

UNDERSTANDING AND REDUCING COLLECTIVE VIOLENCE

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ABSTRACT: Collective violence (including terrorism, gang warfare, war and genocide) is a critical concern worldwide. This paper explores the scientific roots of acts of collective violence to the extent they can currently be identified, and elaborates strategies that may have power for preventing and effectively responding to such acts, focusing particularly but not exclusively on so-called terrorist acts. The approach applied here is rooted in the contemporary science of behavior analysis and its emerging subdiscipline, the scientific analysis of cultural practices. Contemporary behavior analytic science indicates that critical links in the interlocking behavioral and cultural chains that shape and maintain violent acts and reactions to them are often overlooked or misunderstood. As a result, decision-makers are led to believe that they have available only an artificially small set of apparent options. The analysis suggests that those strategies that appear most likely to be effective are often unrecognized and underemphasized, and that certain of the most commonly relied upon strategies are likely to produce weak effects, prove counterproductive, or be accompanied by very costly side-effects. Following these analyses, the paper sketches a program of research for deepening current knowledge and identifying, testing, and refining interventive strategies that in the aggregate might produce meaningful (and possibly dramatic) decreases in collective violence over the next several decades, reversing current international trends.

Key words: Collective violence, terrorism, cultural analysis

Collective violence (terrorism, gang warfare, war, and genocide) is clearly an increasingly serious concern in much of the world. Such violence has been an issue to a greater or lesser extent ever since one human group came into contact with another, although its extent in early times remains controversial (Ferguson, 2003; "War of Words About War," 2003). Modern communication, transportation, and technology (including widespread availability of increasingly lethal weapons, the development of so-called "weapons of mass destruction," and other advances in killing and destructive technologies), however, have dramatically increased potential costs incurred during and following collective violence. An enormous amount of resources (financial, environmental, and human) has been devoted to the science of killing by governments, arms manufacturers, international terrorist networks, and paramilitary groups. Economically driven processes related to globalization (growing income inequities, the spread of violent media, and expanded arms and drug trades) also contribute to escalating patterns of violence worldwide (Buvinic & Morrison, 2000). In one somewhat bizarre example, young paramilitary fighters in Ivory Coast model themselves after US "gangsta" culture (Packer, 2003). Heroes and role models for these "freedom fighters" include the

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boxer and convicted felon Mike Tyson, and the rapper Jay-Z (2001 Grammy for Best Rap performance for Duo or Group for “Big Pimpin”). The violence in Ivory Coast, however, as in so many other places, is terribly real.

The natural responses of one group to violent threats or actions by another—whether those groups are street gangs, terrorist networks or nation-states—are generally to (a) establish a balance of threat, (b) take preemptive action, or (c) strike back in kind—all forms of what is technically termed *countercontrol* (Delprato, 2003). This is not to suggest that actions taken by members of these disparate groups are morally equivalent, but certain of the behavioral dynamics involved are common. Recent advances in the science of behavior can help to explain why humans turn so quickly to these alternatives, why they are in a real sense “natural” (Sidman, 2001). In the contemporary world, however, the potential costs of relying on these nearly automatic responses—levels of casualties and desperate pain; loss of human potential, trust and personal integrity; destruction of cultural and economic systems, and ultimately escalating violence—have become excessively high.

At the same time, emerging scientific work may be helpful for understanding the dynamics of collective violence, as well as for constructing alternative, potentially more effective, strategies to deal with it. Contemporary behavior analytic science indicates that critical links in the interlocking behavioral and cultural chains that shape and maintain violent acts and reactions to them are often overlooked or misunderstood. As a result, decision-makers are led to believe that they have available only an artificially small set of apparent options. In this paper, we examine the context and dynamics of collective violence, with a particular emphasis on terrorist action. While there is much that we do not know, it is becoming clear that a thoughtful scientific analysis can provide useful guidance, and suggests critical directions for further research that could progressively refine that guidance.

UNDERSTANDING ACTS OF COLLECTIVE VIOLENCE

Several bodies of contemporary scientific knowledge, particularly the behavior analytic and cultural analytic sciences, can contribute to an understanding of the dynamics of collective violence. Especially critical is an extensive body of work accessibly summarized by Murray Sidman (2001) related to the dynamics of coercive actions and their fallout. Sidman’s work clarifies the importance of looking at both immediate (often apparently positive) and long-term (often destructive) effects of relying on coercive and retaliatory processes. As discussed below, also essential is the phenomenon technically labeled “countercontrol” (Delprato, 2003; Skinner, 1953), in which human beings who experience aversive control naturally act—or often react—to control their controllers. Recent work clarifying how groups come to see each other as threats¹ is also valuable for

¹ Technically, this involves the formation of *equivalence relations* or *relational frames* (Hayes, Niccolls, Masuda, & Rye, 2002; Sidman, 1994) and the processes by which behavior comes under the control of verbal rules (Malott, Malott, & Suarez, 2003).

reaching a detailed understanding of the processes involved (e.g., Dixon, Dymond, Rehfeldt, Roche, & Zlomke, this issue).

Figure 1 is a simplified diagram introducing some of what is currently known about the dynamics of violent action at the level of an individual participant in an act of collective violence. Although a great deal more technical detail is important to a full analysis, even this preliminary image indicates where many of the issues lie. A number of antecedent events and conditions are associated with the act, as are a number of concurrent and postcedent events and conditions. The primary classes of such events and conditions are briefly described below, followed by a discussion of the implications of this analysis for developing responses to such classes of collective violence as international terrorism.

Occasions for Action

Beginning in the upper left, acts of collective violence usually are initiated when the individual participant is ordered or encouraged to act by someone in a leadership position. The order¹ serves as a signal that, roughly, “If you act now, positive consequences will follow,” and in many cases, “In addition, if you do not act, negative consequences will follow.” In tightly organized and disciplined groups like modern armies, desirable consequences often will only follow the act if it has been ordered—soldiers are usually not encouraged to initiate attacks on their own. In less structured networks including some terrorist and special forces groups in which independent actions are in some cases encouraged, explicit orders may not be required. The availability of a target of opportunity may, for members of such groups, function as an occasion for action. Occasions signal the availability of desirable consequences, including for example positive social recognition and escape from aversive events that might otherwise occur. Many members of street gangs, for instance, participate in violent acts because they are threatened with violence against themselves if they fail to participate, and refusal to follow a direct order in the military also places one at serious risk. Note that the order therefore sets the occasion, but is also one of many motivating antecedents that may be present.

Motivating Antecedents

Considerable research is now being conducted in the area of motivating antecedents.² Behavior science suggests that a participant in an instance or in a

¹ Technically, the occasion—the order in this case—is termed a *discriminative stimulus*.

² Technically, motivating antecedents are known as *establishing* and *abolishing operations*. Such operations both increase or decrease the valence of consequences of an action, and make that action more or less likely to occur (Michael, 1993).

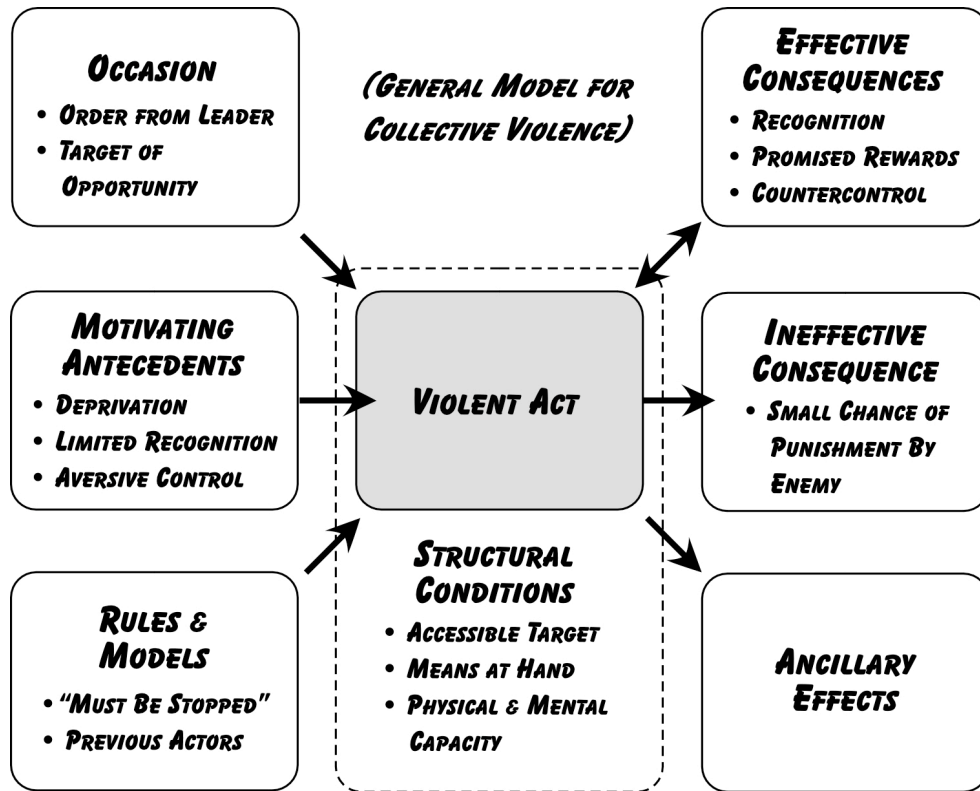


Figure 1. A contingency diagram clarifying the factors that support acts of collective violence.

Campaign of collective violence is only likely to act if the probable consequences of such action are valued or motivating. For many (young persons in particular) across a wide range of cultures, taking action viewed as brave and consistent with group values may lead to respect from peers and recognition by leaders, which can be highly motivating. Deprivation or the threat of loss of something highly valued can also be powerful motivating forces for action among human beings (Michael, 1993). Relative economic deprivation is one example, but so is the possible loss of more abstract values (freedom, or the right to practice one's religion).

Such experiences of deprivation are deeply rooted in culture, and may be difficult for persons outside of a particular cultural framework to comprehend. For example, Iraqi captors of US pilots in the recent war in Iraq were reported to have accused the pilots, with considerable feeling, of "bring[ing] whiskey and pornography." Their point, despite jokes on late night talk shows, was not that the pilots carried a hidden stash on their plane. Rather the culture that the pilots represented was viewed as threatening a set of religious beliefs important to the captors, and reflected the "moral degeneracy and consequent weakness of Western civilization" (Lewis, 2003, p. 22), a degeneracy that many in the Muslim world believe is being forced upon them by the West. More universal forms of

deprivation, of course, are also important. As experiences of the post-war occupation of Iraq in 2003 demonstrate, even many persons who were initially elated about being freed from a repressive regime became increasingly disenchanted and angry as the period without reliable security, power, and water stretched into weeks and months. Decades of behavioral research indicates that action to relieve such deprivation, or non-directed violent actions emerging out of frustration associated with that deprivation, are to be expected under such circumstances.

Aversive conditions and events (experiences one would avoid if possible) serve as powerful motivating antecedents. What is perceived as aversive, however, is deeply rooted in culture, and ranges from the immediate to the historical. For example, frequent complaints about the way US troops “stare” at Iraqi women have been reported during the occupation. Such behavior, normative for one group, is experienced as highly aversive by Iraqis. For radical Islamists, but for many other Muslims worldwide as well, the dissolution of the caliphate at the hands of occupying Western powers and secularized Muslims early in the Twentieth Century—about which most in the West know nothing—remains a deeply humiliating and ever-present experience (Lewis, 2003); such humiliation can be highly motivating.

The actions of members of groups participating in collective violence are often in part directed toward reducing or eliminating aversive conditions. A very powerful aversive event for most human beings is the experience of being coerced by someone else to act in ways that one would not choose to act on one’s own, or that one experiences as costly. There is considerable scientific evidence that such coercive control often leads to “countercontrol”—actions to attempt to “control the controller” (Sidman, 2001). Nonviolent campaigns like the US Civil Rights movement are examples of countercontrol, as are military responses to attacks, or terrorist strikes responding to experiences of occupation. If people do not experience high levels of aversive control (recognizing that because of verbal processes what is experienced as aversive is highly culturally variable, and must therefore be defined by the “victim”), they are unlikely to engage in countercontrol. Unfortunately, contemporary Western nations appear once again to be adopting a strategic stance that relies on establishing their own coercive power as invincible. This stance is precisely the one most likely to lead to countercontrolling actions, like those of September 11, 2001. (Those events demonstrate that effective countercontrol need not be technologically complex nor prohibitively expensive, even against a self-proclaimed “superpower.”) So long as members of some groups are motivated by shared experiences of aversive control, such acts are likely to continue.

Verbal Motivating Antecedents

Some of the most important motivating antecedents for human beings are verbal. Public or private statements about what is important, descriptions of “the way things are,” and statements suggesting what actions will lead to what

consequences, are critical organizing factors for human society.¹ Coming, through experiences of socialization, to view another culture or group as “the Great Satan” or as an organized band of “evildoers” naturally has a profound effect on one’s readiness to attack them, or to explore peaceful alternatives. History demonstrates that participants who are taught that it is essential to act against members of an opposing group even if such action may cause pain to the innocent are likely to be willing to do so. Gang members participate in drive-by shootings that may result in death or injury to bystanders; both sides in World War II relied on tactics that produced unprecedented civilian casualties; Al Qaeda killed and injured thousands on September 11, 2001 (the symbolic value of the selected targets in that case should not be overlooked). The processes involved are scientifically easy to understand. Hayes, Niccolls, Masuda, and Rye (2002) describe the “chill of recognition” as a behavior scientist listens to tapes of Osama bin Laden:

What we see if we listen is a human being entangled in cognitive categories and evaluations, and compelled to attack others in order to maintain consistency with these categories and evaluations. The categorical and evaluative labels flow like water from a spring. (p. 297)

As Hayes and his colleagues also note, such categorizations and evaluations are the result of normal human learning processes; “virtually all cultures openly amplify this process with stigmatized groups” (p. 296); and such constructions once learned are very difficult to disrupt.

If a person sees someone else like him or herself participate in collective violence, and receiving respect and recognition for doing so, the observer may very well later act in a similar way. This is the *modeling* process, which has been well established by social learning theorists (e.g., Bandura, 1986). When such acts produce significant effects on the world stage, the level of social recognition and encouragement for such action can be very high, further supporting powerful collective networks of belief.

The situation is far more complicated than this analysis may at first appear to suggest, however. For example, the 1998 “Declaration of the World Islamic Front for Jihad against the Jews and the Crusaders,” signed by Bin Laden and leaders of other radical Islamic groups, lists three main complaints: the occupation of the holiest lands of Islam (in Saudi Arabia), the destruction of the Iraqi people at the hands the “Crusader Jewish alliance,” and the occupation of Jerusalem. For full discussion of these grievances, which often appear bizarre to those in the West, but are not viewed as at all strange to large numbers of people in the Muslim world, the reader is referred to Lewis (2003). Briefly, however, the concern for the “occupation” of Saudi Arabia needs to be understood in terms of long-standing Islamic tradition. These traditions indicate that the very presence of a non-Muslim on the soil of the most sacred Islamic places (which for theological reasons include

¹ Such verbal constructions can be understood scientifically in terms of equivalence relations (Sidman, 1994), relational frames (Dixon, Dymond, Rehfeldt, Roche, & Zlomke, this issue; Hayes, Strosahl, & Wilson, 1999), and rule governance (Malott, Malott, & Suarez, 2003).

much of Saudi Arabia) is a desecration. The increased presence of Westerners, particularly Americans, as a result of the oil industry and other forms of commerce is therefore deeply offensive to many, including many who are not terrorists. Iraq and Jerusalem also include sacred sites, and are involved in centuries of history involving the clash of two triumphalist religious traditions (the Christian and the Islamic). Each has historically viewed its own as the one true faith, and preached an obligation to convert (or at a minimum dominate) the world. Substantial numbers on both sides, although by no means all, still operate out of such frameworks.

All religions provide ways of understanding the world, and rules for operating in that world. For example, while many contemporary Muslims regard Islam's normative call for jihad as a call for "moral striving," many others—including but not limited to radical Islamist terrorist groups—interpret that binding moral directive as a call to continuing military action against infidels and apostates, until the final ascendancy of Islam worldwide (Lewis, 2003). Note that the call for a continuous, open-ended "war on terrorism" may in fact support looking at the world as an on-going battle between the "Crusaders" and the faithful.

A scientific understanding of how humans form equivalence relations for organizing and categorizing the world supports alternative language. If the response to the attacks of September 11th had been universally framed in terms of police action and enforcement of national and international law, it is likely that many in the developing and Islamic world might have reacted differently than they responded to the call for a "war on terrorism." Law enforcement and open-ended war participate in difference equivalence relations for most persons. Police officers, at least in the ideal, "protect and serve." Soldiers kill. That is what they are trained to do. Behavior science brings us a clear message: for verbal human beings, words matter.

Structural Conditions

Structural conditions (both environmentally and within the person) present at that time of the act are an additional important consideration. These include, for example, the availability of an appropriate target. If one cannot gain access to a victim, one cannot attack. Necessary means for the attack (e.g., weapons) are also required; if these are not available, no attack will occur. (The person must also have the physical and mental capacities required to follow a plan and take action, often coordinated action.) Considerable attention has been paid to structural factors in attempts to reduce international terrorism. For reasons discussed later, while such efforts are potentially important, they often have only limited impact, and in some cases may also produce problematic side effects.

Effective and Ineffective Consequences

Events that occur after the action (or that are reasonably expected to occur after the action) are usually the most powerful variables shaping human action. If, for example, previous acts (by oneself or others) taken at the direction of particular

leaders have produced recognition, relief from aversive emotions, or a sense of effectively controlling or hurting the enemy, one is likely to act again when instructed by that leader. In many cases, the consequence has never been directly experienced. For example, promised glory in an afterlife may be an effective consequence if one is assured of it by persons who have been experienced as reliable in other cases.¹ Certain consequences of prompted violent actions are quite likely, including recognition by peers and leaders and harm to the enemy (which may contribute to inducing the enemy to withdraw—one form of countercontrol). Even when the outcome is not assured or may involve serious costs like the deaths of many innocent people, the perception of at least a realistic possibility of highly valued outcomes may be effective (e.g., the threat to one's people may be reduced). Many complex actions involve both multiple valued consequences and multiple concurrent costs, and a significant level of uncertainty.

By contrast, some types of postcedent events are highly unlikely to influence behavior in meaningful ways. The threat of punishment by the other side is a prime example. Such punishment is commonly viewed within the group involved in collective violence as unlikely; beliefs in relative invincibility have often been shaped. Even the prospect of being injured or killed can become verbally associated with positive outcomes (glory, respect). For example, Anderson (1999) has documented that respect is more highly regarded for many urban youth than is personal safety, even life itself. Similarly, a cultural insider indicates that for the Pashtun in Afghanistan and Pakistan, “the two supreme arts ... of [Pashtun] life” are “how to kill and how to die” (Easwaran, 1999, p. 100). Threats, even the threat of death, are not likely to be powerful when the world is viewed through such lenses. Related processes occur in highly disciplined military cultures; sacrificing oneself is often viewed the noblest act. Within the verbal matrices constructed and reinforced by such cultures, behavior analytic science suggests that threats to “hunt them down” are likely to be ineffective, and may even motivate further attack.

As noted in the figure, given the complexity of the deeply interlocking contemporary world, the act of violence may also produce additional effects in the world that are not behaviorally active consequences, and often that no one has planned. These may include effects on third parties, economic impacts, and institutional responses. The terror attacks of September, 2001, clearly had profound effects on the US economy, many very negative, but they also apparently improved market conditions for certain sectors (defense and “homeland security” industries, for example). Such ancillary effects, while not directly affecting members of the groups perpetrating the acts, may shift the responses of others toward them.

Beyond the Individual

While the behavioral relationships (technically, *contingencies*) sketched in Figure 1 already offer considerable information that might usefully guide policy,

¹ Scientific work related to rule-governed behavior explains how this happens; see Malott, Malott, and Suarez (2003).

the realities are much more complicated. Antecedents and consequences affecting the actions of members of the leadership group are usually substantially different from those affecting the actions of other members of the group, including those who personally perpetrate acts of violence in the name of the group. Malott (1988) has persuasively argued that cultural leaders often act based on perceptions of longer term interlocking consequences, while most other participants may respond to much more immediate factors. Foot soldiers consistently report that when they are in battle, their moment-by-moment actions are often directed toward keeping members of their immediate combat unit as safe as possible. Decisions to send groups into harm's way, however, are made by commanders who must weigh short-term human costs against possible long-term strategic gains.

In the case of collective terrorist acts, the contingency matrices within which leaders operate may be similar in some areas to those shaping the actions of their followers, but in other areas are likely to be different. The opportunity to order a violent action now which is likely to damage the economic situation of an enemy later, and which may subsequently result in the enemy's withdrawal from the territory important to the terrorist leader, may be the active consequence for that leader. Understanding the connections requires a vision beyond the moment that other members of the organization may share to only a limited extent. Seeing the towers fall may be satisfying for the rank and file (simple damage to the enemy), but reverberating impacts around the world are more likely to be the active consequences for the leader.

Scientifically, armies, gangs, terrorist networks, and other groups that maintain an internal culture leading to collective action (including violent action) are what are called *self-organizing systems* (Hudson, 2000). The behavior of their constituent members is to a substantial degree shaped by other members of the group, rather than by forces outside the group. This obviously complicates efforts to change the behavior of individuals within the group. For example, the President of the United States usually can have only an indirect impact on members of a group like Al Qaeda. Members of the group are also often members of other cultural networks like families and religious congregations, however, which in some cases may provide accessible points for intervention as discussed below. (In fact, more militant groups often try to limit contacts between their members and such other networks to maintain tight control of the social and verbal environment.) Adequate scientific analysis needs, to the extent possible, to take all of these concurrent processes into account.

The data-based construction of much more complex contingency diagrams than the example presented in Figure 1 is emerging as an important technique for the analysis of such complexities. The detailed analytic work needed to refine such diagrams and increase precision should be done through collaborations between subject experts (e.g., State Department, intelligence, and cultural experts) and behavior scientists. The specifics for each group examined will be different, and may change continuously over time. The preliminary analysis above, generic and simplified as it may be, can already provide some insight into classes of responses to collective violence that are more, and less, likely to have a meaningful impact.

STEPS TOWARD REDUCING COLLECTIVE VIOLENCE

A number of directions for limiting collective violence that might be immediately pursued, as well as critical questions that need to be explored in detail in future research, are sketched below. These should be viewed as strategic directions, rather than precise prescriptions. These tentative directions map onto the categories examined in the preceding analysis, beginning with attention to occasions, followed by motivating antecedents, rules and models, structural conditions, and consequences. Some of the most common current strategies for addressing terrorism, for example, appear to be (a) an emphasis on punishment and threat (“we will hunt them down”) and (b) attention to structural conditions. The available science suggests that both have serious limitations, however, and that some other categories may be even more potent, so it is essential that all possible approaches be explored.

Occasions

Referring again to Figure 1, one possibility that is commonly emphasized is reducing opportunities for leadership of violent groups to give coordinated instructions to act. In military situations, this is often discussed in terms of damaging command and control systems. The justice system attempts to do something similar when it targets the gang leaders or organized crime leadership structures. Attempts to assassinate leaders represent a similar strategy. The approach appears to be somewhat successful. There are clearly limitations as well, particularly when dealing with groups that are organized as loose-knit networks rather than in rigid hierarchies such as those in West often expect. It was somewhat ludicrous, for example, to present Osama bin Laden as the “CEO” of Al Qaeda, as many in the media did after the events of September 11, 2001, represented at the top of a hierarchical organizational chart with others directly reporting to him, and others in turn reporting to them. A danger associated with certain of the options for targeting leadership figures is, of course, that such action may increase their stature (as appears to have happened with bin Laden in the 1990’s), or create a powerful symbolic presence should the person targeted be killed. The imprisonment of Nelson Mandela is another example, and a reminder that commonly one side’s terrorist is the other side’s liberator.

Reducing the availability of targets of opportunity is considered later in the discussion of focusing on structural factors; we just note here that the history of modern terrorism suggests that there are many possible targets, and protecting all of them is simply not possible, so long as there are many persons who are highly motivated to attack. Motivating antecedents, therefore, are a natural next factor to examine.

Motivating Antecedents

Although it has often been neglected, a basic strategy grounded in shifts in motivating antecedents, rules, and equivalence relations (e.g., the US = “the Great

Satan”) is among the most promising we currently have. Perhaps the major reason why attention to motivating antecedents has not been greater is that for greatest effectiveness, action should be taken preventively rather than reactively. Focusing preventively, however, would require a significant shift in the way international relations are usually dealt with in the US and around the world. If levels of deprivation were universally low (as the Universal Declaration of Human Rights would suggest they should be), there would be many fewer young people (and others) motivated to take violent action. The science suggests that fewer young people with no other way to gain status and demonstrate their worth, fewer young people with no real hope for a satisfying life in their own terms, would result in fewer terrorist recruits. Experiencing reductions in aversive control (being forced to act against one’s will) and reductions in other aversive conditions (e.g., the presence of non-Muslims on sacred ground) will also, the science suggests, reliably reduce acts of countercontrolling violence.

Scientifically, then, the first questions that need to be asked would take forms like, “How can we help to reduce deprivation for peoples who are currently struggling?” and “In what ways do other groups view us as threatening or aversively controlling, and what could be done about that?” The answers would open a range of preventive possibilities. Those who do not experience significant levels of deprivation are much less likely to become involved in radical action than those who find themselves poor, oppressed, or unable to act in ways that they have learned are important (including as required by religious belief). This strategic direction would require assistance in building sustainable societies in which local preferences, values and power are honored and supported. Unfortunately, such action is often not consistent with short-term political advantage, nor, sadly, with corporate agendas that view some populations primarily as potential markets, and which have no interest in others—usually the poorest groups. But it appears to be among the most powerful alternatives for reducing collective violence, if that is genuinely regarded as an important goal.

Exploitation and humiliation are almost universally aversive. Many individuals and peoples around the world experience themselves as being economically exploited in relative terms (media contributes to this experience), and history teaches that members of such groups are likely to take violent action in response. This issue is very difficult—but critically important—to address, since economic exploitation typically provides immediate short-term benefits to certain individuals, corporations and governments, although collective long-term environmental and cultural costs may be enormous. The international arms trade, for example, is highly profitable for some, but terribly costly for many others. Practices that result in sustainability and respect for diverse cultures, by contrast, are much less likely to produce violent reactions, but may produce fewer corporate profits (like those expected from establishing dependence on non-propagating seed in developing countries) and fewer opportunities to manipulate inter-group conflicts (e.g., among warlords and tribal groups in Afghanistan, the Balkans, and many parts of Africa in recent years) for political and economic advantage.

The types of actions described in the last several paragraphs would, over the short-term, require the dedication of significant resources. Preventive action would involve identifying groups, including domestic populations, nations, and non-national peoples that subjectively and objectively experience significant deprivation and highly aversive conditions. This step generally has already been taken; the US, other Western governments, and multinational corporations are generally aware of how they are experienced, and of the relative economic and political status of groups around the world. The next steps are much more difficult, involving analyzing the deprivations and aversive conditions present, and proactively making plans to collaborate with those groups to reduce those experiences. Such action should be taken before, not after, collective violence spreads. Acting to reduce deprivation and aversive conditions immediately following terrorist attacks could lead to further attacks, since they will be viewed as being effective. Delays in adequate reconstruction in Iraq present a related challenge; extended waits for basic human necessities and escalating violence have clearly contributed to increased deprivation—and therefore motivation for further escalation—among many.

The problem of humiliation, as discussed earlier, is particularly challenging to address, since that experience can be so deeply rooted in cultural specifics. Understanding experiences of humiliation, and developing strategies for addressing them requires an uncommon level of dialogic skill and cultural humility. The best way to change problematic equivalence relations, according to the research, is not to dispute them (e.g., repeating “We are not evildoers!” over and over is unlikely to be effective). In fact, such disputation may *strengthen* rather than weaken the equivalence (see Dixon et al., this issue). Rather, the more powerful approach is to strengthen competing relations (“We are partners,” initially in particular projects) through experience. Interestingly, a recent suggestion by President Khatami of Iran may be roughly accurate in terms of how to begin to construct such competing equivalences. He recently called for “a continuous dialogue between cultures and to work toward an alliance for spreading peace” while clarifying that this could not be done through surrender under force (CNN.com, May 13, 2003). Such continuous mutual experience at multiple levels appears promising given basic psychological theory, but is difficult to establish, since in international relations dialogue is often viewed as a reward for acting as the other party wishes. Breaking off dialogue and severing relations are commonly used as punishments, but such actions preclude the continuous contact necessary to begin to build competing equivalences in which members of all groups come progressively to be viewed as genuinely human and valuable—a view inconsistent with propaganda practices of most groups today.

The US government has also recently begun devoting resources to broadcasting on radio and television in an effort to convince people—particularly in Arab countries—that they have nothing to fear, and much to gain, from US-style capitalist, corporate, consumer culture. Scientifically, there are reasons to doubt the efficacy of this media strategy, but also reasons to suspect that it might have some effects, so the results will be interesting. The messages given appear to conflict in

basic ways with the worldviews and values (equivalences and rules) of many in the audience, and change at that level is difficult.¹ On the other hand, the immediate tangible reinforcers offered by consumer culture and the pursuit of personal wealth are seductive (although their unconstrained pursuit ultimately is costly to the individual, society, and the natural world on which all depend).

Verbal Motivating Antecedents

Recall that verbal motivating antecedents involve deepest human beliefs and values. The most profound cultural differences occur not in food, clothing, or behavior, but rather in terms of what is good and what is evil, what is important, and who should be respected and who feared or avoided. People learn these values and beliefs from each other over the life course. The only realistic possibility for changing them, therefore, involves taking steps to shift what people tell their children, relatives and friends; what the news media broadcast; what is learned in the educational process. Propaganda is often directed toward attempting to shift such communications directly, and can be powerful. Some analysts attribute the level of mutual hatred among groups in the former Yugoslavia as being largely shaped in recent years by the mass media on each side (Jarman & Jarman, 2000; Nagler, 2001). Also powerful, however, are personal experiences that conflict with “received wisdom.” The Germans after World War I had every reason not to trust, and even to hate, the US and Great Britain, who imposed a crippling peace. American and British Quakers, on the other hand, fed thousands of German children after the war, and this was remembered in the run up to World War II, when Quakers from those “enemy” nationalities were respectfully received by the Nazi leadership and were able to negotiate for the freedom of many Jews.²

The best current science suggests that active work to reduce deprivation and aversive conditions is the most predictable and powerful way to shift how the US and the American people are perceived in places where they are currently viewed as the enemy. The ultimate goal is a situation in which children are taught that those in the West are helpful, good people. If this occurred, when a young person threatened to become involved in terrorist action against the West, he or she would be actively discouraged from doing so by family and peers. Similarly powerful would be societies in which every person viewed his or her own future, and that of the family, as very promising.

¹ Equivalence relations (including values) are often difficult to disrupt once they are firmly established (Spradlin, Saunders, & Saunders, 1992). In addition, behavior that has been richly reinforced appears to be more difficult to shift when conditions change than behavior that has been less richly reinforced (Dube & McIlvane, 2002; Nevin, Milo, Odum, & Shahan, 2003).

² The US government, however, was resistant to admitting large numbers of Jewish refugees, and placed obstacles in the way of this work (Bacon, 1999).

Structural Conditions

Another major current emphasis for reducing terrorists acts focuses on control of structural variables, e.g., enhancing airport security to reduce access to planned targets as well as targets of opportunity. Such efforts have some utility, at least in reducing the likelihood of the repetition of certain specific threats, but have at least three important limitations. The first is cost, which has become a serious concern in contemporary US policy circles. The second is that there are simply too many vulnerable points requiring protection to defend them all, given the current state of killing knowledge and technology (the concerns about US ports and the length of borders to be protected are examples of the problem). The third issue is that increasing security increases the level of aversive experiences and thereby decreases quality of life for everyone, as has become particularly evident at US airports in the past two years. When distinguished elderly persons are compelled to walk barefoot through security checkpoints, pilots are afraid to fly without weapons, and the next generation of scanners will electronically strip each passenger, such costs are evident.

For all of these reasons, while devoting resources to limiting access to targets as well as to possible instruments of attack (e.g., low-grade nuclear material that could be used for dirty bombs) is only prudent, in the long term such approaches are at best partial, short-term, and certainly costly, strategic options. These approaches do not reduce the motivation to act, and highly motivated individuals and groups will often find a way. In the long run, attention to motivating factors, and to consequences as discussed next, are likely to be far more powerful because they involve work with the basic dynamics of human behavior.

Consequences

Figure 1, and the science that underlies it, provide guidance in the area of consequences as well. The risk of punishment is not high for any particular act associated with being a member of a terrorist group, and any punishment that may occur is often far in an uncertain future. Effective punishment, the research indicates, must be quick and inescapable (Azrin & Holz, 1966). In addition, what those in countries at risk of terror attacks regard as punishment (e.g., death) is often not viewed that way by terrorists. The threat of punishment often sparks countercontrol as well, so threats may paradoxically *increase* the risk of further violent acts, further shaping a reciprocal spiral of threat and violence.

Turning to positive consequences, if a young person is likely to receive recognition for doing something else (say, completing school or contributing to the community) and is *unlikely* to receive recognition from peers and family for participating in collective violence, they are naturally more likely to do the former. But, what would it take to make such transactions likely? First, of course, opportunity; and second, a social and cultural network whose values support the former and not the latter. Such supports appear to be the strongest prescription we currently have for gang-involved youth (Garbarino, 1999; Goldstein & Huff,

1993). Youth who are members of some groups (e.g., the Quakers) are very unlikely to participate in collective violence of any kind, because family, peer, and group values strongly and consistently proscribe such action. The best current science indicates that supporting cultural practices that recognize alternative choices and do not support involvement with terrorist groups or actions would have a powerful effect on youth in vulnerable regions.

The major approach to defusing countercontrol necessarily lies in the antecedent conditions, but at least to a certain extent consequences matter here as well. For example, behavioral theory suggests that refusing to change what one does because doing so would mean that “the terrorists have won,” is in a small way probably useful. The greater the apparent effects of terrorist acts, the more rewarding to the perpetrators. This observation raises the question of the extent to which media attention may encourage continued violence. The issue is difficult to resolve, because free and truthful media are also critically important. Action much earlier in the chain at the level of motivating conditions and events carries fewer complications of this sort than do efforts to manipulate media coverage, but the effects of such coverage should not be dismissed.

A final strategy, perhaps one of the most promising, may be the development of effective alternative action models for nonviolent social change that might emerge from rigorous program of social research and development. Such models after testing could be widely shared with groups who experience oppression or disempowerment. It should be clear from the analysis above that acts of collective violence are functional: for both the individual and the group, such acts occur because they produce (or may produce) effects. Decades of behavioral research clarify that the best way to reduce an undesirable behavior usually is to shape a more desirable alternative repertoire that produces similar effects (e.g., asking for what one wants rather than having a tantrum) (Goldiamond, 2002). Collective nonviolent actions that produce some of the same results as violence at less cost, and potentially more effectively, are likely to serve as functional equivalents to acts of violence. Groups having such alternatives available would be less likely to turn to collective violence, threat, and terrorism. Behavioral theory suggests, for example, that a rigorous strategy of nonviolence could better serve the Palestinians than a violent intifada. See Mattaini (this issue) for an expanded consideration of this alternative.

A PROGRAM OF RESEARCH FOR UNDERSTANDING AND REDUCING COLLECTIVE VIOLENCE

Reducing collective violence is a critical goal worldwide, yet very little scientific attention has been directed toward it. The science of behavior analysis, among the most powerful tools currently available, has not yet pursued this line of research to great depth. What has been done, and well-established theory can guide the development of this science, however. There is strong reason to believe, for example, that in general, violence begets violence, and that violent reactions to violent acts may prove counterproductive (Nevin, this issue). However, responses

(and preventive actions) of some kind clearly are necessary. Some possible steps emerging from the science of behavior appear to be quite straightforward. For example, a shift toward language emphasizing the rule of law, law enforcement, and restorative justice rather than language oriented toward “a war on terrorism” is likely to achieve higher levels of support domestically and internationally than has the latter (so long as actions taken can be seen as consistent with the language used). Other possible steps are much more complex, however, and will require intensive research. A program of research designed to explore and test possible options might include the following:

- *Further development and testing of approaches for initiating and maintaining dialogue across conflicted groups over extended periods of time regardless of, and perhaps focused on understanding, intervening events.* This work might begin with promising data-based approaches emerging from restorative justice, arbitration, cross-cultural communication (including in business), and collective decision-making processes; specific targeted approaches would likely be elaborated from careful testing and documentation. It would be critical to include representatives of multiple sub-groups (including those regarded as “radical” from each) in this work, rather than only those who already have a great deal in common.
- *After initial testing, this work should shift to efforts including persons with real decision-making power across spheres of action (political, business, education, even military).* Much of the research done in these areas until now has been short-term work focused on identifying differences and in some cases enhancing communication. The goals for the present work, firmly rooted in science, would include (a) documenting the ways that differing verbal factors (e.g., equivalence relations and rule-governed behavior) have an impact on inter-group processes and how they shift over time, (b) testing specific, science-based approaches designed to maintain respectful communication over an extended period while fully acknowledging differences in values and beliefs, and (c) widely disseminating what is learned both by the scientists involved and the participants.
- *Analyses of motivating antecedents that may be related to initiation and maintenance of collective violence within particular cultural settings.* This would entail detailed exploration and analyses of motivating and verbal factors affecting specific groups (nations, peoples, domestic minorities, and other networks) whose rhetoric indicates that collective violence may be an option. Both subjective experiences of those within the culture and observations by those outside it should be included in these analyses. Early work may begin with science-based analyses of existing technical literature. It would then be essential, however, to move subsequently to observational, ethnographic, and interview methods with members of the groups involved to further test, clarify and elaborate initial hypotheses. Behavior analysts, ethnographers, and persons

professionally trained in international relations would be important contributors to this work, but the critical importance of including members of the cultures involved as active participants with strong voices should not be underestimated.

- *Both local knowledge specific to each group and generalized patterns across groups are likely to be identified in the course of these investigations. Detailed conceptual models that integrate all of the data can then be elaborated.* From those will emerge data-based approaches for addressing accessible dynamics and shifting patterns of aversive control and countercontrol.
- *Identification and field testing, initially in small local areas, of the interventive options that emerge in the previous step.* Given the general analysis in this paper, a focus on preventive steps is likely to be the most powerful, but the full range of possibilities, once elaborated, can and should be considered. The results of this testing are likely to lead to new questions that need to be explored through observation and cultural contact, and to refined preventive and interventive procedures.

If the findings of a program of research like this are to find their way into the public policy arena domestically and internationally, a wide dissemination effort will be required. If behavior scientists and diplomatic personnel, for example, are familiar with this work, but those in positions of political and economic power are not, the impact would be minimal. If political figures once informed are to act on the knowledge, however, their constituencies also need to understand, at some level, why particular steps are being proposed. This is clearly true in democracies, but also at some level among groups like the more radical Islamists, whose leaders need a certain level of popular support to maintain their positions. Changes will be difficult, of course, since some steps may be inconsistent with common public values. Ongoing public education efforts that provide opportunities for members of the public to actively weigh the multiple effects of possible policy options based on accurate information (*consequence analysis*, Moore & Mattaini, 2001) are therefore critical. For reasons described earlier, efforts to manipulatively manage public opinion are unlikely to produce lasting results.

There are many challenges associated with each of these steps, but more important work is difficult to imagine. While nearly everyone would agree that they want to live in peaceful, non-violent societies in a peaceful, non-violent world, the route from here to there is difficult. The assertion of this article, however, is that the science of behavior analysis is reaching a stage of development such that it can contribute to addressing even such large-scale issues. Supporting and conducting that science may be the most critical challenge of the present age.

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