

Relational Schemas and the Developing Self: Perceptions of Mother and of Self as Joint Predictors of Early Adolescents' Self-Esteem

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This 1-year longitudinal study examined early adolescents' ($N = 278$, age 11–13 years) perceptions of their mother's behavior (affection, knowledge of child's activities, and psychological control) and of how they react to their mother (trust in mother, defiance, and debilitation) as predictors of self-esteem among peers. Perceived maternal affection predicted self-esteem for girls; perceived psychological control forecast lower self-esteem for boys. Perceptions of self as untrusting, defiant, or debilitated led to lower self-esteem. Furthermore, perceived maternal behavior interacted with perceived self-reactions to predict self-esteem: Perceived debilitation led to reduced self-esteem only under high perceived maternal psychological control; perceived defiance predicted lower self-esteem only under low perceived maternal knowledge. The prediction of self-esteem is clearly enhanced when perceived self-reactions are included along with perceived maternal behavior as predictors. Combinations of perceived maternal behavior and perceived self-reactions—relational schemas—warrant increased attention as possible influences on the developing self.

Keywords: relational schemas, self-esteem, adolescence, social development

Self-esteem has a significant role in social development, predicting children's and adolescents' social skills and adjustment (Barber, Olsen, & Shagle, 1994; Pettit, Laird, Dodge, Bates, & Criss, 2001), emotional functioning (Lei, Swartz, Dodge, & McBride-Chang, 2003), and likelihood of victimization by peers (Egan & Perry, 1998). Given the negative outcomes associated with low self-esteem, it is important to understand its determinants. Some progress has been made on this front. Harter (1998) concluded that high self-esteem rests largely on (a) perceptions of support from relationship partners, especially one's parents, and (b) perceptions of competence in valued domains (e.g., sports, intimate friendships). However, much remains to be learned about the origins of self-worth. The present study was based on the idea that adolescents encode and internalize models of social interaction with their mother that are stored in long-term memory and influence subsequent self-representations, including self-esteem. This notion is consistent with a relational schema approach to understanding the self (Andersen & Chen, 2002; Baldwin, 1992; Crittenden, 1990; Fiske, 1992).

In this project, we examined a variety of perceptions of mother and of self that may influence early adolescents' self-esteem when

with peers. We focused on self-esteem when with peers because our main interest was in understanding the implications of adolescents' representations of their interactions with their parents for their functioning in the peer group. Self-esteem when with peers deserves attention for several reasons. First, it is likely that a sense of self-worth specifically when with peers is more predictive of functioning in the peer group than are other, more general indexes of self-esteem (Salmivalli, Ojanen, Haanpää, & Peets, 2005). Second, Harter (1998; Harter, Waters, & Whitesell, 1998) has shown that children's and adolescents' self-esteem often depends on the identity of their current interaction partner(s) (referred to as *relational self-worth*); thus, specifying a particular relational context when assessing self-esteem may be worthwhile. Third, assessing self-esteem when with peers, and relating this assessment to antecedent family variables, may contribute to the debate over whether parent-child interactions contribute to children's functioning beyond the home (e.g., Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Harris, 1995).

In the present study, we focused on early adolescents' perceptions of typical interactions with their mother. The focus on perception rather than observed behavior is consistent with the view that, with development, representations of relationships become especially appropriate ways to assess children's and adolescents' relationships with significant others and to relate these relationships to other aspects of their functioning, including self-esteem (e.g., Bretherton, 1985). Furthermore, relational schema theorists (e.g., Andersen & Chen, 2002; Baldwin, 1992) stress that self-evaluations derive not only from seeing how the self is treated by a relationship partner but also from observing how the self reacts to the relationship partner. Thus, both (a) perceptions of the mother when with the self and (b) perceptions of the self when with the mother might be expected to affect early adolescents' stable self-representations and self-evaluations.

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The study is part of an ongoing research project on children's relational schemata and social goals at the University of Turku (project head: Christina Salmivalli), funded by The Academy of Finland (202554/68884). We thank Jemina Haanpää, Virpi Pöyhönen, and Sani Väänänen for their help in data collection, and Ernest Hodges and Todd D. Little for commenting on drafts of this article.

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We included three perception-of-parent measures in this study. The variables have a long tradition in the socialization literature as influential predictors of children's and adolescents' social behavior and adjustment and are reasonable candidates for possible predictors of self-esteem. Beginning with Schaefer's (1965a, 1965b) original model, parenting styles have been examined in terms of acceptance versus rejection, psychological autonomy versus psychological control, and firm versus lax behavioral control (see Barber, Stoltz, & Olsen, 2006, for a review).

There already exist hints in the literature that child-perceived parental acceptance, granting of autonomy, and firm behavioral control (e.g., monitoring) are conducive to higher self-esteem. Acceptance is reflected in parental affection and support and has been shown to predict prosocial behaviors (Hastings, Rubin, & DeRose, 2005), to buffer against delinquent behaviors (Simons, Lin, & Gordon, 1998), and to promote self-esteem (Harter, 1998). Psychological control, encompassing love withdrawal and manipulation of the youth's thoughts and feelings, predicts internalizing as well as externalizing problems (Barber & Harmon, 2002; Zahn-Waxler, Kochanska, Krupnik, & McKnew, 1990) and is linked to low self-esteem in adolescence (Bean, Bush, McKenry, & Wilson, 2003; Garber, Robinson, & Valentiner, 1997). Behavioral control (e.g., monitoring) is also often found to benefit children's and adolescents' adjustment, for instance by buffering against externalizing difficulties (Laird, Pettit, Bates, & Dodge, 2003; Walker-Barnes & Mason, 2001) and by promoting self-esteem (Bean et al., 2003; Rubin et al., 2004). Work by Kerr and Stattin (2000; Stattin & Kerr, 2000) suggests that parental monitoring is most reliably associated with positive child outcomes when assessed in terms of the parent's knowledge of the child's whereabouts, companions, and activities (as opposed to the parent's active attempts to control these aspects of their children's lives).

We assessed perceived maternal affection, perceived maternal psychological control, and perceived maternal knowledge (of the child's whereabouts, activities, and companions) and evaluated the impacts of these perceptions on early adolescents' self-esteem among peers over a 1-year period. We expected that perceptions of the mother as low in affection, high in psychological control, and low in knowledge would predict lower self-esteem. We also hypothesized that certain combinations (i.e., interactions) of the perceived parenting variables would predict the youths' self-esteem. All three possible two-way interactions were examined, but two were especially expected. First, we expected that perceived maternal knowledge would predict high self-esteem mainly under low levels of psychological control (Aunola & Nurmi, 2005). Under high levels of psychological control, perceived maternal knowledge may take on a quality of intrusiveness, oversolicitousness, or felt inhibition of autonomy, and thus any benefits of perceived maternal knowledge may be nullified by high perceived psychological control. Second, perceived maternal knowledge may predict positive adjustment mainly when combined with parental affection (Steinberg, 2001). In the absence of felt parental affection, perceived parental knowledge may represent the child's perception of the parent as authoritarian rather than as authoritative. In other words, low perceived parental affection may also nullify the customary benefits of perceived parental knowledge.

A major innovation of this study was the inclusion of measures of adolescents' perceptions of how they react to their mother's behavior toward them. Although different youths react in different

ways to the parental treatment they receive, these reaction styles are often neglected when relating parental behavior patterns to developmental outcomes. An exception to this statement may be found in the attachment literature, where children's and adolescents' styles of relating to their caregiver (e.g., secure, avoidant, preoccupied, disorganized) have been extensively studied for their impacts on development and adjustment (Thompson, 1998). In the present project, we included three measures of perceived self-reactions. The first measure was the adolescents' trust in their mother, or the sense that they can count on her for help when needed (e.g., calming, reassurance, communication). This measure is associated with several positive adjustment outcomes for children and adolescents, including higher self-esteem (Doyle & Markiewicz, 2005; Kerns, Klepac, & Cole, 1996; Yungler, Corby, & Perry, 2005). Two other self-reactions were assessed in this project—defiance and debilitation. These capture two styles of youths' reactions to everyday parental control efforts, such as during disciplinary encounters (Perry, Hodges, & Egan, 2001). Debilitated reactions include anxiety, compulsive compliance, and self-blame. Defiant reactions include angry, oppositional, externalizing, and compulsive noncompliance. Both of these reaction styles are associated with problematic adjustment, including lower self-esteem and victimization and/or aggression in the peer group (Bifulco, Moran, Ball, & Little, 2002; Finnegan, Hodges, & Perry, 1998; Gamble & Roberts, 2005).

We included these three self-reactions to evaluate their longitudinal contributions to adolescents' self-esteem and also to see whether they interact with perceived maternal behavior to predict self-esteem. It was expected that low trust, high defiance, and high debilitation would all predict reduced self-esteem. In addition, in line with the relational schema perspective (e.g., Baldwin, 1992), perceived maternal behavior and perceived self-reactions might be expected to interact in predicting social adjustment with peers. Two interaction hypotheses were advanced, both based on the idea that inept parenting has its most detrimental impact on youths who are especially vulnerable to its harmful effects. First, perceived parental psychological control was expected especially to threaten the adolescent's developing sense of self for youths who perceive themselves as debilitated during conflict interactions with their mother; such youths have been suggested to be particularly at risk for victimization by peers because of their presumed lack of self-assertion and self-esteem (Finnegan et al., 1998; Perry et al., 2001). Second, low perceived maternal knowledge was expected to be especially harmful for youths who perceive themselves as defiant during conflicts with their mother. Children with resistant-to-control, oppositional temperaments and whose parents are lax in behavioral control (and thus unlikely to be aware of the child's friends, activities, and whereabouts) are likely to develop problems with aggression and poor emotion- and self-regulation skills (e.g., Bates, Pettit, Dodge, & Ridge, 1998; Eisenberg et al., 2004; Lei et al., 2003), and such difficulties are likely to predict rejection by peers and reduced self-esteem (Rubin, Bukowski, & Parker, 1998).

In summary, four sets of hypotheses were examined. First, perceptions of three maternal qualities were expected to predict change in self-esteem with peers over time. Youths who perceived their mother as low in affection, low in knowledge, or high in psychological control were expected to show reductions in self-esteem. Second, interactions among the perceived parenting variables were also expected, in that the expected benefit of high

perceived maternal knowledge was predicted to be nullified by both low perceived maternal affection and high perceived maternal psychological control. Third, youths' perceptions of how they react to their mother's behavior were expected to predict self-esteem, in that youths who perceive themselves as lacking trust in their mother or as high in either debilitated or defiant reaction styles were expected to show declines in self-esteem over time. Finally, interactions between perceived parenting and perceived self-reactions were also expected; combinations of (a) high perceived maternal psychological control with high self-perceived debilitation and (b) low perceived maternal knowledge with high self-perceived defiance were expected to predict reduced self-esteem.

As noted, we chose to study effects of representations of self-mother interactions on self-esteem during the period of early adolescence. Youths of this age are able to report on their representations, and family influences on adjustment and self-concept may be especially strong during this period, when changes in the family and peer relationships require the negotiating of power and authority with parents (Fuligni & Eccles, 2004), who must learn to give appropriate levels of authority, relax some control, and yet remain supportive (Galambos & Ehrenberg, 1997).

Both boys and girls were included in the study, and in general the hypotheses were expected to be confirmed for both genders. However, there is some indication in prior research that parental acceptance may be more important for girls' self-esteem than for boys', whereas psychological autonomy may be more important for boys' self-esteem than for girls' (e.g., Finnegan et al., 1998; Ladd & Kochenderfer Ladd, 1998). Furthermore, existing findings suggest that gender-atypical reaction styles (e.g., a submissive, debilitated style for boys; a defiant, oppositional style for girls) have especially detrimental effects on adjustment (see, e.g., Finnegan, Hodges, & Perry, 1996, and Lewis, Feiring, McGuffog, & Jaskir, 1984). Therefore, gender was examined as a possible moderator of the relations under study.

Method

Participants and Procedure

Participants were recruited from 12 classes in the fifth and sixth grades (i.e., age 11–13 years) of four primary schools in a midsized town (approximately 170,000 inhabitants) in southwest Finland. Class size varied between 19 and 29, with a mean of 25. Several weeks before data collection, letters giving a description of the project, along with consent forms, were sent to parents. Six youths did not receive parental permission to participate and were excluded from the study. Twelve were not present for other reasons (e.g., were sick) at the time of data collection. The final sample consisted of 278 participants (135 girls) in fifth ($n = 144$, 66 girls) and sixth ($n = 134$, 69 girls) grades from a Finnish elementary school.

Perceptions of mother and of self during family interactions, as well as self-esteem among peers, were assessed at Time 1 (T1; October 2002). At Time 2 (T2; October 2003), children's self-esteem in the peer group was reassessed (but the family variables were not collected at this time).

The T1 data of 4 participants were not usable, and during the interval between T1 and T2 about 50% of the participants trans-

ferred from primary to secondary school, which meant that they dispersed into several different schools. This resulted in a loss of 59 participants (20%) of the original sample at T2. The missing information for the 4 participants at T1, as well as for the participants missing the information on the T2 self-perception, was imputed (using the expectation-maximization algorithm). This should be noted as a potential limitation of the study, due to the possibility of systematic patterns of missing data at T2. However, attrition analysis indicated that, compared with the participants included at both measurement occasions, participants present only at T1 scored lower on the defiant coping scale, $t(276) = -1.99$, but were similar to the remaining participants with respect to all other variables examined in the study.

Data collection took place in classrooms during school hours. The session started with an introduction to the project, with emphasis on confidentiality. Instructions were written on the questionnaires and read out loud and explained to the participants. Youths were encouraged to ask advice from the supervising assistants in case they had any problems comprehending the questions. Data for other purposes were collected as well. It took approximately 1 hr in each session to complete the questionnaires. The order of the questionnaires was counterbalanced across classrooms.

Measures

Perceptions of mother and of self. Perceptions of the mother were assessed with the questionnaire About My Mother (adapted from Finnegan et al., 1998). The items were translated from English to Finnish. Psychological Control reflected the extent to which the mother is intrusive, manipulates the youth's thoughts and feelings, or threatens to deny love (seven items; $\alpha = .63$). Maternal Knowledge captured the mother's knowledge of the youth's whereabouts, activities, and company (six items; $\alpha = .73$). Finally, Affectionate Contact assessed how much the mother expresses affection for, and spends time in positive activities with, the youth (six items; $\alpha = .82$). Although the reliability of the Psychological Control scale may be adequate for research purposes, it is not high, and results with this measure should be interpreted cautiously.

The item format of the inventory was as follows. For each item, youths first chose between two alternative descriptions of children and then they rated that choice as either *very true* or *sort of true* for them. For each scale, response options were scored from 1 to 4, with higher scores indicating higher levels of the assessed construct. We computed scale scores by averaging across the items. Example items include the following: Psychological Control, "Some mothers leave their kid alone when the kid wants to be alone/Other mothers bother their kid when the kid wants to be alone"; Parental Knowledge, "Some mothers don't know what their kids are doing with their free time/Other mothers do know what their kids are doing with their free time"; Affectionate Contact, "Some kids and their mother really enjoy each other's company/Some kids and their mother don't enjoy each other's company."

Adolescents' perceptions of themselves with their mother were assessed with a questionnaire entitled What I'm Like With My Mother. Debilitation during conflict with the mother reflected fearfulness, compulsive obedience, inability to be assertive, and

self-blame (9 items; $\alpha = .69$). Defiance captured disobedience, opposition, compulsive noncompliance, and aggression toward the parent (eight items; $\alpha = .77$). Finally, with the Trust scale, we assessed the extent to which the adolescent trusts, feels loved and understood by, and can count on the mother (eight items; $\alpha = .70$). Items for the Debilitation and Defiant scales were adapted from Finnegan et al. (1998), and items for the Trust scale were adapted from Kerns et al. (1996); items were translated from English into Finnish. The structure of the items was similar to that of the parenting questionnaire described above. Example items include the following: Debilitation, "When their mother disagrees with them, some kids don't get afraid and nervous/Other kids do get afraid and nervous"; Defiance, "When children disagree with their mother, some kids feel that they must get their way/Other kids do not feel that they must get their way"; Trust, "For some children, it is easy to trust their mother/For other children, it is not easy to trust their mother."

We subjected all items of the two questionnaires to a factor analysis (maximum likelihood, oblique rotation), which indicated that the items loaded on six distinct factors, with no overlapping items. Mean item loadings were as follows: Affectionate Contact, .51; Psychological Control, .33; Maternal Knowledge, .51; Debilitation, .41; Defiance, .42; and Trust, .45. The findings support the view that the scales represent six distinct constructs.

Self-esteem in the peer context. We assessed adolescents' self-esteem during peer interactions with 10 items of the Rosenberg (1965) Self-Esteem Scale (e.g., "I feel that I have a number of good qualities," "I feel that I am a person of worth, at least on an equal plane with others"), with the instruction to "report the way you feel about yourself when with your peers." Adolescents used Likert-scale ratings, ranging from 0 (*no, not at all*) to 3 (*yes, completely*) to indicate the extent to which they felt the way described in each item. Responses were coded so that higher scores indicated a more positive self-evaluation. We calculated scale scores by averaging across the 10 items. Internal consistency of the scale was high on both measurement occasions (T1 $\alpha = .74$, T2 $\alpha = .83$).

Analysis Strategy

We conducted the analyses with the Mplus statistical package (Version 3; Muthén & Muthén, 1998–2004). We assessed gender influences on the relations with multigroup models (Jöreskog & Sörbom, 1993) using the chi-square test of significance. In this procedure, models in which the relations of interest are constrained to be equal across genders are compared with models in which they are allowed to vary freely. We conducted parameter estimation using the maximum-likelihood procedure (Muthén & Muthén, 1998–2004). We examined interactive influences among the predictor variables by estimating their continuous interaction effects and by computing follow-up statistics according to the recommendations of Aiken and West (1991). In this procedure, the relation of one predictor variable to an outcome is estimated at different levels of another predictor variable (usually at -1 , 0 , and $+1$ *SD* of the moderator variable) in a hierarchical regression while retaining the continuous nature of the data. This practice avoids dichotomizing the variables and thus losing information (MacCallum, Zhang, Preacher, & Rucker, 2002; Pedhazur, 1982). However, given the difficulties of detecting continuous interactive effects

between continuous variables in outside-of-laboratory studies (see McClelland & Judd, 1993), we used an alpha level of .10 to evaluate the statistical significance of the continuous interactive effects (for a similar practice, see, e.g., Guerra, Asher, & DeRosier, 2004; Mikami & Hinshaw, 2003).

Results

Descriptive Statistics

Means and standard deviations of the variables, along with bivariate zero-order correlations among them, are presented in Table 1. We conducted a repeated-measures analysis of variance to examine change in self-esteem between the two measurement occasions. Self-esteem at T1 and T2 was treated as the within-subject variable, whereas gender was examined as a between-subjects variable. The within-subject effect indicated a positive effect of time on self-esteem, $F(1, 278) = 32.29$, $p < .001$: Self-esteem increased over time. Furthermore, the change in self-esteem was similar for boys and girls, as indicated by the nonsignificant interaction between time of testing and gender, $F(1, 278) = 0.07$, $p = .79$.

Tests of Hypotheses

Perceived maternal behaviors as predictors of change in self-esteem. Our analytic strategy for examining influences on change in adolescents' self-esteem between T1 and T2 was the customary regression strategy in which the relation of a T1 predictor variable to a T2 outcome is evaluated, with the T1 level of the outcome controlled. Thus, *change* refers to relative change (i.e., change relative to other participants).

We examined relations between the perceived maternal and self-variables and change in self-esteem among peers by constructing regression models wherein T2 self-esteem was the dependent variable, and paths from T1 perceptions of mother and of self were included as independent variables while we controlled for the effect of T1 self-esteem. We constructed separate models to examine the effects of perceived maternal behavior and of perceived self-reactions. Owing to obtained gender differences in the examined relations, we specified multigroup models by gender.

Boys and girls differed in the effect of perceived psychological control, $\Delta\chi^2(1, N = 278) = 6.71$, $p < .05$, and marginally also in the effect of maternal affection, $\Delta\chi^2(1, N = 278) = 2.800$, $p < .10$, on change in self-esteem. However, all other directional and nondirectional paths in the model were similar for boys and girls and were thus constrained to be equal between them. The model fit the data well, $\chi^2(8, N = 278) = 6.07$, $p = .64$, comparative fit index = 1.00, root-mean-square error of approximation = .00, and is presented in Figure 1. As can be seen in the figure, perceived psychological control was negatively related and maternal affection and maternal knowledge were positively related to T1 self-esteem among peers. Furthermore, psychological control predicted decline in self-esteem for boys, whereas maternal affection predicted increase in self-esteem for girls. Maternal knowledge was positively associated with self-esteem among peers at T1 but did not contribute to change in self-esteem over time when we controlled for the effect of other parenting styles and T1 self-perception among peers. The R^2 statistics indicated that the above

Table 1
Means, Standard Deviations, and Bivariate Correlations Among the Variables

Variable	M	SD	1	2	3	4	5	6	7	8
1. Debilitation	2.19	0.43	—							
2. Defiance	1.97	0.47	-.16*	—						
3. Trust	3.27	0.45	-.15*	-.37**	—					
4. Psychological Control	1.63	0.41	.09	.27**	-.46	—				
5. Maternal Knowledge	3.17	0.58	.04	-.36**	.31**	-.41**	—			
6. Affectionate Contact	3.34	0.53	.10	-.43**	.50**	-.55**	.50**	—		
7. Time 1 self-esteem	2.10	0.44	-.28**	-.15*	.33**	-.17**	.18**	.13**	—	
8. Time 2 self-esteem	2.24	0.43	-.24**	-.16**	.31**	-.21**	.14**	.15**	.52**	—

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

model explained 30% of the variation in the self-perception for both genders.

It should be noted that because adolescents generally increased in self-esteem between T1 and T2, a negative relation between a predictor variable and T2 self-esteem may mean that youths with high scores on the predictor declined more in self-esteem than did youths with low scores on the predictor. However, it is equally plausible that youths with high scores on the predictor simply

increased less in self-esteem than did youths with low scores on the predictor.

Interactions of perceived parenting variables as predictors of change in self-esteem. We examined interactive effects among perceived parenting styles by using the main effects as well as the interactive effect of two perceived parenting variables as predictors of T2 self-esteem among peers while we controlled for the effect of T1 self-esteem. We examined each interactive effect in a

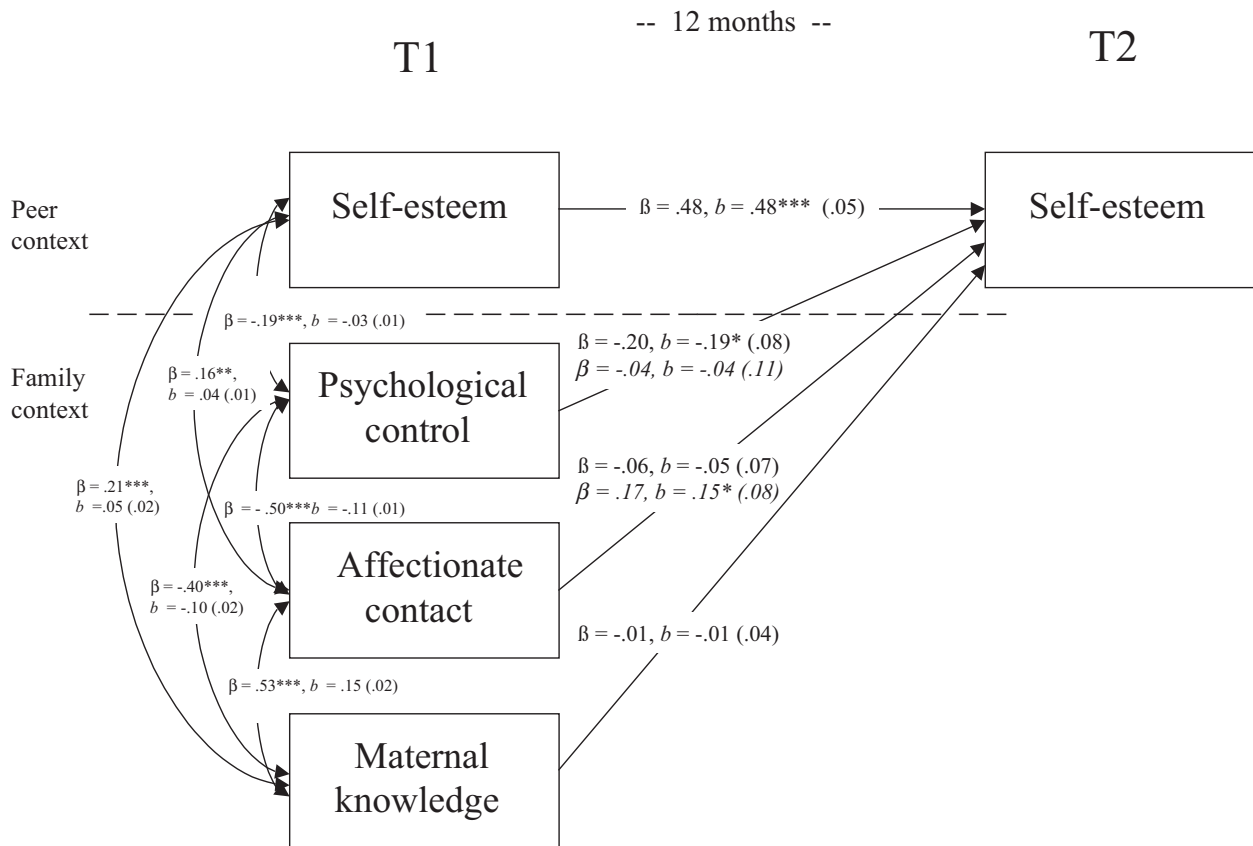


Figure 1. A model describing prospective effects of perceived parenting on adolescents' self-perception among peers. Estimates for girls are italicized. Standard errors of the estimates are reported in parentheses. T = Time. * $p < .05$. ** $p < .01$. *** $p < .001$.

separate model (i.e., three regressions were run, each evaluating one of the three possible two-way interactions). Findings indicated one gender-specific interactive effect, $\Delta\chi^2(7, N = 278) = 97.72, p < .001$. For boys, psychological control and maternal knowledge interacted to predict T2 self-esteem ($\beta = -.76, b = -.24, z = -2.16, SE = .11, p < .05, R^2 = .34$). Follow-up analyses indicated that for boys, maternal knowledge marginally predicted increased self-esteem under low psychological control ($\beta = .17, b = .07, z = 1.64, SE = .05, p = .10$), whereas the relation was nonsignificant under medium ($\beta = .03, b = .01, z = 0.39, SE = .03$) and high ($\beta = -.11, b = -.05, z = -1.24, SE = .04$) levels of psychological control.

Perceived self-reactions as predictors of change in self-esteem. We examined relations between self-reactions and change in self-esteem by specifying a multigroup model by gender, as was done with perceived maternal behavior above. Gender differences were observed in the cross-sectional relation between perceived defiance and debilitation, $\Delta\chi^2(1) = 8.78, p < .01$, as well as in the effect of perceived defiance on T2 self-esteem, $\Delta\chi^2(1) = 3.84, p = .05$. All other relations in the model were similar for boys and girls and thus were constrained to be equal between them. The model fit the data adequately, $\chi^2(8) = 15.10, p = .06$, comparative fit index = .93, root-mean-square error of approximation = .08, and is described in Figure 2.

As can be seen in Figure 2, all perceived self-reaction variables were significantly related to T1 self-esteem and predicted T2 self-esteem when we controlled for the effect of T1 self-esteem. The observed effects were in the expected direction. Perceived debilitation predicted lower self-esteem, whereas trust predicted higher self-esteem among peers over time. For girls, perceived defiance predicted reduced self-esteem over time. The R^2 statistics indicated that the above model explained 31% of the variation in the T2 self-perception for both genders.

Interactions between perceived parenting and perceived self-reactions as predictors of change in self-esteem. We examined interactions between perceived maternal behavior and self-reactions in regression models by including the main effects as well as the interaction effect of the variables of interest in the model as predictors of T2 self-esteem while controlling for the effect of T1 self-esteem. Each interaction was examined in a separate model. Findings indicated two significant interactive effects. Perceived maternal knowledge interacted with perceived defiance in predicting T2 self-esteem ($\beta = -.12, b = -.04, z = -2.17, SE = .02, p < .05, R^2 = .29$). Follow-up analyses revealed that defiance predicted low self-esteem only under low maternal knowledge ($\beta = -.16, b = -.07, z = -2.26, SE = .03, p < .05$), the relation being nonsignificant at medium ($\beta = -.08, b = -.04, z = -1.48, SE = .02$) and high ($\beta = .00, b = .00, z = -0.01, SE =$

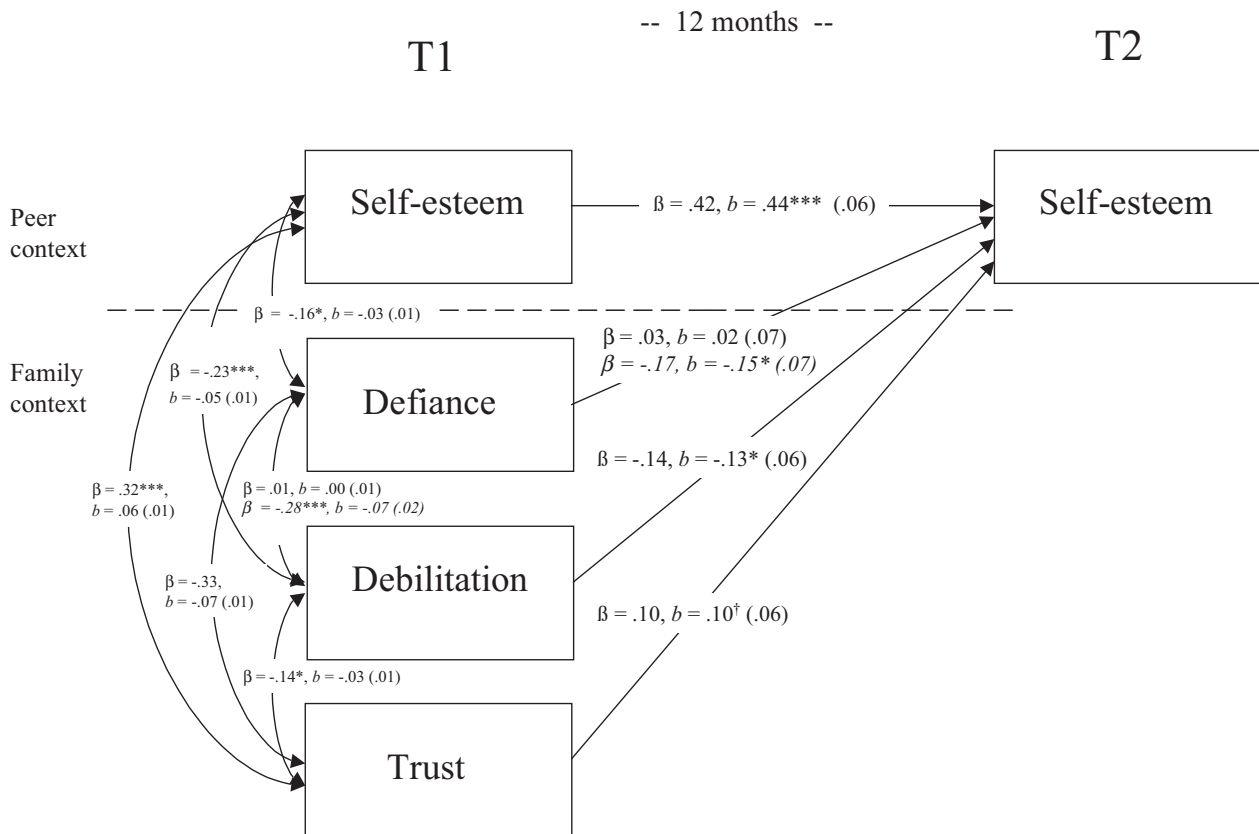


Figure 2. A model describing prospective effects of perceived debilitation, defiance, and trust in the family context on adolescents' self-perception among peers. Estimates for girls are italicized. Standard errors of the estimates are reported in parentheses. T = Time. $^\dagger p < .10$. $^* p < .05$. $^{***} p < .001$.

.03) levels of maternal knowledge. In addition, perceived psychological control interacted with perceived debilitation in predicting T2 self-esteem ($\beta = -.77$, $b = -.29$, $z = -2.30$, $SE = .12$, $p < .05$, $R^2 = .31$). The follow-up statistics indicated that perceived debilitation had an adverse effect on self-esteem only under high ($\beta = -.23$, $b = -.10$, $z = -2.94$, $SE = .03$, $p < .01$) and medium ($\beta = -.11$, $b = -.05$, $z = -2.12$, $SE = .02$, $p < .05$) levels of perceived psychological control; under low levels of psychological control, the effect was practically zero ($\beta = .01$, $b = .00$, $z = 0.08$, $SE = .03$).

Discussion

Self-esteem is a significant influence on children's and adolescents' social behavior and adjustment in the peer group (e.g., Barber et al., 1994; Egan & Perry, 1998; Lei et al., 2003; Pettit et al., 2001). However, much about the development of self-esteem remains to be understood. In accord with cognitive views of social development, which suggest that people internalize models of social interactions and relationships that, in turn, further affect their sense of self as well as other social-cognitive mediators of behavior and adjustment (e.g., Andersen & Chen, 2002; Baldwin, 1992; Crittenden, 1990), we hypothesized that self-esteem would be predicted by early adolescents' cognitive representations of their interactions with their mother during critical parent-youth interactions. We expanded the usual focus on adolescents' perceptions of their mother's behavior to include a complementary focus on adolescents' perceptions of their own behavior in relation to their mother. Thus, we examined whether both perceived parenting and perceived self-reactions during mother-youth conflicts and disciplinary episodes would predict adolescents' feelings of self-worth with peers over time. The findings not only replicated previous linkages between perceived maternal behavior and self-esteem but also showed that the prediction of self-esteem is enhanced by the supplementary focus on youths' perceptions of their own behavior when interacting with their mother.

The associations we found between perceived maternal behavior and self-esteem were gender specific. Perceived maternal affection predicted gains in self-esteem for girls, whereas perceived psychological control predicted reduced self-esteem for boys. The obtained gender specificity in these relations is consistent with suggestions that affiliation and communion with others are more important to self-evaluation for girls than for boys, whereas autonomy and agency are more important for boys than for girls (Block & Block, 2006; Ojanen, Grönroos, & Salmivalli, 2005). Consistent with the present findings, Linver and Silverberg (1997) found a stronger effect of parental warmth on psychosocial maturity for girls than for boys, and Finkelstein (2001) found that relations between maternal psychological control and adjustment difficulties were greater for boys than for girls.

Perceived maternal knowledge was a concurrent correlate of self-esteem but did not predict self-esteem over time when we controlled for the effects of perceived psychological control and affection. This is consistent with the possibility that perceived parental knowledge reflects the affective quality of the parent-youth relationship. That is, parental affection and other positive qualities of the parent-adolescent relationship may simultaneously encourage the youth both to divulge his or her activities, companions, and whereabouts spontaneously to the parent (thereby caus-

ing the youth to perceive the parent as high in knowledge) and to develop self-esteem. In such a scenario, perceived parental knowledge would not necessarily contribute beyond a generally positive parent-youth relationship to self-esteem. However, perceived maternal knowledge interacted with psychological control to predict self-esteem for boys only under low levels of psychological control. This supports the view that, when combined with psychological control, parental knowledge may take on an intrusive quality that prevents it from having beneficial effects (see Aunola & Nurmi, 2005). However, a parallel interaction between maternal knowledge and maternal affection was not found.

As expected, perceived self-reactions during child-mother interactions also predicted self-esteem among peers. Perceived submissiveness during self-mother conflicts predicted reduced self-esteem, whereas trust in the mother predicted higher self-esteem. Furthermore, defiance predicted lower self-esteem but only for girls. This is consistent with other findings indicating that gender-atypical reaction styles are sometimes problematic (Finnegan et al., 1996; Lewis et al., 1984). Our findings are also consistent with previous findings indicating the benefits of feelings of trust and security in the child-parent attachment relationship for children's and early adolescents' self-esteem (Doyle & Markiewicz, 2005; Kerns et al., 1996; Kerns, Schlegelmilch, & Morgan, 2005), but they extend prior research by showing that youths' self-perceived behavioral reaction styles during mother-youth conflicts and disciplinary episodes also contribute to self-worth over time. Additional research is needed to elucidate the pathways responsible for these findings. One possibility is that debilitated and defiant reactions, respectively, are conducive to victimization and aggression in the peer group, and these behaviors then cause reduced self-esteem among peers. Alternatively, perceived debilitation and defiance may have direct effects on self-esteem, that is, effects that are not caused by inept social behavior in the peer group (but that may in fact contribute to inept social behaviors with peers). Future research should include measures of youths' social behaviors among peers to clarify the pathways.

In accordance with the relational schema perspective on social development (e.g., Baldwin, 1992), the effects of perceived self-reactions on self-esteem were moderated by adolescents' perceptions of their mother. Perceived psychological control exacerbated the detrimental effect of perceived debilitation on self-esteem. This finding supports the hypothesis that psychological control is especially harmful to the self-esteem of submissive and fearful children. Furthermore, self-perceived defiance predicted reduced self-esteem only under low perceived maternal knowledge. This finding accords with prior ones showing an interactive influence of child defiance and low parental behavioral control on adjustment difficulties (Bates et al., 1998).

To our knowledge, these findings are the first to indicate interactive influences of perceived maternal control and self-attributed characteristics and thus are the first to yield evidence in support of a relational schema perspective on development of the self-concept. Furthermore, the use of a non-U.S. sample may be considered as a strength in that most studies on the present topic have been conducted within the United States. Our findings suggest that perceived maternal parenting styles and respective self-representations are significant predictors of self-esteem also among Scandinavian youth. Moreover, although the obtained effects of perceived maternal parenting and self-reactions were only

modest to moderate in size (but being comparable with the standardized effects of family-related variables on adolescents' adjustment reported in other studies, see, e.g., Bean et al., 2003; Laird et al., 2003; Rubin et al., 2004), these variables still accounted for significant variation in self-esteem over time when we controlled for the T1 self-esteem. These findings challenge the view that how children adapt at home with their parents is of little relevance for children's adaptation in the peer group (e.g., Harris, 1995).

The present findings, which underscore the influence of dual perceptions of self and of mother in social development, may also be of clinical relevance. Interventions into youths' adjustment and self-esteem difficulties should not only focus on observed maternal or youth characteristics but also address how youths perceive these relationships. Adolescents who feel weak and helpless during child-mother interactions are likely to suffer the most from psychologically controlling parenting, whereas disobedient youths are most at risk for adopting poor self-concept when they perceive their mothers as unaware of their whereabouts, companions, and conduct.

Although a perception of mother coupled with a complementary perception of self meet the criteria for a "relational schema" (Andersen & Chen, 2002; Baldwin, 1992), such schemas do not by themselves constitute full cognitive representations of dyadic functioning. A relationship is more than the sum of its parts, and dyad-level representations (e.g., "My mother and I can't stand each other," "My mother and I never argue") may also be influential in self-development. In other words, relational schemas are not the same as relationship schemas, and both may be important.

The relational schemas we studied focused on perceptions of maternal affection and control and of how the young adolescent perceives the self to accommodate to these parental efforts. However, there exist many behavioral bases for relational schemas other than the particular dimensions of perceived maternal and self-behavior that we studied. For example, some young children assume the role of caregiver of a helpless and needy parent, and some assume the role of punitive controller of a submissive and meek parent (Moss, Cyr, Bureau, Tarabulsy, & Dubois-Comtois, 2005). Do some older children and adolescents develop relational schemas capturing similar role-reversing mother-child adaptations (as well as still other intriguing relational schemas), and, if so, what implications do the schemas hold for the youths' development? The relational schema paradigm holds considerable promise for capturing a rich array of youths' representations of engrained mother-child-adolescent interaction patterns and for relating them to youths' social development and adjustment.

Several limitations of this study may be noted. One question that remains for future research is whether the effects we found are limited to youths' self-esteem in the peer group or are reflections of more general feelings of self-esteem (e.g., global self-worth). Including additional contexts for self-evaluation would be worthwhile in future research. Furthermore, multicollinearity among the predictor variables might have contributed to the modest number of interactive effects found in the present study, especially among the parenting variables.

Our study was also limited in that we were unable to examine change in the perceived family variables as a function of antecedent variables (i.e., reverse models of causality). It is possible that self-esteem with peers predicts perceived maternal behavior and self-reactions as well as is predicted by these latter representations.

Furthermore, whereas maternal approval is a more important predictor of self-worth than is peer approval among very young children (Harter, 1999), it is likely that self-esteem is increasingly influenced by peer interaction as children grow older. In the future, it would be interesting to include assessments not only of youths' perceptions of parent-child interactions but also of their perceptions of their interactions with peers (e.g., their perceptions of how their peers treat them and of how they react to this treatment). Including measures of interaction with both parents and peers in the same study would in fact permit addressing the question of whether early adolescents' self-concept is influenced more by perceptions of interaction with parents or more by perceptions of interactions with peers (and provide a more direct and compelling test of Harris's, 1995, hypothesis that peer experiences are more influential than family experiences for children's personality development).

Because the measures of perceived maternal interaction were collected only at T1, we were unable to examine whether perceptions of the mother forecast change in perceived self-reactions or vice versa. It is likely that perceived parenting and perceived self-reactions reciprocally influence each other. However, a relational schema approach is less concerned with how either of the two components of a relational schema (e.g., perception of parent, perception of self) develops than with how the two components, once connected to form a relatively stable schema, conjointly affect a person's self-concept, well-being, and social behavior. The meaningful interactions we found between perceived maternal parenting and perceived self-reactions constitute preliminary evidence for this emphasis of the relational schema perspective.

The use of self-reports to assess all of the study's variables raises the question of shared method bias. However, the potential influence of shared method variance is reduced (albeit probably not entirely) in longitudinal analyses because the initial level of the outcome variable is controlled. That is, because the T1 measure of the outcome variable is also self-reported, self-report biases tend to be controlled on the first step of the regression analysis (for a similar argument, see, e.g., Harold & Conger, 1997; Kochenderfer & Ladd, 1996).

Our interest in a cognitive, relational schema approach to the development of self-esteem led us to assess adolescents' perceptions of mother-self interactions rather than to assess observed or mother-reported interactions. However, people can distort, bias, minimize, and exaggerate their perceptions and recollections of interactions. Future work might include additional sources of information about mother-youth interactions; it would be of interest, for example, to see whether youths who distort their perceptions are disadvantaged (or advantaged) in self-development in certain ways.

In the present study, youths were queried only about their interactions with their mother. This was to save testing time, not because adolescents' relationships with their fathers are less important than their relationships with their mothers. Although adolescents tend to perceive their interactions with mother and father as similar (e.g., Hodges, Finnegan, & Perry, 1999; Steinberg, Lamborn, Dornbusch, & Darling, 1992), future studies are needed to investigate whether the effects of perceived parenting and of self-reactions differ according to gender of parent.

In this study, we assessed participants twice, a year apart. However, different youths are likely to have had different experi-

ences (both environmental and biological) during the 1-year period between the measurement occasions, and certain experiences may have played a role in the results. For example, if puberty encourages changes in parental or self-behaviors that affect self-esteem, then puberty may indirectly be responsible for the changes in self-esteem that we observed. In addition, puberty (or some other experiential variable) might be correlated with both initial parent-child interaction patterns and subsequent change over time in self-esteem, thereby accounting for the results.

Despite its limitations, the present study provides longitudinal evidence for the importance of perceived parent-adolescent interactions in predicting adolescents' self-concept. Most important, the findings support the fruitfulness of a relational schema approach to understanding early adolescents' feelings of self-worth when with peers. A relational schema approach emphasizes that perceptions of both partners in a relationship—other and self—are important when attempting to relate relationship cognition to subsequent outcomes. It is commonplace to relate perceptions of parents to outcomes, but our findings suggest that perceptions of self-reactions are important too, both as main-effect predictors and as moderators of perceived parenting predictors.

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Received May 31, 2006

Revision received August 17, 2007

Accepted August 21, 2007 ■