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Clarifying the connection between parental conditional regard and contingent self-esteem: An examination of cross-lagged relations in early adolescence

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Abstract

Objective: Relations between parental conditional regard (PCR) and children's motivational and emotional functioning have been demonstrated by past research. However, most available studies relied on cross-sectional correlational data, leaving open the causal direction of these relations. In the present article, we sought to contribute to this topic and examined the longitudinal connection between PCR and adolescents' contingent self-esteem (CSE) over time.

Method: Hypotheses were tested in two longitudinal studies with differently gifted samples of German high school students ($N = 188$ and $N = 202$ students, respectively). Data were gathered at three time points in Study 1 and at two time points in Study 2. In both studies, adolescents answered questionnaires regarding positive and negative PCR in the academic domain as well as general CSE (and additionally academic CSE in Study 2).

Results: Cross-lagged analyses revealed several significant paths from CSE to PCR, and some paths from PCR to CSE, indicating the presumed reciprocal relationship between these constructs.

Conclusions: Our findings suggest that children high in CSE may lead their parents to engage in PCR and that these effects may be more pronounced than vice versa. Possible reasons for these findings and their implications are discussed.

KEYWORDS

contingent self-esteem, cross-lagged panel model, longitudinal, parental conditional regard

1 | INTRODUCTION

Adolescence is a time in life that confronts us with numerous developmental tasks such as forming an identity, building stable self-esteem, and recalibrating social relationships (Branje, 2018; Havighurst, 1972; Meeus, 2011; Trzesniewski et al., 2003). Especially during puberty, adolescents are confronted with social and emotional challenges that they must learn to deal with. Research indicates that parents continue to have a tremendous influence on how successfully their children master various developmental tasks throughout adolescence (Steinberg, 2000). During the last decades, research

has identified one relatively unexplored parenting strategy termed parental conditional regard (PCR; Assor et al., 2004). PCR is a widespread parenting phenomenon that is applied in order to make children behave in a desired way. Research in the past years contradicted the belief that PCR is a benign parenting strategy as it has been linked to maladaptive outcomes in motivational, emotional, and social domains (Assor et al., ,2004, 2014; Otterpohl et al., 2019).

While there is widespread evidence for associations between PCR and emotional and motivational consequences in children and adolescents, most available studies relied on cross-sectional correlational data, leaving open the causal direction of these relationships. In order to correctly assess the implications of PCR and develop effective training and intervention programs (e.g., for targeted modification of appropriate parenting techniques), a more precise understanding of the causal interdependencies of certain parental behavior and affective-motivational factors on the part of the child is indispensable. With the present work, we seek to contribute to this topic by examining the cross-lagged relations between PCR and children's contingent self-esteem (CSE) as an important emotional outcome variable of parenting (Assor et al., 2014), which shares the "conditional love" aspect of PCR and has a broad spectrum of known consequences ranging from boosts in motivation to various psychological costs (cf. Crocker & Park, 2004). Based on theoretical assumptions of the mutual relationship between parenting behavior and adolescents' characteristics (Eisenberg, 2020; Morris et al., 2007; Steinberg, 2000) and on previous empirical studies from other domains of socialization (e.g., Otterpohl et al.), we propose a reciprocal connection between these constructs over time; that is, we predict PCR to lead to changes in the child's CSE and vice versa. The practice of PCR was investigated with respect to the academic domain. Hypotheses were tested in two longitudinal studies with differently gifted samples of German high school students.

1.1 | Parental conditional regard

PCR describes the parental tendency to provide more or withdraw esteem and attention depending on how their children behave. Assor and Tal (2012) differentiated parental conditional positive regard (PCPR) from parental conditional negative regard (PCNR). PCPR describes an enhancement of esteem, which is contingent on the child showing a parentally valued behavior. PCNR refers to the withdrawal of attention and regard when the child shows undesired behavior.

In the literature, PCPR is distinguished from positive feedback or praise (Assor & Tal, 2012). In contrast to PCPR, positive feedback is not experienced as implying a general dependence between the offspring's value and the attainment of certain outcomes. While positive feedback is linked to adaptive outcomes (e.g., Hagger et al., 2015; Mouratidis et al., 2008) and thus should be recommended as a parenting technique, PCPR is likely to evoke maladaptive functioning in children, such as lowered intrinsic motivation, dysfunctional self-regulation, enhanced contingency of self-esteem, or high-school dropout in risk groups (Assor et al. 2004; Curran et al., 2017; Itzhaki-Braun et al., 2020; Perrone et al., 2016; Roth et al., 2009). Similarly, PCNR is distinguished from psychological control, which is defined as a manipulative parenting strategy that includes intrusion into the psychological and emotional development of the child in order to get the child to engage in desired behaviors (Barber, 1996). As PCNR, psychological control involves elements of love withdrawal but compared to PCNR, it also contains elements of blame and intrusiveness that cannot be controlled by the child him- or herself (e.g., being blamed for a dispute between his/her parents). Both constructs are labeled as controlling parenting strategies, and both are applied to make children behave in a certain way using methods of withdrawal of desired goods and leading to feelings of guilt. Overall, PCNR seems to have similar emotional and motivational costs and consequences as psychological control.

PCPR and PCNR are regarded as domain-specific, as their manifestations can take different forms across different situations. Parents may, for example, apply PCR in the academic domain but not concerning social behavior (Assor et al., ,2004, 2014). In this study, we focused on PCR in the academic domain, which is developmentally important because adolescents are constantly surrounded by academic issues. In particular, the older participants of our study are forced to care about their academic achievement with respect to imminent graduation and subsequent job decisions.

1.2 | Contingent self-esteem

Global self-esteem is defined as the global and enduring feelings a person holds about himself or herself, as determined by transactions with the social environment (Kernis, 2003). As Brown and Marshall (2006) point out, global self-esteem relates to either the amount of worthiness a person rationally administers to him- or herself (Crocker & Park, 2004) or to the affection a person holds for him- or herself, independent of rational processes (Brown & Marshall, 2006). In the present study, we define global self-esteem as the feelings of worthiness a person attributes to himself/herself. Thus, a high global self-esteem depicts a person who likes him- or herself, who feels precious and is satisfied with being the person he or she is. A low global self-esteem, moreover, implies feelings of unworthiness or the wish to be different. Global self-esteem has been the focus of most studies in the field, showing that low self-esteem is related to maladaptive outcomes such as depression, alcohol-related problems,

bullying victimization, and reduced mental and physical health (Baumeister et al., 2003; Luk et al., 2016; Trzesniewski et al., 2006). High global self-esteem, moreover, has been found to be linked to happiness, psychological well-being, and was generally found to protect individuals from psychological problems (Baumeister et al., 2003; Rosenberg et al., 1995).

According to several researchers, however, high global self-esteem does not necessarily represent an optimal self-esteem (Deci & Ryan, 2000; Kernis, 2003). Kernis (2003) argues that persons with high self-esteem might still be vulnerable and dependent on certain circumstances and thus experience similar fluctuations in self-esteem as others with generally low self-esteem. Optimal self-esteem would instead consist of a high, stable, and secure, that is, less contingent self esteem. CSE is defined as the dependence of an individual's global self-esteem on the attainment of certain goals or standards that can be self-imposed or established by others (Kernis, 2003; Schöne & Stiensmeier-Pelster, 2016). For example, a person with a high CSE in the domain of attraction would only feel worthy when looking good or getting compliments from significant others. A person with a low CSE, moreover, would judge his or her worth independently of attractiveness. Research in the past decades found that CSE is associated with several negative outcomes, often even above and beyond any effect of global self-esteem (e.g., financial, social, and academic problems, depression, drinking, and anger; Burwell & Shirk, 2006; Crocker & Luhtanen, 2003; Kernis, 2003). Furthermore, CSE may lead to oscillations in the level and stability of self-esteem, which has also been associated with negative outcomes such as anger and depression (Crocker et al., 2003; Kernis et al., 1989).

1.3 | Relations between PCR and CSE

1.3.1 | Bivariate relationships

The concepts of PCR and CSE share the conditionality of behavior as a key conceptual dimension. Several studies examined CSE as an intraindividual precursor of PCR (e.g., maternal child-based CSE is related with maternal PCR, which in turn contributes to negative outcomes in the child; Israeli-Halevi et al., 2015). Over and above these relations, studies also suggest that the overall association between CSE and PCR within an individual may be transmitted intergenerationally (Otterpohl et al., 2020). Accordingly, some authors see PCR not only as an intraindividual product, but also as an intergenerational cause of CSE, suggesting that when relationships with significant others are perceived to be highly conditional, thoughts about those significant others trigger concerns about self-esteem and self-worth (Crocker & Park, 2004; Deci & Ryan, 2000; Roth et al., 2009). Empirical evidence on the relationship between PCR and CSE is scarce, but supports the theoretical assumptions. Assor et al. (2014) state that PCR leads to fluctuations in children's self-esteem. They reported that PCR was related to lower self-esteem in children with failure, and that success was followed by short lived satisfaction and feelings of superiority. Hence, these results emphasize that children's self-esteem may be heavily contingent on PCR. A more recent study found conditional negative regard in the sports domain to be associated with young athletes' competence-contingent self-esteem (Curran, 2018). In a sample of high school students, Wouters et al. (2018) found conditional negative and positive regard to be equally and positively related to CSE when controlling for the respective other parenting. As additional indirect evidence, in a sample of early adolescents, Wouters et al. (2013) found psychological control to be positively related to CSE. Due to the conceptual proximity of psychological control and PCNR mentioned above, it seems reasonable to expect a positive relationship between PCNR and CSE. Nevertheless, the authors themselves indicate that their studies mostly rely on cross-sectional data, which precludes causality statements. Interestingly, Wouters et al. (2013) reported that the relationship to CSE was strengthened when the use of psychological control was accompanied by parental responsiveness. Responsiveness refers to parental emotional support and warmth (Otterpohl & Wild, 2015). The combination of psychological control and responsiveness may resemble the construct of PCPR: The controlling aspect remains but it is enriched by parental warmth and an extra amount of appreciation. Thus, PCPR is also expected to lead to increased CSE. In sum, studies have shown that there is a connection between self-esteem fluctuations (and presumably CSE) and PCR, but the direction is unknown.

1.3.2 | Causal directions

Although various links between PCR and self-esteem fluctuations (and presumably CSE) have been demonstrated in previous research, the question remains as to whether the relationship between PCR and CSE is unidirectional or of a reciprocal nature. For example, a child is likely to learn from parents who are often more appreciative of the child's academic success that he or she is only of value if he or she performs well.

Thus, the child may develop a CSE, feeling only worthy when achieving well. It is also conceivable, however, that the parents feel pressured to enhance attention and appreciation if their child achieves well in school because they perceive and acknowledge the child's wish for extra appreciation. In other words, parents might notice that their child craves extra attention when showing a strongly desired behavior

or behavioral outcome (e.g., a very good grade). Thus, both child- and parent-directed effects are reasonable.

To the best of our knowledge, no study to date has tested and compared child- versus parent-directed effects regarding the relationship between PCR and CSE. However, there are several longitudinal studies that have investigated this question on related constructs (e.g., psychological control and child temperament) and/or younger children, providing indirect evidence on this research question. For example, results from a study with early adolescents (Wuyts et al., 2015) revealed that increases in parental child-invested CSE (i.e., parents' tendency to hinge their self-esteem on their children's achievements) were related to increases in achievement-oriented psychologically controlling parenting even when controlling for child performance. Similarly, Assor et al. (2020) found that maternal prenatal conditional regard orientation predicted preschoolers' helpless coping with failure in an unsolvable puzzle task. This prospective link was mediated by mothers' postnatal achievement-oriented controlling behavior and, importantly, these effects remained even after controlling for the effects of infants' temperament disposition toward frustration reactivity, indicating parent-directed effects for the association of PCR and child characteristics.

In contrast, van der Bruggen et al. (2010) demonstrated that infants' negative emotionality increased their mothers' psychological control 1 year later. Moreover, Otterpohl and Wild (2015) reported reciprocal relationships between psychological control, adolescents' anger regulation, and their psychosocial adjustment in a sample of early adolescents. However, their results revealed child-directed paths to be more dominant, indicating that the degree of parental psychological control depends more on the characteristics of the child than vice versa. This study may indicate that child characteristics may also elicit parents' conditional responses.

Therefore, we considered both causal directions in our study: CSE leading parents to engage in PCR and PCR leading to an increase in the child's CSE. We expect the relationship between PCR and CSE to be quite intense and equally demonstrable for both positive and negative forms of PCR in the academic domain.

1.4 | The present research

In the present study, we sought to enhance our understanding of the connection between PCR and children's CSE by examining their cross-lagged relations over time in two different samples of early adolescents. In Study 1, we assessed both PCPR and PCNR in the academic domain at three time points with a sample of average- to low-performing German high school students. In Study 2, we sought to replicate but also extend our findings by (a) examining a different sample of average- to high-performing German high school students at two time points and (b) focusing on both general and domain-specific CSE (academic domain).

2 | STUDY 1

2.1 | Sample and procedure

Ethical approval for this study was obtained from the institutional review board of Bielefeld University (Approval number: EUB 2015-002). Written informed consent was obtained from all participating adolescents and their parents before the study.

Data were gathered at intervals of 8 weeks from t1 to t2 and 6 weeks from t2 to t3. The survey design was such that the measurement points did not coincide with the half-year reports, in which students and their parents received feedback on their performance and grades in the last half of the school year. T1 took place in early March (4 weeks after students received their first half-year reports), T2 in early May, and T3 in mid-June (4 weeks before students received their second half-year reports). The period between T1 and T2 included 2 weeks of Easter vacation (end of March to mid-April).

Grades eight and nine of three schools participated. In Germany, the secondary school system provides different tracks. In the present study, two schools were chosen that represented the lowest track (*Hauptschule*) (approx. 20% of participants) and another school was selected in which different types of graduation can be achieved (highest and medium graduation) (*Gesamtschule*). A computer-based design was chosen because other instruments that were administered for different research questions were dependent on this method. Questionnaires were administered during two classes, and students answered the questions on their computers. Among all of the participating classes and students, 50 euros were raffled at each wave of data collection, and brochures discussing the results were offered.

A total of 199 students participated throughout the different points of time. At t1, 133 students (75 females, age: $M = 14.55$, $SD = .89$) took part in the study, while 153 adolescents (84 females, age: $M = 14.84$, $SD = .86$) participated at t2 and 127 at t3 (72 females, age: $M = 14.86$, $SD = .98$). The lowest school track was attended by approximately one-fifth of the participants (t1: 21.5%, t2: 16.8%, and t3: 27.5%).

2.2 | Measures

2.2.1 | Parental academic conditional regard

In the introduction, the respondents were asked to state which parent was their most important reference person and

TABLE 1 Scale means, standard deviations, intercorrelations, and reliabilities of Study 1

Scale	*M* (*SD*)	α	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) PACPR t1	3.87 (1.61)	.93	1							
(2) PACNR t1	1.84 (.94)	.91	.46**	1						
(3) CSE t1	3.03 (.60)	.62	.23**	.15	1					
(4) PACPR t2	3.52 (1.52)	.93	.55**	.36**	.32**	1				
(5) PACNR t2	2.18 (1.32)	.96	.41**	.58**	.28**	.52**	1			
(6) CSE t2	3.00 (.73)	.82	.08	.14	.54**	.28**	.27**	1		
(7) PACPR t3	3.42 (1.50)	.94	.45**	.40**	.29**	.60**	.42**	.26**	1	
(8) PACNR t3	2.40 (1.34)	.97	.19	.33**	.12	.22*	.38**	.01	.45**	1
(9) CSE t3	2.90 (.66)	.82	.16	.20	.35**	.31**	.33**	.59**	.33**	.14

Abbreviations: CSE, contingent self-esteem; PACNR, parental academic conditional negative regard; PACPR, parental academic conditional positive regard.
*$p < .05$; **$p < .01$.

to relate the questions concerning their parents to this person. The extent to which the students experienced their parents as conditionally regarding in the academic field was then assessed using the validated German adaptation of the *Parental Conditional Regard Scale* (PCR-D; Otterpohl et al., 2017; Roth et al., 2009). For this study, eight items for Parental Academic Conditional Positive Regard (PACPR) and nine items for Parental Academic Conditional Negative Regard (PACNR) were used. An example item for PACPR is "If I am successful in a test, my mother/father makes me feel that I am worth more." PACNR was captured with items such as "If I get a bad grade in school, I feel that my caregiver is less loving towards me than usual." Approval of these items was measured on a 7-point Likert scale ranging from (1) *totally disagree* to (7) *totally agree*. Otterpohl et al. (2017) demonstrated the validity of the scale as well as very good internal consistency and acceptable test–retest reliabilities. In the present study, both scales also showed very good internal consistency. Cronbach's alphas (α) were good for both PACPR (.93/.93/.94) and PACNR (.91/.96/.97) across all measurement points.

2.2.2 | Contingent self-esteem

Global CSE was measured using the German version of the *Contingent Self-Esteem Scale* (CSES; Schwinger et al., 2017). The scale captures evaluations of oneself with 15 items such as "My feelings about myself are strongly influenced by how much other people like and accept me" and "Even after failure my self-esteem remains unaffected." The 5-point Likert scale ranges from (1) *not true* to (5) *true*. After removing four items, the reliability coefficients became acceptable to good, with $\alpha = .62$ (t1), $\alpha = .82$ (t2), and $\alpha = .82$ (t3).

2.3 | Analysis procedure

The concurrent, predictive, and stability links among variables were investigated by calculating a series of cross-lagged models in *Mplus* Version 7.4 (Muthén & Muthén, 1998–2015). Cross-lagged models hold the advantage of controlling the initial levels of the dependent variable. Thus, a change in the dependent variable is predicted over and above initial levels (Selig & Little, 2012). For the model concerning PACPR and CSE, stability links were assumed between each point of time. Additionally, parent-directed paths were drawn from PACPR t1 to CSE t2 and from PACPR t2 to CSE t3. Child-directed paths were specified from CSE t1 to PACPR t2 and from CSE t2 to PACPR t3. An identical model was tested for the relationships between PACNR and CSE.

2.4 | Results

Table 1 presents the mean scores, standard deviations, and correlations among all variables. With a few exceptions, variables were intercorrelated in the expected directions and showed stability over time ($.33 < rs < .60$). Prior to testing the cross-lagged models, all variables were screened for outliers via boxplots, reducing the sample from $N = 199$ to $N = 188$ participants. Full information maximum likelihood estimation (FIML) was used for missing data.

As explained above, two different cross-lagged models were tested for the full sample ($N = 188$). The model for the relationship between PACPR and CSE showed a good model fit (χ^2 [$df = 4$, $N = 188$] = 6.18; $p = .19$; $CFI = .99$; $RMSEA = .05$; $SRMR = .03$; see Figure 1). Stability links were moderate to high for both PACPR and CSE (βs between .52 and .62). The concurrent relationships were

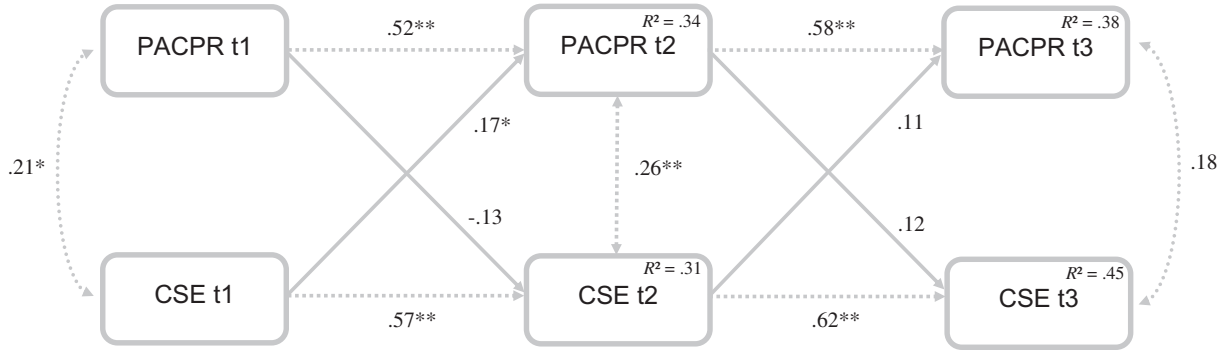

FIGURE 1 Cross-lagged model for PACPR and CSE in Study 1 (χ^2 [$df = 4$, $N = 188$] = 6.18; $p = .18$; *CFI* = .99; *RMSEA* = .05; *SRMR* = .03). CSE, contingent self-esteem; PACPR, parental academic conditional positive regard, Dotted lines indicate concurrent relations and stabilities over time. Continuous lines indicate cross-lagged effects. All coefficients are standardized. $^{**}p < .01$, $^{*}p < .05$

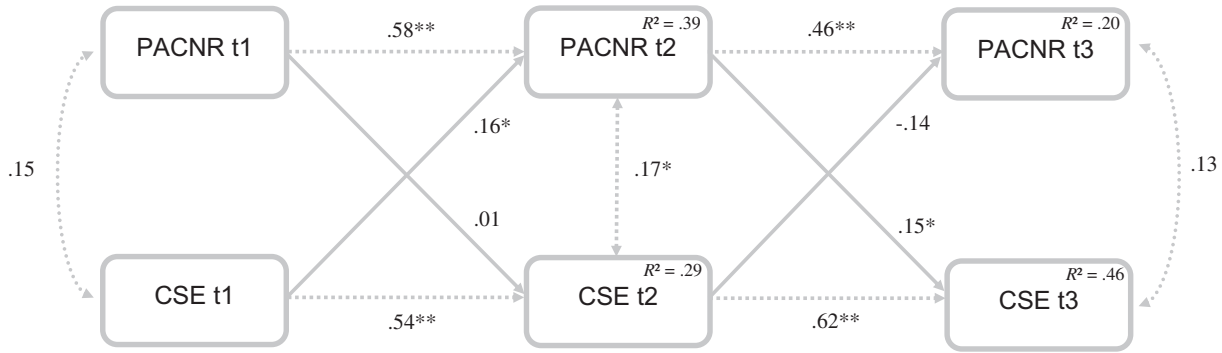

FIGURE 2 Cross-lagged model for PACNR and CSE in Study 1 (χ^2 [$df = 4$, $N = 188$] = 3.78; $p = .43$; *CFI* = 1.00; *RMSEA* = .00; *SRMR* = .03). CSE, contingent self-esteem; PACNR, parental academic conditional negative regard. Dotted lines indicate concurrent relations and stabilities over time. Continuous lines indicate cross-lagged effects. All coefficients are standardized. $^{**}p < .01$, $^{*}p < .05$

significantly positive at t1 ($\beta = .21$, $p < .05$) and t2 ($\beta = .26$, $p < .05$), but not at t3 ($\beta = .18$). Regarding the cross-lagged paths, there was only a significant child-directed path from CSE t1 to PACPR t2 ($\beta = .17$, $p < .05$), while none of the other expected paths revealed significance. However, to gain deeper insights into the prediction of PACPR by CSE, the potential indirect effect of CSE t1 on PACPR t3 was additionally examined.[1] The mediation analysis with 5,000 bootstrapped samples revealed that CSE t1 affected PACPR t3 significantly through PACPR t2 ($\beta = .10$, 90% CI (.024, .164), $p < .05$).

The model for the relationship between PACNR and CSE also revealed a good fit (χ^2 [$df = 4$, $N = 188$] = 3.78; $p = .43$; *CFI* = 1.00; *RMSEA* = .00; *SRMR* = .03; see Figure 2) and showed considerable stability between the same variables at different time points (βs between .46 and .62). Concurrent relationships were only significant at t2 ($\beta = .17$, $p < .05$), but not at t1 ($\beta = .15$) and t3 ($\beta = .13$). Similar to the PACPR model, the child-directed path from CSE t1 to PACNR t2 was significant ($\beta = .16$, $p < .05$). However, there was one additional significant path in this model, namely a parent-directed path from PACNR t2 to CSE t3 ($\beta = .15$, $p < .05$). Parallel to the analyses for PACPR, the indirect effect of CSE t1 on PACNR t3 was also additionally investigated here. Again, there was a significant mediation effect from CSE t1 via PACNR t2 to PACNR t3 ($\beta = .08$, 90% CI (.015, .139), $p < .05$).

3 | STUDY 2

We aimed to replicate the findings of Study 1 in a second study. However, we also sought to enhance the generalizability of our results and, therefore, decided to select a different sample of adolescents (average to high-performing high school students). As we presume that the relationship between PCR and CSE is independent of students' cognitive abilities and academic achievement, we expected to find the same pattern of results as in Study 1. In addition to replicating the first study, we investigated in Study 2 whether the findings are similar for domain-specific compared to general CSE. Since PACPR and PACNR represent domain-specific forms of PCR, it would be reasonable to assume that domain-specific CSE referring to the academic domain would show

higher relations to PACPR and PACNR than general CSE. According to the matching principle, we expect relationships to be higher when the variables are assessed on the same level of specificity (e.g., Baranik et al., 2010).

3.1 | Sample and procedure

We conducted a longitudinal study with students from eighth and ninth grades at two measurement points. Three schools (two representing the highest track and one representing the medium school track in Germany) with 11 classes agreed to participate. Students were informed about the topic, type, and scope of the survey as well as about anonymity and voluntary participation. Informed consent was obtained from the students' parents. The survey of one class lasted between 30 and 45 min in each case and was carried out in most classes during class time.

At the first measurement point, 84 pupils (43%) came from a total of five eighth-grade classes and 111 pupils (57%) from a total of six ninth-grade classes. A total of 189 students (53.6% female; age: $M = 13.80$, $SD = .74$) completed the questionnaires at both time points. The interval between the first and second measurement points was approximately 4 months (t1: end of December, t2: end of March) and included the important time period of half-year reports (around end of January), in which students are informed about their performance in the first half of the school year in terms of standardized school marks.

3.2 | Measures

PACPR and PACNR were again assessed with German adaptation of the PCR-D (Otterpohl et al., 2017; Roth et al., 2009). Here, however, items were measured on a 5-point Likert scale from (1) *totally disagree* to (5) *totally agree*. Cronbach's alphas (α) were good for both PACPR (.90/.92) and PACNR (.90/.93) at the two time points.

Global CSE was again measured using the German version of the CSES (Schwinger et al., 2017). The 5-point Likert scale ranged from (1) *not true* to (5) *true*. Reliabilities for this scale were good ($\alpha = .83$ and .86). Academic CSE was assessed using a subscale of the *Contingencies of Self-Worth Scales* (CSWS; Crocker & Luhtanen, 2003). The five items on academic CSE (e.g., "My self-worth is influenced by my academic performance" and "I feel better when I am successful in school") were answered on the same 5-point Likert scale as global CSE. In the study by Crocker and Luhtanen (2003), the scale showed good internal consistency, while Cronbach's alphas (α) were acceptable in the present study at .67 and .70.

3.3 | Results

Means, standard deviations, and intercorrelations are shown in Table 2. Akin to Study 1, variables were intercorrelated in the expected directions and showed high stabilities ($.62 < rs < .80$). Cross-lagged models were specified as in Study 1, while FIML was used again for handling missing data. Overall, four cross-lagged models were computed (PACPR and CSE, PACPR and ACSE, PACNR and CSE, and PACNR and ACSE). All four models were saturated and thus show a perfect fit ($CFI = 1.00$; $SRMR = .00$).

In the model for the relationship between PACPR and CSE (Figure 3), stability links were high for both PACPR ($\beta = .70$) and CSE ($\beta = .80$). The concurrent relationships were significantly positive at t1 ($\beta = .21$, $p < .01$) and t2 ($\beta = .20$, $p < .01$). Regarding the cross-lagged paths, there was a significant child-directed path from CSE t1 to PACPR t2 ($\beta = .19$, $p < .01$), while the path from PACPR t1 to CSE t2 revealed no significance. Stability links (βs between .65 and 72) and the concurrent relationships ($\beta = .21$ at t1, $\beta = .27$ at t2, ps $< .01$) were similar in the model concerning relations between PACPR and ACSE. However, the pattern of results for the cross-lagged paths differed, in that the child-directed path from ACSE t1 to PACPR t2 was not significant, whereas the parent-directed path from PACPR t1 to ACSE t2 proved to be significant ($\beta = .12$, $p < .05$).

The model for the relationship between PACNR and CSE (Figure 4) also showed considerable stability between the same variables at different time points (βs between .55 and .81). Concurrent relationships were significant at both t1 ($\beta = .26$, $p < .01$) and t2 ($\beta = .35$, $p < .01$). There was a significant cross-lagged path from CSE t1 to PACNR t2 ($\beta = .27$, $p < .01$), but the path from PACNR t1 to CSE t2 did not reach significance. Similar results were obtained for the model regarding PACNR and ACSE, again with high stabilities (βs between .58 and .68), significant concurrent relations (βs = .18 at t1 and .32 at t2, ps $< .01$), and the same significant cross-lagged path from ACSE t1 to PACNR t2 ($\beta = .21$, $p < .01$).

4 | GENERAL DISCUSSION

The aim of the present work was to examine cross-lagged relations between different forms of PCR and adolescents' CSE. Reciprocal effects were expected, indicating that PCR would have an impact on the manifestation of CSE while at the same time CSE was predicted to affect the development of PCR. We tested our expectations in two different samples of differentially gifted German high school students and with respect to both general (Studies 1 and 2) and academic CSE (Study 2).

TABLE 2 Scale means, standard deviations, intercorrelations, and reliabilities of Study 2

Scale	*M* (*SD*)	*α*	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) PACPR t1	2.63 (.96)	.90	1						
(2) PACNR t1	1.62 (.74)	.90	.53**	1					
(3) CSE t1	3.24 (.64)	.83	.21**	.28**	1				
(4) ACSE t1	3.40 (.72)	.67	.22**	.18*	.51**	1			
(5) PACPR t2	2.66 (.99)	.92	.75**	.54**	.34**	.20*	1		
(6) PACNR t2	1.74 (.81)	.93	.40**	.62**	.43**	.31**	.64**	1	
(7) CSE t2	3.21 (.67)	.86	.20*	.18*	.80**	.43**	.36**	.46**	1
(8) ACSE t2	3.39 (.76)	.70	.27**	.14	.58**	.66**	.35**	.39**	.56**

Abbreviations: ACSE, academic contingent self-esteem; CSE, contingent self-esteem; PACNR, parental academic conditional negative regard; PACPR, parental academic conditional positive regard.

*$p < .05$; **$p < .01$.

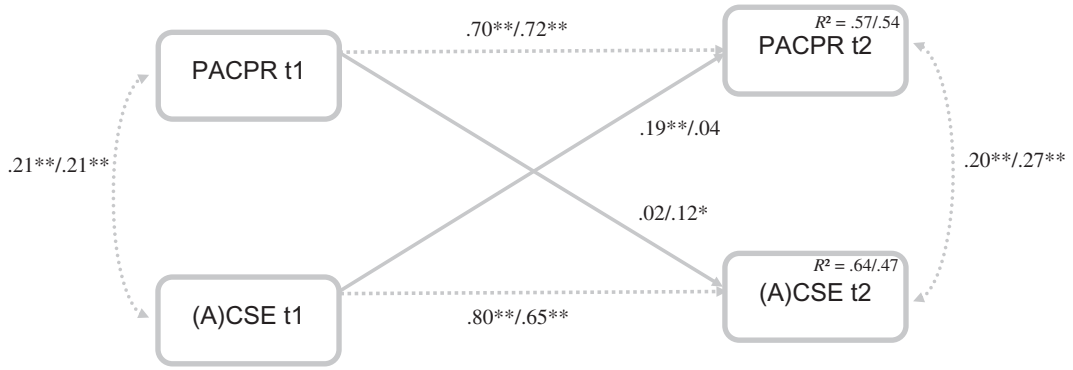

FIGURE 3 Cross-lagged models for PACPR and CSE as well as PACPR and ACSE in Study 2. ACSE, academic contingent self-esteem; CSE, contingent self-esteem; PACPR, parental academic conditional positive regard. Dotted lines indicate concurrent relations and stabilities over time. Continuous lines indicate cross-lagged effects. All coefficients were standardized. Coefficients for the CSE model are presented before the slash, and those for the ACSE model after the slash. **$p < .01$, *$p < .05$. Models for both CSE and ACSE are saturated and thus show a perfect fit ($CFI = 1.00$; $SRMR = .00$)

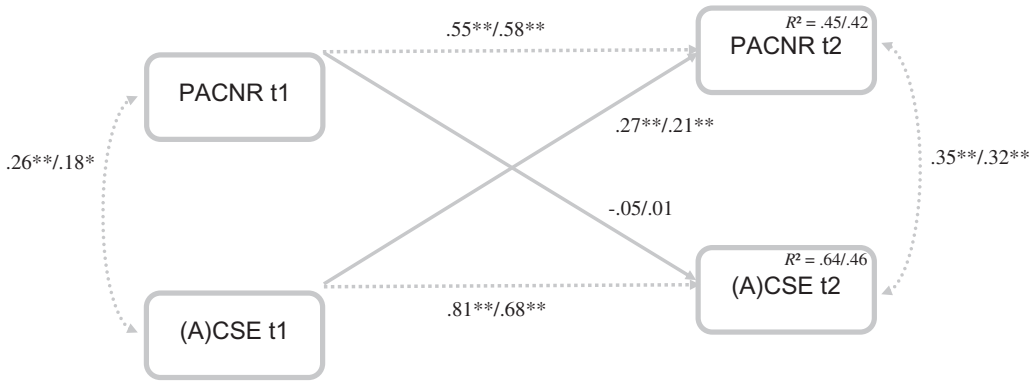

FIGURE 4 Cross-lagged models for PACNR and CSE as well as PACNR and ACSE in Study 2. ACSE, academic contingent self-esteem; CSE, contingent self-esteem; PACNR, parental academic conditional positive regard. Dotted lines indicate concurrent relations and stabilities over time. Continuous lines indicate cross-lagged effects. All coefficients were standardized. Coefficients for the CSE model are presented before the slash, and those for the ACSE model after the slash. **$p < .01$, *$p < .05$. Models for both CSE and ACSE are saturated and thus show a perfect fit ($CFI = 1.00$; $SRMR = .00$)

4.1 | Relations between PCR and CSE

The results from Studies 1 and 2 were mostly in line with our hypothesis of reciprocal effects. Overall, five out of eight possible child-directed cross-lagged effects (CSE predicts PCR) and two out of eight possible parent-directed cross-lagged effects (PCR predicts CSE) achieved significance in our models. These effects had small to moderate effect sizes. Taken together, our findings support the reciprocal effects assumption and yet favor the perspective of child-directed effects that has so far received little attention. In recent years, several authors have highlighted that children's behavior may affect how parents act and decide in the education of their children (e.g., Otterpohl & Wild, 2015; van der Bruggen et al., 2010). However, more research is needed to better understand the interplay between parenting and adolescents' motivational and emotional functioning.

In the two studies reported here, we found that CSE in children positively predicted the change in PCR. This effect appeared for conditional positive as well as negative regard and also for general and domain-specific CSE. This result may be explained by assuming that people shape their environment to strengthen their self-esteem. Someone who strengthens his or her self-esteem by external conditions actively searches for situations of acknowledgment. Thus, when a child can enhance his or her self-esteem through the heightened appreciation of his or her parents, he or she may actively search for situations of praise. Parents may notice this craving for extra attention and appreciation and may behave accordingly. Another explanation in this context could be that parents over the years have recognized the fundamental contingency of their teen and that his or her self-esteem is dependent on certain conditions—that they feel worthy in cases of success and when they are praised, while they feel unworthy in cases of failure or punishment. Parents might have learned to use their child's trait in order to accomplish their own goals concerning their offspring. Hence, they know that when they withdraw love and attention, their child will feel unworthy and will try to seek a boost in self-esteem. As a consequence, the child would improve their behavior in order to please his or her parents.

4.2 | Differential and generalizable effects

Our assumption of a reciprocal relationship between PCR and CSE was expected to be generally valid across diverse contexts, populations, and child characteristics, among others. The two studies reported here enabled us to partially test this hypothesis. The following aspects speak in favor of our generalizability assumption. First, findings were very similar in the two samples which differed mainly in terms of students' level of academic achievement. While students in the first study attended the low or average track in the German school system, students in the second study attended average to high school tracks and were, therefore, clearly more capable. Although not explicitly tested, it is also reasonable to assume differences in students' socio-economic status, thereby implying that the relationships between PCR and CSE are similar in households with low and high social status. This interpretation needs further testing in future studies, but if it were true, it would have important implications for research and practice. Second, the results did not seem to be affected by the number of measurement points; that is, the effects seem to be equally detectable at different time intervals. However, this point needs to be further elaborated in longitudinal studies with larger intervals. Third, effect sizes did not substantially differ between CSE and ACSE. The often-reported matching principle according to which the correlation between two variables should be highest if they are assessed at the same level of specificity did not hold here. We interpret this as evidence of the general coincidence of PCR and CSE. Moreover, this might tap into questions regarding the structure and the conceptual idea of CSE (Schwinger et al., 2017): PCR might lead to the general, not (yet) domain-bound idea in children, that one's "worth" is contingent. If CSE starts with the general idea, this could explain the correlations (PCR-CSE versus. PCR-ACSE) as well. While in students and adults, the structure of CSE is best represented by a domain-specific model with several intercorrelated factors (Schwinger et al., 2017), we have no knowledge of the development of the structure in children and the question of whether the development of CSE starts in specific domains or with the *general* idea that one's worth is not simply given but has to be earned by meeting standards and conditions.

Despite the arguments for the universality of the relationship between PCR and CSE, the cross-lagged models also revealed notable differences. First, although the pattern of results was similar, the effect sizes were slightly higher in the second sample. This could mean that the interplay between PCR and CSE is indeed stronger in families with better academic backgrounds. Alternatively, however, this finding may be attributable to methodological issues such as variance restriction, as indicated by the lower means for PACPR and PACNR in Study 2. A further explanation may be seen in the contextual issue that time intervals in Study 2 included the important time period of half-year reports (around end of January), in which students are informed about their performance in the first half of the school year in terms of standardized school marks, whereas this was not the case in Study 1. Under such conditions, it seems more likely that children with high levels of CSE will try to induce their parents to respond in conditionally regarding ways as the time of the parent-informed grading approaches. That is, as the grading period approaches, high CSE children may push their parents

to show the extent to which the child's efforts and performance cause the parents to appreciate and/or love the child. The supplemental mediation analyses in Study 1 seem to indicate that such a period of (informal) parent-informed grading took place between t1 and t3, but not between t2 and t3, thereby adding further exploratory support for this hypothesis. However, additional research is needed to bolster this assumption with more fine-grained data. Second, findings for PACPR in Study 2 revealed different effects for CSE and ACSE. While the CSE model resembled the child-directed effect found in Study 1, the ACSE model revealed a significant parent-directed effect only. To further complicate a concise interpretation, findings for PACNR in Study 2 were very consistent for CSE and ACSE. Moreover, the PACNR model in Study 1 showed a parent-directed effect, but the PACNR models in Study 2 did not. Therefore, it does not appear to be seriously possible to identify a theoretically meaningful pattern on the basis of this patchwork of specific findings. However, it cannot be ruled out that future studies will discover differential mechanisms for PACPR versus PACNR.

4.3 | Limitations and suggestions for future research

An important limitation to these studies is the sole reliance on children's self-reports. Interpretation of findings may be limited because adolescents with high CSE may be characterized by increased attention to signs of appreciation. This may shape how the child perceives parental responses. Parental affection may, therefore, be perceived more strongly than usual, particularly in success situations, while the child feels less parental warmth in failure situations when his or her self-esteem drops. In order to strengthen the validity of the reported relationship between PCR and CSE, future research should also assess PCR from the parents' perspective and/or by other methods. Similarly, assessing CSE through self-report has not been without criticism, but is still the established method and is seen as valid for measuring CSE (cf. Vonk et al., 2019). The present work is also limited by the domain in which PCR is applied. Although PCR has mostly been investigated in the academic domain, it certainly takes place in additional domains of everyday life, such as in social relationships (Assor et al., 2004). Related to this point, further outcomes on the part of children should be examined in order to verify the reciprocal nature of the relationship of PCR with other important factors such as children's motivation or anxiety.

These and other limitations notwithstanding, our results provide overall breeding grounds for the idea of a reciprocal interplay between child characteristics such as CSE and their parents' engagement in PCR.

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ENDNOTE

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