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Is It Time to Pull the Plug on the Hostile Versus Instrumental Aggression Dichotomy?

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Psychologists have often categorized human aggression as hostile or instrumental. Hostile aggression is “hot,” impulsive behavior that is motivated by a desire to hurt someone; instrumental aggression is “cold,” premeditated behavior used as a means to some other end. This dichotomy was useful to the early development of aggression theories and continues to capture important features of nonhuman aggression, but it has outlived its usefulness as a descriptor of fundamentally different kinds of human aggression. It is confounded with the automatic-controlled information-processing dichotomy, and it fails to consider aggressive acts with multiple motives. Knowledge structure models of aggression easily handle these problems. Taking extreme measures to preserve the hostile-instrumental dichotomy will delay further advances in understanding and controlling human aggression. Therefore, this seems a proper time to “pull the plug” and allow the hostile-instrumental aggression dichotomy a dignified death.

If you strike a child, take care that you strike it in anger, even at the risk of maiming it for life. A blow in cold blood neither can nor should be forgiven.

—George Bernard Shaw, *Man and Superman*

The distinction between impulsive aggressive acts committed in “hot blood” and premeditated aggressive acts committed in “cold blood” has a long history in psychology and an even longer one in the U.S. legal system. In this article, we briefly note the problems with the premeditated--impulsive distinction that have led to its abandonment in many legal contexts. We then describe why the parallel dichotomy in psychology—between instrumental and hostile aggression—may also have outlived its usefulness and how a cognitive knowledge structure approach may be theoretically and empirically more feasible. Finally, we note some of the practical ramifications of this change in theoretical view.

The Premeditated--Impulsive Distinction in Law

In 1794, the Pennsylvania legislature made a distinction between first and second degree murder to limit the use of the death penalty.

All murder, which shall be perpetrated by means of poison or by lying in wait, or by any other kind of wilful, deliberate and premeditated

killing, or which shall be committed in the perpetration or attempt to perpetrate any arson, rape, robbery, or burglary, shall be deemed murder in the first degree; and all other kinds of murder shall be deemed murder in the second degree. (Keedy, 1949, p. 773).

Many other states copied the Pennsylvania statute, and the concept that murder that is premeditated as worse than murder that is not premeditated became integrated into the U.S. legal system.

For over a century, criminal lawyers have wondered whether the distinction between cold-blooded premeditated murders and hot-blooded impulsive murders really made any sense from a social policy point of view. In 1883, for example, the British jurist, Sir James Fitzjames Stephen, wrote

As much cruelty, as much indifference to the life of others, a disposition at least as dangerous to society, probably even more dangerous, is shown by sudden as by premeditated murders. The following cases appear to me to set this in a clear light, A man passing along the road, sees a boy sitting on a bridge over a deep river and, out of mere wanton barbarity, pushes him into it and so drowns him. A man makes advances to a girl who repels him. He deliberately but instantly cuts her throat. A man civilly asked to pay a just debt pretends to get the money, loads a rifle, and blows out his creditor's brains. In none of these cases is there premeditation unless the word is used in a sense as unnatural as “aforethought” in “malice aforethought,” but each represents even more diabolical cruelty and ferocity than that which is involved in murders premeditated in the natural sense of the word. (Stephen, 1883, p. 94)

More recently, Judge (later Justice) Cardozo's 1931 essay (as cited in LaFave & Scott, 1986, p. 645) suggested that the distinction between first and second degree murder was too vague and obscure for juries to understand and should therefore be abolished.

In 1962, the Model Penal Code was offered as a model of how criminal law statutes could be rewritten to improve them from a policy point of view (American Law Institute, 1962). In the Model Penal Code, no distinction is made between first and second degree murder. Both types of murder are now simply classified as murder (see Section 210 of the Model Penal Code; American Law

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Institute, 1962). The Model Penal Code has influenced some states to reform their criminal laws by, among other things, abandoning the premeditation-deliberation formula as a basis for distinguishing among degrees of murder.

The U.S. legal system also distinguishes between murder and voluntary manslaughter. Voluntary manslaughter involves the intentional killing of another while in the heat of passion, causing a temporary loss of self-control (LaFave & Scott, 1986, p. 654). Before a killing can be reduced from murder to voluntary manslaughter, four conditions must be met: "(1) There must have been a reasonable provocation. (2) The defendant must have in fact been provoked. (3) A reasonable (person) so provoked would not have cooled off in the interval of time between the provocation and the delivery of the fatal blow. And (4), the defendant must not in fact have cooled off during that interval" (LaFave & Scott, 1986, p. 654). If any of these criteria are not met, the killing is classified as murder.

Even this distinction between murder and voluntary manslaughter is not as clear as it appears. What constitutes a "reasonable" provocation? Most states have a restricted list of provocations that can be classified as "reasonable" (e.g., adultery of spouse, assault on close relative). Other states allow a jury to decide if a reasonable person would have been motivated to act like the defendant by the particular provocation. Moreover, being provoked does not preclude having premeditation. For example, a person who broods over an insult for 3 days, grabs a gun, and kills someone could easily be a premeditated murderer, even if the person's motive for action was anger and revenge, rather than something more instrumental (e.g., collection of insurance money). Some states specify that a murder is premeditated if the killer thinks about the act ahead of time even for a "matter of seconds" (e.g., *State v. Stewart*, 1964).

How long must the cooling-down period be? If a rape victim kills the rapist 30 seconds after the rape, the homicide would probably be classified as voluntary manslaughter. However, what if the rape victim waits 30 minutes, a day, or a week?

In summary, although U.S. law continues to draw some distinctions between hot-blooded and cold-blooded killing, the legal system has struggled with the significance of this distinction. In general, the law does not focus on motive in determining what category of homicide has been committed.¹

The Hostile-Instrumental Distinction in Psychology

Psychologists have made a distinction between hostile (also called "affective," "angry," "impulsive," and "retaliatory") and instrumental aggression (e.g., Buss, 1961; Feshbach, 1964; Hartup, 1974). Hostile aggression is impulsive, angry behavior that is motivated by a desire to hurt someone. *Instrumental aggression* is premeditated, calculated behavior that is motivated by some other goal (e.g., obtain money, restore one's image, restore justice).

The hostile-instrumental aggression dichotomy is referenced in virtually all aggression textbooks (e.g., Baron & Richardson, 1994; Baumeister, 1997; Berkowitz, 1993; Geen, 1990; Geen & Donnerstein, 1998; Tedeschi & Felson, 1994; Zillmann, 1979), in virtually all social psychology textbooks (e.g., Aronson, Wilson, & Akert, 1999; Baron & Byrne, 2000; Brehm, Kasson, & Fein, 1999; Myers, 1999; Taylor, Peplau, & Sears, 2000), and in the titles or abstracts

of 239 peer-reviewed journal articles (based on a search of the PsycLIT computer database from 1961-2000).

The hostile-instrumental aggression dichotomy was useful to the early development of aggression theories and interventions, but we believe it has outlived its usefulness. In fact, we believe that use of this dichotomy impedes further advances in understanding and controlling human aggression.

What is Aggression?

Any discussion of human aggression necessarily begins with a definition.² In sports and in business, "aggressive" is frequently used when "assertive," "enthusiastic," or "confident" would be more accurate. Within psychology, aggression is also defined in different ways. The most common difference is whether the definition includes the concept of intent to do harm. Although most definitions include intent as a necessary feature of aggression, strict behavioral definitions exclude intent because it refers to an unobservable internal state.

We define *human aggression* as any behavior directed toward another individual that is carried out with the proximate (immediate) intent to cause harm. In addition, the perpetrator must believe that the behavior will harm the target and that the target is motivated to avoid the behavior. (For similar aggression definitions, see Baron & Richardson, 1994; Berkowitz, 1993; Geen, 1990.)

This definition does not assume that all harmful behaviors are aggressive. In fact, it is easy to cite real-world instances in which harmful behaviors are prosocial. For example, the pain caused by a dentist during a root canal procedure is not aggressive because the proximate intent of the dentist is to help, not hurt, the patient. Similarly, the pain administered in sexual masochism is not aggressive because the perpetrator knows that the victim is not motivated to avoid it—indeed, the pain is actively solicited in service of a higher goal (Baumeister, 1989).

Our definition of aggression differs in three ways from most earlier definitions of aggression. First, it distinguishes between proximate (immediate) and primary (ultimate, superordinate) goals. In our definition, intention to harm is still a necessary feature of all aggression, but only as a proximate goal. Second, our definition still allows for distinctions between different types of aggression, but does so at the level of primary goal. Third, our definition does not assume that any particular act of aggression has only one primary goal. An aggressive behavior may well be the result of two or more simultaneously active goals, although there

¹Of course, motive is still crucial to the detection of the perpetrator and in the trial process. That is, detectives use motives to generate and narrow down lists of suspects, and both prosecuting and defense attorneys use motives to convince jurors of the guilt or innocence of a person on trial.

²This article is not concerned with aggression in animals other than humans because we believe that the hostile-instrumental dichotomy continues to be a valuable categorization scheme in the nonhuman aggression literature (Lindsay & Anderson, 1998; Renfrew, 1993). Although humans certainly share aggression-related evolutionarily developed emotion and action systems, we believe that human learning, language, and thinking capacities, especially the development of full consciousness that occurs around 3-4 years of age, override (or cover up) such clearly distinguishable types of aggression (Astington, Harris, & Olson, 1988; Dennett, 1991; Leslie, 1987; Wegner & Bargh, 1998).

are cases in which one goal clearly predominates, as in older distinctions between purely hostile and purely instrumental aggression.

Main Differences Between Hostile and Instrumental Aggression

According to the dichotomous view, there are at least three differences between hostile and instrumental aggression: (a) the primary goal of the behavior, (b) the presence of anger, and (c) the extent of thought and planning involved. We discuss each of these differences in turn. We also use a real-life example to illustrate the difficulties of categorizing aggression as hostile or instrumental on the basis of these three differences.

Primary Goal

In the dichotomous view, one difference between hostile and instrumental aggression is the primary goal of the aggressive behavior. For hostile aggression, harm is the end goal. For example, school yard fights often appear to be primarily motivated by a desire to hurt one's antagonist, even at the expense of known penalties for fighting. For instrumental aggression, harm is the means to some other end. For example, a hit man may kill another person merely to get money.

One of the difficulties with the traditional dichotomous view concerns this distinction in goals. Assigning the goal of harming the victim primary status is frequently arbitrary and problematic. Because aggression can be motivated by many different goals, much hostile aggression can alternatively be viewed as instrumental aggression (Tedeschi & Felson, 1994). Some of the goals that motivate aggression include (a) attempts to reestablish self-esteem, private self-image, or public image; (b) attempts to express grievances, establish justice, or right a perceived wrong; and (c) attempts to obtain benefits such as money, information, goods, services, or safety (Tedeschi & Felson, 1994).

Anger

A second difference between the two types of aggression, according to the dichotomous view, is the presence of anger. Hostile aggression always includes anger, whereas instrumental aggression does not. However, what about well-planned acts of revenge carried out with apparent cold determination some time after the instigating incident? Such acts of revenge are clearly rooted in anger, but if the initial anger reaction has dissipated by the time of the revengeful act, or if the revengeful act serves additional goals, should the act be classified as instrumental instead of hostile? The dichotomous view requires a choice between these two types of aggression, but often one is not more clearly correct than the other.

Planning and Calculating

A third difference inherent to the dichotomous view concerns the extent of thought and planning involved. Hostile aggression is viewed as impulsive, unplanned, hot behavior. Consequences of various behavioral options are given little (if any) consideration. By contrast, instrumental aggression is viewed as premeditated, planned, cold behavior. Instrumental aggression typically involves at least some calculation of potential costs and benefits, as well as

construction and mental testing of plans to aid in selection of the best alternative. One difficulty with the dichotomous view is that some behaviors are "warm," rather than hot or cold. How much planning and premeditation is required before an aggressive act can be considered instrumental?

A Real-Life Example: Is It Hostile or Instrumental Aggression?

On April 20, 1999, the 110th anniversary of Adolf Hitler's birthday, Eric Harris and Dylan Klebold launched a massacre in their high school in Littleton, Colorado, murdering 13 and wounding 23 before turning the guns on themselves. The Columbine High School massacre illustrates the difficulties that arise when aggressive acts are categorized as hostile or instrumental. Harris and Klebold were repeatedly angered and provoked by the athletes in their school. Their planning of the massacre, however, was elaborate; the time frame for the planning was more than a year, they did research on weapons and explosives, they made drawings of their plans, they conducted rehearsals, and many of their overt behaviors during the shooting were probably automatic and over-learned. Was this an act of hostile or instrumental aggression?

Major Problems With the Hostile-Instrumental Aggression Dichotomy

The two major conceptual problems with the hostile--instrumental dichotomy are (a) it is confounded with the automatic-controlled information processing dichotomy, and (b) it excludes aggressive acts based on multiple motives. We discuss each of these problems in turn.

Confounding Types of Aggression With Types of Information Processing

Cognitive and social psychologists have studied the differences and the interface between automatic and controlled information processing (e.g., Kahneman & Treisman, 1984; Schneider, Du-mais, & Shiffrin, 1984; Schneider & Shiffrin, 1977; Shiffrin & Schneider, 1977; Wegner & Bargh, 1998). A recent integration of that literature from a social psychological perspective provides useful insights for the study of human aggression (Wegner & Bargh, 1998).

Controlled processes (also called "consciously controlled processes") have the following four key features: "(a) conscious intention of what the control will accomplish, (b) a sense or feeling of control, (c) an expenditure of effort in the control action, and (d) a (closed-loop) monitoring of the control output" (Wegner & Bargh, 1998, p. 463; outline format added). Closed-loop monitoring refers to a feedback process in which the actual output is compared with the intended output, and discrepancies from the intended output yield adjustments in behavior designed to reduce the discrepancies. A commonly used metaphor of a closed-loop process is the household thermostat, which adjusts heating and cooling processes to match actual temperature to a set or target temperature.

Wegner and Bargh (1998) pointed out that automatic processes are not the polar opposite of controlled processes. Basically, any process that does not contain all four required features of con-

trolled processing is, in part, an automatic one. The most extreme form of automatic process has none of these four features and can be characterized by three other features: It is (a) autonomous (e.g., once started it runs by itself without the need for conscious guidance), (b) fast, and (c) efficient (e.g., requires little attentional capacity). Therefore, we may conceive of the controlled-automatic distinction as being a continuum, with fully controlled processes being those that contain all four required features, and fully automatic processes being those that contain none of the four controlled process features but all three of the automatic process features.

Two types of automatic processes are preconscious perceptual categorization and skilled behavior enactment (Wegner & Bargh, 1998). Both develop from repeated and consistent experiences with the environment. For example, if the same phone number is dialed hundreds of times, it can eventually be processed autonomously (e.g., without conscious thought), quickly, and efficiently (e.g., while thinking about other tasks)-in a word, *automatically* (Schneider et al., 1984). Some automatic processes are set in motion by stimuli themselves (i.e., they are goal independent), whereas others are triggered by conscious intentions or goals.

How is this relevant to the present discussion? The hostile-instrumental aggression dichotomy is confounded with the automatic-controlled information processing distinction. Hostile aggression is, by definition, automatic-it is unreasoned, impulsive, uncontrollable, and spontaneous. By contrast, instrumental aggression is, by definition, controlled-it is reasoned, calculated, and premeditated. There are, however, some internal contradictions in this dichotomous view of aggression. For example, consideration of the potential consequences of a behavior is a characteristic of instrumental (but not of hostile) aggression, whereas anger is a concomitant (and possibly a cause) of hostile (but not instrumental) aggression. However, how should one classify an instance of anger-based aggressive behavior that would occur when the intended target is unarmed but that would not occur if the target was carrying a handgun? The responsiveness to potential negative consequences of one's own aggressiveness against the target person (i.e., getting shot by that person) suggests an instrumental classification, but the anger basis of the aggressive impulse suggests a hostile classification. In brief, the hostile-instrumental dichotomy cannot accurately categorize many instances of human aggression because (a) it requires hostile aggression to be automatic and instrumental aggression to be controlled, and (b) some obviously hostile aggression has controlled features and some obviously instrumental aggression has automatic features.

Confusion Over Aggression Motives

A second major problem with the hostile-instrumental aggression distinction is that it has difficulty accounting for three distinct motive-behavior relations. Specifically, the same motives can drive either type of aggression, different motives can drive the same aggressive behavior, and many aggressive behaviors are mixtures of hostile and instrumental aggression (also see Geen, 1995).

Same motive, different type of aggression Consider a man whose masculinity has just been insulted in front of a group of peers, perhaps by being called a coward. The insulted man may respond immediately and without much thought by punching (or

stabbing or shooting) the provocateur, while experiencing (and demonstrating) considerable anger. Alternatively, the insulted man may not respond immediately but may instead plan some revengeful act of aggression to restore his self-image and social image. In the first case, the behavior would be classified as hostile aggression. In the second case, the behavior would be classified as instrumental aggression. However, the same motive appears operative in both cases-the motivation to restore a positive self-image and social image. If such a motive did not exist, then the insult would not have caused the retaliation.

Different motives, same aggressive behavior. Now consider a case where a child is observed pushing another child off a tricycle. Is the push an act of hostile or instrumental aggression? Different motives may be at work, producing different types of aggression but the same outward behavior. The aggressive child may be using force merely as a way of getting a desired toy. There may be little or no anger involved. Alternatively, the aggressive child may be angrily trying to hurt the target child, perhaps in retaliation for frustrating the aggressive child's desire to ride the tricycle.

Mixed motives. Although the prior two examples illustrate difficulties in trying to classify a given aggressive behavior as either hostile or instrumental, an even more basic difficulty with the dichotomous view of aggression is classifying behaviors with mixed motives. In the example involving the insulted man, one could argue that the immediate (hostile) punch was thrown in service of the broader goal of repairing self-image and social image. This makes the behavior look somewhat instrumental. Furthermore, how immediate or unplanned does hostile aggression have to be? Well-rehearsed decisions-those that have been made with great frequency in the past-can be made very quickly, essentially automatically, so the punch may well have involved some quick calculations of costs and benefits. Such quick, well-practiced decisions can be made without awareness. For instance, if a person holding a loaded handgun had hurled the insult, would the punch have been thrown? If not, does not that suggest an instrumental component because the man considered the consequences of his behavior? Although the automaticity of the response makes it look like hostile aggression, the calculation of costs and benefits makes it look like instrumental aggression. The dichotomous view cannot resolve these internal contradictions.

Similar ambiguities exist with the tricycle example, with the Columbine High School killings, and with many other instances of aggression as they occur in real-world settings. The bottom line is that many individual acts of aggression usually serve more than one motive and have both an anger and a planning component. Therefore, the hostile-instrumental aggression dichotomy produces major difficulties in understanding human aggression.

A Knowledge Structure Approach

Knowledge structures are organized packets of interrelated information stored in semantic (long term) memory. They are subject to the same memory processes involved in major network models of semantic memory, such as priming effects and development of automaticity (e.g., Bargh, 1996; Collins & Loftus, 1975; Higgins, 1996; Shiffrin & Schneider, 1977; Wegner & Bargh, 1998).

Knowledge structures themselves result from frequent activation of a set of related concepts. Over time, the repeated coactivation results in the set becoming so strongly linked that activation

of a portion of the set automatically activates the whole set. The most commonly discussed knowledge structures are schemas (e.g., Fiske & Taylor, 1991) and scripts (e.g., Abelson, 1981; Schank & Abelson, 1977). **Schemas** are knowledge structures that represent substantial information about a concept, its attributes, and its relations to other concepts. The concept, for example, could be the self, another person, a social category (e.g., Republicans), or an object.

Scripts are knowledge structures that contain information about how people (or other objects) behave under varying circumstances. They include many types of information, such as motives, intentions, goals, situational features that enable (or inhibit) certain behaviors, and the causal sequence of events, as well as the specific behaviors themselves. Scripts define situations and guide behavior: The person first selects a script to represent the situation and then assumes a role in the script. One example is a restaurant script (i.e., enter restaurant, go to table, look at menu, order food, eat food, pay for food, leave tip, exit restaurant; see Schank & Abelson, 1977). Scripts can be learned by direct experience or by observing others (e.g., parents, siblings, peers, mass media characters).

Knowledge structure models have been explicitly used in several contemporary theories of human aggression, including discussions of developmental issues (Anderson, 2000; Anderson, Benjamin, & Bartholow, 1998; Anderson & Dill, 2000; Berkowitz, 1990, 1993; Crick & Dodge, 1994; Geen, 1990; Huesmann, 1986, 1988, 1998). People learn schemas and scripts that influence how they perceive, interpret, judge, and respond to events in their lives. These various knowledge structures develop over time, beginning in early childhood. The pervasiveness, interconnectedness, and accessibility of any learned knowledge structure is largely determined by the frequency with which it is encountered, imagined, and used. With great frequency, even complex perception-judgment-behavior knowledge structures can become automatized—so overlearned that they are applied automatically with little effort or awareness. The flexibility of content and the automaticity of operation of knowledge structures help us understand the difficulties that arise from the dichotomous view of hostile versus instrumental aggression.

Key Advantages of Knowledge Structure Aggression Models

The two major problems with the hostile-instrumental aggression dichotomy can be easily handled with a knowledge structure approach to human aggression.

Confounding Types of Aggression With Types of Information Processing

In knowledge structure models, there is no inherent confounding of aggression types (hostile vs. instrumental) with information processing types (automatic vs. controlled). Complex decisions can be made automatically or with careful thought; so can affect-laden decisions. Frequent activation of a knowledge structure results in a lowered threshold of activation, making it chronically accessible as well as increasing the automaticity of the various decisions carried out by the knowledge structure (Bargh, 1996; Wegner & Bargh, 1998). Just as a habitually hostile person has

developed aggressive scripts for understanding and reacting to various life events, an instrumentally aggressive person has developed scripts involving reaching goals through aggressive means. Thus, instrumental aggression scripts can become automatized with practice, including the automatic processing of cost-benefit information. Instrumental aggression scripts may also include other traditionally hostile components such as anger, most likely as an action rule used to decide, for example, whether one is angry enough to behave aggressively (Schank & Abelson 1977).

Similarly, knowledge structure models allow the inclusion of traditionally instrumental components into hostile aggression. Research has demonstrated that people often use their affective state to guide inference and judgment processes (Forgas, 1992; Schwarz & Clore, 1996). Furthermore, whether an initial judgment or decision is accepted or rejected and whether additional cognitive resources are devoted to understanding a particular event seem to be influenced by affect (Anderson, Krull, & Weiner, 1996). Thus, a person might learn a revenge script that is based on anger but that includes coldly calculating the optimal time, place, and method for exacting revenge.

Confusion Over Aggression Motives

The problems involving confusion over motives underlying a given aggressive behavior is at least partially resolved by the knowledge structure approach. Specifically, multiple motives may be a part of the same aggression script or interpretative schema. Similarly, the problem of multiple types of aggressive behaviors having the same motive is also easily handled—different people will use the different behavioral scripts that are most accessible to them. However, the problem of how to accurately identify underlying motives by simply observing a particular aggressive act is not resolved.

The Role of the Hostile-Instrumental Aggression Distinction on Aggression Theories and Interventions

That Was Then

As a consequence of their defining features, hostile and instrumental aggression differ in the kinds of variables that influence their occurrence. This is presumably why the dichotomous view was created in the first place. Many hostile aggression models view anger as the key mediating variable. Thus, understanding and modifying hostile aggression requires a focus on variables that influence anger, such as provocation, frustration, and discomfort.

Key mediators of instrumental aggression are the person's beliefs concerning costs and benefits of aggressive behavior (outcome beliefs) as well as beliefs about one's ability to carry out the aggressive behavior (efficacy beliefs; e.g., Bandura, 1973, 1983). Thus, understanding and modifying instrumental aggression requires a focus on variables that influence either outcome or efficacy beliefs. A person's outcome beliefs can be influenced by many factors, such as observational learning (e.g., watching role models on television who successfully use aggression to get desired outcomes), indirect experience (e.g., playing violent video games; Anderson & Dill, 2000), and direct experience (e.g., using physical force to obtain desired objects). Similarly, a person's efficacy beliefs can be influenced by practicing the aggressive

behavior in simulated (e.g., video game, Army basic training), safe (e.g., karate class), or real-world contexts.

This Is Now

The hostile-instrumental aggression dichotomy leads to very distinct approaches to prevention and modification. Thus, in most real-world cases, where there are mixed motives and many contributing factors, the simplistic dichotomous view will lead to inadequate attempts to control, modify, or prevent aggressive behavior. For example, the hostile aggression focus on anger suggests that anger management training would be the most effective way to reduce school violence. However, such a narrow approach would have relatively little impact because it ignores the fact that much school violence has a strong instrumental component and therefore fails to address the host of learning and efficacy variables involved in such mixed-motive crimes.

A complete understanding of the Columbine High School killings, and other more common violent crimes, requires attention to a much more complex mix of motive, opportunity, and social milieu (e.g., Aronson, 2000). A realization that much anger-based hostile aggression is also based on a desire to set things right (justice) or to repair perceived damage to a public or private self-image leads to a more thorough search for variables that influence these more instrumental motives. What variables create feelings of persecution, a desire for revenge? What makes people believe that aggressive solutions are both proper and efficacious? This more complex view of the causes of human aggression has resulted in more effective therapies designed for violent juvenile offenders (e.g., Tate, Reppucci, & Mulvey, 1995; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998). We believe that the more complex view of human aggression allowed by knowledge structure models will advance theory, prevention, and intervention in this domain.

Summary

The hostile versus instrumental aggression dichotomy was very useful in earlier models of human aggression. It helped researchers and practitioners grasp the complex problem of human aggression and focused attention on distinctions that were important to a first-generation paradigm of the causes and controlling factors involved. However, we believe that this distinction has become reified and that the rigidity of the resulting dichotomy now inhibits further development and refinement of a second-generation paradigm of human aggression. We believe that this second-generation paradigm, based on a knowledge structure approach, resolves a number of difficulties found in the aggression domain and sets the stage for major improvements in understanding, preventing, and controlling unwarranted human aggression. Space limitations preclude a description of such a second-generation paradigm, but the general affective aggression model (e.g., Anderson & Dill, 2000) is one such model that already applies as easily to mixed motive aggression and to more purely instrumental aggression as it does to hostile aggression.

We do not intend to denigrate research that focuses on variables relevant to one type of aggression to the exclusion of other variables and other types of aggression. Placing such variables under the scientific microscope has been and will continue to be a key

strategy in furthering the field's understanding of human aggression. However, we believe that even such basic research will benefit from keeping in mind a more complex and general overview of human aggression. The hostile-instrumental dichotomy has lived a long and productive life. It is now time to pull the life-support plug on this dichotomy; it deserves a dignified death rather than continued extreme measures to prolong its existence.

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