Personality and Individual Differences 83 (2015) 192–197

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Revealing the nuanced associations between facets of trait impulsivity and reactive and proactive aggression

Lisa K. Hecht, Robert D. Latzman *

Department of Psychology, Georgia State University, United States

ARTICLE INFO

Article history:
Received 25 November 2014
Received in revised form 4 March 2015
Accepted 9 April 2015

Keywords:
Trait impulsivity
Reactive aggression
Proactive aggression

ABSTRACT

Although impulsivity has been repeatedly associated with aggression, specific associations between facets of impulsivity and reactive (RA) and proactive (PA) have yet to be fully elucidated. This may be due, in part, to overlapping variance among facets of impulsivity and between RA/PA. The current study systematically examined associations among these variables using both bivariate correlations as well as path analysis. In addition to raw aggression scores, we isolated the variance unique to both RA/PA by regressing RA onto PA (and vice versa), and saving these residual aggression scores. Participants included 384 racially-diverse undergraduates. Results indicated facets of impulsivity uniquely characterize RA/PA, particularly using residual aggression scores. RA was uniquely characterized by higher levels of Negative Urgency followed by low Perseverance, as well as high Premeditation and low Positive Urgency. In contrast, PA was uniquely characterized by higher levels of Positive Urgency, and to a lesser degree, high Premeditation. Results indicate facets of impulsivity represent potentially different underlying pathways to specific subtypes of aggression. As such, impulsivity, particularly in the context of affect, may be especially important to consider in relation to specific subtypes of aggression.

1. Introduction

Aggression represents a broad and heterogeneous construct encompassing a variety of behaviors. Although such complex behaviors are likely explained by multiple etiological processes (e.g., Broidy et al., 2003; Loeber & Hay, 1997; Moffitt, 1993), individual differences in personality (e.g., Caprara, Barbaranelli, Pastorelli, & Perugini, 1994; Geen & Donnerstein, 1998), and impulsivity in particular (e.g., Latzman & Vaidya, 2013; Miller & Lynam, 2001), have been repeatedly found to play an important role in the development and persistence of aggressive and antisocial behaviors. Yet, aggression is a broad, complex construct. To better delineate the heterogeneity within aggression, researchers frequently differentiate between various subtypes or forms of aggressive behaviors. One common distinction, which may be especially pertinent when considering differences in trait impulsivity, is that between reactive (RA) and proactive aggression (PA). Whereas RA is an impulsive, angry response to a provocation, PA is a planned act of aggression committed as a means to achieve a secondary goal. Although their distinction rests heavily on impulsivity (Berkowitz, 1993; Dodge, 1991), the way in which various facets of trait impulsivity relate to RA/PA is not yet understood. As such, it is important to empirically evaluate both the shared and unique associations between facets of trait impulsivity and subtypes of aggression. Such investigations may help to elucidate pathways between individual differences in personality and aggression, and potentially identify avenues through which to intervene (e.g., Derefinko, DeWall, Metze, Walsh, & Lynam, 2011).

1.1. Impulsivity and aggression

Increasingly, researchers are directing effort toward understanding impulsivity's contribution to aggression (e.g., Miller & Lynam, 2001). Indeed, impulsivity and related constructs (e.g., self-control) have repeatedly been associated with aggression (e.g., Latzman & Vaidya, 2013; Miller & Lynam, 2001). Although historically a poorly agreed upon construct, there is an emerging consensus that impulsivity is a multidimensional construct that can be meaningfully divided into distinct dimensions (Roberts, Bogg, Walton, Chernyshenko, & Stark, 2004; Vaidya, Latzman, Markon, & Watson, 2010; Whiteside & Lynam, 2009). To clarify its multidimensional nature, Whiteside and Lynam (2001) analyzed the factor structure of several existing widely-used self-report impulsivity measures, resulting in the development of a

* Corresponding author at: Department of Psychology, Georgia State University, PO Box 5010, Atlanta, GA 30302-5010, United States.
E-mail addresses: lhecht1@student.gsu.edu (L.K. Hecht), rlatzman@gsu.edu (R.D. Latzman).

http://dx.doi.org/10.1016/j.paid.2015.04.021
0191-8869/

multifaceted conceptualization of trait impulsivity, with the UPPS Impulsive Behavior Scale created to operationalize these facets. In this model, trait impulsivity is comprised of: Sensation Seeking, a tendency to engage in rash action as a means of seeking excitement or arousal; Urgency, a tendency toward rash action during periods of intense affect; (lack of) Premeditation, characterized by a poor ability to think through to the consequences of one's actions; and (lack of) Perseverance, characterized by difficulty in following through with tasks from beginning to end. Subsequent research by Cyders and Smith (2007, 2008) demonstrated the importance of separating Urgency into Positive and Negative Urgency, which were both included in the revised UPPS-P measure (Cyders & Smith, 2007). Negative and Positive Urgency represent tendencies toward impulsive action during periods of intense negative and positive affect, respectively.

Although relatively few studies have investigated these facets in relation to aggression, Negative and Positive Urgency, Sensation Seeking, and (lack of) Premeditation have all been broadly implicated (Carlson, Pritchard, & Dominelli, 2013; Lynam & Miller, 2004; Miller, Flory, Lynam, & Leukefeld, 2003; Seibert, Miller, Pryor, Reidy, & Zeichner, 2010). However, these studies employ various operationalizations of aggression, and their results vary. For example, Lynam and Miller (2004) found only (lack of) Premeditation to be associated with higher levels of both choosing and enacting an aggressive response after viewing short provocative vignettes. In contrast, using a response choice aggression paradigm, Seibert et al. (2010) found, only Positive Urgency to be significantly positively correlated with aggression, and no significant associations were found in multivariate regression analyses. The authors speculated that the lack of associations might be related to the nature of the laboratory aggression paradigm, which may have indexed cold, calculated aggression (similar to PA), rather than tapping impulsive, affectively-based aggression (similar to RA). All told, these studies suggest facets of impulsivity differentially relate to aggression, and highlight the importance of considering various aspects of aggression.

1.2. Trait impulsivity and subtypes of aggression

Although the lower order structure of aggression is not fully agreed upon, researchers commonly distinguish between two subtypes or forms of aggression, primarily differentiated by the level of impulsivity and affect involved in the act: reactive and proactive (Berkowitz, 1993; Dodge, 1991). RA refers to impulsive aggressive acts that are retaliatory in nature, carried out in the context of negative affective states such as anger or frustration, whereas PA represents planned, affect-neutral acts that are committed as a means to achieve a secondary goal (Bandura, 1978; Berkowitz, 1993). Although some have questioned the utility of the distinction between RA/PA given the relatively high correlation between them (e.g., Bushman & Anderson, 2001), the distinction has been broadly supported in the extant literature, as each exhibit differential associations with various external correlates. For example, RA/PA are differentially associated with social cognitive biases (e.g., Crick & Dodge, 1996), emotion regulation (Dodge, Lochman, Harnish, Bates, & Pettit, 1997), and personality traits, including impulsivity (e.g., Latzman, Vaidya, Clark, & Watson, 2011; Miller & Lynam, 2006). All told, this literature indicates RA/PA may arise from potentially different etiological processes, one of which appears to be impulsivity. Yet, less is known concerning the specificity of associations with facets of trait impulsivity.

Indeed, recent research does suggest that facets of trait impulsivity may be differentially associated with subtypes of aggression. Although not specific to RA/PA, Derefinko et al. (2011) found both (lack of) Premeditation and Sensation Seeking predicted general violence, while Urgency predicted intimate partner violence. As such, the authors concluded that lower levels of premeditation and higher levels of risk taking characterize general violence. Intimate partner violence, however, arises not simply from lower levels of self-control, but from lower levels of self-control in situations which provoke heightened affectivity. These results highlight the need to consider the associations between facets of impulsivity and subtypes of aggression, particularly RA/PA, given the importance of both impulsivity and affectivity in their theoretical distinction.

Recent research does indeed suggest that facets of impulsivity may exhibit specificity in associations with RA/PA. Although all five UPPS-P facets were not included in their study, Latzman and Vaidya (2013) found (lack of) Perseverance and (lack of) Premeditation to be positively correlated with both RA/PA, yet both were more strongly correlated with PA. This suggests that both lack of follow through, and lack of forethought may be especially pertinent to PA. These results are unexpected and warrant further study, given that the construct of PA would suggest that *higher* levels of forethought and follow through would be necessary for planned, goal-oriented aggression. In the first study to date to simultaneously consider RA/PA in relation to all five facets of trait impulsivity, Miller, Zeichner, and Wilson (2012) found a different pattern of associations when examining all five facets of the UPPS-P in relation to reactive, proactive, and relational aggression. Consistent with Latzman and Vaidya (2013), (lack of) Premeditation and (lack of) Perseverance were significantly positively correlated with PA. PA was also positively correlated with both Negative and Positive Urgency, whereas RA was only correlated with Negative Urgency. Semipartial correlations revealed positive associations between RA and both Negative Urgency and Sensation Seeking, and between PA and (lack of) Premeditation. In regression analyses, RA was uniquely positively associated with Negative Urgency and Sensation Seeking, whereas PA was not associated with any of facets. These important differences in associations at the bivariate versus multivariate level highlight the need to consider overlapping variance in order to understand the unique associations among these variables. Because RA/PA are often highly correlated (e.g., $r = .55$ in Miller et al., 2012), isolating the variance unique to each subtype would allow for a more fine-grained analysis of the associations among these variables, which may potentially reveal distinct pathways to aggressive behaviors.

1.3. Current study

The current study aimed to elucidate the common and distinct associations between facets of impulsivity and RA/PA through the use of path analysis. Given that Urgency, Sensation Seeking, and (lack of) Premeditation are pertinent to aggression broadly (e.g., Carlson et al., 2013; Lynam & Miller, 2004; Whiteside & Lynam, 2009), and given the high correlation between RA/PA (e.g., Miller et al., 2012; Poulin & Boivin, 2000), it was hypothesized that Negative Urgency, Positive Urgency, Sensation Seeking, and (lack of) Premeditation would be correlated with both RA/PA at the bivariate level. Residual scores of RA/PA were also included in analyses in order to index "pure" RA/PA, independent of each other. Because residual scores remove shared variance between RA/PA, we expected to observe greater differentiation in associations with these scores.

Because RA is theoretically a spontaneous aggressive response, and given previous research indicating that low Premeditation is associated with aggressive responding under provocation (Latzman & Vaidya, 2013; Lynam & Miller, 2004), we expected low Premeditation to be uniquely associated with RA. Moreover, because RA theoretically arises during periods of negative affect, and given Derefinko et al. (2011) findings, we expected Negative

Urgency to be uniquely associated with RA as well. In light of Miller et al.'s (2012) results, we expected Sensation Seeking to be uniquely associated with RA. Given both Miller et al.'s (2012) and Latzman and Vaidya's (2013), results, hypotheses for PA are more tentative. Because PA is theoretically an act of premeditated goal-oriented aggression, we expected PA to be uniquely explained by high Premeditation and low Negative Urgency.

2. Method

2.1. Participants

Participants were 384 undergraduate students ages 18–52 years (M_{age} = 20.92 + 4.91, 56.8% female) who participated in a laboratory-based study in partial fulfillment of a research exposure requirement for a psychology course at a large public Southeastern university. The sample was racially diverse with 45.6% of participants self-identifying as Black/African-American, 30.5% as White, and 11.2% as Asian/Asian-American.

2.2. Measures

2.2.1. UPPS-P impulsivity scale

The UPPS-P Impulsivity Scale (UPPS-P; Cyders & Smith, 2007; Whiteside & Lynam, 2001) is a 59-item instrument designed to assess distinct personality pathways to impulsive behavior. The UPPS-P has been found to have good reliability and discriminant validity (Cyders & Smith, 2007; Whiteside & Lynam, 2001). The five subscales that comprise the UPPS-P are Negative Urgency, Positive Urgency, Sensation Seeking, (lack of) Premeditation, (lack of) Perseverance. Participants respond to items using a 5-point Likert-type scale. In the current sample, internal consistencies ranged from .83 for (lack of) Perseverance, and .93 for Positive Urgency.

2.2.2. Reactive–proactive aggression questionnaire

The Reactive–proactive aggression questionnaire (RPQ; Raine et al., 2006) is a 23-item measure with two scales: reactive aggression and proactive aggression. Participants respond to items using a 3-point scale. The RPQ has been shown to demonstrate adequate reliability with internal consistencies ranging from .86 for PA to .84 for RA (Raine et al., 2006). In the current sample, internal consistencies were .82 for RA and .81 for PA.

2.3. Analyses

Because RA/PA were highly correlated (r = .54, p < .001), and consistent with previous research (i.e., Cima & Raine, 2009; Hecht, Berg, Lilienfeld, & Latzman, in press), residual RA/PA scores were saved to index "pure" RA/PA, independent of each other. We first examined bivariate zero-order correlations between various facets of impulsivity and both raw and residual RA/PA scales. Next, using Mplus Version 7.0 (Muthén and Muthén, 1998–2012), we fit path models using maximum likelihood estimation with robust standard errors (MLR). Two separate models were fitted: one each for raw and residual aggression scores. In the first model raw RA/PA were regressed on the five UPPS-P scales simultaneously within a single path model. All five scales were allowed to correlate with each other, accounting for shared variance among them. A second model was run in the same manner, using residual RA/PA scores. Given the heterogeneity of the sample, sex, age, and race were included in both models as covariates.

3. Results

3.1. Bivariate correlations between impulsivity and aggression

Bivariate correlations between the facets of impulsivity and both raw and residual RA/PA are shown in Table 1. Although the pattern of correlations between facets of impulsivity and aggression was largely consistent for raw and residual RA/PA, greater differentiation was observed among correlations between impulsivity and residual aggression scores. Raw and residual PA were most strongly correlated with Positive Urgency (r = .42, p < .01; r = .30, p < .01, respectively) whereas raw and residual RA were most strongly correlated with Negative Urgency (r = .45, p < .01; r = .31, p < .05, respectively). With the exception of Negative and Positive Urgency, which evidenced significant moderate correlations with raw RA/PA, respectively (r = .30, p < .05; r = .35, p < .01, respectively), the remaining significant associations between each subtype of aggression and facets of impulsivity were small in magnitude.

3.2. Path analyses predicting reactive and proactive aggression from facets of impulsivity

To examine unique associations between facets of the UPPS-P model of impulsivity and RA/PA, two path models were fit. Positive (β = .24, t = 3.55, p < .01) and Negative (β = .14, t = 2.14, p < .05) Urgency both contributed uniquely to the prediction of raw PA whereas Negative Urgency (β = .47, t = 7.41, p < .01) and (lack of) Perseverance (β = .12, t = 2.06, p < .05) contributed uniquely to the prediction of raw RA (Fig. 1). Further, male gender was positively associated with PA and being non-White was associated with both RA/PA.

When predicting residual aggression scores (Fig. 2), Positive Urgency (β = .53, t = 4.35, p < .01) emerged as the strongest unique predictor of PA followed by (lack of) Premeditation (β = .24, t = 2.04, p < .05). Negative Urgency no longer emerged as a significant main effect (β = .24, t = 3.55, p < .01) in the explanation of PA. In contrast to findings for residual PA, with the exception of Sensation Seeking, all facets of impulsivity evidenced significant main effects in the predication of residual RA. Specifically, Negative Urgency emerged as the strongest predictor (β = .24, t = 3.55, p < .01). Interestingly, and contrary to results from the first model predicting raw aggression scores, Positive Urgency and (lack of) Premeditation were significantly negatively associated with RA (βs = −.35, −.32, ts = −2.79, −2.65, ps < .01, respectively). Further, lack of Perseverance was significantly positively associated with RA (β = .24, t = 2.03, p < .05). Male gender was significantly associated with residual PA. None of the other demographic covariates were significantly associated with either subtype of residual aggression.

Table 1
Intercorrelations between raw/residual proactive and reactive aggression scores and facets of impulsivity.

Variable	Raw scores		Residual scores	
	Proactive	Reactive	Proactive	Reactive
Negative Urgency	.35**	.45**	.13*	.31**
(lack of) Premeditation	.15**	.06	.13**	−.02
(lack of) Perseverance	.20**	.24**	.09	.16**
Sensation Seeking	.10*	−.04	.15**	−.11*
Positive Urgency	.42**	.30**	.30**	.10

Note: N = 384.
* p < .05.
** p < .01.

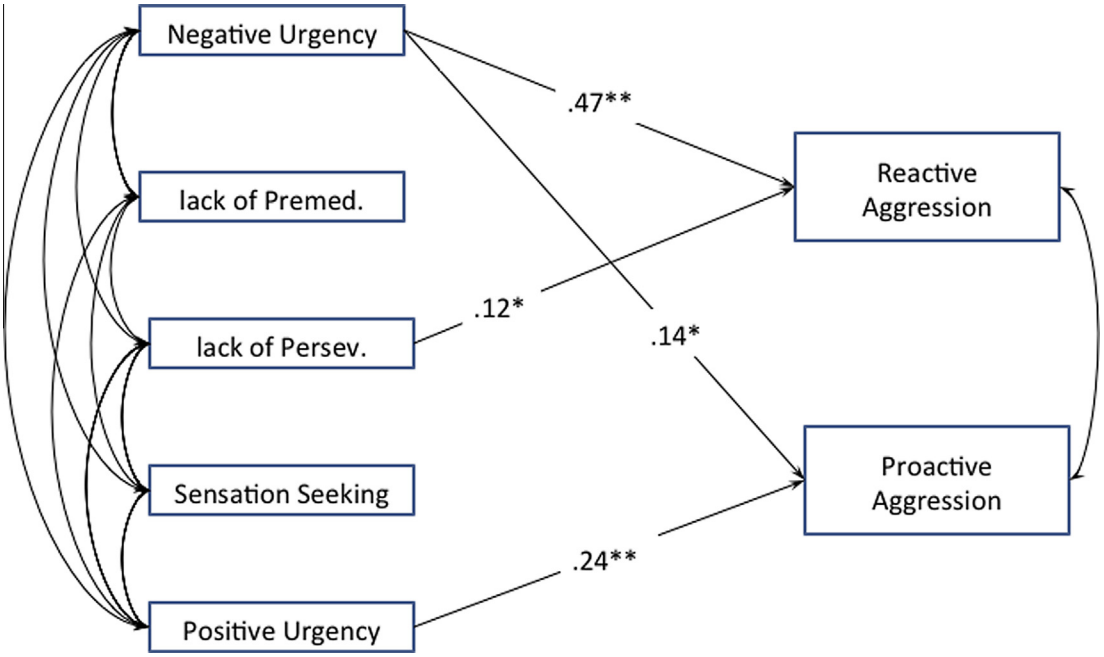

Fig. 1. Path model in which all five UPPS-P facets were regressed onto raw RA/PA scores. Only significant paths are shown. Fit indices are not provided as the model is just identified. $^{*}p < .05$; $^{**}p < .01$.

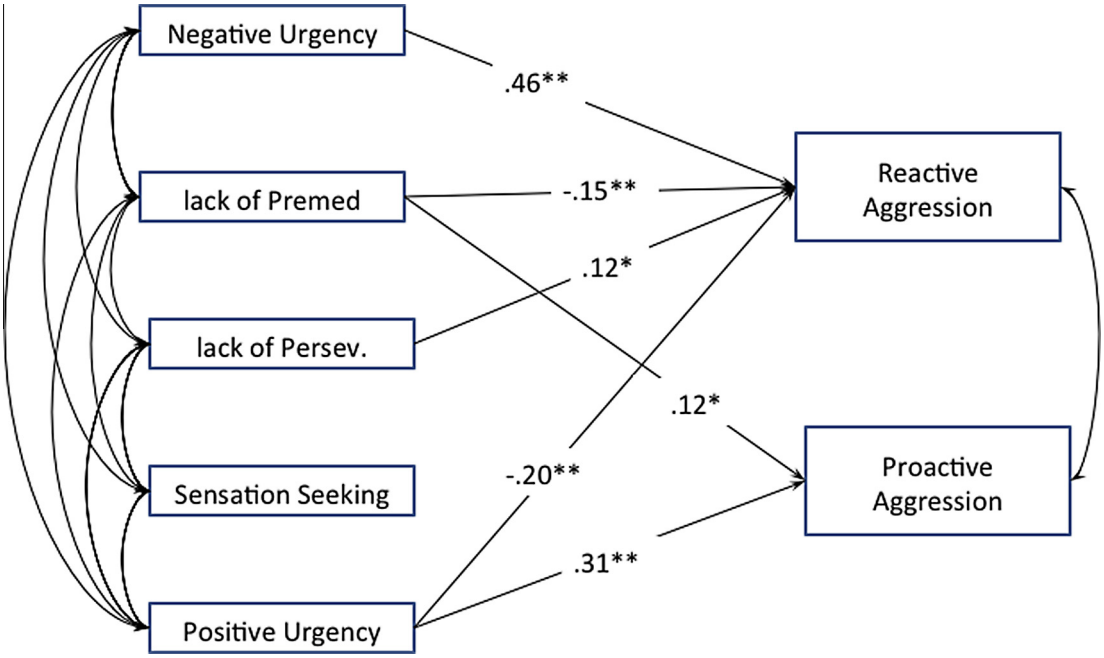

Fig. 2. Path model in which all five UPPS-P facets were regressed onto residual RA/PA scores. Only significant paths are shown. Fit indices are not provided as the model is just identified. $^{*}p < .05$; $^{**}p < .01$.

4. Discussion

Although impulsivity has been consistently associated with aggression (e.g., Miller & Lynam, 2001), very few studies have investigated the patterns of associations between various facets of trait impulsivity and subtypes of aggression. Our limited understanding of the associations between these constructs is due, at least partially, to the heterogeneity within both aggression and impulsivity. Representing the first study to date to begin to address this limitation, we used both bivariate correlations and path analysis to examine the common and distinct associations between facets of trait impulsivity and raw and residual RA/PA. These methods allowed us to more effectively isolate the variance unique to each construct, and thus reveal the nuanced associations between facets of trait impulsivity and aggression.

Results revealed both common and distinct associations between facets of trait impulsivity and RA/PA. Such results confirm the importance of considering impulsivity as a multidimensional construct (e.g., Roberts et al., 2004; Vaidya et al., 2010; Whiteside & Lynam, 2001). Indeed, the consideration of

lower-order facets of impulsivity, rather than impulsivity as a monolithic construct, may reveal more precise associations between personality and aggression (Miller et al., 2012). Moreover, results confirm that although RA/PA are related, these subtypes of aggression are distinguishable (Poulin & Boivin, 2000; Raine et al., 2006), and may potentially arise from different facets of trait impulsivity. Given that treatment of aggressive behaviors may be most optimal when the specific subtype of aggression is considered (Dodge, 1991), results from the current study may serve to inform potentially specific and unique forms of intervention for RA/PA.

Overall, RA and PA were associated with distinct facets of trait impulsivity, particularly once overlapping variance between them was removed. Using raw scores, as expected, RA was explained by higher levels of Negative Urgency. While the expected positive associations did not emerge for Sensation Seeking or (lack of) Premeditation, (lack of) Perseverance did emerge as a significant predictor of RA. Using residual aggression scores, both Negative Urgency and (lack of) Perseverance remained significant positive predictors of RA, with Negative Urgency exhibiting the strongest positive association; while (lack of) Premeditation as well as Positive Urgency both emerged as significant negative predictors, with Positive Urgency exhibiting the strongest negative association. Overall, consistent with the theoretical construct of RA (e.g., Berkowitz, 1993; Dodge, 1991), it appears that the tendency toward rash action during periods of negative, not positive, affect, as well as a lack of follow through, characterize reactively aggressive acts. RA's negative association with (lack of) Premeditation was surprising, and inconsistent with previous research (e.g., Latzman & Vaidya, 2013). However, follow up analyses indicated this association may be due to a suppressor effect by (lack of) Perseverance. Specifically, when (lack of) Perseverance and (lack of) Premeditation were entered simultaneously into the path model (removing their overlapping variance), the association between (lack of) Premeditation and RA became significant and negative. Nonetheless, as Latzman and Vaidya (2013) did not observe this same suppressor effect, these results warrant further investigation.

PA was also associated with distinct facets of trait impulsivity. Specifically, raw and residual PA were explained by higher levels Positive Urgency, an association which did not emerge for raw RA, and was negative for residual RA. However, RA was positively correlated with Positive Urgency at the raw bivariate level; yet, once residual scores were examined, this correlation was no longer significant. PA's association with Positive Urgency, which increased in magnitude in the model with residual aggression scores, indicates that PA may be unique in that it might follow from a tendency to act impulsively during periods of positive affect. Surprisingly, residual PA was also explained by higher levels of Premeditation, whereas residual RA was explained by lower levels. Although this is consistent with previous research (e.g., Latzman & Vaidya, 2013; Miller et al., 2012), these findings are unexpected based on the theoretical construct of PA, and as such, warrant further study.

Negative Urgency was consistently positively related to both raw and residual RA as well as PA, in bivariate and path analysis, although the magnitude of these associations varied. This consistency indicates that the tendency to engage in impulsivity during periods of intense negative affect is highly relevant to aggressive behaviors broadly. However, in the model with residual aggression scores, Negative Urgency remained a significant unique predictor of only RA, indicating that its significant association with PA may be more related to overlapping variance between RA/PA. As such, consistent with expectations, Negative Urgency may be especially pertinent to RA. This is consistent with previous empirical work (e.g., Miller et al., 2012), as well as the theoretical construct of RA as a provoked response during a period of heightened affectivity (e.g., Berkowitz, 1993; Dodge, 1991).

4.1. Strengths and limitations

As is the case with cross-sectional research, causal conclusions are precluded due to the nature of these data. It will be important for future studies to examine these associations longitudinally. Further, the use of an undergraduate sample may limit the generalizability of these findings. Nevertheless, the racially-diverse nature of our sample is a strength of the current study. The current study used well-validated measures of trait impulsivity and RA/PA, however, it may be fruitful to explore these associations using other measures of impulsivity and aggression based on differing models of the constructs, or using different modes of assessment. Additionally, although some researchers have argued against the utility of residual scores (e.g., Lynam, Hoyle, & Newman, 2006; Miller & Lynam, 2006), in line with the aims of the study and consistent with previous examinations (e.g., Cima & Raine, 2009; Hecht et al., in press), we used residual scores to assess the distinctive associations between facets of impulsivity and RA/PA, independent of overlapping variance. In addition, the same analyses were conducted using raw scores. The use of both represents a strength of the current study, as it allows for a more fine-grained analysis of the associations between trait impulsivity and subtypes of aggression. Finally, as findings from the current study were based exclusively on self-report measures, it is possible that the absolute levels of the associations were inflated due to shared method variance. However, this explanation is unlikely to account for differences in the associations among dimensions of impulsivity and RA/PA.

4.2. Conclusions

The current study demonstrates that RA/PA are associated with distinct facets of trait impulsivity. Whereas RA is primarily characterized by the tendency to engage in rash action during period of negative affect, as well as a lack of follow through, PA is characterized by the tendency to engage in rash action during periods of positive affect. Results suggest that RA/PA may arise from different impulsivity-related processes, which has important implications for the intervention and prevention of aggressive behaviors. Additional research in this arena will help to better characterize the potentially unique pathways underlying RA/PA, from which interventions can be specifically tailored to the individual. Our findings contribute to our understanding of both trait impulsivity as well as aggression, and underscore the importance of considering the overlapping variance among these constructs in order to reveal their unique associations.

References

Bandura, A. (1978). Social learning theory of aggression. *Journal of Communication, 28*(3), 12–29.
Berkowitz, L. (1993). *Aggression: Its causes, consequences, and control*. New York, NY, England: Mcgraw-Hill Book Company.
Broidy, L. M., Nagin, D. S., Tremblay, R. E., Bates, J. E., Brame, B., Dodge, K. A., et al. (2003). Developmental trajectories of childhood disruptive behaviors and adolescent delinquency: A six-site, cross-national study. *Developmental Psychology, 39*(2), 222–245.
Bushman, B. J., & Anderson, C. A. (2001). Is it time to pull the plug on hostile versus instrumental aggression dichotomy? *Psychological Review, 108*(1), 273–279.
Caprara, G. V., Barbaranelli, C., Pastorelli, C., & Perugini, M. (1994). Individual differences in the study of human aggression. *Aggressive Behavior, 20*(4), 291–303.
Carlson, S. R., Pritchard, A. A., & Dominelli, R. M. (2013). Externalizing behavior, the UPPS-P impulsive behavior scale and reward and punishment sensitivity. *Personality and Individual Differences, 54*(2), 202–207.

Cima, M., & Raine, A. (2009). Distinct characteristics of psychopathy relate to different subtypes of aggression. *Personality and Individual Differences, 47*(8), 835–840.
Crick, N. R., & Dodge, K. A. (1996). Social information-processing mechanisms in reactive and proactive aggression. *Child Development, 67*(3), 993–1002.
Cyders, M. A., & Smith, G. T. (2007). Mood-based rash action and its components: positive and negative urgency. *Personality and Individual Differences, 43*(4), 839–850.
Cyders, M. A., & Smith, G. T. (2008). Emotion-based dispositions to rash action: positive and negative urgency. *Psychological Bulletin, 134*(6), 807–828.
Derefinko, K., DeWall, C. N., Metze, A. V., Walsh, E. C., & Lynam, D. R. (2011). Do different facets of impulsivity predict different types of aggression?. *Aggressive Behavior, 37*(3), 223–233.
Dodge, K. A. (1991). The structure and function of reactive and proactive aggression. In D. J. Pepler & K. H. Rubin (Eds.), *The Development and Treatment of Childhood Aggression* (pp. 201–218). Hillsdale, NJ, England: Lawrence Erlbaum Associates Inc.
Dodge, K. A., Lochman, J. E., Harnish, J. D., Bates, J. E., & Pettit, G. S. (1997). Reactive and proactive aggression in school children and psychiatrically impaired chronically assaultive youth. *Journal of Abnormal Psychology, 106*(1), 37–51.
Geen, R. G., & Donnerstein, E. (1998). *Human aggression: Theories, research, and implications for social policy*. San Diego, CA: Academic Press.
Hecht, L. K., Berg, J. M., Lilienfeld, S. O., & Latzman, R. D. (in press). Parsing the heterogeneity between psychopathy and aggression: differential associations across age and gender. *Personality Disorders: Theory, Research, and Treatment*.
Latzman, R. D., Vaidya, J. G., Clark, L. A., & Watson, D. (2011). Components of disinhibition (vs. constraint) differentially predict aggression and alcohol use. *European Journal of Personality, 25*(6), 477–486.
Latzman, R. D., & Vaidya, J. (2013). Common and distinct associations between aggression and alcohol problems with trait disinhibition. *Journal of Psychopathology & Behavioral Assessment, 35*(2), 186–196.
Loeber, R., & Hay, D. (1997). Key issues in the development of aggression and violence from childhood to early adulthood. *Annual Review of Psychology, 48*(1), 371–410.
Lynam, D. R., & Miller, J. D. (2004). Personality pathways to impulsive behavior and their relations to deviance: Results from three samples. *Journal of Quantitative Criminology, 20*(4), 319–341.
Lynam, D. R., Hoyle, R. H., & Newman, J. P. (2006). The perils of partialling: Cautionary tales from aggression and psychopathy. *Assessment, 13*(3), 328–341.
Miller, J. D., & Lynam, D. (2001). Structural models of personality and their relation to antisocial behavior: A meta-analytic review. *Criminology, 39*(4), 765–798.
Miller, J. D., & Lynam, D. R. (2006). Reactive and proactive aggression: Similarities and differences. *Personality and Individual Differences, 41*(8), 1469–1480.
Miller, D., Zeichner, A., & Wilson, L. F. (2012). Personality correlates of aggression: Evidence from measures of the Five-Factor Model, UPPS Model of Impulsivity, and BIS/BAS. *Journal of Interpersonal Violence, 27*(14), 2903–2919.
Miller, J., Flory, K., Lynam, D., & Leukefeld, C. (2003). A test of the four-factor model of impulsivity-related traits. *Personality & Individual Differences, 34*(8), 1403.
Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review, 100*(4), 674.
Muthén, L.K., & Muthén, B.O. (1998–2012). Mplus User's Guide. Seventh Edition. Los Angeles, CA: Muthén & Muthén.
Poulin, F., & Boivin, M. (2000). Reactive and proactive aggression: Evidence of a two-factor model. *Psychological Assessment, 12*(2), 115–122.
Raine, A., Dodge, K., Loeber, R., Gatzke-Kopp, L., Lynam, D., Reynolds, C., et al. (2006). The reactive–proactive aggression questionnaire: Differential correlates of reactive and proactive aggression in adolescent boys. *Aggressive Behavior, 32*(2), 159–171.
Roberts, B. W., Bogg, T., Walton, K. E., Chernyshenko, O. S., & Stark, S. E. (2004). A lexical investigation of the lower-order structure of conscientiousness. *Journal of Research in Personality, 38*(2), 164–178.
Seibert, L. A., Miller, J. D., Pryor, L. R., Reidy, D. E., & Zeichner, A. (2010). Personality and laboratory-based aggression: Comparing the predictive power of the Five-Factor Model, BIS/BAS, and impulsivity across context. *Journal of Research in Personality, 44*(1), 13–21.
Vaidya, J. G., Latzman, R. D., Markon, K. E., & Watson, D. (2010). Age differences on measures of disinhibition during young adulthood. *Personality and Individual Differences, 48*(7), 815–820.
Whiteside, S. P., & Lynam, D. R. (2001). The five factor model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and individual differences, 30*(4), 669–689.
Whiteside, S.P., & Lynam, D.R. (2009). Understanding the role of impulsivity and externalizing psychopathology in alcohol abuse: Application of the UPPS Impulsive Behavior Scale. Personality Disorders: Theory, Research, And Treatment, S(1), 69–79.