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# Anger, Aggression, and Psychology: Personal and Professional Reflections on the Virginia Tech Tragedy

David E. Cox

Anger and aggression make up one of the most substantial bodies of literature within the behavioral sciences. The importance of fully understanding the nature of these phenomena are made painfully clear in the wake of violent tragedies such as the one that occurred on the campus of Virginia Tech. Inevitably, the question is how may we, as social scientists, do a better job at predicting and preventing such events? Although a definitive answer to this question may not be immediately obtainable, the current review and discussion

attempts to illuminate how the integration of the diverse concentration areas of psychology may provide a starting point. Neuropsychology, social psychology, and clinical psychology (in all manifestations) can be utilized in a cohesive manner that will improve the prediction and prevention of aggression. The events of April 16th are examined from personal and professional viewpoints to provide relevant and salient examples.

**Keywords:** integrative psychology; anger; violence

On April 16, 2007, I dropped my daughter off at the Lab School on the Virginia Tech campus and returned home to prepare for my day, before returning to campus. Shortly after arriving home I received a call from my wife, a teacher at an elementary school only 1 mile from campus, informing me there had been some incident on campus and the school was on lockdown. I turned on the television and learned that two students had been killed and the gunman was still at large. Although I had spent the majority of my adult life in urban areas where these occurrences are more commonplace, the news was shocking in that the Virginia Tech Campus was the last place I would have expected this to occur.

As the reports of the number of people dead began to grow, so did my shock, anxiety, and sorrow. Although I was concerned about my daughter, the incredible sense of community and caring exhibited by the Virginia Tech Lab School allowed me to assuage these fears and focus more on the horrific loss that was occurring within this community.

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The following day I contacted my advisor who, along with his wife, had gone to the Inn at Virginia Tech to meet and support the number of families that were arriving on campus to locate their children whom they had not heard from. I asked if I could be of any help and he told me that there was much to be done. While at the Inn, I spoke with families devastated by grief and some thankful that their children had been found, unharmed. I saw my advisor, a neuropsychologist by training, exhibiting tremendous, supportive clinical skills and helping people with unimaginable grief. I witnessed a first-year clinical psychology graduate student who had spent all night serving as a point of first contact for families and police reluctantly leave only to return a few hours later. I saw a renowned veteran of trauma and disaster research looking strained as he navigated the hallways full of despair. As people became fatigued and needed to be replaced, I witnessed a flurry of response to my call for help, including a faculty member with four young children who came to the Inn and provided assistance. I passed by the drill field on my way to help out with counseling at the student center and witnessed one of the most touching events I have ever seen. The entire area was filled with people holding candles in utter silence. These images, mixed with the overwhelming

despair and sorrow took a great deal of time to process before I could actually think about the events in terms of my field of study.

While immersed in the tragedy, I had very little appreciation or concern for how the academic pursuits of the behavioral sciences were relevant to the events that had unfolded. Ironically, my research focus while at Virginia Tech was focused on the psychophysiological responses to anger and, in particular, on how these responses could improve clinical awareness and treatment of anger disorders. In fact, I had just completed collecting the data for my dissertation, which focused on the physiological effects of anger expression and anger repression, on April 13th. I remained oblivious to the obvious connection until classes resumed the following week and several of the students in an undergraduate personality course I was teaching questioned me about how my research and all the “stuff” I had lectured on throughout the semester applied to the current situation. I was taken aback by the question but offered to put it together for the next class period if anyone was interested. Surprisingly, although they were under no obligation to attend classes, a large number of students volunteered to attend a final lecture (in lieu of a final exam review) in which I would attempt to make sense of the senseless using a paradigm I had spent all semester stressing the importance of. Although I doubt that I was able to make sense of the events (to the students or to myself), those students provided me with the most clear vision as to why I had chosen this field and how my research was applicable to the violent events of April 16th.

Despite the clarity with which I divined meaning from this tragic set of events, conveying it to a diverse audience remains a difficult task. The more global focus of my research (and my passion within psychology), is melding the fields of neuroscience, psychophysiology, social psychology, and clinical psychology. To transfer this unwieldy goal into a more functional research paradigm, I chose to look at anger, aggression, and violence. As the literature review encompasses a vast selection of material a full review of this literature would be inappropriate for the current article. What follows is a take home message from this research that is driven by the personal impact of April 16th. The material presented below is less an empirical review of this work as it is an expression of hope that there may be methods by which the detection, prediction, and prevention of violent acts may be improved.

## Anger and Contributing Factors

Working with the construct of anger, I found that the definition of the construct varied from field to field and, occasionally, from researcher to researcher. Consequently, the factors involved in what leads to the behavioral expression of anger were frequently different as well. There have been lofty claims of a gene that is one of the primary causal agents for violence (Caspi et al., 2002). Biological factors that people claim to have primary status in the experience and expression of anger include increased testosterone (Dabbs & Hargrove, 1997), dysfunction of the amygdale (Viding & Frith, 2005), reduced serotonin levels (Rossby, 2003), and dysregulation of the frontal lobes (Embry, 2007). Alternatively, poor parental attachment (Bogaerts, VanHeule, & Desmets, 2006), cognitive appraisal (Hart, 2002), and exposure to violence in the media (Greene & Krmar, 2005) have all been assigned preferential status in the initiation of violent acts. Although the evidence for the involvement of these factors is good, there is little to no evidence that suggests that any of them in isolation is a precursor to violence.

What is evident from the combined literature is that all these factors can have an impact on the likelihood that an individual may have an increased risk for violence. To most clinicians, this is not a novel suggestion, as many clinicians look at social history, activities the client is engaged in, and family constellation. Some may even look at the lab reports of endocrine function. However, where the clinician may be missing important information is in the behavioral observations that she or he makes during the session with the client. Some clinicians may feel that this is the equivalent of voodoo in the era of empirically supported treatments and avoid all but the most obvious observations. However, certain behaviors are directly associated with the brain regions associated with anger. Identifying these behaviors through clinical observation or by taxing these systems with cognitive or motor tasks may provide a much more accurate assessment of the client's anger than a self-report measure or structured clinical interview.

The inhibition of anger is closely linked to the right frontal region (Harmon-Jones, 2003). The right frontal region is also charged with contralateral motor control, controlling increases in heart rate, nonverbal fluency, and social appropriateness (Heilman & Valenstein, 2003). A person with chronic or severe anger may be referred to some form of psychological

service by others (e.g., parents, spouse, teachers, employers) and may have substantial reason to inhibit their anger during the clinical encounter. However, the clinician can assess this by taking measures of the aforementioned cognitive or motor tasks (e.g., fluency, contralateral grip strength, and frontal eye fields), asking the client to recall some things that irritated her or him and then taking a “post-stress” measure of the same task. Certainly, one could create potential confounds (the paradigm is greatly simplified because of space limitations), but the brain–behavior paradigm is much more experimental in nature and better understood than the self-report paradigm, which is susceptible to a host of nonassessable difficulties. On the other hand, should an angry person be referred to a clinician who adheres to the protocol described above but fails to assess the client’s current stressors and possible complicating factors, the knowledge that the client is repressing anger is somewhat useless. To assess the risk that clients may pose, the clinician has to be aware of the psychological factors such as clients’ cognitive appraisal of their situation, their feelings of persecution, and the social factors that may mitigate or increase the propensity for violent actions.

As can be evidenced by this very simple example, one must be attentive to the full range of biological, psychological, and social factors composing the experience of anger before determining if that person is indeed angry and what her or his relative risk to themselves or others may be. The negative connotation of anger and the possible negative consequences of admitting significant anger may lead clients to under-report their experiences despite the presence of significant environmental stressors and negative cognitive appraisals. Under these circumstances, physiological measures are much less subject to fraudulent reporting than the traditional self-report measures.

## An Integrated Approach

The impetus for my work comes from what I perceive to be a lack of integration of the physiological, social, and intraindividual factors that guide behavior among clinical psychologists. In particular, I feel that many clinicians have not received adequate training regarding, or do not have an appreciation of, how physiology manifests itself in behavior and how behavior can alter physiological processes. This can be seen across a number of articles in

peer-reviewed journals that make references to “organic” disorders versus “psychological” disorders. Although this has become shorthand for many clinicians, it reflects a poor comprehension of how behavior works. Certainly, one would be hard-pressed to cite a single behavior occurring in the absence of the brain. Conversely, the neurosciences are frequently guilty of neglecting the importance of environmental or idiopathic influences on physiological functions. Although statements of causation have declined, one may still find articles referring to a genetic or biological “cause” for a given behavior. If the brain has plasticity (and we know it does), then the external and internal contextual cues are constantly changing the brain and the body’s physiology. Perhaps more troubling is a trend within neuropsychology to confuse the brain’s functional systems with scores on psychometric tests. Although the normative test paradigm has some advantages, in some contexts, without consideration of the underlying neuroanatomy and the salient external and internal cues, these tests are somewhat impotent.

Psychology has, on paper, embraced the biopsychosocial model of assessing and diagnosing behavioral disturbances. However, it is common that based on theoretical orientation, one element of this model becomes dominant, and the rest are neglected.

Although training models are designed to provide a well-rounded foundation for clinical practice, students, interns, and postdoctoral fellows become increasingly isolated and specialized, leaving many of the more broad-based skills behind. Although specialization has a place in clinical psychology, failure to maintain the skills that allow one to ensure a thorough assessment of all the factors associated with a clinical presentation may not be the best standard practice. Although all the factors that were influencing the gunman on April 16th, 2007, may never be known, the outcome will never be forgotten. The clinicians who evaluated this individual may have conducted the assessment well within the guidelines of a particular framework, and they may or may not have made appropriate referrals, based on the outcome of this assessment. However, it is important to remember that the many assessment protocols are unidimensional (e.g., self-report, structured interview, etc.). As professionals charged with the responsibility of identifying behavioral disturbances, we must use all the available resources to ensure we do a thorough job. Clients are explicitly informed of the consequences of admitting to the intent to harm themselves or others at the outset of any assessment or

psychotherapy session. It would appear that relying solely on self-report data under such conditions may be ineffective.

Ineffective assessment may lead to inefficient or inappropriate treatment recommendations. For example, if the individual in this case were to deny homicidal plans, his profile may be conceptualized as an anger management problem and be referred to some form of anger management. The likelihood that anger management treatment, under the best conditions, would have been sufficient for the Virginia Tech assailant is doubtful. Additionally, the modal number of treatment sessions for individuals referred for anger management is one (Kassinove & Suckhodolsky, 1995), which would be unlikely to promote much in the way of behavioral change.

To facilitate an understanding of the complex interaction of physiological, social, and intraindividual factors involved in behavioral motivation and expression, there may be a need to reevaluate training paradigms in clinical psychology at the level of both doctoral and continuing education for clinicians. Such a change at the doctoral training level would incorporate more general training into the specialty tracks (e.g., substantial coursework and clinical experience in psychotherapy for students in neuropsychology tracks) and some exposure to pertinent specialty areas for general tracks (coursework in psychophysiology and clinical experience in neuropsychology for students in generalist training). At the level of continuing education, these changes may be best implemented through integrated, multidisciplinary conferences that focus on developmental models of brain-behavior relationships and multimodal assessment and treatment of common clinical presentations.

The paradigmatic changes suggested in this manuscript should not be viewed as an indictment of clinical psychology; rather, they are meant as a testament to the strength and diversity of the field. By integrating the diverse areas of this field, we may provide increased services with a greater empirical foundation and better serve the greater good. System

changes are not easy, and sometimes, the value of these changes is not apparent every day. However, if there is even a remote chance that tragedies such as the one that occurred on the Virginia Tech campus can be avoided through more comprehensive training, it is well worth considering.

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