

## The General Aggression Model

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Marwan Abu Ubeida contradicts general stereotypes of would-be mass murderers. He had a privileged upbringing, is deeply religious, and shows none of the signs of psychopathology typically used to identify violent people. Yet he has an insatiable drive to kill as many people as he can. Marwan is an Iraqi suicide bomber. When asked what will happen in the last moments of his life, Marwan outlines a two-step process (Ghosh, 2005). First, he will ask Allah to bless his holy mission with a high rate of American casualties. Second, he will ask for a pure soul that is suitable to see Allah and his mujahedin brothers who are already in paradise. Marwan's final wishes are both chilling and puzzling, suggesting, as they do, that Allah will approve and assist Marwan's murder of many Americans. How does such a privileged youth become a suicide bomber?

Further puzzlement comes from the behavior of Lynndie England. She joined the American National Guard not to inflict pain on others, but to provide a means to pay for her education. She has a son toward whom she behaves with love and kindness. As a guard in the Abu Ghraib prison in Iraq, however, she wreaked havoc on Iraqi prisoners through the use of

cruel and humiliating torture practices. Her acts gained worldwide attention through the publication of pictures showing her apparent glee over inflicting pain and humiliation on naked, shackled prisoners. Lynndie deflects responsibility for her actions, noting that she was merely following orders from superiors and seeking the approval of a fellow soldier with whom she was in love. What leads a person like Lynndie England to perform such aggressive acts?

Scholars, politicians, and the general public are often perplexed not only by aggressive acts committed by individuals, but also by aggression between groups large and small. The escalating conflict between Israelis and Palestinians, for example, has claimed the lives of thousands of people, including many unarmed civilians. Both Israeli and Palestinian leaders have offered logical suggestions for ways to end the conflict, and other governments have done the same. Yet the end of the conflict is nowhere in sight. The dispute appears intractable (Hirschberger & Pyszczynski, Chapter 15, and Halperin, Chapter 16, this volume). On December 29, 2008, Israel launched a major military offensive designed to stop Hamas militants from firing missiles into the Jewish state. Over 1000 people died, with more than 4,500 additional people wounded. After the assault ended, the Hamas rockets continued to land in southern Israel. Why does the Israeli-Palestinian conflict continue to escalate despite recurrent efforts to end it peacefully?

The purpose of this chapter is to demonstrate how the General Aggression Model (GAM; Anderson & Bushman, 2002; Anderson & Carnagey, 2004; Anderson & Huesmann, 2003) helps to answer these perplexing questions (and many others) regarding the causes and conditions of aggression and violence. The chapter is organized into seven sections. First, we offer definitions of anti-social, aggressive, and violent behavior. Second, we provide a brief description of GAM. Third, we discuss the dynamic process by which personological and situational factors establish

and sustain aggression: the violence escalation cycle (VEC). Fourth, we use GAM to understand how seemingly ordinary citizens become terrorists, suicide bombers, torturers, and other doers of aggression and violence. Fifth, we discuss the implications of GAM for aggression between groups of people. Sixth, we apply GAM to show how certain government actions designed to promote peace can increase aggression and violent behavior. Seventh, we discuss useful suggestions based on GAM regarding ways to reduce aggression and violence.

#### *Anti-Social Behavior, Aggression, and Violence*

Much has changed since the Mesolithic period, during which human evolution presumably formed many of our current innate tendencies. Agriculture now dominates people's access to food, allowing people to settle in communities instead of hunting and gathering in nomadic groups. Cultural progress enables people to depend on others for food, clothing, and shelter instead of having to provide for themselves. Technological advances provide people with the means to travel easily and to transmit knowledge to each other quickly. Despite these revolutionary changes in human lives, aggression and violence remain important topics in modern society, just as they must have been to our evolutionary ancestors.

Archeological and historical evidence indicates that aggression and violence were prevalent among our hunter/gatherer ancestors 25,000 years ago. Aggression and violence was widespread among Greek, Egyptian, and Roman societies 2,000-3,000 years ago. Just as modern citizens of the world ingest violent media, ancient Romans had their own form of 'media violence' in which gladiators inflicted physical injury and death on each other in the presence of thousands of viewers. Aggression and violence continue to be widespread. In short, aggression and violence remain ubiquitous parts of human life. Before we can understand the causes and

conditions of aggression and violence, it is necessary to discuss what we mean when we say that a person or group acts anti-socially, aggressively, or violently.

### *Anti-Social Behavior*

Anti-social behavior refers to any action that violates personal or cultural standards for appropriate behavior. Anti-social behavior often involves aggression and violence, but not always. In societies with norms prohibiting physical violence between romantic partners, punching, kicking, or biting one's spouse would be considered anti-social behavior. Littering, lying, and stealing also represent anti-social behaviors, although none of these behaviors involve physical aggression or violence. People with antisocial personality disorder (APD; Hare, 1996) often engage in aggressive and violent actions, but they also violate standards for appropriate behavior in non-aggressive ways such as cheating, stealing, and breaking other laws. Thus, anti-social behavior can involve aggression, violence, or any other type of response that defies cultural standards for desirable behavior. This chapter focuses on aggressive and violent behavior.

### *Aggression and Violence*

Aggression refers to behavior carried out with the proximal (immediate) intention to inflict harm on another person who is motivated to avoid the harm (e.g., Anderson & Bushman, 2002; Baron & Richardson, 1994; Berkowitz, 1993). Harmful behavior that is accidental or an incidental by-product of helpful actions is not aggressive. From a social psychological perspective, violence usually refers to the most severe types of physical aggression, those that are likely to cause serious bodily injury. Occasionally, researchers in this domain discuss "emotional" or "psychological" violence to indicate severe forms of non-physical aggression. All acts of violence fit our definition of aggression, but not all aggressive acts are violent. By our

definition, violent actions need not involve illegal behavior. Note, however, that other behavioral sciences (e.g., criminology) define violence in somewhat different ways, such as by requiring the act to be illegal (Neuilly, 2007).

### *General Aggression Model*

Several dichotomous distinctions among various forms of aggression have been proposed. Although these distinctions (proactive vs. reactive, instrumental vs. hostile, impulsive vs. premeditated) have yielded important insights, we argue for a more flexible understanding of aggression based on a knowledge structure approach (Bushman & Anderson, 2001). We also argue that different forms of aggression can be distinguished in terms of proximate and ultimate goals (Anderson & Bushman, 2002; Bushman & Anderson, 2001). Furthermore, we can characterize any aggressive behavior according to four dimensions, each of which fits well with research on the development, use, and automatization of knowledge structures. Any aggressive act (proximal intent to harm, target motivated to avoid the act) can be characterized along each of the following dimensions: degree of hostile or agitated affect present; automaticity; degree to which the primary (ultimate) goal is to harm the victim versus benefit the perpetrator; and degree to which consequences are considered. Because many aggressive acts involve mixed motivations or are sensitive to specific consequences, considering aggression along these four dimensions rather than relying on dichotomous category systems provides researchers with a better means of understanding aggression and of creating useful interventions (Anderson & Bushman, 2002; Anderson & Huesmann, 2003; Bushman & Anderson, 2001).

### *Basic Model*

The General Aggression Model is a dynamic, social-cognitive, developmental model that provides an integrative framework for domain-specific aggression theories. It includes

situational, personological, and biological variables. GAM draws heavily on social-cognitive and social learning theories that have been developed over the past 40 years by social, personality, cognitive, and developmental psychologists (e.g., Bandura, 1977; Berkowitz, 1989, 1993; Dodge, 1980, 1986, Chapter 10, this volume; Crick & Dodge, 1994; Huesmann, 1982, 1988, 1998, Huesmann, Dubow, & Boxer, Chapter 8, this volume; Mischel, 1973; Mischel & Shoda, 1995). These perspectives paved the way for understanding the learning and developmental processes involved in shaping aggressive behavior, and how aggression operates under the control of intra-psychological processes aimed at overriding impulses to remain in agreement with standards for appropriate behavior (see also Slotter & Finkel, Chapter 2, this volume).

To understand aggression, researchers must take into account how such behavior depends on cognitive factors within the individual. Aggression depends on how an individual perceives and interprets his or her environment and the people therein, expectations regarding the likelihood of various outcomes, knowledge and beliefs about how people typically respond in certain situations, and how much people believe they have the abilities to respond to a variety of events (see also Dodge, Chapter 10, and Huesmann et al., Chapter 8, this volume). By understanding these cognitions, researchers have a basis for understanding both within-person and situation-specific stability in aggression because people show similarity in how they respond to similar events over time, and because situations frequently impose realistic demands that limit the number of options regarding how people can construe the situation. Furthermore, such social-cognitive models also account for variability in aggression across time, people, and contexts, as different knowledge structures develop and change, and as different situational contexts prime different knowledge structures.

GAM also focuses heavily on how the development and use of knowledge structures influence both early (e.g., basic visual perception) and downstream (e.g., judgments, decisions) and behaviors) psychological processes (e.g., Bargh, 1996; Collins & Loftus, 1975; Fiske & Taylor, 1991; Higgins, 1996; Wegner & Bargh, 1998). People develop knowledge structures from their experience. Within the context of aggression, knowledge structures can influence toward whom a person directs visual attention as a function of possible threat, affective responses to provocation or cues linked to aggression in memory, attributions regarding the causes of a provocateur's behavior, judgments regarding the costs and benefits of various behavioral options, memory for people who do and do not represent potential threat, and actual behavior directed toward a target.

Of particular interest are findings showing that through repeated practice and exposure, complex judgments and choices become automatized, requiring little or no mental energy or conscious awareness (Bargh & Pietromonaco, 1982). A “shoot first, ask questions later” mentality may result from learning through repeated experience or cultural teachings that members of various groups represent threats and therefore should be perceived as dangerous even in neutral or ambiguous situations. For example, repeated experience and cultural teachings that African-Americans are likely to be hostile and pose a physical threat have been shown to affect decisions to shoot unarmed African-American crime suspects—decisions made by both college student research participants (Correll, Park, Judd, & Wittenbrink, 2002) and police officers (Plant & Peruche, 2005). The effect that knowledge structures can have on violence was demonstrated in the tragic incident of Amadou Diallo, an African-American male who was shot 19 times by New York City police officers as he reached for his wallet (Cooper, 1999). Thus, knowledge structures set the stage for understanding how people identify objects, people, and

complex social events as relevant or irrelevant to aggression, how beliefs about specific people (e.g., Osama bin Laden) or groups (e.g., Nazis, Hutus) shape perceptions of relevance to aggression, and how people use behavioral scripts to guide their behavior under various circumstances (e.g., respond with retaliation to an insult when that insult increases hostile affect).

### *Single Episode Cycle*

At the most basic level, GAM focuses primarily on how aggression unfolds within one cycle of an ongoing social interaction. At this level the model emphasizes three main issues: person and situation inputs, present internal state (i.e., cognition, arousal, affect), and outcomes of appraisal and decision-making processes (Figure 1).

*Person and situation inputs.* GAM considers both situation and person factors—relatively enduring traits, motivations, attitudes, beliefs, and other chronic knowledge structures and less enduring cognitive, affective, and arousal states that arise in particular contexts (see Dodge, Chapter 10, Huesmann et al., Chapter 8, and Slotter & Finkel, Chapter 2, this volume). Person and situation inputs are *proximate* causes in that they provide the most direct guiding force behind aggression behavior, although the behavior may also serve an *ultimate* goal (see Tooby & Cosmides, 1992). Social psychologists have identified a variety of situational factors that promote aggressive behavior, such as provocation, exposure to weapons, a hot environment, unpleasant odors, loud noises, violent media, and physical pain (see Anderson & Bushman, 2002, for a review). Examples of person factors known to increase aggression are hostile attribution bias, narcissism, being male, and a host of beliefs, attitudes, values, and behavioral scripts (see Cohen, Chapter 7, Dodge, Chapter 10, Mikulincer & Shaver, Chapter 13, Slotter & Finkel, Chapter 2, Tackett & Krueger, Chapter 4, and Thomaes & Bushman, Chapter 11, this volume).

Situation and person factors are not mutually exclusive. Some situational factors give rise to states that closely resemble person variables; for example, social rejection or playing violent video games can strengthen hostile cognitive biases (Bushman & Anderson, 2002; DeWall, Twenge, Gitter, & Baumeister, 2009). In addition, situational variables often interact with person variables to predict aggression. In response to provocation, for example, narcissistic people tend to behave quite aggressively, whereas narcissists do not show high levels of aggression in response to praise (Bushman & Baumeister, 1998; Thomaes & Bushman, this volume). Similarly, exposure to hunting and assault weapons influences the mental accessibility of hostile cognitions and aggressive behavior differently according to whether people have developed knowledge structures through experience to certain kinds of weapons (e.g., hunters as compared with people who have less differentiated knowledge about types of weapons; Bartholow, Carnagey, & Anderson, 2005).

*Internal states.* Person and situation variables influence aggression through the internal states they create. That is, internal states serve as mechanisms underlying the relationship between person and situation variables and outcomes of appraisal and decision-making processes. Affect, arousal, and cognition represent the three most significant internal states. A specific person variable (e.g., high trait hostility) or situational variable (e.g., viewing violent media) may influence one, two, or all three types of internal states. Violent media, for example, affect all three states. Moreover, the three internal states can influence each other.

*Outcomes.* A large body of literature within social psychology suggests that complex information processes can involve reliance on the automatic system or the controlled system (Robinson, 1998; Smith & Lazarus, 1993). In GAM (Figure 2), the third stage includes complex appraisal and decision processes that range from automatic to heavily controlled (Strack &

Deutsch, 2004; Denson, Chapter 6, this volume). Therefore, inputs (stage 1) affect internal states (stage 2), which in turn influence appraisal and decision processes (stage 3). The appraisal and decision processes include automatic processes referred to as “immediate appraisal” and more controlled processes referred to as “reappraisal.” Based on the outcomes of immediate appraisal or reappraisal processes, people are impelled to act in either thoughtful or impulsive ways. These actions enter a feedback loop that becomes part of the input for the next episode.

Immediate appraisals depend heavily on the automatic system and influence affective, goal, and intention information. Appraising environmental threat, for example, occurs effortlessly and without conscious awareness (e.g., Öhman, Lundqvist, & Esteves, 2001). This immediate appraisal process may include fear and anger-related affect, goals related to aggression, and the formation of intentions to carry out aggression-related acts. Person and situation inputs guide immediate appraisals in ways that are congruent with a person’s social learning history (i.e., personality) and current psychological and physiological state. Because immediate appraisal is effortless and requires few resources, some aggressive acts occur so fast that it may seem that appraisal has not even occurred, and indeed some behavioral scripts may be so closely linked to the perception of a particular stimulus that the behavioral response is functionally a part of perceiving the stimulus.

Reappraisal processes, in contrast, depend on whether people have adequate resources and whether the immediate appraisal is judged (automatically) to be both important and unsatisfactory. A growing body of literature suggests, for example, that the ability to override unwanted impulses depends on a limited energy resource that becomes depleted after prior exertion (Gailliot et al., 2007; Slotter & Finkel, Chapter 2, this volume). If a person has recently engaged in an act involving the expenditure of self-regulatory energy, that person will be less

likely to engage in reappraisal (Denson, Chapter 6, this volume; DeWall, Baumeister, Stillman, & Gailliot, 2007; Finkel, DeWall, Slotter, Oaten, & Foshee, in press). Likewise, if a person's immediate appraisal indicates that the probable outcome is either satisfying or unimportant, then the person will be less likely to engage in reappraisal. Other resource limitations, such as time and cognitive capacity, may also preclude reappraisal.

Thus, aggression results from the proximate convergence of situations and personological inputs. Situations can impel or inhibit aggression, whereas personological factors enhance or diminish a person's propensity to behave aggressively. These situational and personological inputs activate affective, arousal, and cognitive internal states, which in turn influence aggression by means of appraisal and decision processes. Once the individual has performed the impulsive or thoughtful action, the behavior feeds back to the situation and personological inputs to guide the next episodic cycle.

*Aggression before and after the single episode cycle.* Is GAM stuck in the present? At first glance, GAM appears to focus most of its attention on how current internal states determine aggression, neglecting the importance of the past and future. However, the personological input factors bring the past to the present, in the form of knowledge structures and well-rehearsed cognitive and affective processes that have been influenced by biological factors (e.g., genes, hormones) and past history (Figure 3).

Similarly, GAM details how the present influences and is influenced by the future, through the knowledge structures used to perceive, react, and learn. The present influences the future in at least two very different ways: by changing the person's relatively enduring beliefs, attitudes, expectations (i.e., personality); and by changing the person's social environment (i.e., the attitudes, beliefs, expectations other people have of the person). Chronic exposure to violent

media, for example, can increase aggressive attitudes, beliefs, expectations of others as hostile, and desensitization to future violence (Anderson et al., 2003; Bartholow, Bushman, & Sestir, 2006; Carnagey, Anderson, & Bushman, 2007). The present is influenced by the future through the person's beliefs and expectations about how others will act, their goals, and other plans. Thus, GAM focuses on internal states as they relate to what people bring with them to the present episode from the past, and also shows how the present episode can influence future personological and situational factors that will influence future internal states and subsequent appraisal and decision processes that guide aggression. It even provides a simple process by which personality influences situations.

#### *Violence Escalation Cycle*

Most incidents involving aggression and violence occur after a series of conflict-based interactions in which the two parties trade retaliatory behaviors back and forth in an escalating cycle. Such escalating cycles include what some refer to as “ordinary” violent crimes between individuals (e.g., assault and murder) and between larger groups and nations. Figure 4 illustrates the violence escalation cycle.

The violence escalation cycle begins with an initial triggering event that may be serious or relatively benign. The triggering event can influence any kind of dyad, including two people, two groups, two religions, or two nations. Whereas person or group “A” considers retaliation to the event to be justified and relatively mild, person or group “B” considers the retaliation to be unjustified and severe, leading to retaliation toward person or group “A.” The cycle persists through several iterations of violent actions in which one unit perceives its retaliation to be appropriate and justified, while the second unit perceives it to be inappropriate and exaggerated

(See similar analyses in Cohen, Chapter 7, and McCullough, Kurzban, & Tabak, Chapter 12, this volume).

Consider an example of the violence escalation cycle within the context of street gangs. Members of gang A venture to a part of town normally considered to be gang B's "turf." Gang B perceives this lack of respect for gang boundaries as an affront to their power and influence. As a result, members of gang B retaliate in a manner that they perceive to be both justified and relatively mild: They destroy several cars belonging to gang A's leaders and assault several members of gang A who try to stop the destruction of the cars. Gang B's retaliation therefore becomes gang A's provocation, leading them to shoot and kill several members of gang B. The escalation cycle continues over the course of several weeks or months, with dozens of members of both gangs experiencing serious physical injury or death. Real-world examples of the violence escalation cycle abound in contemporary society. The Israeli-Palestinian conflict and the "pre-emptive" war on Iraq by the United States are examples of violence escalation cycles.

Why do violence escalations persist? We propose three reasons. First, violence often produces violence as a result of faulty attributions. Whereas neutral third parties can make accurate causal inferences regarding violence between two parties, the parties themselves usually cannot. In a version of the *fundamental attribution error*, people tend to explain the causes of others' behaviors as due to dispositions and their own behavior as due to situational forces (Anderson, Krull, & Weiner, 1996; Lassiter, Geers, Munhall, Ploutz-Snyder, & Breitenbecher, 2002; Swann, Pelham, & Roberts, 1987), people become caught in a web in which members perceive the other party as acting out of malice or evil and perceive their own behavior as appropriate responses to the situation at hand. Out-group homogeneity effects may also prevent members of both parties from making accurate attributions. U. S. citizens, for example, may

perceive all members of the Islamic faith as jihadists, when in reality this represents a minority of Muslims. Second, retaliation often exceeds prior levels of aggression. A push turns into a punch, a punch turns into shooting someone, shooting one person turns into shooting many people, and so on. Such escalation is often an attempt to signal to the other side that it should back down (McCullough & Tabak, this volume; Sell, this volume). Third, increased levels of retaliatory violence stem from perspective biases in which the most recent perpetrator views the harmful behavior as appropriate and justified, whereas the most recent victim perceives the perpetrator's act as an inappropriate overreaction.

The violence escalation cycle corresponds to GAM's assertion that personological and situational factors can influence each other in a dynamic manner. Social psychology frequently demonstrates that powerful situational factors can override personality traits. But personality traits (including beliefs, attitudes, and insecurities) sometimes dramatically influence the situation (see Shaver, Segev, & Mikulincer, Chapter 4, Tackett & Krueger, Chapter 5, this volume). People who characteristically perceive the world as hostile and who resolve conflict through the use of aggression can turn a situation that involves potentially mild conflict into a severely hostile one that gives rise to escalating violence (Anderson, Buckley, & Carnagey, 2008; Thomaes & Bushman, Chapter 11, Mikulincer & Shaver, Chapter 13, this volume).

*Using GAM to understand how perpetrators of violence are created*

Violence has often been approached by scholars from two very different perspectives, one focusing on the development of aberrant individuals who become violent criminals, the other focusing on how large segments of a population become involved in "institutionalized" violence. The habitual violent offender is the prototype of the former, whereas various genocidal events (e.g., the Holocaust, Rwanda) are exemplars of the latter. Other forms of aggression do not fit

this dichotomy so well. For example, some “terrorists” such as Oklahoma City bomber Timothy McVeigh do not seem to fit either. Larger and more persistent terrorist groups seem more institutional (Irish Republic Army, Hamas), but labeling such groups as “terrorist organizations” is to some extent more of a political statement than an objective description. From the standpoint of understanding how individuals become involved in violence against others, it may be best to avoid the political labels whenever possible, and focus research (and intervention) efforts on understanding the precursors.

A lot is known about the precursors of violence, and in our view GAM can be used to organize them all. One point to keep in mind, however, is that GAM is intended to provide an overarching “general” view of aggression. It is not a compendium of specific factors and micro-processes that are unique to each specific type of aggression and violence.

Social psychologists have long been interested in understanding how “ordinary” people can carry out horrific acts of aggression and violence. Stanley Milgram’s (1963) obedience to authority studies and Haney, Banks, and Zimbardo’s (1973) simulation of prison conditions shocked researchers and laypersons by showing how easy it is to create a situation in which people will behave aggressively toward strangers. The terrorist attacks on the World Trade Center and the Pentagon on September 11, 2001, the proliferation of suicide bombers within the Middle East, and recent instances of waterboarding and other brutal tactics used by members of the U. S. military continue to raise the question: How are terrorists, suicide bombers, and torturers created?

Subsequent chapters provide many more specific details about the precursors of specific categories of violence. Many can be summarized in a few statements. Many precursors can be seen as factors that promote the development of individuals who are capable of and predisposed

to use aggression and violence to solve conflicts (e.g., Huesmann et al., Chapter 8, Shaver et al., Chapter 4, Tackett & Krueger, Chapter 4, this volume). Other precursors are immediate situational factors (in the case of individual violence) or the current social milieu, serving in some cases as triggers (precipitating causes) or as factors that support ongoing violence (e.g., Dodge, Chapter 10, Hirschberger & Pyszczynski, Chapter 15).

Beliefs, attitudes, and expectations supportive of violence must come from somewhere. And they do. Basically, if you want to create people who are predisposed to aggression and violence, begin by depriving them of resources necessary to meet basic needs—physical, emotional, psychological, and social. Provide them with multiple examples of aggression and violence, examples in which such behavior appears to work. Desensitize them to the images, sounds, smells—in general, to the horrors—of violence by exposing them to these stimuli, both live and in electronic media form. Then provide them with a belief system that serves to dehumanize potential targets, that justifies on moral grounds any and all forms of attacks on potential targets, and that minimizes negative consequences to oneself and one's social group while maximizing positive consequences in the near future and/or in an afterlife. Finally, if you want specific forms of violence to emerge, provide training (i.e., the behavioral scripts) in those specific forms of violence. Link these violence scripts to the social support system and the belief systems that you have already provided, and you will have a group of people who are quite prepared to behave violently. Put these people into the right situation, and the desired violence will occur (Miller, 2004).

#### *Implications of GAM for Aggression between Groups of People*

GAM makes specific predictions about aggression not only between two people but also between groups of people large (e.g., nations) and small (e.g., two or more people with a defined

identity and common goal). The majority of evidence supporting GAM, however, is derived from correlational, experimental, and longitudinal research on the aggressive behavior of individuals. Increasing the number of people involved in an episode changes features of the situation in the same manner as other situational inputs (e.g., hot ambient temperatures, violent media), which in turn influences current internal states and subsequent appraisal and decision processes.

In a recent review, Meier, Hinsz, and Heimerdinger (2007) argued that groups commit and receive more aggression than individuals. Although the aggression literature is dominated by research on aggression between individuals, the available evidence on aggression between small groups supports this view (Jaffe, Shapir, & Yinon, 1981; Meier & Hinsz, 2004; Wildschut, Pinter, Vevea, Insko, & Schopler, 2003). The findings suggest that group size functions as a situational factor that produces increased levels of aggressive behavior from both the initial perpetrator and the initial target.

According to GAM, heightened aggression between groups (relative to individuals) results from increased levels of aggressive affect, arousal, or cognition. Indeed, expecting to interact with an unfriendly group increases hostile expectations (Hoyle, Pinkley, & Insko, 1989), and the presence of others increases arousal (Zajonc, 1965). Finally, terror management theory suggests additional ways in which groups will become more embedded in escalating cycles of violence (Hirschberger & Pyszczynski, Chapter 15, this volume).

#### *Government Actions and their Impact on Aggression and Violence*

Most, if not all, known human societies have governmental structures. Governments have many functions, one of which is to protect citizens against aggression and violence from perpetrators within and outside the society. Despite the good intentions behind many government

actions, governmental efforts to reduce aggression and violence often fail. Even worse, some governmental actions designed to reduce aggression and violence actually increase them. GAM helps to explain why governmental programs designed to reduce aggression and violence often fail or even enhance the likelihood that people will respond to the program by behaving more aggressively and violently.

War offers an example of how government actions can affect aggression and violence. Wars begin as a result of one or more events that affect two or more nations, frequently by causing some harm or injustice to one or both parties. Very often the precipitating events involve disputes over resources, including not only traditional “natural” resources (e.g., land, water) but psychological ones as well (e.g., access to religious sites, traditional homeland boundaries) (Avalos, 2005). One nation responds in a manner that its citizens believe is justified, whereas the other nation perceives the action to be unjustified and overly harsh. An escalating cycle of violence between nations ensues, with each retaliation growing more violent. Over time, these governmental actions cause citizens of each nation to develop aggression-relevant knowledge structures regarding the enemy. Citizens develop and display more aggressive personalities, which influence their construal and reaction to situations and change the nature of situations they will encounter in the future. As a result, it is difficult for citizens to understand how their nation’s actions can be considered “evil” by members of the enemy nation and how the enemy nation can feel justified in its retaliatory actions.

Consider how two ongoing conflicts—the U.S. “War on Terrorism” in Afghanistan and Iraq, and the Israeli-Palestinian conflict—fit GAM’s explanation of how governmental action can influence aggression and violence. The U.S. “War on Terrorism” in Afghanistan and the war in Iraq are, in large part, governmental responses to the terrorist attacks on the U.S. on

September 11, 2001 by members of al-Qaeda. Many U. S. citizens perceive the actions taken by the U.S. as justified responses to the terrorist attacks, but these same U.S. citizens appear baffled that Arab groups and other members of the Gulf region perceive U.S. governmental actions as “evil” or at least unjustified overreactions. There is also evidence that the 9/11 attacks changed aggression-related knowledge structures in a manner consistent with GAM. After the 9/11 attacks, college students showed increased positive attitudes toward war and more aggressive personalities (Carnagey & Anderson, 2007). The increased aggressive attitudes about the war and the increase in trait physical aggression persisted even a year after the terrorist attacks. These findings provide at least indirect evidence that the U.S. government’s actions in Afghanistan and Iraq affected attitudes toward war and aggressive personality traits. The broader implication is that the U.S. government’s actions created not only hostile attitudes toward Arabs and Muslims among U.S. citizens, but also had the unplanned effect of pushing many people who suffered from the U.S. military actions to join terrorist factions to retaliate against what they perceived as unwarranted and harsh attacks on their nations. The U.S. “War on Terror” may therefore have created more U.S. enemies than it killed.

The Israeli-Palestinian conflict grew out of violent outbreaks between Jewish and Arab residents of the region alternately called Israel or Palestine, a strip of land that Jews claim as their birthright and Palestinians claim as their own. Persistent fighting between Israelis and Palestinians over the course of the last 60 years shows little sign of waning (see Halperin, Chapter 16, Hirschberger & Pyszczynski, Chapter 15, and Solomon, Chapter 21, this volume). Although most members of each group perceive their own leaders’ actions as justified, they have difficulty understanding how members of the enemy group perceive their government’s actions as justified. The leaders of both groups acknowledge that their actions aimed at reducing inter-

group violence may actually increase the level of violence between the groups. For example, Israel's top generals and intelligence officers have admitted that their military actions in response to Palestinian suicide bombings have had the effect of creating additional Palestinian terrorist cells (Moore, 2003). Thus, GAM provides a useful framework for understanding how governmental actions can produce an escalating cycle of violence between groups and even nations.

These two examples illustrate another key point about escalatory violence. When the two parties in a conflict have vastly different resources, their forms of violence and of escalation will vary. al-Qaeda cannot launch a conventional war against the West, so its attacks include unconventional forms of violence such as roadside or suicide bombings. Similarly, the Palestinians cannot win a conventional war with Israel, so they resort to terrorist tactics.

#### *Using GAM to Reduce Aggression and Violence*

Thus far we have dwelled on how GAM can help to describe, predict, and explain aggressive behavior. GAM can also help researchers, government officials, and laypersons understand how to control or prevent aggression.

The most likely points for intervention will vary from case to case, but several stand out. In the case of groups or individuals already in conflict, the first step should be to stop the violence cycle. Interventions by third parties may be necessary. A second step should be to ensure that people's basic needs are met. A third step would be to address people's symbolic needs (e.g., by giving them access to religious sites).

Longer-term interventions should focus on reducing the risk factors that cause individuals to be predisposed to aggression. This is likely to be most effective in the case of individuals who have not already become aggression-prone, either in general or specifically towards an enemy

outgroup. Thus, one must provide for the healthy development of children—physical and psychological. This includes the learning of basic attitudes, beliefs, and values that foster positive social interactions—even with outgroups—and encourage nonviolent problem solving.

Although retraining people who are already violence prone is more difficult, research in the violent crime domain has found that intensive interventions with high-risk youth can be highly successful (U.S. Department of Health and Human Services, 2001). This is a very different conclusion from the one that most scholars and public policy makers in the U.S. held as recently as the late 1980s and early 1990s.

### *Conclusions*

In sum, GAM integrates several domain-specific theories of human aggression to form a general understanding of why people behave aggressively. It identifies a wide range of factors that influence the development of aggressive tendencies over time. It explains how highly aggressive contexts are created and maintained through violence escalation cycles. It clarifies why government actions designed to bring about peace often fail, creating even more violent conflict. And perhaps most important, it offers possible solutions for preventing and reducing aggression and violence both between individuals and groups.

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Figure 1. *The General Aggression Model: Episodic processes* (Anderson & Bushman, 2002).

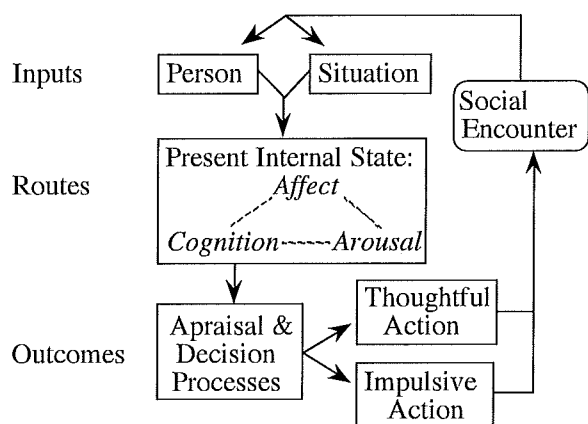


Figure 2. Appraisal and decision processes: Expanded view (From Anderson & Bushman, 2002).

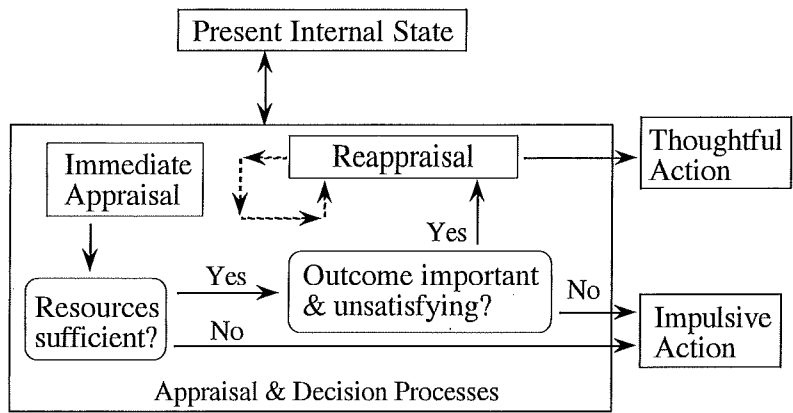


Figure 3. The General Aggression Model: Overall view (From Anderson & Carnagey, 2004)

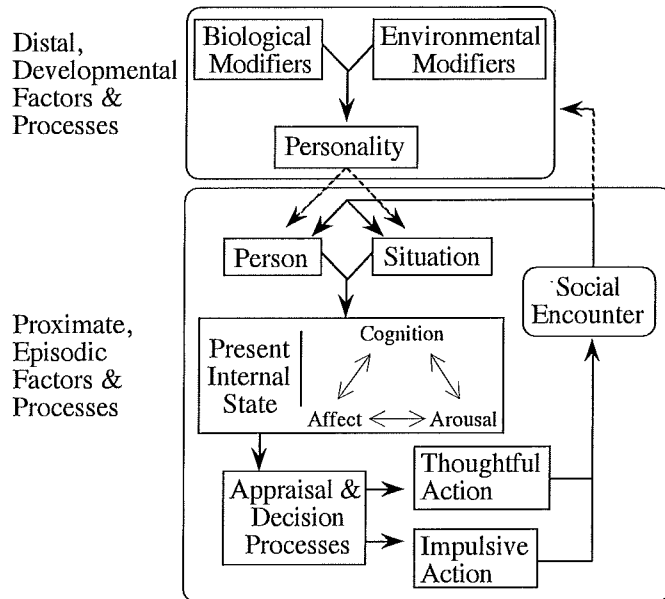


Figure 4. Violence Escalation Cycle (Anderson, Buckley, & Carnagey, 2008)

