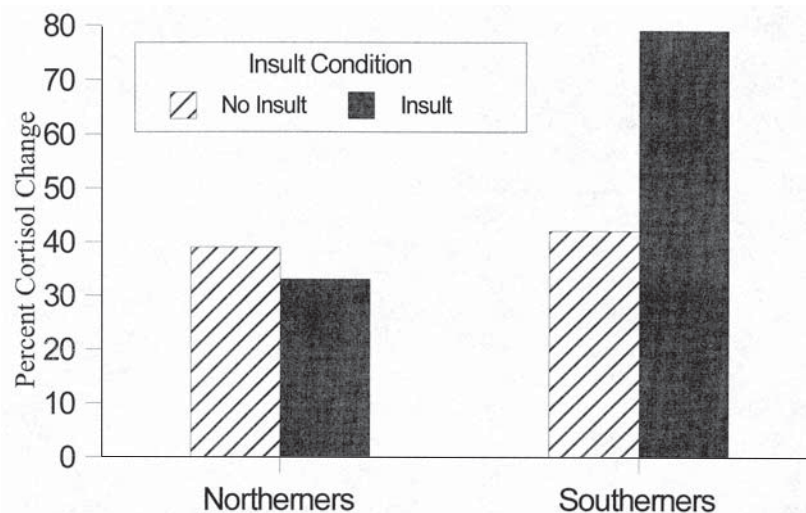
Regional differences in violence between the North and South have been well documented. But is the culture of honor responsible? Are southern males more likely

to react negatively to insults than northern males? In a series of interesting laboratory experiments (Cohen et al., 1996), southern and northern white males were insulted or not insulted by a male confederate of the experimenter. In one experiment, Cohen and colleagues (1996) were interested in whether there was a difference between southerners and northerners in their physiological responses to the insult. Participants were told that they were going to take part in an experiment that required monitoring of blood sugar levels. Saliva samples were obtained from participants before and after the insult (or no insult). The saliva samples were analyzed for cortisol and testosterone levels. (Cortisol is a stress-related hormone that increases when one is aroused or under stress.)

The results from this experiment are shown in Figure 10.5 (testosterone levels) and Figure 10.6 (cortisol levels). As you can see, there was no difference between insulted and noninsulted northern participants for both cortisol and testosterone levels. However,



**Figure 10.5** Percentage testosterone change as a function of culture and insult. Northerners did not show a significant increase in testosterone levels after being insulted. Southerners, on the other hand, showed substantial increases in testosterone levels after being insulted.



**Figure 10.6** Percentage cortisol change as a function of culture and insult. Northerners did not show a significant increase in cortisol levels after being insulted. In contrast, southerners showed an increase in cortisol levels after being insulted.

for southern participants, there was a significant rise in both cortisol and testosterone levels for insulted southern participants (compared to the noninsulted southerners). Thus, in response to an insult, southern white males are more “primed” physiologically for aggression than their northern counterparts (Cohen et al., 1996). In another experiment, Cohen and colleagues (1996) found that after being publicly insulted (compared to being privately insulted or not insulted), southern white males were more likely to experience a drop in perceived masculinity. No such difference was found for northern white males.

Cohen (1998) investigated those aspects of southern and western culture that relate most closely to the acceptance and use of violence. Cohen looked at the role of community and family stability in explaining honor-based violence. Cohen hypothesized that among more stable communities, reputations and honor would have more meaning than in less stable communities. As a consequence, more honor-based violence was expected in stable than in unstable communities. Homicide rates among stable and unstable communities in the North, South, and West were compared. Cohen found a higher honor-based homicide rate among stable southern and western communities than among unstable southern and western communities. No such difference existed for stable and unstable northern communities. Cohen also found that the rate of felony-related homicides (not related to honor) was lower among stable than among unstable communities in the South and West, but not in the North. Additionally, Cohen found that honor-related homicides were higher among communities in the South and West in which traditional families (i.e., intact nuclear families) were more common than less common. The opposite was true for northern communities. Thus, the manner in which cultures evolve, with respect to stability and adherence to traditional family structures, relates closely to patterns of violence. In the South and West, evolution toward community stability (in which honor and reputation in the South and West are important) and adherence to more traditional family structures give rise to higher levels of violence. Such is not the case for northerners, for whom honor and reputation appear to be less important.

Further evidence for a unique southern culture of honor is provided in another study by Cohen (1996). Cohen compared northern and southern (and western) states with respect to gun-control laws, self-defense laws, treatment of violence used in defense of one’s property, laws concerning corporal punishment, capital punishment laws, and stances taken by legislators on using military responses to threats to U.S. national interests. Cohen found that compared to northern states, southern (and western) states had more lax gun-control laws, more lenient laws concerning using violence for self-defense and protection of property, more lenient laws for domestic violence offenders (where disciplining one’s wife is used as a justification for male perpetrators of domestic violence), and a greater tolerance for the use of corporal punishment. Southern states were more likely to execute condemned prisoners than northern or western states. Finally, southern legislators were more likely to endorse the use of military force than northern (or western) states. These findings support the conclusion that cultural differences, embodied in regional laws, exist between the North and South (and to a lesser extent between the West and the North). More lenient laws in the South tend to sanction and support the use of violence.

Interestingly, the “culture of honor” may not be unique to American culture. One study compared Polish and German young adults’ views concerning using aggression to defend one’s reputation (Szmajke & Kubica, 2003). Szmajke and Kubica found that Polish young adults were more favorably inclined toward using aggression in response to a social offense and expected their children to react aggressively toward provocation from other children.



## The Role of Television in Teaching Aggression

Although parents play the major role in the socialization of children and probably contribute most heavily to the development of aggressive scripts, children are exposed to other models as well. Over the years, considerable attention has focused on the role of television in socializing aggressive behaviors. Generally, most research on this topic suggests that there is a link (though not necessarily a causal link) between exposure to television violence and aggressive behavior (Huesmann, 1988; Huesmann, Lagerspetz, & Eron, 1984; Josephson, 1987). Evidence also suggests that the link between watching violent programming and aggression persists from childhood through adolescence into adulthood (Huesmann, Moise-Titus, Podolski, & Eron, 2003).

A meta-analysis conducted by Hogben (1998) revealed the following significant relationships:

1. Viewing “justified” televised violence leads to more aggression.
2. Viewing violence with “inaccurate” consequences leads to more violence.
3. Viewing “plausible” violence leads to more aggression.
4. The effect of televised violence is stronger for studies conducted outside the United States than those conducted in the United States.
5. The size of the effect of television violence on aggression is small.

Hogben estimates that if violence were eliminated from television, the overall amount of aggression we see in our culture would go down by around 10%.

We should note at this point that research in this area has traditionally focused on the effect of violent television content and direct, physical aggression. However, research is now showing that there may also be an effect of depictions of indirect aggression on indirect aggressive behavior. One study conducted in England found that acts of indirect aggression are actually more frequent than acts of physical or verbal aggression (Coyne & Archer, 2004). This study also revealed that female characters on television were more likely to engage in indirect aggression than male characters. Research is beginning to show a link between viewing indirect aggression and the use of indirect aggression (Coyne & Archer, 2005; Coyne, Archer, & Eslea, 2004). For example, a study by Coyne and Archer (2005) found that girls who were exposed to media portrayals of indirect aggression tended to show higher levels of that form of aggression.

Some early research in the area showed that males are more influenced than females by violent television (Liebert & Baron, 1972). More recent research suggests that gender may not be important in understanding the relationship between exposure to televised violence and aggression (Huesmann et al., 1984). The correlations between watching television violence and aggression are about the same for male and female children. However, one interesting gender difference exists. Children, especially males, who identify with television characters (that is, want to be like them) are most influenced by television violence.

Watching television violence may also have some subtle effects. People who watch a lot of violence on television tend to become desensitized to the suffering of others, as we saw was the case with abused children (Rule & Ferguson, 1986). Furthermore, children who watch a lot of violent television generally have a more favorable attitude toward aggressive behavior than do children who watch less.

Even sanctioned aggression can increase the incidence of aggressive behavior among those who view it on television. The impact on aggression of well-publicized heavyweight championship fights has been documented (Phillips, 1983). Among adults,

homicide rates were found to increase for 3 days after these boxing matches (Miller, Heath, Molcan, & Dugoni, 1991). When a white person loses the match, homicides of whites increase; when an African American loses the match, homicides of African Americans increase. A similar effect can be seen with suicide rates. The number of suicides increases during the month in which a suicide is reported in the media compared to the month before the report appears (Phillips, 1986). Interestingly, the rate remains high (again compared to the month before the report) a month after the report.

Although most studies support the general conclusion that there is a relationship between watching media portrayals of violence and aggression, a few words of caution are appropriate (Freedman, 1984):

1. The relationship may not be strong. Correlational studies report relatively low correlations between watching media violence and aggression, and experimental studies typically show weak effects.
2. Although watching violence on television is associated with increased aggression, there is evidence that watching television is also associated with socially appropriate behavior, such as cooperative play or helping another child (Gadow & Sprafkin, 1987; Mares & Woodard, 2005).
3. Other variables, such as parental aggressiveness and socioeconomic status, also correlate significantly with aggression (Huesmann et al., 1984). One 3-year study conducted in the Netherlands found that the small correlation between violent television viewing and aggression ( $r = .23$  and  $.29$  for boys and girls, respectively) virtually disappeared when children's preexisting levels of aggression and intelligence were taken into account (Wiegman, Kuttschreuter, & Baarda, 1992).
4. Many studies of media violence and aggression are correlational and, as explained in Chapter 1, cannot be used to establish a causal relationship between these two variables. Other variables, such as parental aggressiveness, may contribute causally to both violent television viewing and aggression in children.

Individual personality characteristics and social conditions mediate the relationship between exposure to violent content and aggressive behavior. For example, Haridakis (2002) found that "disinhibition" (nonconformity to social norms) and "locus of control" (perception of the degree to which one is controlled by external events or internal motives) were significant predictors of media-related aggression. Generally, individuals who are likely to conform and have an external locus of control showed the most aggression. Children who identify with TV characters and perceive TV violence to be realistic are most affected by TV violence (Huesmann et al., 2003). Finally, violent media have a greater effect on adolescents who feel alienated from school and victimized by their peers (Slater, Henry, Swaim, & Cardador, 2004).

With the connection between exposure to televised violence and aggressive behavior established, researchers have turned their attention to explaining why the relationship exists. One explanation for this relationship is that exposure to violence on television and movies contributes to the development of aggressive scripts (see our previous discussion on this topic). Another possible explanation is that exposure to aggressive media content may prime aggressive thoughts, making them more accessible (Chory-Assad, 2004). There is some evidence for this. Chory-Assad found that after watching sitcoms with high levels of verbal aggression, participants produced high numbers of verbally aggressive thoughts characterized by attacks on a person's character and competence. So, it appears that exposure to aggressive programming increases aggressive thinking patterns.

## Exposure to Violent Video Games

Video games have come a long way from the original “Pong” game (a rather crude tennis game) to today’s highly realistic games. Many modern video games involve elaborate stories and scenarios designed to involve the player. These story lines are quite successful in immersing the player in the game, maintaining interest and arousal (Schneider, Lang, Shin, & Bradley, 2004). Additionally, many popular games involve moderate to high levels of violence. The popularity of video games containing highly realistic violent content has raised concerns about the effects of such games on children’s behavior. A major concern is that exposure to these realistic, violent games can cause children and adults to behave aggressively. In recent years social scientists have addressed this concern. In this section we shall explore the relationship between playing violent video games and overt aggression.

The main question we need to address is whether exposure to violent video games increases aggression. The answer to this question is that it can (Anderson & Bushman, 2001). Anderson and Bushman conducted a meta-analysis of the literature and concluded that playing violent video games increased aggression among both males and females. This was the case regardless of whether the study reported was experimental or correlational. Additionally, playing violent video games increases physiological arousal and aggressive thoughts and emotions. Violent video games were also associated with a short-term decrease in prosocial behavior. Generally, research suggests that there is a link between playing violent video games and aggression, and that link is quite strong (Anderson & Bushman, 2001; Anderson & Dill, 2000). However, the effect of playing violent video games on aggression is probably not as strong as the effect of televised violence on aggression (Sherry, 2001). Playing violent video games has also been found to increase an individual’s immediate level of “state hostility.” That is, playing a violent video game increases hostility while the person is playing the game (Arriaga, Esteves, Carniero, & Montiero, 2006).

Interestingly, playing a violent video game activates parts of the brain that are commonly associated with aggressive thoughts and behavior. In a study conducted by Weber, Ritterfield, and Mathiak (2006), participants played a video game that had violent and nonviolent sequences while undergoing a functional MRI (fMRI) scan. Weber et al. found that while playing the violent segments of the game, there was activation in the dorsal anterior cingulate cortex (normally associated with aggression) and suppression of the anterior cingulate cortex and amygdala. Weber et al. suggest that this pattern of brain activity indicates that areas of the brain associated with emotions such as empathy are suppressed, allowing the game player to engage in the violent activities needed for the game.

How about gender effects? Anderson and Bushman’s (2001) meta-analysis showed that both males and females are affected by playing violent video games. Research confirms that females are affected by violent video games (Anderson & Murphy, 2003). However, one experiment suggests that the effect of violent video games is more pronounced for men than for women (Bartholow & Anderson, 2002). These researchers found that males delivered more intense punishment on another person after playing a violent video game (compared to a nonviolent video game) than females under the same conditions. Finally, research also suggests that females are most affected by violent video games when they control a female character in the game (Anderson & Murphy, 2003). At this time, we don’t know if a similar effect exists for males.

As is the case with exposure to violent television, playing violent video games does not affect everyone equally. Long-term playing of violent video games is associated with increased aggression most strongly among people with aggressive personalities

(Anderson & Dill, 2000). Among these individuals, exposure to high levels of video game violence produces high levels of aggression. Individuals with less aggressive personalities are less affected by video game violence. Based on their experimental and correlational studies, Anderson and Dill suggest that playing violent video games increases real-life aggression (delinquent behavior) and aggression under controlled conditions. They suggest that playing violent video games primes a person for aggression by increasing aggressive thoughts.

### **Media Violence and Aggression: Summing Up**

Exposure to media violence is one among many factors that can contribute to aggression (Huesmann et al., 1984). Available research shows a consistent but sometimes small relationship between media violence and aggression. But interpersonal aggression probably can best be explained with a multiprocess model, one that includes media violence and a wide range of other influences (Huesmann et al., 1984). In all likelihood, media violence interacts with other variables in complex ways to produce aggression.

## **Viewing Sexual Violence: The Impact on Aggression**

Television and video games are not the only media that has come under fire for depicting violence. Many groups have protested the depiction of violence against women in pornographic magazines, movies, and on the Internet. These groups claim that such sexually explicit materials influence the expression of violence, particularly sexual violence, against women in real life.

In the debate about pornographic materials, researchers have made a distinction between sexually explicit and sexually violent materials (Linz, Penrod, & Donnerstein, 1987). Sexually explicit materials are those specifically created to produce sexual arousal. A scene in a movie depicting two nude people engaging in various forms of consensual sex is sexually explicit. Sexually violent material includes scenes of violence within a sexual context that are degrading to women. These scenes need not necessarily be sexually explicit (e.g., showing nudity). A rape scene (with or without nudity) is sexually violent. Of course, materials can be both sexually explicit and sexually violent.

Although the causes of rape are complex (Groth, 1979; Malamuth, 1986), some researchers and observers have focused on pornography as a factor that contributes to the social climate in which sexual violence against women is tolerated. However, not all forms of pornography are associated with sexual violence. Exposure to sexually violent materials does relate to increased sexual violence (Malamuth & Check, 1983). However, mild, nonviolent forms of erotica, such as pictures from *Playboy* magazine or scenes of sex between consenting couples, may inhibit sexual violence against women (Donnerstein, Donnerstein, & Evans, 1975, p. 175).

In a study reported by Donnelly and Fraser (1998), 320 college students responded to a questionnaire concerning arousal to sadomasochistic fantasies and acts. The results showed that males were significantly more likely to be aroused by fantasizing about and engaging in sadomasochistic sexual acts. Specifically, males scored higher than females on measures of being dominant during sex, participating in bondage and discipline, being restrained, and being spanked. In terms of arousal to behaviors, males scored higher than females on watching bondage and discipline, being dominant during sex, and taking part in discipline and bondage.

Of course, sexual arousal does not usually lead to aggression. Most males can easily control their sexual and aggressive impulses. A wide range of social norms, personal ethics, and moral beliefs act to moderate the expression of violence toward women, even when conditions exist that, according to research, lead to increased violence.

### **The Impact of Sexually Violent Material on Attitudes**

Besides increasing violence against women, exposure to sexually violent material has another damaging effect. It fosters attitudes, especially among males, that tacitly allow rape to continue. There is a pervasive rape myth in U.S. society, which fosters such beliefs as “only bad girls get raped,” “if a woman gets raped, she must have asked for it,” “women ‘cry rape’ only when they’ve been jilted or have something to cover up,” and “when a woman says no, she really means yes” (Burt, 1980, p. 217; Groth, 1979). Men are more likely than women to accept the rape myth (Muir, Lonsway, & Payne, 1996). Additionally, such beliefs are most common among men who believe in stereotyped sex roles, hold adversarial sexual beliefs, and find interpersonal aggression an acceptable form of behavior. Thus, the rape myth is integrally tied to a whole set of related attitudes (Burt, 1980). Interestingly, research shows that the rape myth may be stronger in U.S. culture than in other cultures. Muir, Lonsway, and Payne (1996) compared U.S. and Scottish individuals for acceptance of the rape myth. They found that the rape myth was more pervasive among Americans than Scots.

Do media portrayals of sexual violence contribute to rape myths and attitudes? Research suggests that they do (Malamuth & Check, 1981, 1985). In these studies, viewing sexually explicit, violent films increased male (but not female) participants’ acceptance of violence against women. Such portrayals also tended to reinforce rape myths. Media portrayals of a woman enjoying sexual violence had their strongest impact on males who were already predisposed to violence against women (Malamuth & Check, 1985). Men who are likely to commit rape also have beliefs that support the rape myth, such as a belief that rape is justified and the perception that the victim enjoyed the rape (Linz, Penrod, & Donnerstein, 1987; Malamuth & Check, 1981).

Malamuth and Check, for example, had some participants watch films widely distributed in mainstream movie theaters that depicted sexual violence against women (e.g., *The Getaway*). In these films, the sexual violence was portrayed as justified and having positive consequences. Other participants watched films with no sexual violence (e.g., *Hooper*). After viewing the films, participants (both male and female) completed measures of rape-myth acceptance and acceptance of interpersonal violence. The results showed that for male participants, exposure to the films with sexual violence against women increased acceptance of the rape myth and acceptance of interpersonal violence against women. Female participants showed no such increase in acceptance of the rape myth or in violence against women. In fact, there was a slight trend in the opposite direction for female participants.

These “softer” portrayals of sexual violence with unrealistic outcomes in films and on television (e.g., the raped woman marrying her rapist) may have a more pernicious effect than hard-core pornography. Because they are widely available, many individuals see these materials and may be affected by them. The appetite for such films has not subsided since Malamuth and Check’s 1981 experiment, and films depicting violence against women are still made and widely distributed.

Finally, one need not view sexually explicit or violent materials in order for one’s attitudes toward women and sexual violence to be altered. McKay and Covell (1997) reported that male students who looked at magazine advertisements with sexual images



(compared to those who saw more “progressive” images) expressed attitudes that showed greater acceptance of interpersonal violence and the rape myth. They were also more likely to express adversarial sexual attitudes and less acceptance of the women’s movement.

### **Men Prone to Sexual Aggression: Psychological Characteristics**

We have seen that male college students are aroused by depictions of rape and can be instigated to aggression against women through exposure to sexually explicit, violent materials. Does this mean that all, or at least most, males have a great potential for sexual aggression, given the appropriate circumstances? No, apparently not. Psychological characteristics play a part in a man’s inclination to express sexual aggression against women (Malamuth, 1986).

In one study, six variables were investigated to see how they related to self-reported sexual aggression. The six predictor variables were:

1. Dominance as a motive for sexual behavior
2. Hostility toward women
3. Accepting attitudes toward sexual aggression
4. Antisocial characteristics or psychoticism
5. Sexual experience
6. Physiological arousal to depictions of rape

Participants’ sexual aggression was assessed by a test that measured whether pressure, coercion, force, and so on were used in sexual relationships.

Positive correlations were found between five of the six predictor variables and sexual aggression directed against women. Psychoticism was the only variable that did not correlate significantly with aggression. However, the presence of any one predictor alone was not likely to result in sexual aggression. Instead, the predictor variables tended to interact to influence sexual aggression. For example, arousal to depictions of rape is not likely to translate into sexual aggression unless other variables are present. So, just because a man is aroused by depictions of rape, he will not necessarily be sexually violent with women. In other words, several variables interact to predispose a man toward sexual aggression.

Lackie and de Man (1997) investigated the relationship between several variables, including sex-role attitudes, physical aggression, hostility toward women, alcohol use, and fraternity affiliation, and sexual aggression. Their findings showed that sexually aggressive males tended to be physically aggressive in general. Furthermore, they found that stereotyped sex-role beliefs, acceptance of interpersonal violence, masculinity, and fraternity membership were positively related to self-reported sexual aggression. They also found that the most important predictors of sexual aggression were the use of physical aggression, stereotyped sex-role beliefs, and fraternity membership. In another study, Carr and VanDeusen (2004) found a similar pattern of results. Carr and VanDeusen found that four variables significantly related to sexual violence. These were alcohol use, exposure to pornography, sexual conservatism, and acceptance of interpersonal violence. Those prone to sexual violence used alcohol and pornography to a greater extent, were more sexually conservative, and were more accepting of interpersonal violence than those less prone to sexual violence.

So, whether an individual will be sexually aggressive is mediated by other factors. For example, Dean and Malamuth (1997) found that males who are at risk for sexual violence against women were most likely to behave in a sexually aggressive way if they

were also self-centered. A high-risk male who is not self-centered but rather is sensitive to the needs of others is not likely to behave in a sexually aggressive way. However, regardless of whether a high-risk male is self-centered, he is likely to fantasize about sexual violence (Dean & Malamuth, 1997). Additionally, feelings of empathy also appear to mediate sexual aggression. Malamuth, Heavey, and Linz found that males who are high in empathy are less likely to show arousal to scenes of sexual violence than males who are low in empathy (cited in Dean & Malamuth, 1997).

What do we know, then, about the effects of exposure to sexual violence on aggression? The research suggests the following conclusions:

1. Exposure to mild forms of nonviolent erotica tends to decrease sexual aggression against women.
2. Exposure to explicit or sexually violent erotica tends to increase sexual aggression against women but not against men.
3. Individuals who are angry are more likely to be more aggressive after viewing sexually explicit or violent materials than are individuals who are not angry.
4. Male college students are aroused by depictions of rape. However, men who show a greater predisposition to rape are more aroused, especially if the woman is portrayed as being aroused.
5. Exposure to media portrayals of sexual aggression against women increases acceptance of such acts and contributes to the rape myth. Thus, sexually explicit, violent materials contribute to a social climate that tolerates rape.
6. No single psychological characteristic predisposes a man to sexual aggression. Instead, several characteristics interact to increase the likelihood that a man will be sexually aggressive toward women.

## Reducing Aggression

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We have seen that interpersonal aggression comes in many different forms, including murder, rioting, and sexual violence. We also have seen that many different factors can contribute to aggression, including innate biological impulses, situational factors such as frustration, situational cues such as the presence of weapons, and aggressive scripts internalized through the process of socialization. We turn now to a more practical question: What can be done to reduce aggression? Although aggression can be addressed on a societal level, such as through laws regulating violent television programming and pornography, the best approach is to undermine aggression in childhood, before it becomes a life script.

### Reducing Aggression in the Family

According to the social-interactional model described earlier in this chapter, antisocial behavior begins early in life and results from poor parenting. The time to target aggression, then, is during early childhood, when the socialization process is just under way. Teachers, health workers, and police need to look for signs of abuse and neglect and intervene as soon as possible (Widom, 1992). Waiting until an aggressive child is older is not the best course of action (Patterson et al., 1989). Intervention attempts with adolescents produce only temporary reductions in aggression, at best.

One way to counter the development of aggression is to give parents guidance with their parenting. Parents who show tendencies toward inept parenting can be identified, perhaps through child-welfare agencies or schools, and offered training programs in productive parenting skills. Such training programs have been shown to be effective in reducing noncompliant and aggressive behavior in children (Forehand & Long, 1991). Children whose parents received training in productive parenting skills were also less likely to show aggressive behavior as adolescents.

What types of parenting techniques are most effective in minimizing aggression? Parents should avoid techniques that provide children with aggressive role models. Recommended techniques include positive reinforcement of desired behaviors and time-outs (separating a child from activities for a time) for undesired behaviors. Also, parenting that involves inductive techniques, or giving age-relevant explanations for discipline, is related to lowered levels of juvenile crime (Shaw & Scott, 1991). Parents can also encourage prosocial behaviors that involve helping, cooperating, and sharing. It is a simple fact that prosocial behavior is incompatible with aggression. If a child learns to be empathic and altruistic in his or her social interactions, aggression is less likely to occur. To support the development of prosocial behaviors, parents can take four specific steps (Bee, 1992, pp. 331–443):

1. Set clear rules and explain to children why certain behaviors are unacceptable. For example, tell a child that if he or she hits another child, that other child will be hurt.
2. Provide children with age-appropriate opportunities to help others, such as setting the table, cooking dinner, and teaching younger siblings.
3. Attribute prosocial behavior to the child's internal characteristics; for example, tell the child how helpful he or she is.
4. Provide children with prosocial role models who demonstrate caring, empathy, helping, and other positive traits.

### Reducing Aggression with Cognitive Intervention and Therapy

Reducing aggression through better parenting is a long-term, global solution to the problem. Another more direct approach to aggression in specific individuals makes use of cognitive intervention. We have seen that children who are exposed to violence develop aggressive scripts. These scripts increase the likelihood that a child will interpret social situations in an aggressive way. Dodge (1986) suggested that aggression is mediated by the way we process information about our social world. According to this **social information-processing view of aggression**, there are five important steps involved in instigating aggression (as well as other forms of social interaction). These are (as cited in Kendall, Ronan, & Epps, 1991):

1. We perceive and decode cues from our social environment.
2. We develop expectations of others' behavior based on our attribution of intent.
3. We look for possible responses.
4. We decide which response is most appropriate.
5. We carry out the chosen response.

**social information-processing view of aggression** A view stating that how a person processes social information mediates aggression.

Individuals with aggressive tendencies see their own feelings reflected in the world. They are likely to interpret and make attributions about the behaviors of others that center on aggressive intent. This leads them to respond aggressively to the perceived threat. Generally, aggressive individuals interpret the world as a hostile place, choose aggression as a desired way to solve conflict, and enact those aggressive behaviors to solve problems (Kendall et al., 1991).

Programs to assess and treat aggressive children have been developed using cognitive intervention techniques. Some programs use behavior management strategies (teaching individuals to effectively manage their social behavior) to establish and enforce rules in a nonconfrontational way (Kendall et al., 1991). Aggressive children (and adults) can be exposed to positive role models and taught to consider nonaggressive solutions to problems.

Other programs focus more specifically on teaching aggressive individuals new information-processing and social skills that they can use to solve interpersonal problems (Pepler, King, & Byrd, 1991; Sukhodolsky, Golub, Stone, & Orban, 2005). Individuals are taught to listen to what others say and, more important, think about what they are saying. They are also taught how to correctly interpret others' behaviors, thoughts, and feelings, and how to select nonaggressive behaviors to solve interpersonal problems. These skills are practiced in role-playing sessions where various scenarios that could lead to aggression are acted out and analyzed. In essence, the aggressive child (or adult) is taught to reinterpret social situations in a less-threatening, less-hostile way. Cognitively-based interventions may also be effective with high-risk individuals. LeSure-Lester (2002) contrasted a cognitive intervention program that included anger recognition, self-talk, and alternatives to aggression with a more traditional intervention with a sample of abused African American adolescents. LeSure-Lester found that the cognitive intervention resulted in greater reductions in aggressive behavior than the more traditional intervention.

As you can see, cognitively based therapy techniques have produced some encouraging results. It appears that they can be effective in changing an individual's perceptions of social events and in reducing aggression. However, the jury is still out on these programs. It may be best to view them as just one technique among many to help reduce aggression.

Other therapeutic techniques might also be effective in reducing aggression. In one study conducted in Israel, group-based "bibliotherapy" involving both the mother and child was most successful in reducing children's aggression (Schectman & Birani-Nasaraladen, 2006). Among schoolchildren, using a system that reinforced nonaggressive behavior on the playground (a straight behavioral intervention) also is effective in reducing aggression (Roderick, Pitchford, & Miller, 1997).

## The Beltway Sniper Case Revisited

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The fate that befell the victims of the Beltway Snipers was the result of naked aggression directed against them. We would classify the type of aggression displayed by the Beltway Snipers as instrumental aggression. The fact that Muhammad and Malvo planned to extort money and/or use the random victims to set up a final murder of Muhammad's ex-wife suggests that they were using the killings as a means to an end.

Although it would be difficult to pinpoint an exact cause for the Beltway Snipers' shooting spree, it is fairly clear that there were no physiological causes for the aggression (e.g., no damage to the hypothalamus). The best explanations for the shooting spree might lie in the frustration-aggression and social learning perspectives. It seems evident that Muhammad was deeply frustrated and angry over the custody dispute with his ex-wife. We have seen how frustration, mediated by anger, can provoke aggressive behavior. Further, Muhammad learned skills in the military that lent themselves to the sniper-type method he used to kill his victims. Lee Malvo's motives are more difficult to determine. Was there something in his childhood that could explain his behavior? Malvo came from a poor, single-parent family. He was raised by his mother (who was not married to Malvo's father). Malvo's father left the scene when Lee was an infant and Lee rarely saw his father. Recall from the social-interactional model of aggression how family experiences can shape a person's tendencies toward aggressive behavior. It may well be that Lee Malvo's childhood experiences shaped his behavior later in his life.

## Chapter Review

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### 1. How do social psychologists define aggression?

For social psychologists, the term *aggression* carries a very specific meaning, which differs from a layperson's definition. For social psychologists, aggression is any behavior intended to inflict harm (whether psychological or physical) on another organism or object. Key to this definition are the notions of intent and the fact that harm need not be limited to physical harm but can also include psychological harm.

### 2. What are the different types of aggression?

Social psychologists distinguish different types of aggression, including hostile aggression (aggression stemming from emotions such as anger or hatred) and instrumental aggression (aggression used to achieve a goal). Direct aggression refers to overt forms of aggression such as physical aggression and verbal aggression. Indirect aggression is aggression that is social in nature. Another type of aggression called relational aggression (using social ostracism, rejection, and direct confrontation) has elements of both direct and indirect aggression. Symbolic aggression involves doing things that block another person's goals. Sanctioned aggression is aggression that society approves, such as a soldier killing in war or a police officer shooting a suspect in the line of duty.

### 3. What are the gender differences in aggression?

Research has established that there are, in fact, differences in aggression between males and females. One of the most reliable differences between males and females is the male's greater predisposition toward direct, physical aggression, most evident among children. However, the role of gender in the use of indirect, relational aggression is still an open question. Males tend to favor physical aggression as a way to settle a dispute and are more likely than females to be the target of aggression. Females, however, tend to use verbal



aggression more than males. Males and females also think differently about aggression. Females tend to feel guiltier than males about using aggression and show more concern for the harm done by aggression. The observed gender differences are most likely a result of the interaction between biological and social forces.

Laboratory research on gender differences in aggression suggests that the difference between males and females is reliable but quite small. However, crime statistics bear out the commonly held belief that males are more aggressive than females. Across three major categories of violent crime (murder, robbery, and assault), males commit far more violent crimes than females.

**4. How can we explain aggression?**

As is typical of most complex behaviors, aggression has multiple causes. Several explanations for aggression can be offered, including both biological and social factors.

**5. What are the ethological, sociobiological, and genetic explanations for aggression?**

Biological explanations include attempts by ethologists and sociobiologists to explain aggression as a behavior with survival value for individuals and for groups of organisms. Ethology theory suggests that aggression is related to the biological survival and evolution of an organism. This theory emphasizes the roles of instincts and genetics. Sociobiology, like ethology, looks at aggression as having survival value and resulting from competition among members of a species. Aggression is seen as one behavior biologically programmed into an organism. There is also a genetic component for aggression, especially for males. Research has found that genetics and the common environment combine to influence aggression. Most likely, genetics operates by resulting in characteristics that predispose a person to behave aggressively. However, just because a person has a genetic predisposition for aggression does not guarantee that the person will behave aggressively.

**6. What role do brain mechanisms play in aggression?**

The roles of brain mechanisms and hormonal influences in aggression have also been studied. Stimulation of certain parts of the brain elicits aggressive behavior. The hypothalamus is one part of the brain that has been implicated in aggression. Stimulation of one part of the hypothalamus in a cat leads to emotional aggression, whereas stimulation of another elicits predatory aggression. Interacting with social factors, these neurological factors increase or decrease the likelihood of aggression. The male hormone testosterone has also been linked to aggressive behavior. Higher concentrations of testosterone are associated with more aggression. Like brain mechanisms, hormonal influences interact with the social environment to influence aggression.

**7. How does alcohol consumption relate to aggression?**

Although alcohol is considered a sedative, it tends to increase aggression. Research shows that individuals who are intoxicated behave more aggressively than those who are not. Furthermore, it is not only the pharmacological effects of alcohol that increase aggression. An individual's expectations about the

effects of alcohol also can increase aggression after consuming a beverage believed to be alcoholic. Alcohol appears to operate on the brain to reduce levels of the neurotransmitter serotonin. This reduction in serotonin is related to increased aggression. Furthermore, alcohol tends to suppress the executive cognitive functions that normally operate to mediate aggressive responses. The alcohol-aggression link is mediated by individual characteristics and the social situation. Individuals, especially men, who are high on a characteristic known as *dispositional empathy* are less likely to behave aggressively. It appears that alcohol interacts with individual characteristics and the social situation to influence aggression.

**8.** What is the frustration-aggression hypothesis?

The frustration-aggression hypothesis suggests that aggression is caused by frustration resulting from blocked goals. This hypothesis has raised much controversy. Once frustrated, we choose a target for aggression. Our first choice is the source of the frustration, but if the source is an inappropriate target, we may vent our frustration against another target. This is called displaced aggression. Whether aggression is displaced depends on three factors: the intensity of the original frustration, the similarity between the original and displaced target, and the negativity of the interaction between the individual and original target.

**9.** How does anger relate to frustration and aggression, and what factors contribute to anger?

A modified version of the frustration-aggression hypothesis suggests that frustration does not lead to aggression unless a negative affect such as anger is aroused. Anger may be aroused under several conditions. Cognitive mediators, such as attributions about intent, have been found to play a role in the frustration-aggression link as well. If we believe that another person intends to harm us, we are more likely to react aggressively. If we are given a good reason for why we are frustrated, we are less likely to react aggressively.

Another social psychological mechanism operating to cause aggression is perceived injustice. Aggression can be used to restore a sense of justice and equity in such situations. Research suggests that a perceived inequity in a frustrating situation is a stronger cause for aggression than frustration itself.

High temperature also relates to frustration-related aggression. Research shows that under conditions of high temperature, aggression is likely to occur. One explanation for this is that heat makes people cranky and more likely to interpret situations as aggressive, calling for an aggressive response.

**10.** How does social learning theory explain aggression?

According to social learning theory, aggression is learned, much like any other human behavior. The primary means of learning for social learning theorists is observational learning, or modeling. By watching others we learn new behaviors or have preexisting behaviors inhibited or disinhibited. Research confirms the role of early experience in the development of aggressive behavior. Additionally, there is continuity between childhood aggression and adult aggression.

**11.** What are aggressive scripts, and how do they relate to aggression?

One mechanism believed to underlie the relationship between observation and aggression is the formation of an aggressive script during the socialization process. These aggressive scripts lead a person to behave more aggressively and to interpret social situations in aggressive terms. During the socialization process, children develop aggressive scripts and behavior patterns because they are exposed to acts of aggression, both within the family and in the media.

**12.** How does the family socialize a child into aggression?

Research shows that aggressive behavior patterns develop early in life. Research also shows that there is continuity between childhood aggression and aggression later in life; that is, an aggressive child is likely to grow into an aggressive adult.

According to the social-interactional model, antisocial behavior such as aggression results from inept parenting. Parental use of physical or verbal aggression is related to heightened aggressiveness among children, a finding that extends across cultures. Physical punishment is significantly associated with a variety of negative outcomes, including aggressive behavior, lower levels of moral internalization of behavior, degraded parent-child relationships, and poorer mental health. Other research shows that verbal aggression directed at children by parents is particularly problematic. Verbal aggression may signal parental rejection, which has been associated with a host of negative outcomes, including aggression.

Child abuse and neglect also have been found to lead to increases in aggression (as measured by violent crime). In addition, child abuse leads to a desensitization to the suffering of others. An abused child is likely to respond to an agemate in distress with anger and physical abuse, rather than concern or empathy (as would a nonabused child). Child abuse, then, leads to a callous attitude toward others as well as to increases in aggression.

Finally, family disruption also relates to increases in aggression. Children from disrupted homes have been found to engage in more criminal behavior as adults than children from nondisrupted homes.

**13.** What is the role of culture in aggression?

An individual's level of aggressiveness relates to the cultural environment within which he or she is reared. Cross-cultural research shows that aggression is less likely to occur in cultures that have collectivist values, high levels of moral discipline, egalitarian values, low levels of avoiding uncertainty, and Confucian values.

Research comparing individuals from the American South with the American North has shown differences in attitudes toward using aggression. Generally, individuals from the South are more favorable toward using aggression than individuals from the North. One explanation for this is that a culture of honor has developed in the South (and the West) because different people settled these regions during the 17th and 18th centuries. The South was settled by people from herding economies, and these people were predisposed to be constantly vigilant for theft on one's stock and react with force to drive intruders away to protect one's property. From this the culture of honor emerged.

**14.** What role do the media play in aggression?

One important application of social learning theory to the problem of aggression is the relationship between media portrayals of aggression and aggressive behavior. Research suggests that children who watch aggressive television programs tend to be more aggressive. Although some early research suggested that males were more affected by television violence than were females, more recent research suggests that there is no reliable, general difference between males and females. One gender difference that does emerge is that children, especially males, who identify with television characters are most affected by television violence. Additionally, heavy doses of television violence desensitize individuals to violence. A meta-analysis has shown that televised violence is most likely to lead to overt aggression when the violence shown on television is justified, is shown having inaccurate consequences, and is plausible.

Although many studies have established a link between watching media violence and aggression, the observed effects are small. Additionally, televised violence does not affect everyone in the same way. Some individuals are more prone to be affected by televised violence than others.

**15.** What are the effects of playing violent video games on aggressive behavior?

Research shows that playing violent video games increases aggression among both males and females. Additionally, playing violent video games increases physiological arousal, aggressive thoughts and emotions, and state hostility. Violent video games are also associated with a short-term decrease in prosocial behavior. Playing a violent video game activates parts of the brain that are commonly associated with aggressive thoughts and behavior, while suppressing parts of the brain associated with empathy. Finally, playing violent video games does not affect everyone equally. Long-term playing of violent video games is associated with increased aggression most strongly among people with aggressive personalities.

**16.** What is the link between sexual violence portrayed in the media and sexual aggression directed toward women?

The research on the link between violent sexual media portrayals and violence directed at women leads to six conclusions: (1) Exposure to mild forms of erotica tends to decrease sexual violence against women. (2) Exposure to explicit or sexually violent erotica increases aggression against women but not against men. (3) Individuals who are angry are more likely to be more aggressive after viewing sexually explicit or violent materials than individuals who are not angry. (4) Male college students are aroused by depictions of rape. However, individuals who show a greater predisposition to rape are more aroused, especially if the victim is shown being aroused by sexual violence. (5) Exposure to media portrayals of sexual violence increases acceptance of violence against women and contributes to the rape myth. Thus, sexually explicit, violent pornography contributes to a social climate that tolerates rape. (6) There is no single psychological characteristic that predisposes a man to sexual violence. Instead, several characteristics interact to increase the likelihood that a man will be sexually violent.

**17.** How can aggression be reduced?

Many factors contribute to aggression, including biological predispositions, frustration, the presence of aggressive cues, the media, and family factors. The most fruitful approach to reducing aggression is to target family factors that contribute to aggression. Aggression can be reduced if parents change inept parenting styles, do not abuse or neglect their children, and minimize family disruption. Parents should reduce or eliminate their use of physical and verbal aggression directed at children. Positive reinforcement for desired behavior and time-out techniques should be used more often. Socializing children to be altruistic and caring can also help reduce aggression.

According to the cognitive approach, children are encouraged to reinterpret situations as nonaggressive. The social information-processing view of aggression maintains that there are five important steps involved in the instigation to aggression: We perceive and decode cues from our social environment, we develop expectations of others' behavior based on our attribution of intent, we look for possible responses, we decide which response is most appropriate, and we carry out the chosen response. The cognitive approach suggests that aggressive individuals need to change their view of the world as a hostile place, to manage their aggressive impulses, and to learn new social skills for managing their interpersonal problems.



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