

1993). Loud noises, excessive heat, the irritation of someone else's cigarette smoke, and even awful smells can lead people to act out in an aggressive manner (Anderson, 1987; Rotton et al., 1979; Rotton & Frey, 1985; Zillmann et al., 1981).

Frustration is not the only source of aggressive behavior. Many early researchers, including Sigmund Freud (1930), believed that aggression was a basic human instinct. In Freud's view, aggression was part of the death instinct that drove human beings to destroy both others and themselves, and he believed that if aggression were not released it would cause illness. But if aggression is an instinct present in all humans, it should occur in far more similar patterns across cultures than it does. Instinctual behavior, as often seen in animals, is not modifiable by environmental influences. Modern approaches try to explain aggression as a biological phenomenon or a learned behavior.

## AGGRESSION AND BIOLOGY

### 13.15 *How is aggressive behavior determined by biology and learning?*

There is some evidence that human aggression has at least partially a genetic basis. Studies of twins have shown that if one identical twin has a violent temper, the identical sibling will most likely also have a violent temper. This agreement between twins' personalities happens more often with identical twins than with fraternal twins (Miles & Carey, 1997; Rowe et al., 1999). It may be that some gene or complex of genes makes certain people more susceptible to aggressive responses under the right environmental conditions.

As discussed in Chapter Two, certain areas of the brain seem to control aggressive responses. The amygdala and other structures of the limbic system have been shown to trigger aggressive responses when stimulated in both animals and humans (Adams, 1968; Albert & Richmond, 1977; LaBar et al., 1995; Scott et al., 1997). Charles Whitman, the Tower of Texas sniper, who in 1966 killed his mother, his wife, and then shot and killed 12 more people before finally being killed by law enforcement officers, left a note asking for an examination of his brain. An autopsy did reveal a tumor that was pressing into his amygdala (Laverne, 1997).

There are also chemical influences on aggression. Testosterone, a male sex hormone, has been linked to higher levels of aggression in humans (Archer, 1991). This may help to explain why violent criminals tend to be young, male, and muscular. They typically have high levels of testosterone and low levels of serotonin, another important chemical found in the brain (Alexander et al., 1986; Brown & Linnoila, 1990; Coccaro & Kavoussi, 1996; Dabbs et al., 2001; Robins, 1996).

► Don't some people get pretty violent after drinking too much? Does alcohol do something to those brain chemicals? Alcohol does have an impact on aggressive behavior. Psychologically, alcohol acts to release inhibitions, making people less likely to control their behavior even if they are not yet intoxicated. Biologically, alcohol affects the functioning of many neurotransmitters and in particular is associated with a decrease in serotonin (Virkkunen & Linnoila, 1996). In one study, volunteers were asked to administer electric shocks to an unseen "opponent" in a study reminiscent of Milgram's shock experiment. The actual responses to the shock were simulated by a computer, although the volunteers believed that the responses were coming from a real person. The volunteers were told it was a test of reaction time and learning (Bushman, 1997). Volunteers participated both before consuming alcohol and after consuming alcohol. Participants were much more aggressive in administering stronger shocks after drinking.

## THE POWER OF SOCIAL ROLES

Although frustration, genetics, body chemicals, and even the effects of drugs can be blamed for aggressive behavior to some degree, much of human aggression is also

influenced by learning. The social learning theory explanation for aggression states that aggressive behavior is learned by watching aggressive models get reinforced for their aggressive behavior (Bandura, 1980; Bandura et al., 1961). **LINK to Chapter Five: Learning, p. 252.** Aggressive models can be parents, siblings, friends, or people on television.

There is some evidence to suggest that even taking on a particular *social role*, such as that of a soldier, can lead to an increase in aggressive behavior. A **social role** is the pattern of behavior that is expected of a person who is in a particular social position. For example, “doctor” is a social role that implies wearing a white coat, asking certain types of questions, and writing prescriptions, among other things. A deeply disturbing experiment was conducted by famed social psychologist Philip Zimbardo at Stanford University in 1971. The experiment was recorded on film from the beginning to a rather abrupt end: about 70 young men, most of whom were college students, volunteered to participate for two weeks. They were told that they would be randomly assigned the social role of either a guard or a prisoner in the experiment. The “guards” were given uniforms and instructions not to use violence but to maintain control of the “prison.” The “prisoners” were booked at a real jail, blindfolded, and transported to the campus “prison,” actually the basement of one of the campus buildings. On day 2, the prisoners staged a revolt (not planned as part of the experiment), which was quickly crushed by the guards. The guards then became increasingly more aggressive, using humiliation to control and punish the prisoners. For example, prisoners were forced to clean out toilet bowls with their bare hands. The staff observing the experiment had to release five of the prisoners who became so upset that they were physically ill. The entire experiment was canceled on the fifth day, after one of the prisoners reported to Zimbardo that what the experimenters were doing to the young men was terrible (Zimbardo, 1971).

The conclusions of Zimbardo and his colleagues highlighted the influence that a social role, such as that of “guard,” can have on perfectly ordinary people. Although history is full of examples of people behaving horribly to others while filling a particular role, one need not travel very far into the past to find an example. During the war in Iraq in 2003, an army reserve general was suspended from duty while an investigation into reported prisoner abuses was conducted. Between October and December 2003, investigators found numerous cases of cruel, humiliating, and other startling abuses of the Iraqi prisoners by the army military police stationed at the prison of Abu Ghraib (Hersh, 2004). Among the cruelties reported were pouring cold water on naked detainees, beating them with a broom handle or chair, threatening them with rape, and one case of actually carrying out the threat. How could any normal person have done such things? The “guards” in the Stanford prison study were normal people, but the effect of putting on the uniform and taking on the social role of guard changed their behavior radically. Is it possible that a similar factor was at work at Abu Ghraib? The behavior of the guards at Abu Ghraib was not part of a formal, controlled study, so further research will be needed to determine to what degree the social roles at work in situations like this influence the kind of behavior seen in this real-life example.



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No one can deny that abused children are exposed to powerful models of aggression. Their abusing parents get reinforced for their aggressive behavior when they get what they want from the child. No one can deny that there are people who were abused who go on to become abusers. Contrary to popular belief, most children who suffer abuse do *not* grow up to become abusers themselves—in fact, only one-third of abused children do so (Kaufman & Zigler, 1993; Oliver, 1993). Instead of becoming abusers themselves, some abused children receive help and overcome the damage from their childhood, whereas others withdraw, isolating themselves rather than becoming abusive (Dodge et al., 1990).

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**VIOLENCE IN THE MEDIA AND AGGRESSION** I've heard that violent television programs can cause children to become more aggressive. How true is that? Bandura's early study on the effects of an aggressive model viewed over a movie screen on small children was one of the first attempts to investigate the effect of violence in the media on children's aggressive behavior (Bandura et al., 1961). Since then, researchers have examined the impact of television and other media violence on the aggressive behavior of children of various ages. The conclusions have all been similar: Children who are exposed to high levels of violent media are more aggressive than children who are not (Baron & Reiss, 1985; Bushman & Huesmann, 2000; Centerwall, 1989; Geen & Thomas, 1986; Huesmann & Miller, 1994; Huesmann et al., 1997; Huesmann et al., 2003; Villani, 2001). These studies have found that there are several contributing factors involving the normal aggressive tendencies of the child, with more aggressive children preferring to watch more aggressive media as well as the age at which exposure begins: the younger the child, the greater the impact. Parenting issues also have an impact, as the aggressive impact of television is lessened in homes where aggressive behavior is not tolerated and punishment is not physical.

Violent video games have also come under fire as causing violent acting-out in children, especially young adolescents. The tragic shootings at schools all over the United States have, at least in part, been blamed on violent video games that the students seemed to be imitating. This was especially a concern in the Littleton, Colorado, shootings because the adolescent boys involved in those incidents had not only played a violent video game in which two shooters killed people who could not fight back but also had made a video of themselves in trench coats, shooting school athletes. This occurred less than a year before these same boys killed 13 of their fellow students at Columbine High School and wounded 23 others (Anderson & Dill, 2000). In one study, second-grade boys were allowed to play either an aggressive or a nonaggressive video game. After playing the game, the boys who had played the aggressive video game demonstrated more verbal and physical aggression both to objects around them and to their playmates while playing in a free period than boys who had played the nonaggressive video game (Irwin & Gross, 1995).

In a massive meta-analysis of research into the connection between violent media and aggressive behavior in children, social psychologist Craig Anderson and colleagues found clear and consistent evidence that even short-term exposure to violent media significantly increases the likelihood that children will engage in both physical and verbal aggression as well as aggressive thoughts and emotions (Anderson et al., 2003). Clearly, violent video games do correlate with increased aggression levels of the children who play them, both young children and adolescents (Anderson, 2003; Anderson & Bushman, 2001).