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DISENTANGLING THE PSYCHOLOGY AND LAW OF INSTRUMENTAL AND REACTIVE SUBTYPES OF AGGRESSION

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Behavioral scientists have distinguished an instrumental (or proactive) style of aggression from a style that is reactive (or hostile). Whereas instrumental aggression is cold-blooded, deliberate, and goal driven, reactive aggression is characterized by hot blood, impulsivity, and uncontrollable rage. Scholars have pointed to the distinction between murder (committed with malice aforethought) and manslaughter (enacted in the heat of passion in response to provocation) in criminal law as a reflection of the instrumental–reactive aggression dichotomy. Recently, B. J. Bushman and C. A. Anderson (2001) argued that the instrumental–reactive aggression distinction has outlived its usefulness in psychology and pointed to inconsistencies and confusion in criminal law applications as support for their position. But how similar is the legal distinction between murder and manslaughter to the instrumental–reactive aggression dichotomy in psychology? This article compares and contrasts the psychological and legal models and demonstrates that the purposes for distinguishing between instrumental and reactive aggression in psychology and law are undeniably different in meaningful ways. As such, a perceived shift in law away from differentiating murder and manslaughter has no bearing on the usefulness of the instrumental–reactive aggression distinction in psychological science.

Keywords: instrumental, reactive, aggression, violence, murder

> Social science seeks to explain behavior, criminal law to judge it. (Wilson, 1997, p. 7)

Over the last 20 years, numerous significant advances in the scientific study of human aggression subtypes have been made. Originally, recognition of discernible styles of aggression in humans stemmed from research on the structure, function, and phenomenology of aggressive subtypes observed in nonhuman animals (Dodge, 1991; Moyer, 1968, 1976; Vitiello & Stoff, 1997). This area of study was fueled by numerous findings that observational differences in animal aggression could be linked to differences in the level and location of brain activity.

In humans, recent dichotomous models of aggression have included distinctions between overt and relational (e.g., Crick & Grotpeter, 1995, 1996; Grotpeter & Crick, 1996), physical and verbal (e.g., Tisak, Maynard, & Tisak, 2002), and

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overt and covert (e.g., Kazdin, 1992; Loeber & Hay, 1997) styles of misconduct, among others. Although sometimes assigned different labels, the model of aggressive subtypes that has received the most scholarly attention—as well as empirical support—distinguishes instrumental (proactive or offensive) from reactive (hostile or defensive) aggressive behavior (e.g., Dodge, 1991; Fontaine, 2007; Houston, Stanford, Villemarette-Pittman, Conklin, & Helfritz, 2003; Kempes, Matthys, de Vries, & van England, 2005; Miethe & Drass, 1999; Quay, Routh, & Shapiro, 1987; Vitaro, Brendgen, & Barker, 2006; Vitiello & Stoff, 1997). Whereas instrumental aggression is typified by cold-blooded physiology and affect, deliberation, and instrumental motives, reactive aggression results from an interpretation of a provocative, threatening, or unjust stimulus, heated anger, impulsivity, and an interest in hurting the perceived provocateur. Scientific studies in the areas of social cognition, psychophysiology, neurobiology, neurocognition, and clinical psychology and psychiatry have all provided empirical support for the instrumental–reactive aggression distinction.[1]

In scholarly discussions of the science of aggressive subtypes, psychologists have compared the instrumental–reactive dichotomy and the criminal law distinction between homicidal acts that are committed with malice aforethought versus in the heat of passion. That is, in the United States (and elsewhere), legal doctrine distinguishes homicides that, because they are enacted with premeditation or, at least, with deliberation, are acts of murder and homicides that, because they occur in reaction to provocation and in the context of extreme emotional disturbance, are acts of manslaughter. The law–psychology parallel, then, characterizes murder as instrumental violence and characterizes manslaughter as reactive violence (Bushman & Anderson, 2001; Dodge, 1991; Kempes et al., 2005).[2]

Recently, Bushman and Anderson (2001) drew on this parallel to buttress their position that the instrumental–reactive aggression distinction is no longer useful to psychology as a scientific model. They noted that, currently in U.S. criminal law, (a) there are trends that suggest an overall movement away from discerning levels of homicide (including the distinction between murder and manslaughter)[3] and (b) unlike in psychology, motive is not a factor that is used to distinguish instrumental and reactive violence in law. However, it remains unclear in the literature as to how similar the instrumental–reactive distinction in psychology and law is. As a result, it is also unclear to what degree, if any, scientific psychology should be guided by the current state and trends in criminal law.

The purposes of this article are to (a) compare and contrast the parallel of the instrumental–reactive aggression distinction in psychology and in law and, on the basis of the conclusions drawn from this analysis, (b) examine the degree to which scientific psychology should be guided by (perceived) conditions and trends in

[1] In this article, the terms psychology and behavioral science are used interchangeably and are broadly intended to encompass the disciplines listed here.

[2] In contrast, see Scarpa and Raine (2000), who made the unusual comparison between instrumental violence versus reactive violence in psychology and serial murder versus nonserial murder and manslaughter in criminal law.

[3] These trends are minor; all 50 states continue to recognize levels of homicide. In addition, the Model Penal Code (American Law Institute, 1962) expressly distinguishes between murder and manslaughter.

criminal law. The article is arranged in four main sections. First, a review of the instrumental–reactive aggression dichotomy in psychology and behavioral science is presented. Second, the application of violent subtypes to homicide in criminal law is discussed. Third, the instrumental–reactive aggression distinction is compared and contrasted across psychology and law. In this section, important differences are identified with respect to how and why the respective distinctions are drawn in psychology and law. In light of these differences, the connections drawn between law and psychology by Bushman and Anderson (2001) are reviewed in detail and challenged. Finally, the fourth section of the article addresses the implications of the psychological science of instrumental and reactive aggressive subtypes for legal, mental health, and social policy.

The Psychological Science of Aggressive Subtypes

Scientific support for instrumental and reactive aggressive subtypes has stemmed from several areas of behavioral science research based on morphology of behavior, cognitive mechanisms, biology, and socialization. Among the most prolific of these disciplines, with respect to aggressive subtypes, has been research on social cognition and behavior. One body of research that has been particularly generative in demonstrating empirical findings of social-cognitive differences between instrumental and reactive aggression has been guided by social information processing theory (SIP; Crick & Dodge, 1994). According to this model, there are domains of mental operating that are potentially activated by an individual in the course of responding to a social cue (or stimulus). First, a person attends to and organizes information about the cue (*encoding of cues*). Second, the responding individual ascribes attributions of intent and causality to the stimulus (*interpretation of cues*). Third, the person addresses his or her interests in the situation at hand (*clarification of goals*). Fourth, the responder identifies possible ways of responding to the cue, either by constructing new ones or by drawing on memories of past similar situations (*response access or construction*). Fifth, during the most sophisticated step, the individual evaluates and compares these alternative response options by making judgments of response efficacy ("How easy or hard would it be for me to act this way?"), response valuation ("How good or bad would it be to do this?"), outcome valuation ("How much do I value a certain outcome over other possible outcomes?"), and outcome expectancy ("How likely is it that this way of responding will lead to a specified outcome or consequence?")—called *response evaluation and decision* (see Fontaine & Dodge, 2006). Sixth, the responding individual selects a way of responding and behaviorally enacts it.

Consider SIP in the case of a reactive killing: A man returns home to find his wife in the company of another man. He encodes aspects of the situation, such as how his wife and the other man are clothed, their physical proximity to each other, and their facial expressions in reaction to finding that he has returned home. He makes attributions about the intentions of his wife and her acquaintance and interprets that they are in an adulterous relationship. The man is incensed because this interpretation violates his value of being respected by his wife and others. He generates the idea of obtaining a gun from his cabinet and shooting the perceived

provocateurs. Having quickly evaluated this response as justified (and deserved), the man retrieves his gun and kills his wife and her acquaintance.

With respect to aggressive subtypes, SIP research has focused on two main hypotheses. First, it has been hypothesized that earlier steps of SIP, such as encoding and interpretation of cues, are more prominent in the initiation and maintenance of reactive aggressive behavior. Second, it has been hypothesized that later, more advanced SIP steps are uniquely related to instrumental aggression (see Fontaine, 2006b). Numerous empirical studies have made contributions to the literature that supports these hypotheses. For example, it has been empirically shown that bias in favor of interpreting ambiguous provocations as hostile and intentionally harmful is related to reactive aggressive behavior but is not related that which is proactive (Crick & Dodge, 1996; Dodge & Coie, 1987; Dodge, Price, Bachorowski, & Newman, 1990; Schwartz et al., 1998). In addition, reactive aggressive youths have been found to have greater difficulty encoding and organizing information, and they generate more alternative responses when facing ambiguously provocative social situations, compared with their nonreactive aggressive peers (Dodge, Lochman, Harnish, Bates, & Pettit, 1997). Other research has shown that certain styles of advanced SIP are linked to proactive (or instrumental) violent behavior. For example, proactive aggressive youths have been shown to endorse aggressive behavioral options over nonaggressive ones and to be more likely to expect favorable outcomes of their violent actions (Crick & Dodge, 1996; Schwartz et al., 1998; Smithmyer, Hubbard, & Simons, 2000). In addition, proactive aggressive youths have been found to prefer instrumental goals, such as acquisition of desired material objects, over relational goals, such as developing friendships (Crick & Dodge, 1996).

Although less abundant, some scientific support for the distinction between instrumental and reactive violence has also stemmed from research on psychophysiology (Barratt, Stanford, Kent, & Felthous, 1997; Smithmyer, Hubbard, & Simons, 1998), neuropsychology and cognitive neuroscience (Barratt et al., 1997; Barratt, Stanford, Dowdy, Liebman, & Kent, 1999; Blair, 2001, 2004), and neurobiology (Houston et al., 2003). For instance, new research on the neuroscience of aggression has suggested that these subtypes of violent conduct may be differentiated by activity in distinct regions of the brain (see Blair, 2004; Greene & Haidt, 2002). Psychophysiological research has indicated that, whereas reactive aggression is associated with increased heart rate (Jacobsen & Gottman, 1998; Pitts, 1997), instrumental aggression is related to decreased heart rate (Jacobsen & Gottman, 1998). In addition, Hubbard et al. (2002) found that elevated skin conductance was indicative of reactive aggressive youths, compared with their nonreactive aggressive peers. Also worth noting is neurochemistry research that has differentially characterized the reactive aggressive subtype. In multiple studies, researchers using alternative methodological approaches have found that decreased serotonergic function is uniquely linked to reactive aggressive behavior (e.g., Coccaro & Kavoussi, 1997; Coccaro et al., 1989; Kavoussi, Liu, & Coccaro, 1994; Kent et al., 1988; New et al., 2002; Virkkunen, De Jong, Bartko, & Linnoila, 1989). Results of these and related studies have contributed to the increase in scientific attention to the instrumental–reactive aggression distinction that has been witnessed over the last two decades in psychology.

Criminal Law and Violent Subtypes

On multiple occasions, psychologists have made reference to the distinction in U.S. criminal law between murder and manslaughter in their discussions of the behavioral science of aggressive subtypes (Bushman & Anderson, 2001; Dodge, 1991; Kempes et al., 2005). U.S. criminal law has long recognized various levels of homicide, including sublevels of murder (e.g., first and second degree murder) and manslaughter (e.g., voluntary and involuntary). The clearest and most common example of the instrumental–reactive aggression distinction in criminal law, though, resides in the differential consideration and treatment of murder and manslaughter.[4] Murder requires malice aforethought and premeditation or, at least, deliberation. On the other hand, manslaughter may be found in cases in which the actor, although still acting with intent, commits the homicide in response to an extreme provocation and while experiencing significant emotional disturbance, as determined by the reasonable person standard.[5]

A person who is charged with murder may invoke the heat of passion defense (also called the *provocation* defense; e.g., Baron, 2004; Dressler, 1982, 2002; Nourse, 1997), in an attempt to be found guilty of only the lesser offense of manslaughter and to avoid the typically harsher sentence or punishment that accompanies a murder conviction. Although the heat of passion doctrine has been debated as to whether the defense is a legal excuse or justification[6] (e.g., Baron, 2004; Dressler, 1988, 2002; Nourse, 1997), it is perhaps most accurately characterized as an affirmative, partial excuse (or mitigating)[7] defense. The defense is affirmative in that it concedes that the homicidal act was committed by the defendant. It is a partial excuse defense in that it does not completely exonerate the defendant of culpability and responsibility, as a complete excuse (e.g., duress or legal insanity) or justification (e.g., self-defense) defense would. Rather, the defense mitigates the crime on the basis of the principle of penal proportionality,

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[4] For the purposes of this article, neither a distinction between first degree murder and second degree murder nor a distinction between voluntary manslaughter and involuntary manslaughter is of primary importance. It should be noted, though, that in some states, "passion or provocation reduces an offense from first to second degree murder rather than from murder to manslaughter." (Nourse, 1997, p. 1331). Instrumental and reactive violent subtypes may also be likened to instances of nonhomicidal crimes in which the act of violence is viewed differently because it is deemed to be provoked and carried out with reactive fury (see von Hirsch & Jareborg, 1987).

[5] In criminal law, the reasonable person standard holds that certain criminal offenses may be reduced or excused if a reasonably prudent person would have acted in the same manner, given all of the circumstances.

[6] Some scholars have argued that heat of passion is actually a partial justification defense (for a recent discussion, see Dressler, 2002). However, whereas anger that results from provocation may be justified, it remains unclear what, exactly, is justifiable about killing in the heat of passion. That is, the emotion of anger and the act of homicide, though highly related in the case of heat of passion killing, must be distinguished in order to put to rest the debate as to whether the heat of passion defense is one of partial excuse or partial justification. The provocation defense concedes that the homicidal act is indeed reprehensible (and thus, in no way justifiable) but should be partially excused on the basis of the mitigating factors of provocation and induced, extreme emotional disturbance.

[7] Equating the terms partial excuse and mitigation helps to clarify some of the confusion in philosophical writings about the heat of passion defense and avoids the semantic inconsistencies that have been identified by Hart (1968) and Steinberg and Scott (2003).

in which it is argued that lesser culpability and punishment should be ascribed because of mitigating circumstances (i.e., the killing was committed out of overwhelming fury, in response to provocation). Unlike the results of successful full excuse or justification defenses, the partial defense of heat of passion is invoked with the goal of a guilty finding of manslaughter. Whereas it remains undisputed that the act is reprehensible, its degree of reprehensibility is lessened. As Steinberg and Scott (2003) wrote,

> Mitigation is a consideration when a harmful act is sufficiently blameworthy to meet the minimum threshold of criminal responsibility, but the actor's capacities are sufficiently compromised, or the circumstances of the crime sufficiently coercive, to warrant less punishment than the typical offender would receive. (p. 1010)

Although requirements of the heat of passion defense vary by jurisdiction, they often include the following: (a) A provocation occurred that was substantial enough for a reasonable person to have lost self-control; (b) the defendant was indeed provoked and, as a direct result of being provoked, he or she experienced an uncontrollable rage or an overwhelming emotional disturbance; (c) a reasonable person would not have cooled off during the time that elapsed between the provocation and killing; and (d) the defendant indeed did not cool off prior to killing the victim (cf., Averill, 1982; Baron, 2004; LaFave & Scott, 1986). In the heat of passion defense, it is argued that the killer is less guilty because his or her capacities were sufficiently compromised at the time of the killing because he or she was provoked and consequently became overwhelmed with fury.

For the purpose of illustration, consider again the case of the man who kills his wife. A murder charge is filed by the district attorney who believes that there is evidence that the perpetrator killed his wife with malice aforethought. The district attorney alleges that the perpetrator planned the killing because he purchased a gun only a few days prior to the murder and told his friends that he wished he had the same freedom that he had before he was married. In addition, the district attorney asserts that the perpetrator had a motive in the form of an insurance policy payoff. Counsel for the defendant, however, invokes the partial defense of heat of passion. In accordance, defense counsel argues that the client was deeply in love with his wife and that he arrived home early on the day of the incident in order to surprise her with flowers and dinner plans. Instead, he was shocked and devastated to find his wife in bed with his best friend. In response to having witnessed the infidelity, the defendant became flooded with emotions and literally overcome with rage. He impulsively and irrationally retrieved his gun and, finding that his best friend had slipped out through the window, shot his wife, only to ultimately fall to the floor himself in tears and utter despair. Thus, defense counsel asks the court for leniency in the form of a lesser charge or sentence—manslaughter. This account exemplifies the distinction between murder and manslaughter in U.S. criminal law. In addition, it represents characterizations of instrumental and reactive violence, respectively, in psychology.

The distinction between murder and manslaughter is guided by penal proportionality, the principle that the punishment assigned to an act must be equal (no less and no more) to the degree of criminal culpability with which the act was carried out (see Bonnie, Coughlin, & Jeffries, 1997; Steinberg & Scott, 2003).

That is, the amount of harm caused by the act cannot be the sole determinant of the punishment. Rather, the resultant harm must be considered in light of the actor's blameworthiness. Penal proportionality dictates that the act as well as the harm caused by the act must be judged in light of the actor's mens rea (or culpable mental state) in order to discern the criminality and punishment of the act in question. In the cases of murder and manslaughter, then, both crimes have as their acts the killing or homicide of another person. In addition, the resultant harm—the death of the victim—is the same for both crimes. However, whereas murder requires an extremely guilty mind by which malice aforethought or, at least, deliberation is required, the lesser crime of manslaughter necessitates a less culpable mental state in that the intentionality and rationality of the actor were limited via heat of passion (or emotional disturbance).

Legal distinctions among levels of homicide have existed in criminal law for centuries (Kempes et al., 2005). It is reasonable to presume that debate as to the justification of such distinctions has an even longer history. Such debate is sparked, in part, by disagreement over the concept of diminished responsibility. The underlying rationale of this concept is that if an individual who committed homicide is found guilty of the lesser crime of manslaughter and is punished accordingly because he or she acted in response to provocation and in the heat of passion, then it must also be the case that this person has been deemed to be less responsible for the killing that was perpetrated. However, not everyone accepts this conclusion.

In the heat of passion context, on the question of diminished responsibility, one asks the following: Is a person really less responsible for his or her actions when he or she is overwrought with anger as a result of being provoked? On the basis of how widely the distinction between murder and manslaughter is recognized, it is reasonable to presume that the majority opinion is a resounding yes. However, some philosophical positions reject the conclusion of diminished responsibility. Predictably, law-and-order advocates oppose the heat of passion doctrine because it may be used to allow one who intentionally kills to avoid a murder conviction (Dressler, 2002). The premise of this argument is that because the killing is intentional, the actor's responsibility—and thus blameworthiness—may not be viewed as diminished. Also, some legal philosophers have argued that because a significantly disproportionate number of manslaughters are committed by men against women, the heat of passion doctrine functions as a gender-biased defense that promotes angry, subordinating acts of violence by men against women (e.g., Baron, 2004; Taylor, 1986; also, see Dressler, 2002). Despite these attacks on the heat of passion doctrine, the murder–manslaughter distinction remains widely recognized and applied. In this way, U.S. criminal law has continued to recognize a distinction between instrumental and reactive violence.

Distinguishing the Distinctions: Comparing and Contrasting the Psychology and Law of Violent Subtypes

How Is the Distinction Made?

In his influential article in support of maintaining the distinction between murder and manslaughter, Dressler (2002) wrote, "Provocation law is all about emotions, most notably anger" (p. 959). Perhaps the most prominent similarity

between models of instrumental–reactive violence in psychology and murder–manslaughter in law is the distinguishing feature of emotion. Psychologists recognize emotion as one of the key elements that differentiates instrumental and reactive forms of aggression. Whereas instrumental aggression is more typically a cold, calm, and relatively emotionless behavior, reactive aggression is one of heated anger and elevated physiological arousal. Likewise, the distinction between murder and manslaughter in criminal law may arguably be reduced, in part, to emotion—or, as Dressler (2002) specified, anger. That is, but for emotion, the heat of passion defense would be definitively unsuccessful, if not entirely absurd. It is a contradiction to say that one acted in the heat of passion if one did not experience anger or emotional arousal.

However, this statement by Dressler (2002), if taken literally, is incorrect, of course. Provocation law is not, in fact, all about emotions.[8] Perhaps even more obvious than the role of emotions in provocation law is that of provocation. Not only is provocation clearly a critical element of any provocation defense, it also marks the beginning of the divergence between how the instrumental–reactive aggression distinction is conceptualized in psychology versus criminal law. That is, in addition to substantial variability in individual differences in emotional reactivity to provocation, there exists the issue in criminal law of the objective severity of the provocation.

In law, the heat of passion defense requires not only that there was provocation but that the provocation was the direct cause of the extreme emotional disturbance that restricted the killer's ability to control him- or herself and that the provocation was sufficient to meet the reasonable person standard (i.e., a reasonable person in the same set of circumstances would experience the provocation as extremely disturbing and emotionally overwhelming). In these ways, the restrictions on the provocation element are several and narrowly tailored. Historically, this has been by design, as provocation defenses are intended to apply only to very specific situations, so as to protect against abuses of the defense. In psychology, however, reactive aggression is restricted in no such way. In fact, psychologists define reactive aggression according to its structural and functional characteristics and not nearly as much by the type of cue that caused its enactment. In psychology, reactive aggressive behavior is typically attributed to situations in which the actor has perceived or interpreted an aversive stimulus. However, this is a far cry from the requirement of a very specific kind of real provocation that is essential to a successful heat of passion defense. For the purpose of scientific classification, the person who reactively aggresses may be completely unrealistic, or even delusional, in his or her perception of threat, provocation, or aversive occurrence.

This observation is supported by research on subtypes of aggressive behavior in youths by Dodge and his colleagues (Crick & Dodge, 1996; Dodge & Coie, 1987; Dodge et al., 1990, 1997; Schwartz et al., 1998). Multiple empirical studies have provided scientific evidence that youths who demonstrate reactive aggressive behavioral patterns also tend to have perceptual (encoding of cues) and attributional (interpretation of cues) biases in certain types of social interactions. Specifically, when presented with ambiguous provocation situations, reactive

[8] Make no mistake, Dressler (1982, 1988, 2002) was well aware of this.

aggressive youths tend to attribute hostility and harmful intent to the stimulus-actor and tend to show greater difficulty in organizing and interpreting incoming social information, compared with their nonreactive aggressive peers. In other words, in social situations in which it is unclear whether a person's actions are guided by provocative or by hostile intent, youths who have distorted cognitive patterns by which they are biased toward interpreting harmful intent also tend to display behavioral problems of a reactive aggressive nature.

This points to another way in which legal and psychological views of violent subtypes differ: in the scope of the cases that may be included in the reactive class in psychology versus those that may be included in the manslaughter class in law. Whereas the vast majority of provocation defenses are invoked in cases in which the defendant has been charged with murder, the scientific study of reactive aggression may apply to any homicidal or nonhomicidal act of violence. Furthermore, a considerable amount of empirical research on aggressive subtypes in psychology focuses on the emergence of and changes in styles of aggressive behavioral problems in children and adolescents. The overwhelming percentage of legal contexts to which the murder–manslaughter debate may be applied involves adults. Lastly, as previously mentioned, the heat of passion defense applies only to a specific subset of homicide cases. In psychology, on the other hand, a label of reactive aggression may be applied to any aggressive behavior that is enacted in response to a perceived aversive cue, ranging from a brutal killing to a mildly negative remark.

Why Is the Distinction Made?

Why is it that the existence of a real provocation is not of importance in distinguishing violent subtypes in psychology? The answer to this question is found in the comparative discussion of the undeniably distinct purposes that underlie the instrumental–reactive and murder–manslaughter dichotomies. The quote by Wilson (1997)—"Social science seeks to explain behavior, criminal law to judge it" (p. 7)—that opened this article serves as a reminder. The primary purposes of psychologists and behavioral scientists in studying subtypes of aggression are to discover, understand, and explain differences in alternative forms of aggression, to the degrees that such differences exist. Alternatively, in law, the interest in distinguishing manslaughter from murder is based on a reasoned conclusion that the former is less morally reprehensible than the latter.

Scientific hypotheses about subtypes of aggressive behavior were originally constructed on the basis of observations of differences in aggression displayed by nonhuman animals. Ethologists have long documented several different subtypes of aggressive behavior in cats, rats, and other animals and have found evidence supporting subtypes in the forms of neuroanatomical topology and neurochemical functioning (see Vitiello & Stoff, 1997, for a recent review). To identify and understand possible differences between human aggressive behaviors, scientists have tested related hypotheses in examinations of youths and adults. To date, the instrumental–reactive model of aggressive subtypes (e.g., Dodge, 1991; Kempes et al., 2005; Raine et al., 2006; Vitaro et al., 2006; Vitiello & Stoff, 1997) has remained the most studied and substantiated of all models of aggressive subtypes in humans.

Moving beyond basic science interests, subdisciplines of psychology such as clinical psychology and psychiatry have prevention, intervention, and treatment as their purposes in the study of aggressive subtypes. Violent behavior, undoubtedly, has long proven to be highly problematic and maladaptive in various contexts. Understanding differences in alternative forms of aggression may be useful for clinical applications at multiple (e.g., individual, family, and community) levels (e.g., see Dodge, 1991; Kempes et al., 2005; Phillips & Lochman, 2003; Vitiello & Stoff, 1997). In addition, implications of research on aggressive subtypes for legal policy and criminal justice are of interest to legal, criminological, and forensic psychologists, as well as legal philosophers and jurisprudence scholars.

In contrast to behavioral science, criminal law draws a distinction between types of violent acts because of a reasoned difference in culpability. Retributivist philosophers and legal scholars have long argued that a criminal act needs to be punished in exact accordance with—absolutely no less and no more than—the degree to which the act was wrongful. The retributive concept of just desserts, by which the amount of an act's reprehensibility dictates the severity of its due punishment, continues to be consistent with, if not guide, the Model Penal Code (American Law Institute, 1962) to this day (also, see Dressler, 2002). The doctrine of penal proportionality reflects this view: The offender should be punished in proportion to the blameworthiness of his or her offense. Law, then, distinguishes murder from manslaughter because of a reasoned difference in blameworthiness between the two. This difference in judgment applies even if the topographical features of the act (e.g., putting poison in one's drink to induce a peaceful sleep and death or a bloody death by multiple stab wounds and mutilation) are identical.

The legal distinction may be reduced to a difference in mens rea. Whereas the act (killing another person) and outcome of the act (death of the victim) are the same for murder and manslaughter, the culpable mind that underlies the killing is viewed, from a retributive perspective, to be different. Whereas murder comprises malice aforethought, manslaughter is committed absent premeditation. Thus, Dressler's (2002) assertion that the heat of passion defense is "all about emotions" (p. 959) may be taken to mean that one who invokes this defense is, in effect, arguing that because a provocation caused such an extreme emotional response, he or she was unable to fully think through the situation, let alone premeditate the killing. By differentiating his or her mental state from that which is required for murder, the defendant is arguing that his or her crime is less blameworthy. Blameworthiness is at the heart of why law distinguishes between instrumental and reactive homicides.

In re Bushman and Anderson (2001)

The instrumental–reactive model of aggressive subtypes is not without opposition. In perhaps the most critical published work, Bushman and Anderson (2001) argued that it is "time to pull the plug" (p. 273) on the instrumental–hostile aggression distinction in psychology. Of particular interest to the present article, Bushman and Anderson began making their case by providing a discussion of unresolved issues regarding distinctions between levels of homicide that have been recognized in U.S. criminal law. They wrote,

> 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.[9] (p. 273)

The authors followed this by identifying multiple issues of debate and confusion in criminal law with respect to defining and applying levels of homicide.

Bushman and Anderson (2001) made three primary observations with respect to discerning levels of homicide in U.S. criminal law. First, they asserted that there is a shift away from recognizing a difference between first and second degree murder, as evidenced by the absence of this distinction in the Model Penal Code (American Law Institute, 1962) and the abandonment of this distinction by some states. However, the relevance of this observation to the instrumental–reactive aggression model in psychology is limited, as the dichotomy in psychology is typically reflected in law by the distinction between murder and voluntary manslaughter.[10]

Problems with the murder–voluntary manslaughter distinction in the law served as the basis for Bushman and Anderson's (2001) second observation. They stated that this distinction is uncertain because (a) it is unclear what constitutes a reasonable provocation, and (b) being provoked does not preclude acting with premeditation. It is difficult to disagree with these points. However, it is also difficult to find what relevance these observations have for assessing the usefulness of the instrumental–reactive aggression distinction in behavioral science. As discussed, although there are clear conceptual similarities in the legal and psychological distinctions between instrumental and reactive violence, the how and why of the respective distinctions illustrate several critical, substantial differences. The uniqueness of the purposes that underlie the psychological (to advance science) and legal (to recognize a reasoned difference in culpability) models is in and of itself sufficient reason to conclude that any problems that may exist with the legal distinction have no bearing on whether psychology continues to view the instrumental–reactive aggression dichotomy as a useful scientific model.

Bushman and Anderson's (2001) third observation cited another important way the distinction in law is different from that made in psychology: "In general, the law does not focus on motive in determining what category of homicide has

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[9] Bushman and Anderson (2001) offered an alternative model of aggressive behavior, based on cognitive knowledge structures, that is meritorious and certainly worthy of further scientific scrutiny. The purpose of the present article is to compare and contrast the instrumental–reactive aggression distinction in psychology with the murder–manslaughter distinction in law and clarify the misunderstood parallel of these models. As a result, my responses to Bushman and Anderson's (2001) article are restricted to their introductory discussion that juxtaposes law and psychology with respect to the instrumental–reactive aggression dichotomy.

[10] It appears that Bushman and Anderson (2001) also disfavored the murder–manslaughter dichotomy in criminal law. Their article did not state their stance on the doctrine of penal proportionality, but their view that differentiating levels of homicide is a troubled practice was made clear. At present, all 50 states as well as the Model Penal Code (American Law Institute, 1962), continue to recognize different levels of unlawful killings on the basis of varying degrees of mens rea, most often by distinguishing between murder and manslaughter. In addition to the murder–manslaughter distinction, many states continue to recognize even finer subdivisions of homicide in the forms of first and second degree murder. A few even recognize third degree murder.

been committed" (p. 274). This is true. Note, though, that motive (or motivation or goal) is regularly recognized, at least conceptually, as a distinguishing feature of instrumental aggression versus reactive aggression. Whereas instrumental aggression is commonly characterized as being enacted to exact some desired consequence beyond hurting the victim (gratification of thrill-seeking, acquisition of money or material goods, etc.), the purpose of reactive violence is typically described as one of retaliation and harming the perceived provocateur (Atkins & Stoff, 1993; Dodge, 1991; Dodge et al., 1997; Kempes et al., 2005; Vitiello & Stoff, 1997). For example, Crick and Dodge (1996) found that proactive aggressive youths expect more positive outcomes to result from acting aggressively than do their reactive aggressive peers. Fontaine and Dodge (2006) discussed this issue in greater detail and further hypothesized specific goal- and outcome-oriented evaluative processes that may differentiate proactive and reactive aggressive subtypes. The role of motive as a discerning feature between instrumental and reactive aggression is important in psychology to the degree that it goes to the discipline's primary scientific goals: discovery, understanding, and explanation.[11] The fact that motive is not central to how homicide levels are distinguished further highlights a basic conceptual difference between the respective rationales of the murder–manslaughter and instrumental–reactive aggression frameworks.

Bushman and Anderson (2001) did allude to one common ground of psychology and law with respect to the instrumental–reactive aggression distinction: the implications for social policy. In their review of the history of the legal distinction made between first and second degree murder (though not between murder and manslaughter), Bushman and Anderson asserted that there has remained longstanding debate among criminal lawyers as to what sense this distinction makes to social policy. As their first example, the authors cited British jurist, Sir James Fitzjames Stephen (1883), who argued that sudden (or impulsive) murder, on the basis of its unpredictable and often baseless nature, is "at least as dangerous to society" (Stephen, 1883, p. 94) as, and "represents even more diabolical cruelty" than, its premeditated counterpart (Stephen, 1883, p. 94). The implication is that it does not make good sense to ascribe greater culpability and punishment to premeditated killings than to killings that are not premeditated. Although Stephen's differentiation of premeditated and sudden murder may not be equated to the distinction between instrumental and reactive homicide,[12] it is presumed that Bushman and Anderson referenced Stephen's position because, in terms of the instrumental–reactive aggression distinction, reactive acts of violence are typically characterized as sudden or impulsive. As discussed, impulsivity (or, alternatively, absence of premeditation) plays a critical role in assessing whether a provoked killing qualifies under the heat of passion defense. Impulsivity and other key factors that have been used to distinguish violent subtypes in psychol-

[11] It should be noted that the role of motive in the instrumental–reactive aggression distinction has been challenged by Bushman and Anderson (2001), who argued that many behaviors are based on mixed motives (i.e., punishment as well as instrumental gain).

[12] Stephen (1883) provided, as one of his illustrations of sudden homicide, the unique example of an impulsive, nonreactive killing by which "[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" (Stephen, 1883, p. 94).

ogy and law are central to the implications of the instrumental–reactive aggression distinction for public policy.

Legal, Mental Health, and Social Policy Implications

As demonstrated, with respect to the instrumental–reactive violence distinction, the primary purposes and interests of law (justice) and psychology (discovery, understanding, and explanation) are inherently different. On the basis of the principle of penal proportionality, criminal law treats manslaughter as a lesser crime than murder because of a reasoned difference in reprehensibility. Alternatively, scientific psychologists are interested in etiological, structural, topographical, functional, and phenomenological differences between instrumental and reactive instances and styles of aggression. However, law and psychology do share the substantial secondary interest of social policy.

If, as Stephen (1883) suggested, impulsive killings such as heat of passion homicide are crueler, more dangerous, and more ferocious, what implications do the recognition and assignment of the lesser crime of manslaughter, and its corresponding lesser punishment, have for social policy? This characterization might suggest to some that if any distinction were made, it should reflect the idea that reactive killing is actually more reprehensible and punishable than killing that is instrumental. Certainly, this is inconsistent with the retributive principles of diminished capacity and penal proportionality by which the heat of passion doctrine originated and was adopted. First, heat of passion killing is not viewed as crueler because, from a retributive justice perspective, the defendant is judged to have acted with diminished rationality and, thus, a less guilty mind. In other words, one who reacts to provocation out of overwhelming emotional disturbance and, in the context of said disturbance, kills another may be deemed to lack the requisite malice aforethought or premeditation for murder. In this way, the heat of passion killer's mental state is viewed to be less guilty than that of the killer who rationally premeditates the act. Second, the degree to which a reactive killing may be more dangerous and more ferocious does not necessitate that it is more reprehensible. The retributive doctrine of penal proportionality dictates that culpability and punishment are ascribed to the degree that the crime in question is blameworthy. The blameworthiness of a killing may not be discerned by considering the act's dangerousness and ferocity irrespective of the corresponding mens rea. Third, to the degree that the dangerousness of the heat of passion killing is relevant to criminal law and justice, science has not demonstrated that this type of homicide is, in fact, more dangerous.[13]

On the other hand, behavioral science research has not supported the notion that reactive aggression is less predictive of future dangerousness, or the likelihood that an individual will engage in subsequent dangerous (e.g., violent) behavior. This is an implicit presumption in criminal law, as the usual requirements of manslaughter include the condition that a provocation occurred by which an otherwise reasonable person would have lost self-control. The idea is that a reactive or manslaughter killing is partially excusable because a reasonable

[13] Here, dangerousness may be defined several different ways, such as the likelihood that a specific type of killing causes harm above and beyond the death of the target victim.

person—that is, a person who is not normally prone to reacting with significant violence—under the same circumstances would have become unable to control him- or herself. Although considerable research has demonstrated that aggression is a stable phenomenon (e.g., Huesmann, Eron, Lefkowitz, & Walder, 1984; Olweus, 1979), longitudinal modeling of instrumental subtypes versus reactive subtypes of aggression across time is extremely limited (Vitaro et al., 2006). As a result, it is not known whether one of these subtypes of aggression is more stable across time than the other. However, it should be noted that it is not a requirement of the heat of passion defense that the defendant him- or herself be an otherwise reasonable person. That is, it is not required that the defendant, but for the provocation at hand, demonstrate that he or she is not generally prone to violent reactivity. This is a critical point because it means that even if reactive aggression were scientifically demonstrated to be no less stable or predictive of future dangerousness than instrumental violence, it would not undermine the heat of passion doctrine or the practice of discerning levels of homicide on the basis of penal proportionality.

What about evidence from behavioral science research that is not reflected in the rationale for the murder–manslaughter distinction? For example, the moral capacity of instrumental versus reactive criminal offenders is surely of direct relevance to the heat of passion debate. As opposed to reactive aggressors, individuals who are chronically violent and antisocial in accordance with their instrumental goals have been described as psychopathic (see Cornell et al., 1996; Dempster, Lyon, Sullivan, & Hart, 1996; Vitacco, Neumann, Caldwell, Leistico, & Van Rybroek, 2006; Williamson, Hare, & Wong, 1987). Although psychopathy and instrumental antisocial behavior are not synonymous terms,[14] there is a conceptual link between the two in that both are associated with behavioral attitudes and styles that are cold, emotionally shallow, self-motivated, and reward driven. Furthermore, there is empirical evidence that psychopathy is common to instrumental—as opposed to reactive—aggressors. Cornell and his colleagues (Cornell et al. 1996), for example, demonstrated that incarcerated instrumental violent offenders were significantly more psychopathic than both reactive violent and nonviolent offenders. Other research has shown that psychopathy is associated with cognitive problems such as information-processing deficits (Newman, 1998), personality attributes such as antagonism (Skeem, Miller, Mulvey, Tiemann, & Monahan, 2005), and mechanisms that are critical to moral cognitive development (Blair, 1995, 2005; Blair, Jones, Clark, & Smith, 1995). In particular, Blair (see 1995, 2001, 2005) has offered evidence that psychopaths lack neurocognitive mechanisms related to making appropriate moral and conventional distinctions in one's behavioral judgments, inhibiting violent enactments, and having the inclination to take the perspectives of others.

If instrumental violence and psychopathy are related—and there is empirical evidence that they are (e.g., Cornell et al., 1996)—and psychopathy is a product,

[14] For example, psychopaths have been found to be highly impulsive, a characteristic that is typically associated with reactive (and not instrumental) aggression (e.g., Vitacco & Rogers, 2001). As such, the instrumental–reactive aggression distinction should not be equated to a distinction between psychopathic and nonpsychopathic violent behavior.

at least in part, of the atypical development by which the psychopathic individual lacks neurocognitive mechanisms that are necessary for normal moral development, does this suggest that instrumental violence (at least to the degree that it is psychopathic) may be a less culpable antisocial type than is reactive violence? A conclusion in the affirmative would appear to undermine the murder–manslaughter distinction in criminal law.[15] However, the answer to this question lies in the specific etiological foundation of the instrumental or reactive aggressive act (or behavioral pattern) in question. There is scientific evidence that instrumental violence may stem from uncontrolled, biologically based psychopathology (amygdala dysfunction) and/or controlled decision making that is based on anticipated environmental consequences (observational and enactive learning of external reinforcers). Similarly, reactive violence may also result from alternative (controlled and/or uncontrolled) etiological paths (see Blair, 2001).[16] That is, whereas some reactive aggressive acts are the products of the failure to control undeniably manageable impulses and emotions, others are the result of psychopathology-based problems that have brain-level correlates. For example, there is a large body of research on humans that has shown a strong association between serotonergic function and impulsive aggression. Disruption to the serotonin neurotransmitter system and reduced serotonergic activity have been repeatedly linked to increases in anger, hostility, and a volatile style of violence (e.g., see Fishbein, 2000; Gollan, Lee, & Coccaro, 2005; Seroczynski, Bergeman, & Coccaro, 1999), attributes often used to describe reactive aggression (e.g., Dodge, 1991). Thus, there is some scientific evidence that, although they have distinguishable etiological foundations, the biological bases for both instrumental and reactive violence inhibit self-control and the ability to refrain from acting on aggressive impulses. In this way, behavioral science findings of the etiologies and biological correlates of instrumental and reactive violence may challenge not only issues of legality but also issues of corresponding social policy.

In contrast to neurocognitive research, research in social-cognitive psychology by Dodge and his colleagues (e.g., Crick & Dodge, 1996; Dodge & Coie, 1987; Dodge et al., 1997) has focused on SIP styles (or biases) that distinguish proactive from reactive aggressive youths. Whereas Newman (e.g., 1998) has suggested that psychopathic behavior is due to information processing deficits or deficiencies (i.e., the absence of a processing mechanism that is present in normal individuals) that disrupts effective self-regulation, SIP research has examined information processing distortions or biases; that is, on-line social cognitions that are geared toward perceiving, interpreting, and evaluating facets of social cues and interactions in ways that lend themselves to enacting aggressive behavior (e.g., Dodge et al., 2003; 1997; 1990; Fontaine, 2006a; Fontaine, Burks, & Dodge,

[15] Note that this issue may also be related to the legal insanity defense by which it must be demonstrated that the defendant was unable to distinguish the rightfulness from the wrongfulness of his or her alleged act at the time of its commission. Readers are directed to Blair et al. (1995), who asked, "Is the psychopath 'morally insane'?" (p. 741)

[16] In fact, there are official diagnoses—named *antisocial personality disorder* and *intermittent explosive disorder* (or, alternatively, *impulse-control disorder not otherwise specified*)—that are recognized by the American Psychiatric Association (2000) and that, to a degree, represent psychopathological profiles of instrumental and reactive violence, respectively.

2002). This line of research shows that, to a greater degree than their reactive aggressive peers, instrumental aggressive youths tend to evaluate aggression favorably across multiple domains and expect aggression to lead to various positive outcomes. These findings support a model of instrumental aggression that is different from Newman's (1998) information processing model of psychopathy in that they distinguish proactive aggressors by how they process information and not by the presence or absence of self-regulating mechanisms. This is not at all to say that the research programs and perspectives of Blair (e.g., Blair, 2005), Dodge (e.g., Dodge et al., 1997), and Newman (e.g., Newman, 1998) are mutually exclusive or even inconsistent with each other;[17] rather, Dodge's work is crucial because it points to features of instrumental aggression that are not, by their nature, dependent on the absence of specific mechanisms of moral-cognitive and self-regulatory development. The point for legal and social policy is that individuals who enact instrumental aggression may do so simply because they are inclined to for various reasons (e.g., persistent reinforcement based on enactive and observational learning) and not because they are incapable of normal moral development or are unable to control or manage themselves.

Although it is unclear which mental health and legal interventions may be useful in preventing, treating, and rehabilitating instrumental and reactive aggressors, there appears to be increasing agreement that such should approaches be uniquely tailored to these subtypes (see Dodge, 1991 and Vitiello & Stoff, 1997, for discussions of alternative mental health treatments for instrumental and reactive aggressive youths). Resolution of these issues is made even more challenging by the significant positive correlation between instrumental and reactive aggression (Dodge & Coie, 1987; Vitiello & Stoff, 1997). Both Dodge (1991) and Vitiello and Stoff (1997) suggested that proactive aggressive youths may respond better to treatment than do their reactive aggressive counterparts, presumably because of the volatility and undercontrolled emotion of the reactive aggressive child. Specifically, Vitiello and Stoff hypothesized that instrumental aggressive children are more likely to respond to behavioral therapy on the basis of the idea that this subtype of aggressor is more capable of behavioral control.

In contrast with the hypotheses offered by Dodge (1991) and Vitiello and Stoff (1997), I suggest that the opposite may be true, partly on the basis of the motive difference that is central to the instrumental–reactive aggression distinction. That is, an alternative hypothesis states that reactive aggressive individuals are more likely to show a positive posttherapy outcome because the usual motive in reactive aggression is to retaliate against and harm the perceived provocateur. In this way, the presumed intention underlying the reactive aggressive act is to "balance the scales of justice" as the perceived provocateur is believed to have intended and/or caused harm to the reactor. However, reactive aggressive individuals have been found to be biased in their interpretations of ambiguous provocations (e.g., Crick & Dodge, 1996; Dodge & Coie, 1987). The reactive

[17] Individual differences among psychopaths and instrumental aggressors allow for many different psychological and neurocognitive profiles. Whereas one instrumental aggressor may demonstrate an absence of the key mechanisms of moral cognitive development, another may process social information in biased ways that promote a predatory antisocial approach to his or her world.

aggressor may become more willing or even motivated to change (i.e., become less aggressive) if he or she learns that his or her reactive aggressive acts ironically serve to imbalance, as opposed to balance, the scales of justice in cases in which the perceived provocateur is misjudged to have acted intentionally and wrongfully. In contrast, the instrumental aggressor desires achievement of reward goals, such as the acquisition of money or material goods and feelings of control, power, and thrill—outcomes that may be more reinforcing of an instrumental style of violent offending. Empirical tests of the alternative sets of hypotheses stated herein are clearly needed.[18]

There is an additional issue that may be relevant to how rehabilitatable instrumental violent offenders are compared with reactive violent offenders. The idea that at least a subset of psychopaths do not respond to punishment is not new (e.g., Blair et al., 2004; Newman, 1987). Guided by the empirical association between psychopathy and instrumental aggression (Cornell et al., 1996; Dempster et al., 1996; Vitacco et al., 2006), one may hypothesize that instrumental aggressors, as a group, are not only less likely to be promising candidates for rehabilitation but are also less likely to be deterred from reoffending. This resistance to deterrence may be a result of being punished or being made aware of potential punishments for criminal offending.[19] If empirically substantiated, these further distinctions between instrumental and reactive aggressors would have clear implications for legal and social policy. For example, it may be of interest to administrators of incarceration facilities (juvenile detention centers, prisons, etc.) to separately house instrumental and reactive offenders in order to improve the cost–benefit ratio of providing rehabilitative services.[20] Whereas therapeutic treatments that focus on social skills training and anger management may be useful in the rehabilitation of reactive aggressive offenders, instrumental aggressive offenders may be best served by tightly controlled environments that strictly punish rule-violating behaviors and eliminate possible reinforcers of such behaviors. However, it is likely that any rehabilitative effects on instrumental violent

[18] Of course, the likelihood of any therapeutic treatment's success with either instrumental or reactive aggression depends, in part, on both the severity (frequency and brutality) and etiology of the behavioral pattern. As described earlier, in addition to normative, controllable forms of instrumental and reactive aggression, both types of violence may be partially or wholly based in biological and neurochemical mechanisms that serve to impede the actor's conscious control of his or her behavior. In addition, it should be acknowledged that many aggressive youths (and offenders) exhibit, to varying degrees, both instrumental and reactive aggressive behaviors, and thus, treatments should be individually tailored to one's specific needs. The alternative interventions described herein may be particularly beneficial to aggressive individuals whose behavioral style is predominately or purely instrumental or reactive.

[19] Fortunately, severity of punishment is guided primarily by principles of retribution and not deterrence. Otherwise, it could actually be argued that punishments for murders committed by psychopaths should be reduced because it is unlikely that the defendant would be more specifically deterred by a relatively harsh sentence.

[20] There are additional reasons for which prison and detention center officials may want to sequester offenders on the basis of aggressive subtype. For example, housing instrumental offenders with reactive violent inmates may promote prison discordance (e.g., fighting and rioting) because of an interest on the part of instrumental offenders in learning and using means by which they can antagonize and set off their reactive violent peers.

offending will diminish following the offender's release from incarceration if these environmental controls are not maintained.

Also related to the issue of motive for psychological intervention is the social policy question that asks the following: Should society ascribe greater punishment to the instrumental aggressor, who engages in violent behavior because he or she believes it to be rewarding, or the reactive aggressor, for whom most, if not all, outcomes of his or her behavior are not considered prior to retaliating with violence? Bushman and Anderson (2001) correctly pointed out that motive is not the focus in the process of distinguishing levels of homicide. However, the hypothesized difference in motives hardly seems unrelated to assigning degrees of moral culpability to incidents of killing. That is, is it not the case that the evaluation of the instrumental offender, whereby the victim's harm is outweighed by the anticipated realization of reward goals, is part of what defines this type of mindset as necessarily guiltier than that of the reactive aggressor who makes no such prebehavioral analysis? Perhaps this is why, as Vitiello and Stoff (1997) noted, pure instrumental violent offenders are less likely to be referred for psychiatric care than are those who exhibit reactive aggression. Whereas the latter group is viewed by society as suffering from emotional and psychological disturbances, instrumental aggressors are judged to be mentally capable, deliberate wrongdoers.

A final application of the instrumental–reactive aggression distinction to legal and social policy has to do with its relevance to juvenile criminal culpability. Recently, Steinberg and Scott (2003) made a compelling case that juvenile offenders should not be held to the same standard of criminal culpability that is applied to adults because of adolescents' developmental immaturity. Specifically, they argued that, as compared with adults, adolescent decision-making abilities are less developed, the adolescent is more susceptible to coercive influence, and adolescent character is still approaching maturation. In addition, adolescence is marked by considerable change in brain regions that are associated with response inhibition, estimation of risk and reward, and emotion modulation (Steinberg, 2005). In the developmental immaturity perspective, then, it has been argued that adolescent offenders are, by their nature, less guilty than adult offenders, everything else being equal. The related question with respect to the instrumental–reactive aggression distinction is as follows: What bearing, if any, does the diminished capacity—and thus diminished responsibility—attributed to adolescents by Steinberg and Scott (2003) have on the merit of distinguishing between murder and manslaughter in criminal law? In other words, does adolescent developmental immaturity apply equally to instrumental and reactive violent crimes? This poses an important line of empirical inquiry for psychologists and behavioral scientists—and the implications of such research for discerning differences in adolescents' diminished responsibility for instrumental versus reactive violent crimes would seem to be of considerable interest to legal philosophers as well.

Conclusion

In this article, I address the parallel between the instrumental–reactive aggression dichotomy in psychology and the murder–manslaughter distinction in

criminal law. The models are compared and contrasted and their mutual relevance is examined. I briefly respond to Bushman and Anderson's (2001) article in which they point to potential problems with how levels of homicide are discerned in criminal law in the context of arguing that psychology should abandon the aggressive subtypes dichotomy because it has outlived its usefulness as a scientific model. Lastly, several implications of the aggressive subtypes approach for legal, mental health, and social policy are discussed.

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