

Some dichotomous classifications of aggression according to its function

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Abstract

Aggression is a multifaceted phenomenon, with different concepts under the same term. A lack of agreement in the attempts to categorize its different types explains the overabundance of classifications found in the literature, with a consequent poor conceptual clarity. Some authors use the form or mode of the aggressive act as a criterion of classification, and others prefer to focus aggression on its function, purpose, or goal. This manuscript reviews a variety of functional classifications of aggressive behavior, analyzing similarities and differences among them, in an attempt to clarify the nature of diverse types of aggression. A literature review compares various dichotomies of aggression, presenting comparisons between instrumental and hostile aggression, between proactive and reactive aggression, and between premeditative and impulsive aggression. An analysis of empirical data from some self-report instruments applied in our and in other laboratories shows high correlations between hostile, reactive and impulsive aggression, on one side, and between instrumental, proactive and premeditate aggression, on the other. This supports the convenience of unifying some measurement instruments in order to offer a more conceptual clarity and parsimony in the categorization of aggression.

Keywords

aggression
types
function
impulsive vs.
premeditate
aggression
hostile vs.
instrumental
aggression
reactive vs. proactive
aggression
self-report instruments
for measuring
aggression

Introduction

Aggression is a complex phenomenon operating at multiple levels, with a large variety of meanings, and expressed behaviourally in a myriad of ways. Attempts to understand it at a 'generic level', therefore, are inadequate. It is essential to make finer discriminations between specific kinds of aggression, defining which category is being analyzed, because each has distinctive determinants and regulatory mechanisms, different functions and antecedents, and separate genetic and neural control mechanisms, being instigated by different external circumstances (Bandura 1986, 1991). Each category describes diverse phenomenological manifestations.

The general purpose of this article consists in improving our knowledge of aggression research and the diagnosis, prevention and treatment of the abnormalities of its various types. More specifically, the aim of this review is to point out some limitations in the construct validity of some measurement instruments, and to facilitate its resolution through a more practical, effective and inclusive, yet parsimonious, classification system

that maintains conceptual clarity, because without clear conceptual distinctions between subtypes of aggression, efforts to diagnose and treat violent individuals in clinical settings will continue to suffer (Parrot and Giancoila 2007).

Some dichotomous classifications

Numerous subtypes of human aggression have been proposed for over half a century (see among others, Ramirez and Andreu 2003, 2006; Parrot and Giancoila 2007). These subtypes include, but are not limited to, direct versus indirect (Buss 1961; Feshbach 1969), physical versus verbal (Buss 1961), active versus passive (Buss 1961), rational versus manipulative (Bjorkqvist, Osterman and Kaukiainen 1992), proactive versus reactive (Dodge 1991), antisocial versus prosocial (Sears 1961), annoyance-motivated versus incentive-motivated (Zillmann 1979), overt versus covert (Buss 1995), targeted versus targetless (Buss 1961), overt versus relational (Crick 1996; Crick and Grotpeter 1995), and relational versus social (Bjorkqvist 2001; Underwood, Galen and Paquette 2001).

Most classifications can be disentangled in those focused to distinguish the form or mode of aggression from those others interested in its function or goal. This study will focus at the latter ones (for a more in-depth description of the former classifications see: Ramirez and Andreu 2003) trying to refine them, eliminating redundant terminologies – rather similar concepts are labeled differently according to the different authors – with which they are mentioned in the literature, in the hope that it will help to find a more refined and parsimonious typological categorization scheme of human aggression.

The ‘frustration-aggression’ theory (Dollard et al. 1939), which has been the predominant theoretical approach of aggression for almost half a century, preferred a drive model, proposing a functional link between aggression and particular kinds of experience, described as that the degree of aggression was a direct function of the degree of frustration; it postulates that an obstacle to goal attainment leads to frustration which may lead to aggression (see Ramirez 2003). Within its frame, Saul Rosenzweig (1941) delineated one of the oldest dichotomous distinctions between different kinds of human responses to frustration: a *Positive/constructive* profile (need-persistence), which is adaptive and prosocial; and a *Negative/destructive* one (ego-defence), which is maladaptive and antisocial. More recently Friedman and Pumphrey (2002), examining some physiological correlates of this typology, found that these categories were associated with distinct autonomic nervous system response patterns.

In 1964 Seymour Feshbach drew a distinction between *expressive and impulsive* aggression – a ‘drive to hit’ presumably arising from a preceding frustration – and a learned drive to hurt somebody. Later different authors proposed other similar classifications. For instance, we analyzed a tridimensional construct of aggression, grouped in three highly interrelated bimodal dimensions in which aggression could be shown: biological

(*Physical vs. Verbal* aggression), social (*Direct vs. Indirect/Critical* aggression), and contextual or situational nature (*Instrumental vs. Reactive* aggression) (see: Andreu and Ramirez 2003; Ramirez and Andreu 2003).

Here the major similarities and differences among the main functional categories found in the literature will be analyzed: instrumental vs. hostile aggression, proactive vs. reactive aggression and premeditated vs. impulsive aggression.

Instrumental vs. Hostile aggression

Even if intention to harm seems to be a necessary feature in any kind of aggression, as a proximate goal (Anderson and Bushman 2002), at the level of an ultimate goal most researchers over the past 40 years have distinguished whether the primary *intent* is distress (instrumental aggression) or harm (hostile aggression) (Aronson 1992; Bandura 1973; Baron 1977; Feshbach 1964; Geen 1990; Hartup 1974; Hinde 1970; Kingsbury, Lambert and Hendrickse 1997). Another difference is the observation that aggressive acts may differ in terms of their primary purpose, the presence or absence of anger and the degree of planning involved.

Hostile aggression is an angry, unplanned act intended to harm another person. It is oriented towards the infliction of injury on another individual; its primary goal is to hurt the victim. It occurs as an angry reaction to some frustration, perceived provocation, or discomfort, in an impulsive, spontaneous, thoughtless (i.e., unplanned), automatic, autonomous, unreasoned manner (Wegen 1998). Anger is always present in hostile aggression, being its key-mediating variable. This form is driven by anger, motivated by anger and aggressiveness, and elicited by a threatening stimulus that evokes fear, anger and rage. Psychophysiological hostile aggression is characterized by a marked behavioural and autonomic (sympathetic) overarousal.

Stone and Costa (1990) distinguished two kinds of *hostility*: an *intrapsychic* affect, manifested in the tendency to experience anger, frustration or rage frequently, intensely, and across many situations; (it is a facet of the personality trait 'neuroticism'); and an aspect of *interpersonal* behaviour, manifested in an antagonistic orientation towards others, and typically expressed in a cool, unemotional behavioural style (it is a facet of the personality trait dimension 'aggreableness vs. hostility'). Besides this specific *hostility*, several other subtypes of hostile aggression can also be distinguished: *harassment*, unprovoked and directed at a person,¹ *hostile games*, and *defensive* or *reactive aggression*, which is provoked by the action of others (Hinde 1970; Maning 1978; Zillmann 1979).

Instrumental aggression is conceived as a premeditated technique for obtaining a variety of objectives, such as some reward, profit, or advantage for the aggressor. Its primary goal is to achieve some form of non-aggressive incentive rather than to inflict harm to the victim (Berkowitz 1993; Geen 1990). For example, a hit man may kill another person merely to get money. Tedeschi and Felson (1994) described it as motivated by attempts to

1 This definition of harassment as unprovoked though seems to be inconsistent with the previous definition of hostile aggression, mentioned as a response to provocation.

reestablish self-esteem, public image, power, control and domination; to express grievances, establish justice; or to obtain benefits such as money, information, safety, goods, gratification with sex drugs or other services. Instrumental aggression focuses on changing environmental contingencies, provides alternative ways of securing reinforcers from the environment, and may fluctuate over time as environmental reinforcements change (Lansford et al. 2002). Consideration of the potential consequences of a behaviour, thus, is a characteristic of instrumental (but not of hostile) aggression.

Although hostile aggression always includes anger as a key-mediating variable, the occurrence of instrumental aggression requires neither provocation nor anger but variables that influence outcome beliefs (calculating the potential costs and benefits), and efficacy beliefs (one's ability to carry out aggression). Outcome beliefs can be influenced by many factors, such as observational learning, direct and indirect experiences. And efficacy beliefs can be influenced by practicing aggression, either simulated (games, army training) or in real-world context (Bushman and Anderson 2001). Contrary to hostile aggression, instrumental aggression is physiologically marked by under arousal.

Individuals are far more likely to report a willingness to consider instrumental acts of aggression than hostile acts. For instance, when Wann and his colleagues (1999, 2003) asked basketball players the degree to which they would consider tripping the opposing player, thereby eliminating him from a championship contest, 48 per cent of respondents admitted at least a minimal willingness. Similarly, 42 per cent admitted a willingness to consider tripping a coach if it meant that he would be unable to participate in the game. Even larger discrepancies were found for willingness to consider breaking a player's or coach's leg. Whereas they found that 34 per cent and 32 per cent of respondents were willing to consider such acts (instrumental aggression), only 14 per cent and 13 per cent of the current sample would consider breaking the leg of a player or coach, respectively (hostile aggression). Dodge and colleagues (1990) observed the same trend when distinguishing between reactive and proactive aggression: the latter (closer to instrumental aggression) seems more justified than reactive aggression.

In summary, Instrumental aggression is consciously controlled, reasoned, calculated, premeditated and planned. In contrast, Hostile aggression is impulsive, spontaneous, unplanned, automatic, autonomous, unreasoned and more unjustified.

Proactive vs reactive aggression

According to Dodge's model of social information processing, aggressive people tend to process information from their social environment differently than non-aggressive ones: they encode environmental cues in an inaccurate manner, attending selectively to hostile or threatening cues, and misinterpreting others' behaviour. They also generate fewer, less competent,

responses, choosing aggressive responses for enactment and holding positive beliefs regarding the outcomes of aggression. On the basis of that, Dodge and colleagues (Dodge 1991; Crick and Dodge 1996; Dodge and Coie 1987; Dodge and Schwartz 1997), and previously Pitkänen/Pulkkinen (1969), proposed another dichotomic classification of human aggression based on its initiating or instigating factor: proactive (instrumental) and reactive (hostile) aggression.

This distinction, rooted in prior aggression theory and research, echoes opposing views regarding the origin and the functions of aggression (Bandura 1973; Berkowitz 1962, 1974, 1989, 1993; Dollard et al. 1939; Hartup 1974). Although both occur simultaneously in a large proportion of aggressive people, they have important and different antecedent and subsequent measures: in social-cognitive need and processing mechanisms, peer popularity, behavioural dimensions, etiology, personality traits, outcomes, and diagnosis and treatment (Vitaro, Brendgen and Tremblay 2002). Little et al. (2003) showed that proactive and reactive aggression were basically uncorrelated ($r = -0.10$). A recent meta-analysis revealed that both types of aggression are most clearly differentiated with behavioural observations and questionnaires that unravel form and functions of aggression (Polman 2007).

Reactive aggression is a hostile reaction or response to any perceived harm, threat or provocation. It serves as a retaliation or defense against frustration and is based on a negative affective status (anger or frustration). This concept has its theoretical roots in the frustration-aggression model (Dollard et al. 1939). The centerpiece of this hypothesis is the specification of motivational dynamics by which blocked goals instigated retaliatory acts to remove them or their agents (Caprara et al. 1996). Its information processing is impulsive, involuntary, automatic, inattentive, immediate, emotional and excitable (Dodge et al. 1997; Vitaro et al. 2002).

This type of aggression is associated with starting fights and getting angry, and with an absence of leadership, cooperation and caring about peers (Price and Dodge 1989). The subjects with these characteristics are perceived as more aggressive, socially isolated, and victimized (Dodge and Coie 1987; Vitaro et al. 2002; Poulin and Boivin 2000), more likely to be impulsive, unable to control their aggressive impulses, less happy and popular, and poorer at problem solving (Day, Beam and Pal 1992). This explains their peers' rejection: reactive people are friendless (Poulin and Boivin 2000; Vitaro and Brendgen 2005). In turn, reactive subjects show hostile attributional biases towards peers, who are perceived as mean and threatening to the self (Crick and Dodge 1996). These hostile attributional biases 'push' them to retaliate, predicting both retaliatory aggressive responses, within a negative cycle (Crick and Dodge 1996; Dodge 1980; Dodge, Bates and Pettit, 1990; Dodge and Coie 1987) and authority conflict (Vitaro et al. 2002).

Reactive aggression is a self-regulation failure stemming from feelings of anger, internalizing problems, such as anxiety and depression (Vitaro et al.

2002), or because of low threshold to stress, frustration, punishment or threat (Miller and Lynam 2006). Unable to self-control when provoked, there is a tendency to act impulsively and to strike out in an out-of-control manner, without sufficient thought about future consequences (Crick and Dodge 1992). These characteristic deficits in social skills (poorer at problem solving), in intention-cue detection and in perception might be related to neurological impairment and learning disabilities (Moffit 1990), possibly due to a less efficient functioning of the parietal lobe (Barratt et al. 1997).

This unique link between reactive aggression and anger is also supported by some psychophysiological correlates: a positive relation with skin conductance and a negative relation with heart rate (Hubbatt et al. 2002).

Besides its close relation to anger, reactive aggression is also related to hostility and to impulsivity personality traits (Miller and Lynam 2006): (1) positively related to neuroticism, described as a tendency towards overall emotional instability, experiencing its potentially inhibiting effect, with proneness to depressive feelings (Vitaro et al. 2002); and (2) negatively related to agreeableness and conscientiousness (Bettencourt et al. 2006). Reactive subjects are more 'excitable' because of their low threshold to react to threatening, disturbing, distracting or frustrating stimuli. They also show more inhibition and anxiety, as well as deficient regulation of emotional arousal and of attentional processes (Vitaro et al. 2002; Miller and Lynam 2006). Having more anxiety-related problems, they are predictably more prone to depressive feelings (Maser and Cloninger 1990).

Reactive aggression may be reduced by efficacious psychological and psychopharmacological strategies for negative mood states (Miller and Lynam 2006). Its treatment is mainly focused on developing appropriate skills, self-control and problem-solving abilities (Coie and Koepl Krehbiel 1990), and in anger-control (Crick and Dodge 1992).

Proactive aggression enacts aggression as an effective means for obtaining external rewards and social goals, such as possession of objects (i.e., instrumental) or dominating people (i.e., person-oriented or bullying). Its information processing is instrumentally oriented, cognitively based, reasoned, voluntary, under the guidance of self-regulatory intentional processes (Dodge and Coie 1987; Vitaro et al. 2002).

This goal-directed concept is motivated by the desire to reach a specific goal, and more likely to be acquired and reinforced. It is backed by Bandura's social learning model (1973), which determines how a person will respond to an emotional arousal: learned by observing others' aggression and positively reinforced for their own use of proactive aggression. Learning, thus, can alter the readiness to respond aggressively to a thwarting.

Proactive aggression is associated with some positive characteristics: people with this behaviour tend to evaluate aggression and its consequences in relatively positive ways, showing a good sense of humour (Crick and Dodge 1996; Dodge and Coie 1987); they have high popularity among peers, who identify them as leaders. This relation, however, remains equivocal: Dodge (1991) found in children that proactive aggression was associated

with both negative and positive peer status depending on whether aggression involved instrumental (negative peer status) or bullying (positive peer status) behaviour. The finding for reactive aggression appears to be more consistent, as described above. Using the Five Factor Model of personality, proactive aggression has been positively related to extraversion and externalizing behaviours because of the unmitigated effect of antagonism and negatively related to agreeableness (Bettencourt et al. 2006; Miller and Lynam 2006).

Proactive aggressive people show some difficulty in keeping out of fights, given their weak inhibition (Day et al. 1992); their anticipated outcome 'pulls' aggression (Dodge and Coie 1987). Proactive aggression does not show the social skills deficit characteristic of reactive aggression, but it is more strongly related to other problematic behaviours, such as substance use, property crime and sexual experience. Proactive aggression predicts adult delinquency (Vitaro et al. 1998; Miller and Lynam 2006).

The treatment of proactive aggression is focused on developing non-aggressive alternatives for achieving desire outcomes and on internalizing-values other than aggression (Grusec and Lytton 1988), changing the reinforcement contingencies (Crick and Dodge 1992), and by focusing on social skills building, such as increasing empathy and perspecting talking (Miller and Lynam 2006).

Impulsive vs. premeditate aggression

Another interesting dichotomous distinction is between aggressive acts committed impulsively, in 'hot blood', and aggressive acts committed with premeditation, in 'cold blood'.

Impulsive aggression tends to pursue immediate gratification, without thinking or concern about consequences, delaying long-run costs. Subjects characterized by this kind of behaviour have a lowered threshold for response to 'perceived' noxious stimuli (Coccaro et al. 1989; Coccaro et al. 1991; Coccaro, Bergman and McClearn 1993). A short and minimal provocation results in an agitated state; and while in this state, they do not communicate well (Barratt 1991; Barratt and Felthous 2003).

This behavioural dimension shows a high inter-correlation with impulsiveness² or impulse control and with anger/hostility (Barratt 1991; Barratt and Felthous 2003). It can take many forms, such as irritability,³ temper tantrums, punching a sibling, striking others. Irritability is also significantly inter-correlated with impulsiveness (Coccaro et al. 1989).

The neuropsychological literature tends to find increased impulsive aggression associated with cognitive deficits in executive function, in social skills (poorer at problem solving) and in intention-cue detection, as well as an impaired emotional responsiveness, which would be reflected by abnormal neural responses to negative affective stimuli (Wang et al. 1997; Zhou et al. 2006). This is a consequence of low central nervous system (CNS) arousal. According to Barratt et al. (1997), the parietal lobe would function less efficiently, while the also highly serotonergically innervated frontal

- 2 Impulsiveness is a relatively stable aspect of personality (Lee and Coccaro 2001) defined clinically as 'an individual's predisposition toward rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions to themselves or others' (Moeller et al. 2001).
- 3 Irritability is defined as a 'readiness to explode with negative affect at the slightest provocation' (Coccaro et al. 1989).

lobe would possibly be more related to antisocial behaviour. Other researchers, however, observed that impulsive aggression patients was significantly associated with blunted metabolic responses in orbital frontal, adjacent ventral medial and cingulate cortex, but not in the inferior parietal lobe (Siever et al., 1999; Soloff et al. 2000; Blair et al., 2006).

A central serotonin deficit has also been associated with increased impulsiveness and impulsive aggression (Hennig et al. 2005; Lee and Coccaro 2001; Lesch and Merschdorf 2000; Moore et al. 2002; Virkkunen et al. 1983, 1989, 1996). Coccaro et al. (1990) also found a decrease in the prolactin response to d-fenfluramine in violent offenders with a past history of suicide attempts. Most studies to date have also found an inverse correlation between the number of platelet binding sites and aggression, although there have been significant non-replicating studies and some studies with opposite findings (Cook et al. 1994). Phenytoin would also be related to impulsive aggression, decreasing the frequency and intensity of impulsive aggressive acts (Barratt 1991) and increasing CNS arousal, especially at the cortical level (Barratt and Slaughter 1997; Barratt et al. 1997; Coccaro 1992). Finally, aggression has also been associated with hypoglycemia (Andrade et al. 1988; Bovil, 1973). Virkkunen and colleagues (1982, 1984, 1994) demonstrated that impulsive violent offenders with antisocial personality disorder and offenders with intermittent explosive disorder have lower glucose nadir after glucose challenge, compared with normal volunteers. A possible explanation is that hypoglycemia leads to impaired central neuronal function and consequent impairment in cognitive processes and judgment, which may increase the risk of aggression or impulsivity.

Premeditate aggression, as opposed to the impulsive or reactive form, is planned, purposeful, intentional and goal-directed. Another difference is that it does not show that high relation with impulsiveness and with anger/hostility characteristic of impulsive aggression (Siever 2005). Premeditate violent offenders did not find any difference in serotonin levels compared with normal controls (Linnoila et al. 1983; Virkkunen et al. 1989, 1996), nor the effects of serotonin and phenytoin on CNS arousal described in impulsive aggression, or the lower glucose nadir after glucose challenge observed in impulsive violent offenders (Lee and Coccaro 2001).

Finally, besides these differentiations in the context of normal aggression already mentioned, psychiatric disorders characteristics of each type have also been described. Whereas patients with acquired *sociopathy* show an impairment of the frontal lobe (Blair et al. 2006) and their aggression is exclusively of an impulsive nature (Anderson et al. 1999; Grafman et al. 1996), a heightened level of premeditate aggression is found exclusively in another form of antisocial personality known as *psychopathy*, characterized by an increased risk of both impulsive and instrumental aggression (Blair 2006; Blair et al. 2006; Hare 2001). Proceeding from the consideration that 'cold' instrumental aggression is accompanied by deficits in learning social rules about avoiding antisocial behaviour, the hypothesis was advanced that a dysfunction of the amygdala, a structure important

for emotional learning, is primarily connected with psychopathy (Blair 2001, 2003).

Towards a unification of labels

The above-described typological models of aggression suggest that different authors use different terms for rather similar concepts. If that were the case, a more refined and parsimonious typological categorization scheme of human aggression with unified labels, might simplify its analysis. It is necessary for researchers, thus, to agree upon the categorization of aggression because, without a theoretically sound conceptualization and taxonomy of aggression, a diagnostic class of aggressive disorders would be built upon a weak foundation and ultimately be of little clinical value (Parrot and Giancola 2007).

Converging evidence from experimental research on human aggression, ratified by a recent meta-analysis done by Polman (2007), shows an apparent consensus about two contrasting forms of aggression clearly distinct, with different operation, and basic characteristics (Lansford et al. 2002; Poulin, Dishion and Boivin 2002; Ramírez and Andreu 2003). Personality variables also load on two separate factors (Caprara, Barbarelli and Zimbardo 1996) clearly different in terms of etiology, social information-processing mechanisms, phenomenology, underlying physiology, developmental course, in the type of social-cognitive processing errors they make, and also at the factorial level (Brendgen, Vitaro and Tremblay 2002), as well as in the specific therapeutic strategy. These two components can already be differentiated at 3–6 years of age (Bower 1992; Vitaro et al. 2002). In sum, the above-mentioned classifications could lead towards two competing orientations:

1. A social-cognitive type, with emphasis on an '*instrumental-premeditate-proactive-cold blooded- controlled-calculated-offensive-predatory*' orientation, associated with a '*positive*' evaluation of aggression (leadership, socialization, reciprocal relationship and friendship with other proactive children, aggressive models . . .). This goal-directed concept is motivated by the desire to reach a specific goal, and more likely it is acquired and reinforced, under the guidance of self-regulatory-intentional processes (Caprara et al. 1996; Geen 1990). It is backed by Bandura's (1973, 1986) social learning model, and more recently social-cognitive approach. This first alternative includes the characteristics described above as instrumental, premeditate and proactive forms of aggression.

Instrumental aggression is, by definition, consciously controlled, cognitively based, reasoned, calculated, premeditated, involves some degree of planning to achieve the goal, and usually occurs over a longer time frame than the more spontaneous reactive aggression. Likewise, premeditate and proactive aggressions are consistent with the idea that this form is planned and instrumental (Poulin and Boivin 2000). Proactively aggressive subjects aggress because they believe it is an effective way of obtaining desired

goals (e.g., controlling others, obtaining goods); they seem to premeditate their action, of planned nature, instrumentally oriented, cognitively based, voluntarily and under the guidance of self-regulatory intentional processes. The definition of proactive aggression, also resembles personality traits concomitant to instrumental and 'cold-blooded' aggression, such as callousness, lack of affect and empathy, habitual lying and manipulation, and superficiality (Harpur, Hakstian and Hare 1989; Cornell et al. 1996).

2. An *emotional* type, with emphasis on a '*hostile-impulsive-reactive-hot blooded-uncontrolled-retaliatory-defensive-affective*' orientation, is associated with a '*negative*' aggression (disruptive behaviour, hostile attribution biases, internalizing problems, such as depression or somatization, and victimization). This approach, based on the neo-associationism, focuses primarily on affective/motivational aspects, being more under the guidance of excitatory and involuntary, automatic or reflexive, processes instigating aggressive responses (Berkowitz 1989, 1993; Geen 1990; Caprara et al. 1996). This second alternative includes the characteristics described above as hostile, impulsive and reactive forms of aggression, and it seems less justified than the first alternative (Dodge et al. 1990; Ramirez 2007).

Hostile aggression is, by definition, automatic – it is impulsive, uncontrollable, spontaneous, unplanned, autonomous, unreasoned and more unjustified. Impulsive aggression tends to pursue immediate gratification, delaying long-run costs, without thinking or concerning about consequences. Reactive aggression is typically an impulsive, involuntary, excitable automatic, inattentive, immediate, emotional response to feeling provoked. Reactively aggressive subjects tend to respond more emotionally or impulsively (Day et al. 1991; Dodge et al. 1997; Ramírez and Andreu 2003).

We are aware, however, that this duality of aggression is not always so clearcut. Reality tends to be more complex than what these academic classifications may suggest. These different approaches to aggression, far from being independent, may overlap one another including multiple variables and dimensions (e.g., Yudofsky et al. 1986). It is not always clear when an aggressive action belongs to a specific category. For example, hostile aggression can also be proactive (i.e., initiated without a triggering provocation); in addition, it does not necessarily include anger, which is perhaps the main characteristic of reactive aggression. How should one classify an instance of anger-based aggressive behavior that would occur when the intended target is unarmed but would not occur if the target was carrying a handgun? We cannot accurately categorize many instances of human aggression because some obviously hostile aggression may involve some degree of planning and controlling features, and some obviously instrumental aggression may involve automatized, unscripted features; in many aggressive acts both controlled and automatic information processing are present (Bushman and Anderson 2001). Many aggressive acts may fit into

more than one category, being motivated by multiple goals and involving some degree of both anger and planning. Barratt and Slaughter (1998) estimated that only 50 per cent of aggressive acts could be categorized as either hostile or instrumental, leaving approximately 50 per cent of acts to be categorized as 'mixed', 'can't determine' or 'medically related'. Equating several terminologies, as we suggest to do here, may not always be appropriate (Vitaro and Brendgen 2005).

But, with these words of caution said, we still consider it is convenient to simplify at maximum, equating rather redundant and synonymous terminologies. Our hypothesis is that the above-mentioned dichotomic classifications are basically redundant concepts: even if with different terms, they show essentially synonymous styles, mirroring the distinction of different nomenclatures. The consistency of empirical findings showing high correlations between different self-report instruments presented by Andreu and Ramirez (2003) may be viewed as a clear example of the use of apparently different instruments for measuring the consistent dichotomic categorization of human aggression, and as a contribution in favour of the convenience of unifying adequately some measurement instruments in order to offer more conceptual clarity and parsimony in the categorization of aggression. Approaching the study of aggression through an empirically updated paradigm like this, thus, will stimulate more precise measurement and provide a useful standardized framework for categorizing functional aggression as parsimoniously and as conceptually clear as possible. Consequently, additional work directed towards this aim will refine more advanced theories, diagnostic, and clinical work, and therapeutic and policy interventions aimed at reducing aggression and violence.

Conclusion

The goal of this study was to improve the understanding of aggression by providing a categorization of human aggression as parsimonious as possible, avoiding redundant measurements. Our main point was that aggression is a heterogeneous construct resulting in two main phenotypes, with a considerable amount of semantic overlap. Even if diverse authors refer to them using different nomenclatures, these different terms are basically redundant concepts.

1. Most attempts to classify human aggression show a clear dichotomic distinction in the types of aggression.
2. Although different authors use different nomenclatures, which may not be quite congruent with respect to both types, redundant classifications should be avoided in order to offer a model as parsimonious as possible. Only useful distinctions should be kept, thereby leading towards a unifying terminology and measurement.

Corollary: We need a broad consensus for unifying some more refined and parsimonious self-report measurement instruments of these main

phenotypes, in the hopes that in this way a differential assessment of the subtypes of aggression and the diagnosis, prevention, and treatment of its abnormalities, can be improved more effectively.

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