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Global and contingent self-esteem as moderators in the relations between adolescent narcissism, callous-unemotional traits, and aggression

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ABSTRACT

Research on the association between self-esteem and aggression yields mixed, even contradictory, conclusions. This study investigated the potential interactions of global (i.e., overall self-evaluation) and contingent (i.e., tendency for self-evaluation to change based on feedback) self-esteem with narcissism and callous-unemotional traits in relation to adolescent proactive and reactive aggression. Participants were 156 adolescents, ages 16–19, who were attending a residential program for youth who have dropped out of school. Global self-esteem (GSE) was positively correlated with peer-nominated aggression, whereas contingent self-esteem (CSE) was positively related to self-reported proactive and reactive aggression. In addition, individuals with relatively high narcissism or callous-unemotional traits reportedly engaged in more aggression if they also reported high CSE. The implications of the findings, including that adolescents with CSE may benefit from efforts aimed at providing alternatives to aggression following social feedback, are discussed.

1. Introduction

1.1. Self-esteem and aggression

Global self-esteem (GSE) is conceptualized as an individual's overall self-evaluation (e.g., Barry, Frick, & Killian, 2003). Based on mixed findings, it is unclear how GSE relates to aggression. For example, low GSE has been associated with aggression in adolescent community samples (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). Similar results were evident longitudinally in that low self-esteem during adolescence predicted criminal activity at age 26 (Trzesniewski et al., 2006). However, in community (Barry, Thompson et al., 2007; Thomaes, Bushman, Stegge, & Olthof, 2008) and residential (Golmaryami & Barry, 2010) adolescent samples, high self-esteem was related to aggression. Furthermore, Bushman et al. (2009) conclude that self-esteem is not independently related to aggression, based on their series of studies with undergraduates.

Because findings vary regarding aggression in relation to GSE, additional constructs such as narcissism and fluctuations in self-esteem have been offered as important factors to consider (Baumeister, Bushman, & Campbell, 2000; Falkenbach, Howe, & Falki, 2013). For example, beyond one's overall self-esteem level, contingent self-esteem (CSE; self-worth based on perceived evaluations of others; Crocker & Wolfe, 2001) may be characteristic of individuals who respond to perceived threats or seek social goals through aggression. This possibility has not yet been examined in youth samples.

Because of self-esteem's complexity and the mixed findings from prior research, additional factors may help explain an association between self-esteem and different functions of youth aggression. For example, personality dimensions such as narcissism (e.g., a grandiose self-presentation with preoccupation with one's status relative to others; Barry et al., 2003) and callous-unemotional (CU) traits (e.g., low empathy, shallow affect, and remorselessness; Frick, Bodin, & Barry, 2000) have been identified as correlates of youth aggression. Aggression is often conceptualized as proactive (i.e., aggression toward others for personal gain or reward; Fite, Rathert, Colder, Lochman, & Wells, 2012) or reactive (i.e., aggression in response to a real or perceived threat; Berkowitz, 1993). In adolescents, CU traits have been associated with both functions of aggression (Fanti, Frick, & Georgiou, 2009), as has narcissism (e.g., Barry & Kauten, 2014; Fossati, Borroni, Eisenberg, & Maffei, 2010). Therefore, although the relations of narcissism (e.g., Barry, Grafeman, Adler, & Pickard, 2007; Lee-Rowland, Barry, Gillen, & Hansen, 2017; Thomaes et al., 2008) and CU traits (e.g., Stellwagen & Kerig, 2010) with youth aggression have been well-established, it still remains unclear how self-esteem is related to adolescent aggression.

The primary purpose of this study was to examine GSE and CSE as correlates of adolescent aggression and as possible moderators in the established relations of CU traits and narcissism with aggression. The present study was the first known examination of such a model in

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adolescents, despite growing literature on youth intrapersonal factors and aggression. Furthermore, this study was novel in its simultaneous consideration of CU traits and narcissism, different functions of aggression, and in the use of peer reports rather than relying solely on self-reports.

1.2. Self-esteem as a moderator

Previous research in youth indicated that the association between narcissism and conduct problems was particularly high for youth with low GSE (Barry et al., 2003), whereas the combination of narcissism and high GSE has shown a correspondence to higher adolescent relational aggression (i.e., acts targeted at others' social status; Golmaryami & Barry, 2010). However, such moderations have not been replicated (e.g., Barry, Grafeman et al., 2007), and it has been suggested that a self-esteem-narcissism interaction may be partly based on development (Barry et al., 2003). Comparatively little research has examined self-esteem and CU traits together in youth samples, with the available evidence indicating no relation (Barry et al., 2003) or a negative relation (Fanti, 2013). Low self-esteem has also mediated the effect between personality features of psychopathy (akin to CU traits) and aggression in young adults (Falkenbach et al., 2013). Therefore, similar to narcissism, it is unclear whether, or how, GSE might moderate the connection between CU traits and aggression.

Alternatively, the ego threat hypothesis suggests a moderational effect for CSE. According to this model, individuals high in narcissism react more aggressively when faced with an ego threat, an effect that has been demonstrated with adults (e.g., Bushman & Baumeister, 1998) and youth (Thomaes et al., 2008) in experimental paradigms. Because of their unstable and inflated sense of self (Geukes et al., 2017), individuals high in narcissism are perhaps particularly vulnerable to ego threats and may respond aggressively to such threats. CSE may exacerbate this effect. Cale and Lilienfeld (2006) extended the ego threat hypothesis to psychopathy. They described psychopathy as characterized by ego-enhancing behaviors and overreaction to insults, and in their sample of incarcerated adults, the affective/interpersonal characteristics of psychopathy (again, similar to CU traits) were related to staff-reported aggression in ego threat situations. However, this pattern did not apply to aggression from prison disciplinary reports or in non-ego threatening situations. Thus, individuals with CU traits who also have CSE may be prone to reactive aggression, a possibility that has not been examined with adolescents.

The ego threat hypothesis appears relevant for reactive aggression, but there may still be a connection between GSE or CSE and proactive aggression. The desire for power and status that are prominent features of narcissism (Krizan & Bushman, 2011; Morf & Rhodewalt, 2001) may translate to proactive aggression for individuals who are sensitive to perceived barriers to attaining social goals. Thus, CSE might also exacerbate the association between narcissism and proactive aggression. Likewise, youth with CU traits appear particularly reward-driven (e.g., Pardini & Byrd, 2012) and thus may utilize proactive aggression for personal gain. This relation may be pronounced for individuals whose self-perception is contingent on environmental feedback and thus are attuned to situations where aggression may be effective, a possibility examined for the first time in the present study.

1.3. Hypotheses

It was hypothesized that all measures of aggression would be correlated with CSE (Hypothesis 1), as well as with narcissism and CU traits (Hypothesis 2). In addition, it was hypothesized that CSE would exhibit a significant moderation effect in the relations of CU traits and narcissism with self- and peer-reported aggression. That is, it was expected that the highest levels of aggression would be evident for individuals with high levels of narcissism and CSE (Hypothesis 3) and similarly for individuals with high levels of CU traits and CSE (Hypothesis 4). No a priori hypotheses were made concerning GSE as a moderator in light of mixed findings concerning its interaction with narcissism and the limited research on the association between GSE and CU traits in youth.

2. Method

2.1. Participants

Participants were 156 adolescents (126 males, 29 females, 1 unreported; 81% males, 19% females) aged 16–19 (M = 16.81, SD = 0.77), enrolled in a voluntary military-style program for at-risk youth who have dropped out of school. The racial/ethnic composition was as follows: 52.6% White, 29.5% Black, 0.6% Hispanic, 0.6% Other, and 16.7% unreported. This program is designed to provide a structured environment for gaining academic, self-care, and coping skills. Thus, participants in this study are considered “at-risk” for a variety of negative economic, behavioral, or legal outcomes based on having dropped out of school. Such risk samples have been the focus of much research on correlates of adolescent narcissism and aggression (e.g., Barry, Thompson et al., 2007; Marsee et al., 2011) given that they likely demonstrate greater variability on constructs such as narcissism, aggression, or CU traits than community samples. Furthermore, individuals enrolled in this residential program attend all activities and live with approximately 20–30 others (i.e., in “platoons”), providing a useful context in which to utilize peer-referenced assessment.

2.2. Measures

2.2.1. Narcissistic Personality Inventory (NPIC; Barry et al., 2003)

The NPIC is a 40-item self-report questionnaire developed for youth from the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988). The NPIC is a forced-choice questionnaire, with each item posing two statements (e.g., “I am just like everybody else” vs. “I am an outstanding person”). The participant must choose one and then rate how true the selected statement is for him/her (i.e., *sort of true* or *really true*). In the present study, the internal consistency of NPIC scores was α = 0.87.

2.2.2. Inventory of Callous and Unemotional Traits (ICU; Essau, Sasagawa, & Frick, 2006)

The ICU is a 24-item self-report measure of CU traits. Items (e.g., “I do not care who I hurt to get what I want”) are rated on a 4-point Likert scale from *not at all true* to *definitely true*. Scores on the ICU had an internal consistency of α = 0.74 in this sample.

2.2.3. Rosenberg Self-esteem Scale (RSES; Rosenberg, 1965)

The RSES consists of 10 items and has been used in a wealth of studies on GSE in the past several decades. Items (e.g., “On the whole, I am satisfied with my life”) are rated on a 4-point scale from *strongly disagree* to *strongly agree*. The internal consistency was α = 0.81 in the present sample.

2.2.4. Pathological Narcissism Inventory (PNI; Pincus et al., 2009)

The CSE subscale of the PNI was used as the measure of CSE. This scale consists of 12 items (e.g., “I sometimes need important others in my life to reassure me of my self-worth”) that are rated on a 6-point scale from *not at all like me* to *very much like me*. In the present sample, the internal consistency was α = 0.89 for this subscale.

2.2.5. Peer Conflict Scale (PCS; Marsee et al., 2011)

The PCS is a 40-item self-report inventory that assesses proactive and reactive aggression. Items are rated on a 4-point scale from *Not all True* to *Definitely True*. The Proactive Aggression (e.g., “I start fights to get what I want”) and Reactive Aggression (e.g., “When somebody threatens me, I usually end up getting in a fight”) scales each consist of

20 items. In the present study, the internal consistencies of the Proactive Aggression and Reactive Aggression scales were α = 0.95 and 0.90, respectively.

2.2.6. Peer Nomination of Aggression (Crick & Grotpeter, 1995)

Peer nominations (see Crick & Grotpeter, 1995) were used to assess peer-reported aggression. Participants were asked to nominate up to 3 members of their platoon on 15 items concerning specific behaviors or characteristics. Seven items assess aggression (e.g., "Hits/pushes others;" "Calls others mean names"). Nominations on each item were *z*-scored within platoon. The internal consistency of the aggression items was α = 0.88.

2.3. Procedure

The Institutional Review Board (IRB) at the university through which data were collected approved this study. The director of the residential program gave consent for adolescents to be contacted about the study. Adolescents provided their written assent/consent if they wished to participate, and their decision did not affect their status in the program. The present sample represents an approximately 70.7% response rate of the number of adolescents invited to participate. Self-report measures from this study and a larger project were administered in a classroom setting over two to three 45-minute sessions. The peer nomination procedure was conducted approximately 20 weeks into the 22-week residential program with 3 randomly selected platoons (2 male platoons, 1 female platoon; $n = 81$) as agreed to by program administrators.

3. Results

Descriptive statistics are shown in Table 1. Measures of aggression were positively skewed, indicating that most participants reported engaging in (or were nominated as engaging in) little aggression. Two participants scored > 3 *SD* above the sample mean on proactive aggression; therefore, we transformed scores for these two individuals to be one point above the next highest score in the sample. We conducted analyses with the initial scores on all variables and then repeated correlational and regression analyses involving proactive aggression with transformed scores.

As shown in Table 2, CSE was positively correlated with self-reported proactive and reactive aggression, in partial support of Hypothesis 1, and was significantly negatively related to self-esteem. CU traits were moderately, positively correlated with self-reported proactive and reactive aggression. Narcissism was correlated with self-reported proactive and reactive aggression and peer-reported aggression. Thus, Hypothesis 2 was supported with the exception of the association between CU traits and peer-reported aggression. GSE was positively correlated with peer-reported aggression and was significantly, but weakly, correlated with narcissism. CSE was not related to narcissism.

Table 1
Descriptive statistics for self-report variables.

Variable (possible range)	*m*	*sd*	*range*	*skew*
CU Traits (0–72)	26.12	9.35	2–49	0.17
Non-pathological narcissism (0–120)	52.63	18.55	12–113	0.06
GSE (0–30)	18.15	6.02	0–30	− 0.52
CSE (0–5)	1.58	1.09	0–4.50	0.68
Proactive aggression (0–60)	8.13	10.55	0–60	2.25
Reactive aggression (0–60)	13.29	10.62	0–60	1.42
Peer-reported aggression	0.11	0.98	− 0.93–4.02	1.43

Note: CSE = contingent self-esteem, and scores are based on *mean* item ratings for the CSE subscale of the PNI. GSE = global self-esteem. Peer-reported aggression is based on *z-scores* within each platoon (group) with $n = 81$ participants completing the peer-report portion of the study.

Table 2
Correlations among study variables.

	1.	2.	3.	4.	5.	6.	7.
1. CU Traits	–	0.17*	− 0.08	− 0.12	0.37***	0.30***	0.02
2. Non-pathological narcissism		–	0.18*	0.03	0.26**	0.23**	0.33**
3. Global self-esteem			–	− 0.34***	− 0.03	0.02	0.37**
4. Contingent self-esteem				–	0.20*	0.20*	0.07
5. Proactive aggression					–	0.87***	0.22*
6. Reactive aggression						–	0.20*
7. Peer-nominated aggression							–

* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

When transformed scores on proactive aggression for outliers were used, proactive aggression remained significantly correlated with CU traits and narcissism but was not significantly related to CSE, $r = 0.15$, $p = 0.06$.

3.1. Regression analyses

A series of multiple regression analyses were conducted to test the hypothesized moderations. Narcissism and CU traits served as predictors in separate models, GSE and CSE were moderators in separate models, and the three indices of aggression (i.e., self-reported proactive and reactive aggression and peer-reported overall aggression) were the criterion variables in separate models. The predictor and moderator were first entered to examine their unique main effects, followed by analysis of the two-way interaction term between the predictor and moderator from the bootstrapping procedure in PROCESS developed by Hayes (2015). Significant interactions were plotted according to the procedures outlined by Hayes (2013).

3.1.1. GSE

With narcissism as the predictor and GSE as the moderator, there was a significant main effect for narcissism in predicting self-reported proactive aggression, $b = 0.16$, $se = 0.05$, $p < 0.001$, and reactive aggression, $b = 0.14$, $se = 0.05$, $p = 0.003$ in the first step. For peer-reported aggression, the main effects for both narcissism and GSE were also positive and significant, $b = 0.03$, $se = 0.01$, $p = 0.003$, and, $b = 0.08$, $se = 0.03$, $p = 0.004$, respectively. However, none of the interactions in these models were significant.

For models with GSE as the moderator and CU traits as the predictor, there were significant main effects for CU traits in the prediction of self-reported proactive aggression, $b = 0.42$, $se = 0.09$, $p < 0.001$, and self-reported reactive aggression, $b = 0.35$, $se = 0.09$, $p < 0.001$, but there were no main effects for GSE in the first step of these models or any significant interaction effects. For peer-reported aggression, there was a significant main effect for GSE, $b = 0.09$, $se = 0.03$, $p = 0.002$, in the first step, but there was no main effect for CU traits or significant interaction.

3.1.2. CSE

These models were repeated with CSE as the moderator. First, with narcissism as the predictor, there were main effects for narcissism, $b = 0.15$, $se = 0.04$, $p = 0.001$, and CSE, $b = 1.69$, $se = 0.74$, $p = 0.02$, in predicting self-reported proactive aggression. The interaction between narcissism and CSE was significant, $b = 0.09$, $se = 0.04$, $p = 0.02$, R^2 *change* = 0.04, and is plotted in Fig. 1. This interaction demonstrates that individuals with relatively high narcissism reported engaging in more proactive aggression if they also

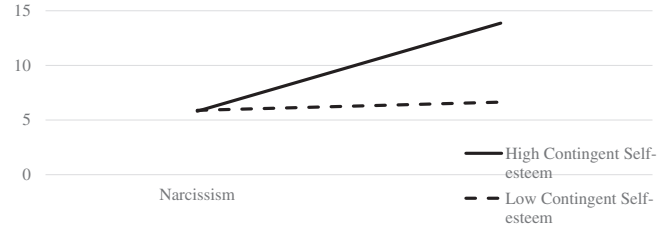

Fig. 1. The interaction between narcissism and CSE for predicting proactive aggression. Note: High CSE: $b = 0.22$, $se = 0.05$, $p < 0.001$; Low CSE: $b = 0.02$, $se = 0.07$, $p = 0.76$.

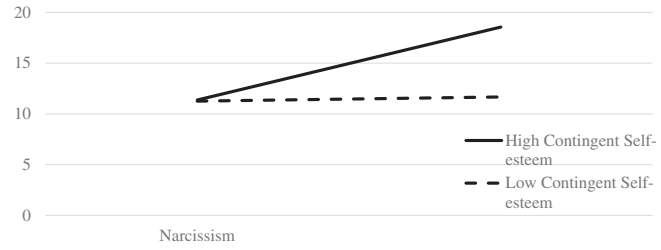

Fig. 2. Interaction between narcissism and CSE for predicting reactive aggression. Note: High CSE: $b = 0.20$, $se = 0.05$, $p < 0.001$; Low CSE: $b = 0.01$, $se = 0.07$, $p = 0.87$.

reported relatively high CSE.

For reactive aggression, there were main effects for narcissism, $b = 0.13$, $se = 0.04$, $p = 0.004$, and CSE, $b = 1.74$, $se = 0.18$, $p = 0.02$. The interaction term was also significant, $b = 0.09$, $se = 0.04$, $p = 0.01$, R^2 *change* $= 0.03$, and is plotted in Fig. 2. This interaction followed the pattern described above for proactive aggression. For peer-reported aggression, there was a main effect for narcissism, $b = 0.04$, $se = 0.01$, $p = 0.001$, but no significant narcissism x CSE interaction. Thus, Hypothesis 3 was partially supported.

With CU traits as the predictor, there were main effects for both CU traits, $b = 0.46$, $se = 0.08$, $p < 0.001$, and CSE, $b = 2.29$, $se = 0.71$, $p = 0.001$, in predicting self-reported proactive aggression; furthermore, the interaction term in the subsequent step was also significant, $b = 0.18$, $se = 0.07$, $p = 0.01$, R^2 *change* $= 0.03$, and is shown in Fig. 3. This interaction followed the same pattern as those shown in Figs. 1 and 2 for narcissism; however, Fig. 3 also reflects a main effect for CU traits, as the slopes of the high and low CSE lines were both significant. The interaction was non-significant when utilizing adjusted scores for outliers on proactive aggression.

For self-reported reactive aggression, there were main effects for CU traits, $b = 0.37$, $se = 0.09$, $p < 0.001$, and CSE, $b = 2.34$, $se = 0.74$, $p = 0.003$. The CU traits x CSE interaction in the next step was significant, $b = 0.15$, $se = 0.07$, $p = 0.04$, R^2 *change* $= 0.03$, and is displayed in Fig. 4. This effect is consistent with the other interactions reported and also depicts a main effect for CU traits in predicting reactive aggression. In the model predicting peer-nominated aggression from CU traits and CSE, there were no significant main effects, and the

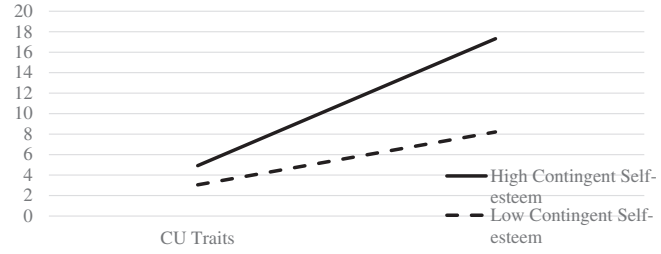

Fig. 3. Interaction between CU traits and CSE for predicting proactive aggression. Note: High CSE: $b = 0.66$, $se = 0.11$, $p < 0.001$; Low CSE: $b = 0.28$, $se = 0.11$, $p = 0.01$.

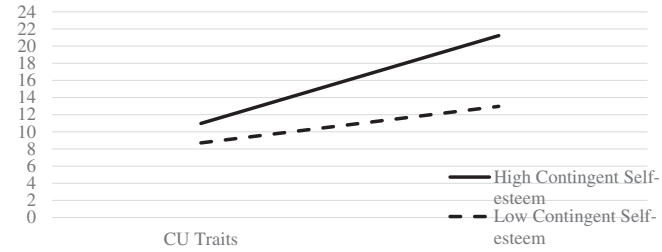

Fig. 4. Interaction between CU traits and CSE for predicting reactive aggression. Note: High CSE: $b = 0.55$, $se = 0.12$, $p < 0.001$; Low CSE: $b = 0.23$, $se = 0.11$, $p = 0.04$.

interaction was also non-significant. Therefore, Hypothesis 4 was partially supported. Similar to the analyses for narcissism, the effects were only apparent for self-reported aggression.

4. Discussion

The results provide some insight on the role of self-esteem in aggression among at-risk youth, particularly as a function of CU traits and narcissism. Specifically, consistent with our hypothesis, CSE, in conjunction with narcissism and CU traits, may increase the likelihood of proactive and reactive aggression in adolescents. On the other hand, GSE may not serve the same function in adolescent aggression. Therefore, the extent to which one's self-esteem might be characterized as sensitive to feedback from others may have implications for an adolescent's tendency to react to negative feedback aggressively or use aggression in a way to thwart potential threats to a fragile self-esteem. It should be noted that the moderations for CSE were most robust for reactive aggression in that those involving proactive aggression did not hold when outliers' scores were transformed. Self-reported proactive and reactive aggression were highly interrelated, but we considered them separately based on theoretical expectations described in the Introduction as to how GSE or CSE might operate in these two functions of aggression.

The bivariate correlations involving CSE are also noteworthy. The negative association between contingent and GSE may be tied to the inevitability of unfavorable feedback in day-to-day life and the apparent sensitivity that individuals with CSE would have in response to such events. Furthermore, despite notions that CSE is an important element of narcissism (Geukes et al., 2017; Zeigler-Hill, Clark, & Pickard, 2008), self-reported CSE may not be connected to non-pathological narcissism (which was assessed in this study), as this form of narcissism has been linked to higher GSE (Rosenthal & Hooley, 2010) and self-worth contingencies only in specific domains (e.g., competitiveness; Zeigler-Hill et al., 2008). This relation may also differ in adolescents, as CSE may be partly an artifact of the developmental period rather than signaling a broader personality style. The expected relation between non-pathological narcissism and GSE was evident, although weak in magnitude. This finding is consistent with other research in youth, which has suggested that the connection between narcissism and self-esteem may be lower in youth than adults (Barry et al., 2003).

The relations of higher self-esteem and non-pathological narcissism to greater peer-perceived aggression are consistent with past research in an adolescent residential setting (Golmaryami & Barry, 2010). This pattern suggests some shared feature between higher GSE and non-pathological narcissism that is viewed negatively by peers. Individuals with higher self-esteem may not perceive themselves thusly; however, individuals higher on narcissism are relatively likely to acknowledge engaging in aggression. The processes involved in negative peer perceptions of narcissism and GSE need further examination in broader samples of adolescents.

Several limitations should be considered. First, although much work

on CU traits and narcissism in youth has focused on at-risk samples, the generalizability of such samples is likely limited, particularly in light of the small size of the present sample. Furthermore, the measure of CSE used in this study is directly tied to conceptualizations of pathological narcissism (Pincus et al., 2009). The item content (e.g., "When people don't notice me, I start to feel bad about myself") captures self-perception that is fragile and based on others' appraisals. However, research is needed on specific domains of contingent self-worth (see Crocker & Wolfe, 2001), which may be important for adolescent aggression. Lastly, the overlap between proactive and reactive aggression raises some caution about considering separate conceptual models for explaining the interplay between CU traits, narcissism, and self-esteem in these functions of aggression.

The developmental pathways involved in the emergence of fragile self-esteem and aggression should now be investigated longitudinally in youth. Moreover, CSE could be an important factor to consider in further intervention innovations for reducing aggression. For example, decreasing sensitivity to social feedback could help decrease aggression in adolescents high in CU traits or narcissism. If an adolescent is sensitive to social feedback and unconcerned about the impact of his/her behavior on others, intervention efforts should focus on alternatives to aggression for coping with interpersonal setbacks (e.g., Lochman, Whidby, & FitzGerald, 2012) rather than approaching this issue through blanket attempts to alter GSE.

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