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Problems of Self-Regulation in Forms and Functions of Aggression

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Abstract

The role of self-regulation in aggression has typically been studied by neglecting the multidimensional nature of aggression, which differentiates between its forms (overt vs. relational) and functions (proactive vs. reactive). Besides, the contribution of two aspects of self-regulation (effortful control and reactive control) in the regulation of aggression has been ignored. Studies suggest that only reactive aggressive children have low effortful control because aggression results from the insufficient inhibition of an aggressive impulse. On the other hand, some studies suggest that proactive aggression has no deficits in effortful control, because proactive aggression is referred to as premeditated behaviour driven by instrumental goals. However, the conceptualization of proactive aggression as premeditated with higher levels of forethought and perseverance is not sustainable, because proactive aggression is associated with reactive undercontrol which corresponds to impulsivity. This paper addresses this problem by reviewing recent research suggesting that both forms and functions of aggression are related to inadequate effortful control. Studies suggest that forms and functions of aggression are related to various aspects of impulsivity. Further, reactive overcontrolled children are, due to their behavioural inhibition, better able to attenuate their aggression. Future studies should determine which forms and functions of aggression are characterized by low reactive overcontrol, i.e. low behavioural inhibition. For children whose aggression is driven by weak reactive control, effortful control is necessary to inhibit aggressive impulses. Interventions are suggested for reinforcing self-regulation in forms and functions of aggression.

Keywords: effortful control, reactive control, forms of aggression, functions of aggression

Introduction

Inadequate self-regulation has frequently been related with aggressive behaviour (Denson et al., 2012; Olson et al., 2005). Most theories of self-regulation differentiate between effortful control through which the emotions are voluntarily regulated on the one hand, and reactive control which includes aspects of control that

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are generally difficult to voluntarily control on the other (Rothbart & Bates, 2006). Reactive control can be divided into reactive undercontrol and reactive overcontrol referring to impulsivity and behavioural inhibition, respectively (Eisenberg et al., 2007). However, relatively few studies have attempted to establish the relation between different types of self-regulation and aggression. Research examining the role of self-regulation in aggression has so far tended to focus either on measures of general aggression or to consider function (proactive vs. reactive) or form (overt vs. relational) separately. Consequently, studies have generally neglected a multidimensional approach to the study of aggression to differentiate between proactive overt, proactive relational, reactive overt, and reactive relational aggression.

Research focusing on the function of aggression suggests that effortful control deficits are more relevant to reactive than proactive aggression, because only reactive aggression stems from an uninhibited aggressive impulse which manifests on the spur of the moment. On the other hand, proactive aggression is referred to as deliberate, instrumental behaviour driven by reinforcements (Frick & Morris, 2004; Rathert et al., 2011; White et al., 2013). Research focusing on the relation between effortful control and forms of aggression indicate that overt aggression is related to a deficit of effortful control, while the relation between effortful control and relational aggression is not consistent (McQuade et al., 2017; Poland et al., 2015). The current paper addresses this problem by reviewing recent research suggesting that both forms and functions of aggression are related to inadequate effortful control. Several studies suggest that all types of aggression are related to various aspects of impulsivity (Cui et al., 2016; Miller et al., 2012; Perez Fuentes et al., 2016; Raine et al., 2006; Sarkisian et al., 2017; Scarpa et al., 2010). The present work also addresses the problem of low behavioural inhibition in forms and functions of aggression, suggesting that all types of aggression characterized by low behavioural inhibition should be overridden by high effortful control. The review aims to identify and analyse effortful control deficits as well as reactive control deficits in forms and functions of aggression which have consistently been disregarded in previous research. Self-regulation has been studied from different research traditions. While effortful control is a framework for studying self-regulation emerging from temperament research, executive functions are a framework for studying self-regulation emerging from neurocognitive research. Although effortful control and executive function pertain to different research traditions, they overlap conceptually and also have similarities in neurobiological and developmental aspects as well as shared correlates (Bridgett et al., 2013). In order to respond to the set goal of the review, focus is placed on studies analysing the relations of forms and functions of aggression with measures of self-regulation stemming from both traditions, as well as with measures of impulsivity, reflecting reactive undercontrol and measures of behavioural inhibition, reflecting reactive overcontrol. By addressing effortful control and reactive control deficits in various types of aggression, the review aims

to propose suggestions for reinforcing self-regulation in forms and functions of aggression.

The paper begins with a review of the theoretical model of self-regulation encompassing effortful control and reactive control. A brief insight is given into the effortful control capacities involved in the regulation of aggressive behaviour as well as aspects of reactive control in its regulation. The central part of the paper examines previous research on the relationship between the two facets of self-regulation and forms and functions of aggression and weighs evidence that the failure of self-regulation contributes to all types of aggression which was not recognized in previous research. The last section considers the implications of self-regulation programme for forms and functions of aggression.

Self-Regulation

Self-regulation is generally defined as the ability to modulate cognitive processes, affect and behaviour (Karoly, 1993). In line with the work of Derryberry and Rothbart (1997), Eisenberg et al. (2004) distinguished between two types of control. One is voluntarily regulated, referred to as effortful control. The other is less tendential and manifests more as an automatic response to emotional stimuli, referred to as reactive control.

Effortful Control

Effortful control refers to capacities to suppress a dominant response in order to activate a less dominant one, to plan and detect errors (Rothbart & Rueda, 2005). It is involved in the regulation of two emotional systems, one oriented toward approach and the other toward avoidance behaviour. Low levels of effortful control will let children act according to their emotional reactivity. In this context, an emotionally dysregulated child will likely have an increase in his or her emotionality which may cause the development of psychological problems. On the other hand, greater effortful control may help an emotionally dysregulated child to willingly regulate his or her emotional reactivity by detaching from threatening situations and internal feelings (Derryberry & Rothbart, 1997). Undercontrolled reactivity in arousing contexts impedes optimal emotional response, processing relevant information and inhibiting inappropriate behaviour which is associated with higher levels of aggression (Corr & McNaughton, 2014; Eisenberg, Fabes et al., 2000; Olson et al., 2005; Rothbart et al., 1994). Effortful control capacities are involved in the regulation of aggressive behaviour in many ways. For example, attentional control, defined as the capacity to switch and maintain attention, can help to focus attention away from aversive stimuli and may therefore lower the influence of emotional reactivity (Derryberry & Rothbart, 1997). In this context, attentional control is often used to train a child to delay immediate gratification and reduce levels of negative emotionality (Rothbart et al., 2004). Conversely, a child with poor attentional control

is more inclined toward externalizing problems and aggression (Eisenberg, Guthrie et al., 2000; Meesters et al., 2007). Inhibitory control refers to the ability to willingly suppress inappropriate behaviour (Rueda, 2012). Children who can inhibit their approach responses directed toward forbidden matter are more socially competent, able to resist temptation and have fewer externalizing problems (O'Connor et al., 2012; Rhoades et al., 2009). Pre-schoolers, school-aged children and adolescents with higher inhibitory control exhibit lower levels of aggression (Eisenberg et al., 2009; Qiao et al., 2016; Raaijmakers et al., 2008).

Reactive Control

Reactive control relates to relatively involuntary, unconscious or automatic responses to emotional stimuli (Derryberry & Rothbart, 1997). It corresponds to temperamental reactivity which refers to "responsiveness to change in the external and internal environment" (Rothbart & Bates, 2006, p. 100). Reactive control includes the behavioural elements of reactivity which serve to regulate behaviour (Eisenberg et al., 2007). Eisenberg et al. (2007) differentiate between reactive undercontrol and reactive overcontrol. While undercontrolled children incline towards impulsive, reward-directed behaviour, overcontrolled children are prone to constrained and rigid behaviour.

Reactive undercontrol corresponds to impulsivity, which is a multidimensional personality construct encompassing a cluster of approach behaviours such as risk-taking, lack of forethought and problems of attention (Niv et al., 2012). Reactive undercontrol reflects Gray's (1975) *Behavioral Activation System* (BAS) which mediates reactions to appetitive stimuli resulting in approach behaviour. Although impulsivity can be functional, when it is advantageous to respond rapidly with relatively little forethought (Dickman, 1990), impulsive behaviour may also be a risk factor for diverse problem behaviours, including aggression. A consistent relationship has been found between impulsivity and aggression (Perez Fuentes et al., 2016). In general, children with externalizing problems have especially high levels of reactive undercontrol (impulsivity) (Eisenberg et al., 2005).

Reactive overcontrol refers to fear reactivity and behavioural inhibition manifested as constrained behaviour or an inhibited approach in novel or uncertain situations (Derryberry & Rothbart, 1997; Eisenberg et al., 2013). Reactive overcontrol reflects Gray's (1982) *Behavioral Inhibition System* (BIS) which refers to the sensitivity to punishment and one's tendency to experience negative emotions, such as fear, anxiety, anger and frustration. Avoidance patterns of behaviourally inhibited children may protect them from maladaptive approach behaviour in a way that they inhibit or delay inappropriate behaviour (Eisenberg et al., 2009; Gray, 1987). Insufficient inhibition of inappropriate behaviour may lead to externalizing symptoms and is a predictor of aggressive behaviour (Corr & McNaughton, 2014; Kimonis et al., 2006). Since low behavioural inhibition may correspond to low

emotional arousal, which is an aversive state, individuals may try to raise their under-arousal to an optimal level by seeking stimulating and risky situations and engaging in externalizing behaviours (Scarpa et al., 2010; Williams et al., 2009). Besides, individuals who lack behavioural inhibition may be less emotionally aroused by disturbing others and may be less attached to the consequences of their aggressive behaviour on others (Blair, 1995). Thus, behaviourally inhibited children should be better able to attenuate their approach-oriented behaviour such as aggression (Williams et al., 2009). On the other hand, relatively fearless children who show strong approach tendencies may be prone to impulsive reactions. In the context where avoidance patterns of behavioural inhibition are insufficiently activated, effortful control is needed to inhibit inappropriate behaviour (Stifter et al., 2009). Consequently, in order to understand self-regulation problems in aggression, both effortful control deficits and reactive control deficits need to be taken into account.

Effortful Control and Forms and Functions of Aggression

A large number of studies indicate that insufficient self-control increases aggression (Denson et al., 2012; Olson et al., 2005). However, studies suggest that effortful control deficits explain only reactive aggression which refers to defensive, emotionally dysregulated, angry responses to a perceived threat and is associated with hostile attributional biases and dispositions toward anxiety and fear (Bobadilla et al., 2012; Marsee & Frick, 2007; Moran et al., 2014; Vitaro et al., 2002; Wilkovski & Robinson, 2008). On the other hand, other studies suggest that problems in effortful control are limited in explaining proactive aggression (Rathert et al., 2011; White et al., 2013; White & Turner, 2014) which is referred to as instrumental, premeditated and unprovoked aggression used for acquiring a desired goal (Frick & Morris, 2004). Proactive aggressive individuals have low tendency toward anxiety and fear (Bobadilla et al., 2012; Gao et al., 2015; Vitaro et al., 2002) and a higher disposition towards reward-directed behaviour (Atkins et al., 2001; Frick & White, 2008). As compared to reactive aggressive individuals, proactive aggressive individuals are more socially competent and better accepted by their peers (Poulin & Boivin, 2000; Prinstein & Cillessen, 2003). Likewise, studies show that poor executive function plays an important role in the occurrence of aggression (Villemarette-Pittman et al., 2002). Executive function is a framework for studying self-regulation which arises from cognitive neuroscience and is involved in the control of cognition (Bridgett et al., 2013). Although effortful control and executive function pertain to different research traditions, they overlap conceptually and also have similarities in neurobiological and developmental aspects as well as shared correlates (Bridgett et al., 2013). Accordingly, children with higher executive functions may inhibit inappropriate behaviour and behave in a premeditated manner, but they can also be cognitively flexible when the situation demands in order to achieve a goal (Rohlf et al., 2018; Thomson & Centifanti, 2017). Studies suggest that, unlike proactive aggression, reactive aggression is specifically associated with

deficits in executive functions (Ellis et al., 2009; Rohlf et al., 2018; White et al., 2013). Studies explain this association in a way that both reactive aggression and poor executive functions are characterized by low ability to plan and suppress inappropriate behaviour. Thus, studies suggest that effortful control deficits are particularly related to reactive, rather than proactive aggression because reactive aggression is viewed as impulsive aggression resulting from the insufficient inhibition of aggressive urges. On the other hand, proactive aggression is viewed as premeditated aggression driven by appetitive stimuli, and not as aggression resulting from the failure of an uninhibited aggressive urge (Frick & Morris, 2004; Rathert et al., 2011; White et al., 2013). However, measures of proactive and reactive aggression used in these studies consider only the functions (proactive vs. reactive) of aggression and neglect the forms (overt vs. relational) of aggression, which might have affected the study results and interpretation.

Proactive and reactive aggression can be manifested in different overt and relational forms. Overt aggression refers to harming others verbally or physically, while relational aggression refers to harming others through peer relationships (Crick & Grotpeter, 1995). Accordingly, overt aggressive individuals have higher sensitivity to appetitive stimuli (Bjork et al., 2010; Hundt et al., 2008; Olson et al., 2013) and lower predisposition towards anxiety and fear (Dane & Marini, 2014; Terranova et al., 2008). Since low predisposition towards anxiety and fear interferes with internalization of social norms, it may lead to inappropriate behaviour such as aggression. Besides, due to low anxiety and fear, reward-directed behaviour becomes more prominent (Scarpa et al., 2010). Conversely, relational aggressive individuals have higher predisposition toward anxiety and fear (Dane & Marini, 2014; Loudin et al., 2003; Loukas et al., 2005; Marsee et al., 2008; Terranova et al., 2008). Therefore they choose a relational form of aggression which is more covert and socially acceptable (Loukas et al., 2005; Terranova et al., 2008). Research on associations between self-regulation deficits and forms of aggression is not consistent. Since relational aggression is directed toward damaging others' peer relationships, it has been postulated that, unlike physical aggression, it is associated with social cognitive skills (Andreou, 2006). Therefore, unimpaired or even higher executive functions may be characteristic of relational aggression, while poor executive skills may characterize physical aggression, which some studies have confirmed (McQuade et al., 2017; O'Toole et al., 2017). On the other hand, Poland et al. (2015) and Rohlf et al. (2018) have shown that high executive functions are associated with lower levels of both forms of aggression. However, these studies have also neglected the multidimensional nature of aggression which differentiates between proactive overt aggression, proactive relational aggression, reactive overt aggression, and reactive relational aggression (Poland et al., 2015). It is thus unclear how the forms and functions of aggression are related to effortful control.

To make aggressive children better at voluntarily regulating their behaviour, it is very important to identify their specific effortful control deficits. This is very

important because if the aggressive child is treated with a method for reinforcing effortful control which is not suitable for his or her effortful control deficit, then this child will not benefit. For example, training in self-regulatory behaviour focused on inhibiting negative affect and shifting attention away from negative cues may be beneficial for aggression types characterized by high negative emotionality such as reactive and relational aggression. On the other hand, aggression types characterized by low negative emotionality and reward-directed behaviour, such as proactive and overt aggression, could benefit from training behaviour focused on inhibiting response to immediate gratification and shifting attention away from rewarding cues. Aggression types which combine sensitivity to aversive stimuli and a tendency toward reward-directed behaviour, such as reactive overt aggression and proactive relational aggression, should be trained to voluntarily control both negative emotions and reward-driven behaviour.

Reactive Overcontrol and Forms and Functions of Aggression

The highest levels of aggression are characterized by low levels of both effortful control and reactive overcontrol, i.e., low behavioural inhibition and fear reactivity (Dane & Marini, 2014; Eisenberg et al., 2005). Studies show that low levels of fear reactivity and effortful control predispose one to higher levels of overt aggression, but not relational aggression (Dane & Marini, 2014; Terranova et al., 2008), and that fearful individuals are less predisposed to reactive-overt than reactive-relational aggression (Dane & Marini, 2014). Regarding functions of aggression, the relation between reactive overcontrol and proactive and reactive aggression has not yet been examined. The proactive functions of aggression are also characterized by low fear and behavioural inhibition (Bobadilla et al., 2012; Gao et al., 2015; Vitaro et al., 2002). Consequently, it would be necessary to examine whether fearfulness motivates the avoidance of proactive aggression as well. Uninhibited children should specifically be trained to effortfully inhibit their aggressive urges because such children are predisposed to dominant responses without appropriate consideration of the negative outcomes of their behaviour (Stifter et al., 2009). For example, shifting and sustaining attention to potential punishments in novel and uncertain situations could enhance avoidance behaviour and thus attenuate a fearless approach. In this context, proactive and overt aggressive children could access the negative consequences of their actions and disengage attention from the goal of achieving a reward. Future studies should examine aggression types for which avoidance patterns of the behavioural inhibition system should be enhanced, as well as the role of effortful control in its regulation. It can be assumed that proactive overt aggression is characterized by the lowest reactive overcontrol. Intervention programmes should therefore specifically focus on strengthening reactive overcontrol in this type of aggression.

Reactive Undercontrol and Forms and Functions of Aggression

Current findings suggest that proactive aggressive children may benefit less from interventions aiming at developing self-regulation (White et al., 2013). However, this finding is not clear, as proactive aggression is significantly related to impulsivity (Cui et al., 2016; Miller et al., 2012; Perez Fuentes et al., 2016; Raine et al., 2006; Scarpa et al., 2010), as well as reactive aggression and overt and relational aggression (Raine et al., 2006; Sarkisian et al., 2017). As impulsivity is related to failure in self-regulation (Nigg, 2017), these findings suggest that all aggression types have self-regulation deficits. In order to explore multiple aspects of impulsivity, Whiteside and Lynam (2001) factor analysed most commonly used impulsivity measures and identified a four-factor structure: lack of perseverance, which refers to the inability to maintain attention or persist in a task that may be boring or difficult; lack of premeditation, which refers to the inability to think over the consequences of engaging in an activity; sensation seeking, which refers to the individual's need for new and exciting activities; and negative urgency which represents the tendency to rash actions under conditions of extreme negative affect (Whiteside & Lynam, 2001). A fifth factor, positive urgency, was later added by Cyders et al. (2007), referring to the tendency to rash actions under conditions of extreme positive affect. Although little research has examined how various aspects of impulsivity are associated with different types of aggression, it has been suggested that proactive and reactive aggression may derive from different aspects of impulsivity which is important for intervention, and prevention of aggression. For example, Hecht and Latzman (2015) have suggested that reactive aggression is specifically characterized by negative urgency and a lack of perseverance, while proactive aggression is specifically related to positive urgency. A meta-analysis (Bresin, 2019) has shown that negative and positive urgency are associated with reactive aggression, whereas proactive aggression is associated with positive urgency, a lack of premeditation, and a lack of perseverance. Latzman and Vaidya (2013) have shown that a lack of premeditation is associated with both reactive and proactive types of aggression.

These studies suggest that proactive and reactive aggression are characterized by high urgency which is the primary component of many impulsive maladaptive behaviours such as aggression (Berg et al., 2015). Individuals under intense emotions are more prone to focus on their immediate situation. Although sometimes adaptive behaviour relates to a focus on one's immediate situation when, for example, one is motivated to achieve a goal, directing attention to the immediate may also lead to inconsiderate and rash actions. For example, individuals who focus on their current anger, or on their desire for a reward, may, in the absence of a coexisting focus on their future plans, be under heightened risk of rash actions. Emotionally driven actions provide immediate gratification even if such actions include involvement in risky situations or do not correspond to one's long-term goals. These actions may be motivated by negative reinforcement such as the reduction of stress or by positive

reinforcement such as meeting one's needs (Cyders & Smith, 2008). Further, strong emotions may impair rational decision-making (Bechara et al., 2000) which leads one to be more prone to thoughtless behaviour and rash actions (Cyders & Smith, 2008). Accordingly, a combination of high emotional reactivity and a tendency to behave rashly without thinking over the consequences of one's behaviour while experiencing strong emotions may sustain urgency (Billieux et al., 2010). Positive urgency is associated with positive reinforcement. Individuals driven by positive urgency long for immediate gratification and thus engage in highly rewarding and risky behaviours (Berg et al., 2015). The relation between positive urgency and proactive aggression may be understood in the context of reward-driven behaviour, positive affect and approach motivation which are characteristics of proactive aggression (Bresin, 2019). In general, strong positive emotions impair the ability to take into account the consequences of one's risky behaviour, which increases the likelihood of impulsive behaviour (Stewart, 2013). Risk-taking behaviour may be elicited by positive emotions in another way. In order to maintain or enhance their good mood, individuals may engage in thrill-seeking actions (Cyders & Smith, 2008). Regarding reactive aggression, the latter behaviour may be explained by high urgency as it represents a reactive form of impulsivity. This implies that high urgency heightens the likelihood of aggression in a situation of perceived threat or provocation (Bresin, 2019). Negative urgency is driven by negative reinforcement which is motivated by the avoidance of adverse events or emotions. Thus, maladaptive behaviour elicited by negative urgency may briefly attenuate or eliminate negative emotions without premeditation about the negative outcomes of such behaviour (Tice et al., 2001). Impairing rational decision-making, negative urgency increases the likelihood of acting without forethought which may lead to rash actions (Gagnon et al., 2013). Further, negative urgency mediates the relation between hostile attributional biases and reactive aggression (Gagnon & Rochat, 2017). Hostile attributional biases tend to increase negative affect which promotes reactive aggression because individuals are less able to regulate negative emotions (Gagnon et al., 2015; Gagnon & Rochat, 2017).

Studies also suggest that proactive aggression and reactive aggression are related to a lack of premeditation and lack of perseverance (Bresin, 2019; Hecht & Latzman, 2015; Latzman & Vaidya, 2013). A lack of premeditation is conceptualized as acting on the spur of the moment without considering the consequences of one's action (Whiteside & Lynam, 2001) and thus represents an aspect of aggression related to lack of forethought. Such individuals make decisions with little consideration of past outcomes or regard for future outcomes which might result from their actions (Whiteside & Lynam, 2001; Zermatten et al., 2005). These individuals may also be less sensitive to punishment. In other words, the negative outcomes of their actions may not be sufficient to prevent these individuals from behaving similarly in future (Berg et al., 2015). A lack of premeditation may facilitate aggression as a disinhibitor. Individuals who are less able to think over the consequences of their aggressive behaviour and are less able to plan ahead also are

less able to inhibit their aggressive reactions. On the other hand, individuals who have a high level of this dimension are more able to inhibit their aggressive impulses because they can plan ahead, which includes pausing and anticipating the potential negative consequences of their aggressive actions. In the same way, their ability to plan may prompt them to consider non-aggressive methods for achieving their goals (Bresin, 2019).

A lack of perseverance is related to the poor capacity of staying focused on a task over a certain period of time. Individuals who have a great lack of perseverance may face problems in ignoring distracting stimuli, such as irrelevant thoughts, or encounter problems in shifting attention from irrelevant thoughts and focusing on a specific one (Bechara & Van der Linden, 2005). Because inhibition of an aggressive impulse requires persistence in ignoring stimuli that may provoke aggression and in shifting attention away from aversive stimuli, individuals who can persist may suppress the inappropriate behaviour. In contrast, individuals who lack persistence find it difficult to resist temptation and may behave aggressively (Bresin, 2019).

A meta-analysis (Bresin, 2019) suggests that all facets of impulsivity are significantly positively related to overt aggression, while relational aggression is significantly related to positive and negative urgency. Since few studies explore the relation between specific impulsivity dimensions and various types of aggression, future studies should examine this relation and include other models of impulsivity in addition to the UPPS model (Whiteside & Lynam, 2001).

Implications for Intervention

Self-regulation programmes for the forms and functions of aggression should focus on training individuals to behave adaptively when experiencing strong emotions. The relation between high emotional reactivity and forms and functions of aggression can be reduced through the contribution of effortful control (Derryberry & Rothbart, 1997; Eisenberg et al., 2004). Interfering with emotional reactivity, attentional control may reduce aggression by regulating high emotional reactivity (Morris et al., 2014). Proactive aggressive children could benefit from interventions focusing on strengthening attentional control by means of which they could voluntarily constrain positive urgency, shifting attention away from the possible rewarding consequences of aggression and by focusing more on the potential punishments. Likewise, reactive aggressive children could benefit from strengthened attentional control by which they could voluntarily reduce the attention paid to threatening stimuli and raise attention to the relieving stimuli (Derryberry & Rothbart, 1997). In this way, individuals can function at a more optimal level of emotional arousal when they are better able to make rational decisions such as taking into account long-term interests. Indeed, intervention should help aggressive individuals to keep their attention on their long-term goals, thereby helping them to avoid risky or dangerous behaviours.

Inhibitory control is involved in reducing impulsivity (Enticott et al., 2006; Gill & Calkins, 2003). In this context, all impulsivity-related dimensions may be associated with problems of insufficient inhibition. For example, urgency may be related to the inadequate inhibition of dominant emotional responses in arousing situations which restrains one from regarding the probable outcomes of an action and not just its immediate gratification (Bechara & Van der Linden, 2005; Billieux et al., 2010). Individuals who greatly lack premeditation are less able to consider the consequences of their aggressive behaviour and are thereby less able to inhibit inappropriate behaviour. Individuals who lack perseverance may specifically be in an adverse situation when they want to persist in inhibiting their aggression and not give in to the temptation to aggress (Bresin, 2019). Poland et al. (2015) have shown that both forms and functions of aggression are related to poor inhibitory control. That is, individuals who are prone to reactive and proactive aggression may in frustrating situations and in high reward activities be less able to suppress a physical or relational aggressive response. Thus, intervention strategies targeting problems of inhibition are relevant for reducing all types of aggressive behaviours.

However, studies continuously suggest that proactively aggressive children are better able to inhibit their behaviours in order to achieve a goal. The typology of proactive and premeditated aggression is often used interchangeably. However, the conceptualization of proactive aggression characterized by higher levels of self-regulation such as greater levels of perseverance and forethought is not sustainable. Since there are apparent differences between these two types of aggression, such as the relations to different outcomes, studies suggest that proactive and premeditated aggression may have different etiologies (Babcock et al., 2014; Smeijers et al., 2018; Tharp et al., 2011). Because studies suggest that proactive aggression is related to facets of impulsivity, there is a need for intervention programmes to enable individuals with proactive aggression to attenuate their positive urgency by inhibiting their high emotional responses to provoking situations. Further interventions should enable those individuals to focus attention on the long-term consequences of their actions, such as punishment if they have aggressive urges and to inhibit irrelevant information while persisting in their goals, such as inhibiting aggressive urges. Treating proactive aggression without focusing on the problems of impulsiveness will be incomplete and will probably not have therapeutic benefits.

Furthermore, the problems of weak reactive control, such as low behavioural inhibition and fear reactivity, may be attenuated by fostering high effortful control. Fearlessness and low behavioural inhibition are related to overtly aggressive as well as proactively aggressive individuals. Interventions targeting avoidance patterns of behaviour, such as shifting attention to the potential risks of becoming involved in novel situations, to the distress cues of others, may reduce the aggressive behaviour of those individuals.

Conclusion

In order to understand the role of self-regulation in aggression, it is necessary to take a multidimensional approach to the study of aggression which differentiates between forms and functions of aggression. Besides, self-regulation interventions for forms and functions of aggression should focus on the contribution of effortful control as well as reactive control. Mechanisms through which improved effortful control and reactive control may lead to reduced forms and functions of aggression warrant examination. Since there is a scarcity of studies exploring the relation between self-regulation and aggression in general and specifically between the facets of effortful control, reactive control and forms and functions of aggression, the conclusions of this study should be considered in the light of existing scientific work conducted in this domain. Although the UPPS model of impulsivity (Whiteside & Lynam, 2001) is a well-known model, it is not the only way to categorize the dimensions of impulsivity. It is possible that different results might emerge from an alternative model. However, so far, only the UPPS model of impulsivity has been used to analyse the relation between the facets of impulsivity and the forms and functions of aggression. Although not the scope of this study, self-regulation strategies for reducing forms and functions of aggression might be complemented with cognitive bias modification strategies which are promising techniques for regulating hostile attributional biases (Hawkins & Cougle, 2013), social information-processing skills which improve social competence (Fraser et al., 2005), and behavioural interventions focused on conceiving alternative ways of achieving a goal (Blader et al., 2013).

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Problemi samoregulacije u agresiji s obzirom na oblik i funkciju u kojoj se pojavljuje

Sažetak

Uloga samoregulacije u agresiji uobičajeno se proučavala zanemarivanjem višedimenzionalne prirode agresije koja razlikuje oblike (otvorena nasuprot relacijskoj) i funkcije (proaktivna nasuprot reaktivnoj) agresije. Osim toga, zanemarivan je doprinos dvaju vidova samoregulacije (voljna i reaktivna kontrola) u regulaciji agresije. Dosadašnja istraživanja sugeriraju da samo reaktivno agresivna djeca imaju nisku voljnu kontrolu jer je njihova agresija posljedica nedovoljne inhibicije agresivnih impulsa. S druge se strane sugerira da proaktivno agresivna djeca nemaju probleme u voljnoj kontroli jer se proaktivna agresija opisuje kao unaprijed smišljeno ponašanje koje je vođeno instrumentalnim ciljevima. Međutim, konceptualizacija proaktivne agresije kao planirane agresije s predumišljajem nije održiva jer je proaktivna agresija povezana s reaktivnom nedovoljnom kontrolom, što predstavlja impulzivnost. U ovome se radu pregledom recentnih istraživanja analizira taj problem te se sugerira da su svi tipovi agresije povezani s nedovoljnom voljnom kontrolom. Istraživanja sugeriraju da su tipovi agresije s obzirom na oblik i funkciju povezani s različitim aspektima impulzivnosti. Nadalje, djeca koja imaju reaktivnu pretjeranu kontrolu mogu putem bihevioralne inhibicije umanjiti svoju agresiju. Budućim bi se istraživanjima trebalo utvrditi koji su oblici i funkcije agresije povezani s niskom reaktivnom pretjeranom kontrolom, tj. s niskom bihevioralnom inhibicijom. Kod djece čija je agresija posljedica slabe reaktivne kontrole potrebno je razviti voljnu kontrolu da bi se inhibiralo agresivno ponašanje. Predložene su intervencije za učvršćivanje samoregulacije u tipovima agresije s obzirom na oblik i funkciju u kojima se pojavljuju.

Ključne riječi: voljna kontrola, reaktivna kontrola, oblici agresije, funkcije agresije

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