

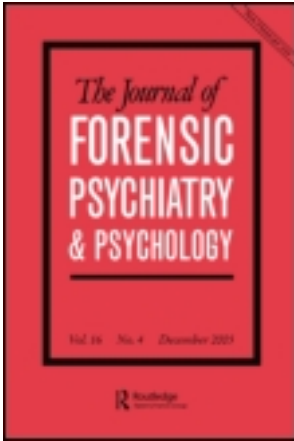
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Anger dysregulation: driver of violent offending

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Anger has had insufficient priority in the forensic field. From classical scholarship to contemporary neuroscience, anger has been known for its dynamic bearing on violence risk and for its involvement in psychiatric disorders. Anger is intrinsically and reciprocally related to threat perception, and it impels violent behavior in the absence of self-regulatory controls. Focus is given to what has been learned in forensic domains about anger as an impetus for the violent behavior of offenders. Issues bearing on anger assessment in forensic settings are discussed. Topics for further engagement in forensic research on anger are presented, including offender readiness, transdiagnostic processes, and female offender specificity. While anger treatment is not covered, interfacing discussion is provided throughout.

Keywords: anger; violence; forensic; offenders; anger assessment

Introduction

Violence is a fundamental subject for forensic psychology and psychiatry, and it is often seen to be anger-infused. Violence is certified as an international public health issue (Krug, Mercy, Dahlberg, & Zwi, 2002). A national population study in the UK (Coid et al., 2006) involving 8397 households found 12% to affirm violent behavior in the previous five years. In the US, the costs associated with non-fatal injuries and deaths due to violence in the year 2000 were reported to be more than \$70 billion, according to a Center for Disease Control and Prevention study (Corso, Mercy, Simon, Finkelstein, & Miller, 2007). Social gatekeepers and clinicians prudently look for ways of reducing violence risk, and that goal now embraces anger control. In the UK, a public information campaign on problem anger was launched by the Mental Health Foundation (2008). Until recent decades, the turbulent emotions underpinning harm-doing behavior had eluded clinical focus, having been long ignored in the privileging of other antecedents, such as criminal history, mental illness, and psychopathic personality. Court-referred ‘anger management’ is now commonplace for many varieties of

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offending behavior. Anger and its vicissitudes – rage, hate, and revenge – are drivers of violent offending, as established empirically in forensic contexts. Studies conducted with violent offenders in institutions (prisoners and hospital patients) and in the community (discharged patients and offenders on probation) have implicated anger as an activator of aggressive behavior, as has been found with quasi-forensic populations, such as perpetrators of domestic violence and driving rules violators. Some key issues concerning anger assessment in forensic arenas will be presented, and, because the topic of anger treatment is too substantial to be covered here, only interfacing discussion can be provided.

A conception of anger and its forensic relevance

Understanding anger in a forensic context entails more than merely defining it, but a definition can be straightforwardly rendered: ‘Anger is a negatively toned emotion, subjectively experienced as an aroused state of antagonism toward someone or something perceived to be the source of an aversive event. It is triggered or provoked situationally by events that are perceived to constitute deliberate harm-doing by an instigator toward oneself or toward those to whom one is endeared. Provocations usually take the form of insults, unfair treatments, or intended thwartings. Anger is prototypically experienced as a justified response to some “wrong” that has been done. While anger is situationally triggered by acute, proximal occurrences, it is shaped and facilitated contextually by conditions affecting the cognitive, arousal, and behavioral systems that comprise anger reactions. Anger activation is centrally linked to threat perceptions and survival responding’ (Novaco, 2000, p. 170). An evolutionary perspective on anger and violent response to transgression is given by Fessler (2010). For its forensic relevance, though, we must first understand some key aspects of how anger is experienced and reported.

Anger has a Janus-faced symbolic character that can thwart our assessment and intervention efforts (Novaco, 2000). Anger is symbolically represented as eruptive, destructive, unbridled, savage, venomous, burning, and consuming but also as energizing, empowering, justifying, signifying, rectifying, and relieving. The ‘volcanic-savage’ metaphors connote something requiring containment and control, whereas the ‘kinetic-justice’ metaphors connote something pressing for expression and utilization. This duality in psychosocial imagery reflects conflicting intuitions about anger, its expression, and its consequences.

The Janus-faced character of anger foils attempts to assess it in forensic settings, as it contributes to measurement reactivity, i.e. when responses to tests/interviews are given in anticipation of what those responses will mean to an audience. It also thwarts therapeutic efforts with recurrently angry individuals, because they can be reluctant to surrender the mastery-toned

functions that anger has served for them and can view enrolling in an 'anger management' service as confirming their status as being dangerous. Howells and Day (2003) thus help us replace the notion of treatment 'resistance' with 'readiness' for treatment and to grasp the multivariate co-morbidities that can impede readiness. Nevertheless, anger can be reliably and validly assessed in forensic settings, and effectively treated in those settings, even with offenders having intellectual disabilities (Taylor & Novaco, 2005).

A primary observational base from which we understand anger as a subjective emotion and make assessments of its problematic status is the personal narrative about anger experiences.

Personalized renditions, however, of how a provocation unfolded are often colored by 'hostile attribution bias' and by 'proximity bias'. Both to forensic practitioners and to researchers, the former is more familiar than the latter. Those working with offenders know well their inclination to externalize blame and to see malevolence in others.

The concept of 'hostile attribution bias' has had substantial currency in the aggression research literature. Since the early work of Dodge and colleagues (e.g. Dodge & Coie, 1987; Dodge & Frame, 1982), it is widely recognized that those who are reactively aggressive tend to perceive hostile intent in the behavior of others. Similarly, among children, Schultz, Izard, and Bear (2004) found 'anger attribution bias' to be associated with teacher-reported aggression. In the adult clinical and forensic arena, anger/hostile attribution bias has been linked to intimate partner violence (Clements & Schumacher, 2010) and persecutory symptoms among psychotic patients (An et al., 2010). Among violent offenders, Copello and Tata (1990) found a 'threat-interpretative bias' alternatively casting it in terms of anger-related appraisal processes. Earlier, in Cameron's (1943, 1951) writings on paranoia, he asserted that people who are hostile and insecure will attribute hostility to their surroundings; and Allport (1958), writing on prejudice, stated: 'With emotional provocation, a person's view of his social world becomes constricted and distorted. He sees personal demons . . . at work because his normally directed thinking is blocked by the intensity of his feelings' (p. 209–210).

The clinical assessment veridicality issues, though, do not end with the often transparent attributional bias inherent in self-centered portrayals of anger experiences. Anger incident accounts reporting the phenomenology of provocation episodes are also truncated or misleading in another respect that is not so commonly detected. When people report anger experiences, they most typically tell about things that have 'happened to them', describing elements physically and temporally proximate to the anger arousal. Provocation sources are ordinarily identified as the aversive behavior of others, such as insults, unfair treatments, or deliberate thwartings. Anger is then prototypically experienced as a justified response to some 'wrong' that has been done, portrayed in the telling as being

something about which anger is quite fitting. Subjective accounts of anger experiences thus can be seen to have a 'proximity bias'.

In ordinary discourse, clinical interviews, and research studies, anger narratives can be misleading about sources of anger and about variables influencing its course. The response to the question 'What has made you angry?' hinges on self-observational proficiencies. Precisely because getting angry involves a loss in self-monitoring capacity, people are neither good nor objective observers when they are angry. They often fail to disaggregate their anger experiences into multi-causal origins, some of which may be remote events or ambient circumstances, rather than acute, proximal events. Anger experiences are embedded or nested within an environmental-temporal context. Disturbances that may not have involved anger at the outset leave residues that are not readily recognized but which operate as a lingering backdrop for focal provocations. Importantly, while anger dyscontrol can result from long-term adverse life circumstances, acute trauma, psychosis, or biochemical imbalance, recurrent anger is a product of *agentic* behavior. People often select high conflict settings or continue to inhabit high stress environments that set the stage for their anger experiences. Habitually hostile and aggressive people create systemic conditions that fuel continued anger responding.

Humans are hard-wired for anger because of its survival functions. Faced with adversity, it can mobilize physical and psychological resources, energize behaviors for corrective action, and facilitate perseverance. Yet, the aggression-producing, harm-doing capacity of anger is unmistakable, and so is its potential to adversely affect prudent thought, core relationships, work performance, and health. Given the functionality of anger, what demarcates anger dysregulation are the parameters of frequency, reactivity, intensity, duration, and mode of expression. These parameters have different contours in various psychopathologies. With regard to survival systems and anger functions, a fundamental component is threat detection.

Anger and threat

Threat perception is intrinsic to anger activation. Anger focuses attention on situational elements having threat significance and carries an aura of repelling threat. My conception of anger as being a product of threat perceptions, as having confirmatory bias characteristics (i.e. the perception of events is biased toward fit with existing anger schemas), as being primed by aversive precursors, as having social distancing effects (i.e. expressing anger keeps worrisome people away), and as energizing aggressive behavior, as well as the value of self-control, has its roots in the writings of first- and second-century Stoics philosophers, Seneca (44/1817) and Galen (1963), respectively. Historically more proximate, Darwin (1872/1998) and Cannon (1915) understood anger as a response to survival threat (danger or pain).

Anger is reciprocally related to threat. Its activation is intrinsically associated with threat sensing, and its display serves to signal threat. Many theories of emotion have enlarged upon the Darwinian view of emotions as reactions to basic survival problems created by the environment and upon Cannon's (1915) idea that internal changes prepare the body for fight or flight behavior. From Cannon to Lang (1995), emotion has commonly been viewed as an action disposition, and anger is thought to be engaged in response to survival challenges.

In his classic article on the 'paranoid pseudo community' Cameron (1943) construed paranoia as an outcome of inadequate social learning and consequent deficits in social skills that underpin interpersonal communications – high susceptibility to slights, a deprecatory attitude toward the self, and the inability to air suspicions to gauge their objectivity are predisposing for anger and hostility. Cameron (1951) argued that a person who is hostile and insecure will attribute hostility to his surroundings, and, when he is lacking in skills needed for social validation, he will maximize the confirmatory information in the situation. Antagonistic behavior, in turn, elicits rejection and counter-aggression from others, which then serve to reinforce paranoid beliefs.

Threat-driven anger activation is a deviation-amplification process (succeeding events intensifying their own precursors) that is fundamental to the escalation of anger and aggression. Anger arousal gives rise to thoughts that justify the anger, which in turn, through associative cognitive networks, increase the likelihood that future events are appraised in ways that facilitate anger. Anger's impelling of antagonistic behavior (impulsive or planned), in a positive feedback loop, creates adaptive pressures that reinforce anger activation and the mode of response. A person with problems controlling anger is likely to lose real friends while forging interpersonal associations with others who tolerate or even support his anger.

Implicit in the notion of threat is potential harm to the subject. Anger is aroused when threat is detected, malevolence is inferred, and approach or attack motivation is engaged. It is amplified by justification schema. Threat detection occurs through elaborate neurocognitive systems that are progressively being identified. The neural architecture specialized for the processing of emotion and emotion–cognition interactions includes the limbic system, particularly the amygdala, which is centrally involved in detecting events as threats (e.g. Aggleton & Mishkin, 1986; LeDoux, 2000). Lang (1995) proposed that emotion is controlled by appetitive and aversive motive systems in the brain, with the amygdala being a key site for the aversive motivational system. Anger, though, would be seen by Lang to be a product of subcortical structures related to harm avoidance and to be primed by this motivational system. While the amygdala has a specialized activation for fear in threat detection, its response varies with whether the

threat is a fearful or an angry stimulus, as does that of other neural systems (Pichon, de Gelder, & Grezes, 2009). The orbital frontal cortex, which is highly interconnected with the amygdala, has been identified for processing of anger in facial displays and modulation of reactive aggression (e.g. Blair, 2004). Yet, the neuropsychological and psychophysiological processing story is far from straightforward, given research findings on amygdala activation to emotion displays as affected by blood testosterone (Derntyl et al., 2009), on anger being associated with approach-motivation systems (Harmon-Jones, Peterson, & Harmon-Jones, 2010), and conflicting findings on orbitofrontal activation, depending on subject characteristics and anger conditions.

Much research on the activation of the amygdala and other neural systems in threat detection has been in conjunction with experimental exposure to facial displays. The elementary point that threat detection anticipates potential harm to the subject has not been absorbed when 'angry faces' are used as experimental stimuli. The face picture is not advancing on the viewer nor does it hold sway to deliver physical or psychic pain. A review of the specialized neural networks pertinent to social threat perception in the processing of facial displays can be found in Green and Phillips (2004), most pertinent to paranoia.

Anger experienced by the subject, of course, is a different phenomenon than responding to an angry face, hence the neuropsychological story changes. In contrast to Lang's pointing to aversive or avoidance motivation, the work of Harmon-Jones on frontal brain activity (e.g. Harmon-Jones & Allen, 1998; Harmon-Jones et al., 2010) has linked anger arousal with left-prefrontal cortical activity, which has typically been associated with positive affect and approach motivation. The anger conditions that he and his colleagues have studied are not traumatic in origin or severity. Congruently, though, the behavioral approach disposition was found by Beaver, Lawrence, Passamonti, and Calder (2008) to be associated with increased amygdala activation in conjunction with the presentation of angry faces (signals of aggression).

While it is known that limbic system and cortical structures, as well as neurotransmitters such as norepinephrine, serotonin, and dopamine are involved in anger activation (e.g. Anderson & Silver, 1998; Davidson, Putnam, & Larson, 2000), the neural structures and circuitry in anger dysregulation remain to be disentangled. Anger associated with traumatic brain injury (e.g. Dyer, Bell, McCann, & Rauch, 2006; Elbogen et al, 2010; Grafman et al., 1996; McDonald, Hunt, Henry, Dimoska, & Bornhofen, 2010) is of added relevance for violent offenders, whose backgrounds and behaviors have head injury likelihood.

Pertinent to the forensic field, there are a number of neuroscience studies in this threat detection genre. It can be expected that those who are sensitized to threat will allocate attention to and have better recollection of

an angry face. Indeed, delusion-prone subjects (students), compared to those non-delusion-prone, selectively attend to angry faces (Arguedas, Green, Langdon, & Coltheart, 2006) and are better at recognizing angry faces (Laroi, D'Argembeau, & Van der Linden, 2006), reflecting a cognitive bias for threat. Understanding persecutory delusions in terms of cognitive biases is perhaps best exemplified by Bentall and colleagues (e.g. Bentall, Kinderman, & Kaney, 1994), who see such delusions as protections against threats to self-esteem – external attributions for blame are made in response to self-ideal discrepancies in a self-perpetuating loop. Kennedy, Kemp, and Dyer (1992) reported that patients with delusional disorder ('paranoid psychosis') who had committed serious violence all had persecutory delusions in which anger was a prominent affect, both before and during the violent offense in the majority of cases. Both high anger and violent offender status were found by Smith and Waterman (2003) to be associated with a processing bias for aggression words.

Raine et al. (1998) demonstrated that affective murderers (characterized by angry, reactive aggression) had lower prefrontal functioning and higher subcortical (amygdala, hypothalamus, mid-brain, thalamus) functioning compared to controls. Similarly, Coccaro, McCloskey, Fitzgerald, and Phan (2006) found exaggerated amygdala reactivity and diminished orbitofrontal activity to angry faces among persons with intermittent explosive disorder (IED). Coccaro and his colleagues conjectured about a disorder specific amygdala-orbitofrontal cortex dysfunction.

Someone who has been targeted by physical attack, will likely show selective attention to anger-related threat cues, as can be seen in the elaborate neurophysiological evidence of Pollak and Tolley-Schell (2003) regarding the attentional processing of physically abused children to angry faces. They conjectured that poorly modulated attentional control during anger displays contributes to the social-cognitive biases found in abused children. Similarly, d'Acremont and Van der Linden (2007) found a memory bias effect for angry faces among impulsive adolescents with conduct problems and hyperactivity/inattention. Among post-traumatic stress disorder (PTSD) patients, many of whom were victims of violence, Grey and Holmes (2008) identified anger and psychological threat as 'hotspots' in their trauma memories. Threat-anger reciprocities feature in the traumatic stress reactions observed among psychiatric hospital staff who have been assaulted by patients (Caldwell, 1992; Whittington & Richter, 2005; Wykes & Whittington, 1998).

Examining the anger–threat interrelationship, a transdiagnostic theme emerges. A similar memory bias and neural structural heightened activation (amygdala) and diminished activation (orbitofrontal cortex) are manifested in different disorders; attention bias or hypersensitivity to threat is empirically linked to anger across many disorders, including personality disorders, psychotic disorders, bipolar disorder, suicide attempters,

Asperger syndrome, and anxiety disorders, especially post-traumatic stress disorder (Novaco, 2010). Threat–anger reciprocities are a prominent feature of PTSD, especially for combat-related trauma (Novaco & Chemtob, 2002; Orth & Wieland, 2006). That anger potentiates threat interpretations, independent of anxiety, has been demonstrated experimentally by Barazzone and Davey (2009).

Anger, violence, and forensic populations

Anger is neither necessary nor sufficient for violence, but it is part of the confluence of multi-level risk factors affecting violent behavior, and its relevance has been insufficiently prioritized. Terminological muddiness, with the terms ‘aggression’, ‘hostility’, and ‘anger’ being used interchangeably, detracts from understanding anger as a dynamic risk factor and as a treatment need. Aggression is harm-doing behavior; hostility is an attitudinal disposition; anger is an emotion. Confusing anger with ‘hostility’ easily morphs into ‘belligerence’. Experientially, anger is often intermingled or entangled with other distress emotions, such as shame, sadness, disappointment, and fear. When seeking to access anger, especially among forensic populations, the probe hits upon the admixture of emotions and schemas within which anger is nested. There is far less clarity phenomenologically than there is definitionally.

For hospitalized patients, both forensic and civil commitment, anger is a salient problem, as identified by staff and by the patients. Within secure psychiatric facilities, anger/aggression is all too prevalent. Among over 4000 California State Hospital patients, approximately 14% had assaulted someone in hospital in a 30-day period, and about 35% were rated by their primary clinician as someone who ‘gets angry and annoyed easily’ (Novaco, 1997). The importance of anger for patient assaultiveness was established in early studies by Craig (1982) and by Kay, Wolkenfeld, and Murrill (1988), who respectively found anger to be the strongest variable associated with physical aggression before hospital admission and during hospitalization. Despite disconfirming findings by Daffern, Howells, Ogloff, and Lee (2005)¹, there are converging results for anger on hospital violence, with control variables, as discussed below. Regarding psychiatric outpatients, Posternak and Zimmerman (2002) found ‘extreme levels of anger’ (p. 668) in the preceding week for one fourth of their sample of 1300. High level anger among forensic outpatients can be seen in studies by Hornsveld, Bezuijen, Leenaars, and Kraaiaat (2008) and by McMurrin et al. (2000), even for the non-anger referrals. However, these three outpatient studies did not examine pre-clinic violence or subsequent assaultiveness.

As a potential driver of violent behavior, anger has been linked to assaultiveness by psychiatric patients both inside and outside psychiatric hospitals, here highlighting studies with control variables. Anger is

predictive of physical aggression prior to hospital admission (Craig, 1982; McNeil, Eisner, & Binder, 2003; Novaco, 1994), during institutionalization (Doyle & Dolan, 2006a; Linaker & Busch-Iversen, 1995; Novaco, 1994; Novaco & Taylor, 2004; Wang & Diamond, 1999) and in the community after discharge (Doyle & Dolan, 2006b; Monahan et al., 2001; Skeem et al., 2006). Concerning violence prior to hospitalization, McNeil et al. (2003) found that patients' self-reported anger was the strongest retrospective predictor, controlling for age, substance-related disorder, bipolar disorder, depressive disorder, and schizophrenia.

Regarding violence in forensic hospitals, Doyle and Dolan (2006a) reported that anger, patient-rated and staff-rated, was predictive of physical aggression, controlling for age, gender, length of stay, and major mental disorder. Novaco (1994) controlled for physical assaultiveness in hospital in a given year and found anger that year to predict physical assault in hospital the next year. Linaker and Busch-Iversen (1995) found angry behaviors to precede violent episodes. In the prison hospital study by Wang and Diamond (1999), anger was the strongest predictor of institutional physical aggression, controlling for background, offending, and personality measures. Similarly, in the Novaco and Taylor (2004) study, patient-rated anger significantly accounted for patients' assaults in hospital, controlling for age, IQ, length of stay, prior violent offending, and personality variables².

For hospital post-discharge community violence, in the MacArthur violence risk project (Monahan et al. 2001), high anger patients (assessed in hospital) were more than twice as likely to be violent in the community at 20 weeks and one year after discharge than were low anger patients. Doyle and Dolan (2006b) controlled for age, length of stay, gender, and forensic status, and found anger to be very significantly predictive of violence 24-week post discharge. Impressively, Skeem et al. (2006), with patients having high risk for community violence, obtained weekly post-discharge data (26 weeks) with numerous control variables; they found a time-ordered relationship between anger and violence the following week, whereas anxiety, depression, psychotic symptoms, and general psychological distress were not predictors.

With regard to incarcerated offenders, some studies have not found the anger–violence association, such as Loza and Loza-Fanous (1999) and Mills and Kroner (2003). Neither study found anger to be predictive of 'violence'.³ However, the prisoner-reported anger in both studies (in Canadian prisons) shows low scores on the measures in comparison to standardization norms for offenders (e.g. Novaco, 2003) and to other studies with prisoners using the same measures in three other countries (Baker, Van Hasselt, & Sellers, 2008; Lindqvist, Daderman, & Hellstrom, 2005; Sutter, Byrne, Byrne, Howells, & Day, 2002) and in that same country (Ford, 1991). Thus, measurement reactivity might have been at play. When anger scores are suppressed, it is hard to find predictive utility. In contrast, Cornell, Peterson, and Richards (1999) found anger (self-rated and staff-rated) to be predictive

of physical and verbal aggression (institutional infractions) among incarcerated adolescents. Institutional offending among Canadian prisoners has been observed to decline as a function of treatment-related declines in anger levels (Mela et al., 2008).

Parallel to the studies on pre-hospitalization violence, Wood and Newton (2003) found recidivism among Icelandic prisoners to be predictive of anger levels. Similarly, in Michie and Cooke's (2006) study with Scottish prisoners, anger, in rigorous multivariate analyses, was the strongest predictor of adult violence without a weapon. Motivation for offending among male youths on probation in Iceland, across three of four motive categories, was found by Gudjonsson and Sigurdsson (2007) to be most strongly predicted by anger disposition.

In summary, there is a growing body of evidence that anger impels violent behavior among forensic populations, making it an important treatment target.

Anger topics for further engagement in forensic research

Howells (2004) proposed ways to broaden our perspective on anger in violent offending, offering several possibilities: addressing readiness for anger management, broadening our theoretical framework, and developing preventive interventions. He and his colleagues, as already cited, conceptually and psychometrically advanced the anger treatment readiness idea, then enlarging it to encompass a range of treatments for violent offenders (Day et al., 2009). In a similar vein, McMurrin and Ward (2004) advanced their 'Good Lives Model' providing strategies and techniques for engaging offenders in therapy. Specific to anger treatment, enhancement of readiness can be seen as the 'preparatory phase' components of the treatment protocol of Taylor and Novaco (2005) and Walker, Novaco, O'Hanlon, and Ramm (2009). Clients are motivated to change when they can see the costs of staying the same as being higher than the costs of trying to change. People prone to anger can be stubbornly rooted in their anger disposition, and the therapeutic mission is to facilitate a smarter accounting of costs. Turning the notion of treatment resistance even further on its head, Monahan and Steadman (2011) assert that, for offenders, the situation is more accurately characterized as one of 'client-resistant services'. Howells and Day (2003) asserted that we must be prepared to modify the client, modify the therapy, and modify the setting – points that were echoed by McMurrin and Ward (2010).

To broaden our theoretical framework, Howells (2004) discussed links to contemplative science and positive psychology, involving ideas derived from Buddhism, such as mindfulness and metacognitive processes. Metacognitive transdiagnostic processes, such as rumination, substantially bear on anger (see review by Owen, 2011) and have high relevance for forensic

populations, yet remain virtually unstudied with them. The rumination scales of Caprara (1986) and of Sukhodolsky, Golub, and Cromwell (2001) have not yet had play in forensic research, although Caprara, Paciello, Gerbino, and Cugini (2007) found hostile rumination to have a longitudinal trajectory to violence among adolescents.

Rumination and its attendant self-absorption with negative affect would seem to be a key process in two important forensic population phenomena: imagined violence and over-controlled anger. Regarding imagined violence, the Grisso, Davis, Vesselinov, Appelbaum, and Monahan (2000) study is informative, as imagined violence in hospital was predictive of community violence, and anger was strongly related to the imagined violence. Regarding over-controlled anger and serious violent offending, Davey, Day, and Howells (2005) differentiated low-anger types – those with an ‘instigatory abnormality’ and those with a ‘regulatory abnormality’, with rumination and rehearsal of grievances featuring in the latter. Given the life histories, impoverished activity schedules, and anger-related schemas of people in detainment, rumination merits attention in the forensic field, not only because of its prospective priming and scripting of violence and revenge, but also because it is a viable treatment target.

Continuing to re-visit Howells’ (2004) suggestions, another topic that he broached for perspective broadening was anger’s association with masculinity, although that may pertain more to gender role identification than to than to gender *per se* (e.g. Milovchevich, Howells, Drew, & Day, 2001). The canard that anger/aggression is the province of males has likely been dispensed from contemporary societal thought. That vestige of Victorianism, predated by classical mythologies and Homeric epics, certainly fell away during the 1980s, when female anger was salient on the social landscape of many countries. While acknowledging that males are more physically aggressive than females (unmistakably true for homicide), various reviews (e.g. Archer, 2004; Stoney & Engebretson, 1994) have concluded that there is an absence of gender differences in anger. However, the complexity of anger has been missed in many gender difference inquires (e.g. anger intensity is assessed, but anger duration is not).

Gender differences in anger, with women having higher anger levels, have been obtained in a number of studies with forensic populations. Sutter et al., (2002), who compared male and female Australian prisoners on the State-Trait Anger Inventory (STAXI; Spielberger, 1996) and the Novaco Anger Scale and Provocation Inventory (NAS-PI; Novaco, 2003), found all of the STAXI and NAS-PI anger subscales to be higher for females, as was one NAS-PI provocation subscale (‘unfairness’). Archer and Haigh (1997), comparing male and female prisoners in England on multiple measures related to aggression, reported that the anger subscale of the Buss-Perry Aggression Questionnaire (Buss & Perry, 1992) was the only measure having a significant gender difference, and women were higher.

A number of studies on hospital assaultiveness indicate that female patients are more assaultive than male patients (e.g. Convit, Isay, & Volavka, 1990; Larkin, Murtagh & Hones, 1988; Ionno, 1983), and Novaco (1997) found female patients to be both more assaultive and more angry. However, other investigators report obtaining no gender differences in either hospital assaultive behavior (e.g. Linhorst & Scott, 2004; de Vogel & de Ruiter, 2005) or anger (Leenaars, 2005), few anger differences (Robertson, 2005), or have found female forensic patients to be less violent (e.g. Lumsden, Wong, Fenton, and Fenwick, 1996).

There is ample justification for boosting research on anger among female forensic populations. It is well-known that women inmates have histories of abuse, and their childhood physical abuse, which can engender internalized anger, has been found to be predictive of violent behavior (e.g. Ogle, Maier-Katkin, & Bernard, 1995; Pollack, Mullings, & Crouch, 2006). In the prison study by Beer, Morgan, Garland, and Spanierman (2007), institutional punishments were related to women's anger, which seemed to be a product of intimate relationship frictions. Among female prisoners, anger is substantially related to self-harm and suicide attempts (e.g. Chapman & Dixon-Gordon, 2007; Milligan & Andrews, 2005), prison misconduct and recidivism (Voorhis, Wright, Salisbury, & Bauman, 2010), eating disturbances (Milligan, Waller, & Andrews, 2002), and PTSD (Huang, Zhang, Momartin, Cao, & Zhao, 2006). Thus, anger, in the Risk-Needs-Responsivity framework of Andrews and his colleagues (e.g. Andrews & Dowden, 2007), constitutes a specific responsivity factor for female offenders in providing intervention for violence and their mental health needs.

Conclusion

Anger, a fundamental and functional human emotion, is problematic when dysregulated – that is, its activation, expression, and experience occur without appropriate controls. From ancient scholarship to contemporary neuroscience, the activation of anger can be seen to be intrinsically and reciprocally related to threat perception. This article has given focus to its role as a driver of the violent behavior of offenders. Due to space constraints, some forensic domains in which anger provides impetus for aggression, and for which there is substantial literature, have not been included, e.g. domestic violence, aggressive behavior on roadways, and mass murder.

Anger is not only a dynamic risk factor for violence, it also constitutes an important forensic mental health treatment need. High anger patients typically have traumatic histories, replete with abandonment and rejection, and with economic and psychological impoverishment. For them, anger becomes an entrenched mode of reactance to aversive experiences, and it can

underpin inertia against therapy programs. Boosting proficiencies in anger assessment and in enhancing offender readiness for treatment will provide for optimal therapeutic intervention. As coverage here has privileged institutional settings, we should not lose sight of anger as part of the human fabric, magnificently reflected in the autobiography of Clifford Beers (1908), for whom anger was central to his recovery from a debilitating disorder while in a psychiatric hospital.

Notes

1. It is, however, hard to interpret the results of this study, because the values reported for the range of the anger measure (Novaco Anger Scale) are outside the parameters of the instrument, and the means that are reported look to be irregular.
2. The criterion for Loza and Loza-Fanous (1999) was a recidivism risk rating. For Mills and Kroner (2003), the criteria were institutional misconduct (violence or threats, undifferentiated) and post-release recidivism (undifferentiated for violence).
3. As the latter study involved intellectual disabilities of forensic patients, it should be noted that this population is not short of 'insight' about anger and can self-report anger with a veridicality reflected in behavioral records data.

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