

Shy Adolescents' Perceptions of Parents' Psychological Control and Emotional Warmth: Examining Bidirectional Links

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Two kinds of parental behaviors—psychological control and emotional warmth—have been linked with children's shy behaviors. The questions we addressed are whether this applies to adolescent shyness, and whether shyness in itself might also affect perceptions of parental behaviors. The participants were 916 seventh to ninth graders in a longitudinal project. We used a cross-lagged panel model with three time points in MPlus with adolescents' self-reports of shyness and perceptions of parents' psychological control (intrusive control and rejection) and warmth. Shyness predicted an increase in perceptions of intrusive control by parents at Time 2, which then predicted an increase in shyness at Time 3. Shyness also predicted an increase in perceived rejection by parents at Time 2. Finally, shyness predicted decreases in parental warmth at both time points. The effects did not differ for boys and girls. These results show that adolescent shyness predicts parental behaviors, though perhaps less strongly than in childhood. They also suggest some bidirectional effects in which perceived parental responses to shy youths might serve to strengthen the shyness.

Everyday wisdom about shy people is that they tend to be overlooked by those around them. Although they might be easy to overlook, they probably experience much private unhappiness, as adolescent shy behavior is linked to loneliness (Mounts, Valentiner, Anderson, & Boswell, 2006),

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having fewer friends (Asendorpf & Wilpers, 1998), and other internalizing problems such as anxiety, low self-worth (Jackson, Fritch, Nagasaka, & Gunderson, 2002), depression (Elovainio et al., 2004; Smith & Betz, 2002), social phobia (Heiser, Turner, & Beidel, 2003), and eating disorders among women (Troop & Bifulco, 2002). Shy behavior in adolescence seems to be particularly problematic in the long run, as it has been linked to middle-adulthood measures of poor romantic and sexual relationships, low self-esteem, and low subjective well-being (Kerr, 2001). Thus, understanding adolescent shyness seems particularly relevant.

Shyness has been defined as the experience of wariness with unknown people and in new social encounters and novel places (Asendorpf, 1991; Cheek & Buss, 1981; Cheek & Watson, 1989). It overlaps conceptually with constructs such as behavioral inhibition, social anxiety, social withdrawal, and social reticence because they all involve social fears (Crozier, 2000b). Like behaviorally inhibited children, shy children get distressed when meeting new people, are hesitant when approaching unknown adults, and tend to hover around other children without joining in play (Crozier, 2000b; Leary & Buckley, 2000). *Social anxiety* is similar to shyness in that it refers to the ongoing occurrence of uneasiness, negative ideation, and inept performance in social situations (Hartman, 1986), but it is a somewhat broader term (Crozier, 2000a). Social withdrawal and reticence, both of which involve solitary behavior (Coplan, Rubin, Fox, Calkins, & Stewart, 1994; Rubin & Asendorpf, 1993), could be seen as consequences of shyness (Carducci, 1999). The aforementioned concepts have all been found to show considerable overlap and similarity to shyness (Crozier, 2000b). Because shyness and these associated terms are related to current and future problems, one would like to understand what factors serve to maintain shy behavior or make it worse.

Most of the research on the development and maintenance of shy behavior has focused on children rather than adolescents, and one of the most studied factors has been parental treatment. As a number of reviews show, different forms of socially fearful behaviors, such as shyness, behavioral inhibition, social anxiety, social withdrawal, and reticence, are associated in young children with two forms of parental psychological control: intrusive control and criticism or rejection (Dadds & Barrett, 2001; Hastings, Nuselovici, Rubin, & Cheah, 2010; Masia & Morris, 1998; Wood, McLeod, Sigman, Hwang, & Chu, 2003). Theoretically, one idea about control is that parents who shield their children from demanding experiences or take control in stressful circumstances, however well meaning these behaviors might be, teach them that the world is a dangerous place from which they need protection and over which they have little control

(Rapee, 2001). Another idea is that overcontrolling one's child might obstruct the development of self-regulation and feelings of self-efficacy and autonomy (Hastings, Rubin, & DeRose, 2005; Mills & Rubin, 1998; Rubin, Cheah, & Fox, 2001; Rubin, Stewart, & Chen, 1995). This, in turn, might exacerbate children's shyness. Consistent with these ideas, empirical findings show that mothers of shy children tend to overcontrol them via means of intrusive and unnecessary management of their everyday lives (Coplan, Arbeau, & Armer, 2008; Hastings et al., 2005; Rubin, Burgess, & Hastings, 2002; Rubin et al., 2001; Rubin, Hastings, Stewart, Henderson, & Chen, 1997). Regarding criticism or rejection, the theoretical idea is that as children are growing up, if they perceive their parents' behaviors as rejecting, they might become preoccupied with others' evaluative remarks (Grüner, Muris, & Merckelbach, 1999; Hudson & Rapee, 2001). This, in turn, may lead to a generalized fear of negative evaluation, an important component of shyness (Bruch, 1989). Empirically, it has been found that mothers of shy children tend to act rejecting toward their children (Grüner et al., 1999; Hudson & Rapee, 2001). In addition, social withdrawal tends to diminish in toddlers whose mothers do not appear rejecting, compared with socially withdrawn toddlers whose mothers do appear derogatory and rejecting (Rubin et al., 2002). Thus, there are clear theoretical ideas about the links between childhood shyness and different aspects of parental psychological control, and the reported associations are consistent with those ideas.

Besides psychological control, there also seems to be a link between different types of children's social fears and parental warmth. This link has recently come to the attention of researchers because it deals with a positive type of parenting that might lessen children's social fears and help them achieve more fulfilling social lives (Hastings et al., 2010). Research shows that mothers who are warm toward their children, via praise and positive affect, have children who show fewer symptoms of anxiety over time (Bayer, Sanson, & Hemphill, 2006). In contrast, less warmth in mothers of preschoolers has been linked to children's sadness, loneliness, and dislike by others (McDowell, Parke, & Wang, 2003). Several studies have found that mothers of shy children show little warmth toward their children and tend to act coldly toward them (Grüner et al., 1999; Hudson & Rapee, 2001). Thus, it seems that children who are shy or socially anxious might benefit from warmth and praise by their parents, and this, in turn, might diminish their shyness.

During adolescence, however, youths' needs and roles within the family change (Holmbeck, Paikoff, & Brooks-Gunn, 1995), and adolescents spend increasing amounts of time away from home and away from parents'

direct supervision. These developmental changes give reason to question whether the links between parenting and shyness in adolescence would be similar to those in childhood. The links between shyness and different aspects of parenting have not been investigated to the same extent as more generalized anxiety or internalizing problems (Hastings et al., 2010). Concerning generalized anxiety and internalizing problems, however, rejection and lack of warmth seem to increase the risk of early adolescents developing internalizing problems (Muris & Merckelbach, 1998), and overcontrol by parents is believed to contribute to anxiety disorders (Siqueland, Kendall, & Steinberg, 1996; Van Brakel, Muris, Bögels, & Thomassen, 2006). Parents of anxious youths have also been found to grant the youths less autonomy, and the youths report their parents as more overcontrolling than do nonanxious youths (Siqueland et al., 1996). Psychological control has been linked to children's internalizing symptoms during fifth, eighth, and tenth grades (Barber, Olsen, & Shagle, 1994). Finally, anxious youths report their parents as less warm, less supportive, and more rejecting than non-anxious youths (Siqueland et al., 1996; Whaley, Pinto, & Sigman, 1999). In one study, however, measures of both generalized anxiety and shyness were used, and the associations with parental behaviors were much weaker for shyness than for anxiety, although all were significant ($\beta = .10$ vs. $.21$ for control and $.14$ vs. $.30$ for anxious rearing) (Van Brakel et al., 2006). Thus, adolescent anxiety has been linked to some aspects of parenting, but the link between adolescent shyness and parenting cannot be considered established.

Another question that arises from the literature on shyness and parenting is whether shyness might actually affect parental behaviors as much as parental behaviors affect shyness. Some researchers have suggested that small children who are temperamentally shy will probably elicit different behavioral responses from their parents than nonshy children (Mills & Rubin, 1993; Rubin et al., 2002; Rubin & Mills, 1991; Rubin, Stewart, et al., 1995). Shy children who are exposed to novel social conditions are often more "difficult" and more easily aroused than nonshy children (Kagan, Reznick, & Snidman, 1987). These characteristics might make it harder for parents to soothe and comfort shy children, and this might evoke rejection, criticism, and less warmth from parents (Rapee, 2001; Rubin & Mills, 1991). Furthermore, researchers have argued that shyness early on in childhood might evoke intrusively controlling responses by parents (Rubin et al., 2002; Rubin & Mills, 1990, 1991; Rubin, Stewart, et al., 1995). That is, when parents recognize the child's social insecurity and the anxiety that goes along with it, they might respond with intrusive control (Rubin et al., 2002; Rubin & Mills, 1990, 1991; Rubin, Stewart, et al., 1995). Parents

might even think they are helping by being directive, but they might, instead, reinforce shyness or social fearfulness (Rubin et al., 2002; Rubin & Mills, 1990, 1991; Rubin, Stewart, et al., 1995). Some evidence exists that intrusive parenting may not be specific to anxious youths alone, as mothers of youths diagnosed with social anxiety were found to be just as intrusive with their nonanxious siblings (Hudson & Rapee, 2002). Thus, there are well-developed ideas about the possible mechanisms through which parental behaviors and children's shyness might affect each other, but, because of the cross-sectional designs of most studies, little is known about bidirectional effects between parenting and shyness in either childhood or adolescence.

Several appeals for longitudinal, bidirectional studies have been voiced in the literature, but so far only a couple of longitudinal studies have been reported. One study of toddlers examined bidirectional links between shyness and parental behaviors (Rubin, Nelson, Hastings, & Asendorpf, 1999). Children's shyness, as reported by the parents, predicted a lack of encouragement of independence from parents over a 2-year period, but parenting did not predict changes in shyness. In another study, socially withdrawn 11-year-olds reported being more insecure and disconnected from their parents 3 years later (Rubin, Chen, McDougall, & Bowker, 1995). To our knowledge, only two longitudinal studies involve adolescents (Loukas, 2009; Papini & Roggman, 1992). In one, the issue of interest was how the links between social anxiety and parenting changed over the transition to adolescence, so the data were analyzed within time points, and prediction of change across time was not addressed (Papini & Roggman, 1992). In the other, directions of effects between social anxiety and maternal psychological control were in focus (Loukas, 2009). In a model controlling for adolescent depression, early adolescents' social anxiety predicted less perceived maternal psychological control over the course of one 1 year, which is contrary to expectations based on the literature reviewed above and to the author's predictions. It is difficult to know how to interpret these results, however, because the zero-order correlations showed positive associations between psychological control and social anxiety, as did the within-time associations in the structural equation model. In addition, all associations between depression and psychological control were positive, as were the links between social anxiety and depression (Loukas, 2009). All this suggests that the negative across-time link from social anxiety to psychological control might be a suppressor effect. Whatever the explanation, however, it is clear that additional studies on the issue are needed.

Gender is an important aspect to consider regarding shyness, as mean-level differences between boys and girls have often been reported. For

example, many studies identify girls as more shy than boys, both in childhood (Burgess, Wojslawowicz, Rubin, Rose-Krasnor, & Booth-LaForce, 2006; Crozier, 1995; Kim, Brody, & Murry, 2003; Lemerise, 1997) and in adolescence (La Greca & Lopez, 1998; Zimbardo, 1977). Even so, another body of literature suggests that being shy may be worse for boys than girls in many different ways, such as emotional adjustment or peer acceptance (Coplan, Gavinski-Molina, Lagacé-Séguin, & Wichmann, 2001). On the other hand, it has been suggested that it may be less acceptable for girls to be shy in today's society, as girls might be more expected to socialize than boys and not interacting with others might be more expected for boys (Kerr, 2000). Some, however, have suggested that boys and men might be more pressured to change their behaviors in order to fit in (Buss & Plomin, 1984; Kerr, Lambert, Stattin, & Klackenberg-Larsson, 1994). Either way, parents might treat shy girls differently than shy boys. Some results point to differential parental treatment of shy boys and girls wherein mothers were found to be more positive toward shyness in girls (Simpson & Stevenson-Hinde, 1985; Stevenson-Hinde & Glover, 1996). Hence, differences between boys and girls on shyness and parenting should be taken into account.

In this study, we examined the directional links between adolescent shyness and perceived parenting. As has been argued elsewhere, there are good reasons for focusing on youths' perceptions of parenting (Gray & Steinberg, 1999). First, youths are likely to be affected by their own perceptions of parental behaviors regardless of how the behaviors might appear to someone else. Second, perceived parenting might have just as much impact on youths' development as actual parenting behaviors (Bronfenbrenner, 1979). Finally, in comparisons of youths' and parents' reports of parental behaviors, youth reports were more closely related to an outside observer's report (Sessa, Avenevoli, Steinberg, & Morris, 2001). Using three waves of longitudinal data from students in seventh to ninth grades in a community-based sample, we estimated directions of effects with a cross-lagged panel model. We asked whether parents' behaviors led to shyness, whether shyness seemed to elicit parental behaviors, or both. We examined youths' perceptions of two kinds of parenting: psychological control and parental warmth. We tested one model by examining the different measures of perceived parenting simultaneously. Finally, we conducted multiple group comparisons between boys and girls by using the same model in order to examine whether these links differed between girls and boys. We expected to find bidirectional links between perceived parenting and shyness, in that parents' psychological control and lack of warmth would predict increases in shyness over time and vice versa. We also expected these links to differ

between boys and girls, with parents reacting more negatively to shyness in boys than in girls. We did not, however, have specific expectations about the effects of parenting on boys' and girls' shyness.

Method

Participants

The data are from a five-wave, cohort-sequential study conducted in a city in central Sweden with a population of about 26,000. The larger study was a broad investigation of external and internal difficulties in adolescence, focusing on the roles of parents, peers, and individual characteristics in the development of problem behaviors. External adjustment, such as delinquency, was somewhat more emphasized than internal adjustment, and parenting was also emphasized. Nonetheless, the study was intended to cover the broadest range of issues possible, including behavior at home, at school, and with peers. The questionnaires contained approximately 450 questions each year. The first data collection took place during the 2001–2002 academic year, and follow-ups were done yearly. Each year, all youths in grades 4–12 were targeted, and more than 90% participated. The unemployment rate in the community at the outset of the study was similar to that in the rest of the country, as was the proportion of single-parent households. Mean incomes were about 4.0% lower than in the rest of Sweden.

Shyness was assessed during Waves 3–5. For this study, the target sample was youths in Grades 7–9 at Wave 3 or Time 1 ($N = 981$). If the participants had missing data for two time points on any of the variables for the latent parenting constructs, they were removed from the data set. They might lack data for one time point on any single construct, but not for two or three. A total of 65 participants were thus removed from the data set because they lacked data for more than one wave on the measures of interest for this study. They tended to have a large percentage of other missing data, as well—between 6% and 87% for all variables used in the overall project. The final analytic sample, then, included youths with at least two time points of data for each variable in the study. These were 916 youths at Time 1 ($M_{\text{age}} = 14.25$; 444 girls and 472 boys), 785 youths at Time 2 ($M_{\text{age}} = 15.06$; 366 girls and 419 boys), and 703 youths at Time 3 ($M_{\text{age}} = 16.01$; 332 girls and 371 boys).

We addressed the problem of missing data by using the full information maximum likelihood estimation (FIML) method. This procedure computes maximum likelihood parameter estimates and standard errors for a given

model by using all available information from the observed data, including cases with missing values (Enders & Bandalos, 2001). The method is considered to provide less biased estimates than listwise or pairwise deletion and is suitable to use when data are not missing completely at random (Schafer & Graham, 2002). By using a covariance “coverage” matrix in MPlus (Muthén & Muthén, Los Angeles), one can calculate the proportion of missing values in the data set (Muthén & Muthén, 1998–2007). This calculation yields an estimated proportion of all available observations for each variable. In this study, 403 youths in the analytic sample (44% of the sample at Time 1) had a complete data set (i.e., all scales present for all time points). The rest of the youths in the analytic sample had data coverage ranging from .54 to .97 for all the scales used in the current study, meaning that they had between 54% and 97% of data available. We also compared the 65 participants we removed from the data set with the analytic sample by using logistic regression analysis to determine whether any of the following variables predicted attrition: gender, age, immigrant status, and family status. Significant results emerged for immigrant status (odds ratio [OR] = 2.55, $p < .05$) and family status (OR = .33, $p < .01$), showing that youths in the analytic sample were more likely than those lost to attrition to be immigrants and to have parents who were not divorced. The seventh, eighth, and ninth graders in the analytic sample came from seven different classrooms and were evenly distributed among the classrooms for each grade; 9.4% were born in a country outside of Sweden. At Time 1, 68% of the youths lived in households with both biological parents, whereas 13% lived with one stepparent and one biological parent, and 18% lived in single-parent households.

Procedure

Youths were recruited in their classrooms during school hours. They were informed about what kinds of questions they would answer in the questionnaires, and how long it would take to finish them. They were also told that participation was voluntary and that they could do something else if they chose not to take part. They were guaranteed that if they did participate, their answers would not be revealed to anyone outside of the project (e.g., parents or teachers). Parents were informed about the study beforehand in meetings held in the community and by mail. They received a postage-paid card to return in case they did not want their child to participate in the study (1% of the parents did so). They were also informed that they could withdraw their child from the study at any time they pleased. Youths filled out the questionnaires during regular school hours in sessions administered by trained research assistants. Teachers were not present at the time. No

one was paid for participating, but in each of the classes in Grades 7–12 we held a drawing for movie tickets. Everyone who stayed in the room, whether participating or not, was qualified for the drawing. Youth participation rates were over 90% each year. The procedures and measures were approved by the university's ethics review board at the start and again at the midpoint of the longitudinal study.

Measures

The measures used in the study comprised parenting and adolescent shyness. The parenting measures included emotional warmth and two aspects of psychological control—intrusive control and rejection. As is always the case in large survey studies, questionnaire space is at a premium and difficult decisions must be made about what can be included. In this case, our choice would have been to include measures for mothers and fathers separately for all parenting constructs; however, space did not permit this. Our strategy, then, was to assess youths' views of *parents* for issues dealing with family management (e.g., influence in family decisions) and to assess views of *mothers and fathers* separately for issues dealing with individual reactions (e.g., warmth and rejection). Reports on mothers and fathers were nearly always highly correlated, however. Thus, in this study, when reports were given on mothers and fathers separately, they were combined into one parenting measure.

Parental emotional warmth. Youths were asked how warm they perceived their parents to be toward them (Kerr & Stattin, 2003). The 12 items were “Your mom/Your dad”: “Praises you for no special reason,” “Shows he/she cares for you with words and gestures,” “Does small things to make you feel special (e.g., winks, smiles),” “Constantly shows how proud he/she is of you,” “Focuses on the positive and seldom on the negative things you do,” and “Always shows his/her love for you without any reason—almost regardless of what you do.” The response items ranged from “never” to “most often” on a 3-point scale. The alpha reliabilities for the scales combining fathers' and mothers' ratings were .90 for Times 1 and 2, and .91 for Time 3. The cross-year correlations ranged from .50 to .54. The mother and father reports were considerably correlated, $r = .66$ to $.68$, $p < .01$, for cross-year correlations.

Intrusive control. Intrusive control, one aspect of psychological control assessed, included questions about feeling overly controlled and perceiving a lack of influence in family decisions. Both of these scales refer to parenting behaviors for both parents simultaneously. For *feeling overly controlled*, five items measured whether youths felt overly controlled by

their parents (Kerr & Stattin, 2000). The items were "Do you think your parents give you enough freedom to do what you want during your free time?" "Does it feel like your parents demand to know everything?" "Do you think your parents control everything in your life?" "Do you think your parents intrude into what you do in your free time?" and "Do you feel like you can't keep anything to yourself, because your parents want to know everything?" The 5-point scale ranged from "yes, always" to "no, never." The alpha reliabilities were .80 for Time 1, .82 for Time 2, and .88 for Time 3. The cross-year correlations ranged from .50 to .62. The scale measuring *influence in family decisions* was developed in this project to assess how much influence youths felt they had at home. Reversing the influence in family decision scale yielded items that refer to being in an environment where parents are fully in charge, taking control of different aspects of family life, and where youths feel they do not have much to contribute to the family climate. Youths replied using a 4-point scale ranging from "don't agree at all" to "agree completely." The items were "Your parents listen to you when decisions are to be made in the family," "You feel like you have influence and are partaking in things that happen in your family," "Your parents let you take part when you are going to decide something in the family," "If you have other points of view, then these viewpoints can change decisions taken in the family," "Your parents ask you when decisions are to be made in the family," and "When you are having a discussion at home, you usually get to finish what you have to say." These items were reversed, so that higher scores meant less influence (and thus more intrusive control). The alpha reliabilities were .88 for Time 1, .88 for Time 2, and .89 for Time 3. The cross-year correlations ranged from .44 to .59.

Rejection. For the second aspect of psychological control, rejection, youths were asked four questions about their mothers' and fathers' critical, rejecting behavior toward them. These items were part of an instrument created in this project to capture parents' negative and positive reactions to youth wrongdoing. Youths were asked how their parents typically reacted when they had done something their parents really did not like. The rejection items were "Doesn't talk to you until after a long while," "Is silent and cold towards you," "Disregards your views or ideas," and "Avoids you." The response items were on a 3-point scale ranging from "never" to "most often." The alpha reliabilities for the scales combining fathers' and mothers' ratings were .87 for Time 1, .84 for Time 2, and .87 for Time 3. The cross-year correlations ranged from .37 to .42. The mother and father reports were substantially correlated, $r = .63$ to $.71$, $p < .01$, for cross-year correlations.

Shyness. Adolescent shyness was measured with questions about social fears in eight different situations (Gren-Landell et al., 2009). The items involved situations or behaviors similar to those that distinguish shy individuals from others, as they measure a wariness in social situations (Cheek, Melchior, & Carpentieri, 1986). The items were about speaking in front of the class, raising a hand during class, making a phone call to someone one does not know, being with classmates during breaks, going to a party, initiating conversation with someone one does not know very well, eating with others during lunch, and looking into someone's eyes while speaking. The participants rated themselves on a 3-point scale ranging from having "no fear" to "a lot of fear" of these situations. The scale has been used previously as a continuous measure of social anxiety and shyness (Bešić & Kerr, 2009; Tillfors, El-Khoury, Stein, & Trost, 2009), and has been shown to have good validity (Furmark et al., 1999). Furthermore, in a pilot study of 365 seventh to ninth graders living in another community, we tested the validity of this measure by comparing it with a shortened version of the well-known Cheek and Buss (1981) shyness scale. The correlation between the scales was .67. The alpha reliabilities were .74 for Time 1, .72 for Time 2, and .74 for Time 3. The cross-year correlations ranged from .48 to .64.

Analyses

We conducted structural equation modeling (SEM) for assessing directional associations between shyness and the various aspects of parental behaviors. We used the MPlus 5.0 software (Muthén & Muthén, 1998–2007) with the FIML procedure for all analyses presented in the following sections. The FIML procedure allowed for the use of raw data for the final sample. Two indices of model fit were used: the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993) and the comparative fit index (CFI; Bentler, 1990). An RMSEA less than .08 is considered an acceptable fit, whereas a value less than .05 is considered a very good fit (Browne & Cudeck, 1993). In addition, CFIs with values greater than .95 are considered acceptable fit, whereas values greater than .97 are considered good fit (Bentler, 1990).

Cross-lagged panel model. To test the reciprocal effects between youths' shyness, on the one hand, and intrusively controlling parenting, critical/rejecting parenting, and parental warmth, on the other hand, we tested a cross-lagged model with three time points. The lag between adjacent times of measurement was approximately 1 year. To test whether shyness at Time 1 influences parenting behaviors at Time 2, the effect of

parenting at Time 1 on parenting at Time 2, and from Time 2 to Time 3, respectively, should be statistically controlled. The same is true for the measures of shyness over time. This model allows assessment of the predictive change (i.e., increase or decrease) from one time point to another, without prior relationships between the same constructs confounding the results (MacCallum & Austin, 2000).

The measurement model. First, to identify the measurement model, we conducted a confirmatory factor analysis (CFA) in MPlus for all three parenting constructs. In Table 1, the latent variables are listed with their respective manifest indicators and standardized factor loadings for the variables concerning parental behavior. The manifest variables indicating psychological control and parental warmth were factor analyzed in one model to specify a 3-factor solution within each wave, with measures for mothers and fathers separated into different indicators. As Table 1 shows, the factor loadings for the latent variables ranged from .47 to .89 (all $ps < .001$). The correlations between the latent variables for all the parenting constructs are shown in Table 2. They were significantly correlated at all time points (all $ps < .001$). In addition, the model showed that the latent constructs were distinctively different factors. The model indicated a good fit ($\chi^2 = 406.64$, $df = 87$, $p < .001$, RMSEA = .06, CFI = .95), meaning that the indicators reflected the latent constructs very well. Thus, it was considered sound to use the manifest indicators for each latent construct representing the parenting behaviors. In addition, the correlations showed that the measures are significantly different from each other and thus measuring three separate constructs.

The structural model. After identifying the measurement model, we added the structural relationships between the latent variables. At this point, the cross-lagged paths and covariations between shyness and the other constructs at each wave were added. The covariations between all the parenting constructs were included, as well. According to recommendations, the unstandardized factor loadings were set equal to 1 while the other loadings were set equal across time, the variances of the latent variables were set free, and the error variances as well as the nonstandardized coefficients were constrained to equality (Jöreskog & Sörbom, 1996). Error terms of the same measured variables assessed at different times were interpreted as correlated with each other because of the assumption that factors contributing to measurement error will be consistent across time (Martens & Haase, 2006). For the latent variables with only one indicator (e.g., shyness), error variances were set to zero. The final model included shyness and these latent variables: (a) psychological control (with intrusive control and rejection as indicators) and (b) parental warmth.

Table 1. Latent Variables and Their Manifest Indicators for the Measures of Youth-Reported Parental Behaviors With Standardized Factor Loadings for the Respective Indicators

Latent variable	Manifest indicator	Factor loading
Intrusive control T1–T3	1. Feeling overly controlled T1	.46 ^a
	2. Lack of influence at home T1	.74***
	1. Feeling overly controlled T2	.52 ^a
	2. Lack of influence at home T2	.79***
	1. Feeling overly controlled T3	.49 ^a
	2. Lack of influence at home T3	.87***
Rejection T1–T3	1. Mothers' rejection T1	.81 ^a
	2. Fathers' rejection T1	.81***
	1. Mothers' rejection T2	.84 ^a
	2. Fathers' rejection T2	.75***
	1. Mothers' rejection T3	.83 ^a
	2. Fathers' rejection T3	.79***
Warmth T1–T3	1. Mothers' warmth T1	.85 ^a
	2. Fathers' warmth T1	.79***
	1. Mothers' warmth T2	.85 ^a
	2. Fathers' warmth T2	.81***
	1. Mothers' warmth T3	.84 ^a
	2. Fathers' warmth T3	.79***

^a Factor loading set equal to 1, thus generating no *t* value. T1 = Time 1; T3 = Time 3.

Results

Directional Relations Between Shyness and Perceived Parenting

To examine the possibility that parental behaviors are responses to adolescent shyness as well as precursors of it, we examined the cross-lagged paths from the aforementioned model. The results are presented in Figure 1. The model had a good fit to the data ($\chi^2 = 870.39$; $df = 149$; $p < .001$; RMSEA = .07; CFI = .91). Only the coefficients for significant paths are depicted in the figure. Additionally, in the interests of clarity, neither the covariation paths between the parenting constructs nor the coefficients for the stability paths are depicted in the figure. The latent constructs showed good stability over time for shyness (.62 and .60) and intrusively controlling parenting (.74 and .71), and somewhat less stability for parental warmth (.55 and .56) and rejecting parenting (.48 and .42) (all $ps < .001$). In addition, some covariation paths between shyness and the parenting constructs were significant for Time 1 (.24 for intrusively controlling parenting and .06 for rejecting parenting, and $-.14$ for parental warmth) and Time 2 (.04 for

Table 2. Results From the Confirmatory Factor Analysis Showing Correlations Between All Latent Constructs

	1	2	3	4	5	6	7	8
<i>Intrusive control</i>								
1. Time 1	—							
2. Time 2	.79	—						
3. Time 3	.62	.76	—					
<i>Warmth</i>								
4. Time 1	-.81	-.55	-.48	—				
5. Time 2	-.67	-.78	-.60	.55	—			
6. Time 3	-.58	-.65	-.81	.54	.57	—		
<i>Rejection</i>								
7. Time 1	.52	.40	.32	-.33	-.24	-.27	—	
8. Time 2	.43	.56	.36	-.28	-.46	-.34	.44	—
9. Time 3	.38	.44	.47	-.27	-.30	-.40	.39	.41

Note. All correlations were significant at $p < .001$.

intrusively controlling parenting and $-.08$ for parental warmth) (all $ps < .05$).

Regarding the cross-lagged paths, the model shows more evidence for shyness influencing perceived parenting than for perceived parenting influencing shyness. Shyness at Time 1 predicted increases from Time 1 to Time 2 in intrusive control, lack of parental warmth, and rejection—with the strongest unique link being for rejection. Also, increases in shyness from Time 1 to Time 2 predicted decreases in parental warmth from Time 2 to Time 3. The only path from parenting to shyness that reached significance at the .05 level showed that increases in intrusive control from Time 1 to Time 2 predicted subsequent increases in shyness. We should mention, however, that the path from warmth at Time 1 to shyness at Time 2 was marginally significant ($p < .10$). The coefficients for the nonsignificant paths ranged from $-.04$ to $.07$. Overall then, the results suggest that, in adolescence, shyness influences perceived parenting more than perceived parenting influences shyness. Perceived intrusive control by parents, however, does seem to increase shyness.

Gender Differences

Table 3 shows means and standard deviations by gender for all the measures used in the study, as well as results from independent samples t test comparing boys and girls on all of the measures. As can be seen in the table, even though girls were higher on shyness than boys at all time points, the

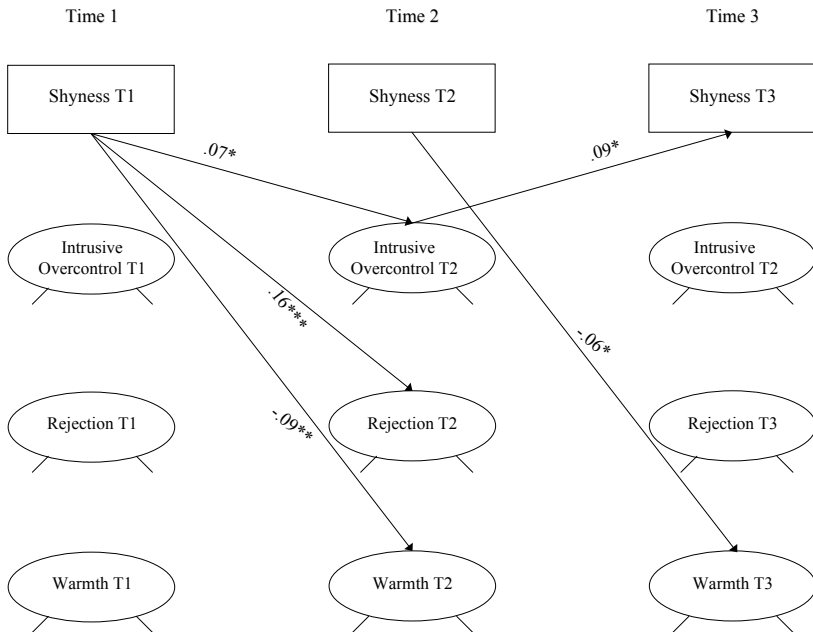


Figure 1. Cross-lagged panel model with shyness and the two parenting constructs: psychological control (including intrusively controlling parenting and rejection) and emotional warmth. All within-time correlations and stability paths were included in the model. For clarity, only significant cross-paths are shown. $*p < .05$, $**p < .01$, $***p < .001$.

t tests revealed no significant differences between the groups. There were, however, significant differences between boys and girls on the measures of perceptions of parental rejection at Times 1, 2, and 3; feeling overcontrolled by parents at Time 1; and influence in family decisions at Time 3. The question, then, is whether boys and girls differ in the directional relations between shyness and perceived parenting.

To answer this question, we conducted multiple group comparisons in MPlus. After constraining all paths to equality between girls and boys, we freed all paths of interest and tested differences in model fit between this model and the fully constrained model with chi-square difference tests. As a first step, then, all paths were constrained to be equal between the two groups, thus stating that there were no differences between the genders ($\chi^2 = 1309.01$; $df = 361$; $p < .001$). As we did not know on which paths to expect differences between genders, we released all cross-paths in the model at once. Thus, as a second step, all of the cross-lagged paths were

Table 3. Independent Samples *T* Test for Girls and Boys With All Study Variables

Variable	Mean girls (<i>SD</i>)	Mean boys (<i>SD</i>)	<i>t</i> (<i>df</i>)	<i>p</i>
Shyness				
Time 1	1.43 (.31)	1.33 (.32)	-4.80 (957)	.40
Time 2	1.44 (.31)	1.33 (.29)	-4.93 (787)	.13
Time 3	1.42 (.30)	1.35 (.31)	-2.92 (701)	.71
Warmth				
Time 1	2.41 (.45)	2.38 (.42)	-1.03 (897)	.10
Time 2	2.34 (.47)	2.35 (.44)	.28 (763)	.09
Time 3	2.41 (.48)	2.33 (.45)	-2.22 (674)	.46
Rejection				
Time 1	1.29 (.38)	1.41 (.45)	4.33 (887)	.00***
Time 2	1.30 (.39)	1.31 (.41)	.13 (779)	.05*
Time 3	1.26 (.36)	1.34 (.45)	2.30 (691)	.00***
Feeling overly controlled				
Time 1	3.15 (.59)	3.02 (.75)	-3.02 (946)	.00***
Time 2	3.25 (.58)	3.23 (.63)	-.31 (782)	.21
Time 3	2.32 (1.03)	2.52 (.96)	2.30 (540)	.09
Influential in family decisions				
Time 1	1.83 (.67)	1.86 (.63)	.74 (908)	.16
Time 2	1.80 (.66)	1.86 (.60)	1.31 (764)	.10
Time 3	1.76 (.66)	1.97 (.63)	4.25 (671)	.05*

Note. * $p > .05$. ** $p > .01$. *** $p > .001$.

set free, allowing them to differ between girls and boys ($\chi^2 = 1295.40$; $df = 347$; $p < .001$). The differences between the chi-squares and the degrees of freedom were then tested in a chi-square difference test, the result of which was nonsignificant ($\chi^2_{\text{difference}} = 13.63$; $df_{\text{difference}} = 14$; $p > .10$). Thus, we concluded that girls and boys did not differ significantly on the links between shyness and perceived parenting in this model.

Discussion

How parents might contribute to their children's shyness has been discussed extensively in the developmental literature. Concerning adolescence, however, much less is known (Hastings et al., 2010). Moreover, there is little longitudinal research on youths' perceptions of parenting and adolescent shyness, and none of it has examined directions of effects. This leaves open the possibility that adolescent shyness in part elicits the same parental behaviors, or perceptions thereof, that end up making it worse. Adolescents have been widely overlooked in the literature

on shyness and parenting, even though adolescent shyness is more connected to problems later in life than is childhood shyness (Kerr, 2001). In this study, however, we found that the more shy adolescents were, the more intrusively controlling, rejecting, and less emotionally warm they perceived their parents to be over time. There was also some evidence that the more youths perceived parents as intrusively controlling, the more their shyness increased over time. From adolescents' perspectives, then, parents seem to respond negatively to shyness, and, to some extent, this seems to exacerbate youth shyness. Viewed this way, our findings are in line with a growing number of studies showing children's and adolescents' influence in family dynamics and parental behaviors as both action and reaction (e.g., see Kerr & Stattin, 2003).

The strongest unique link in the model was from shyness to perceptions of increased rejection, and shyness was also linked to perceptions of decreased warmth. Why would shyness elicit these behaviors from parents? One possible explanation is that parents mistakenly see the adolescent's social isolation as intentional (see Dix, Ruble, & Zambarano, 1989) and that they tend to do this more as youths age (Rubin & Mills, 1992). Their lack of warmth and rejection might reflect frustration or concern that is not expressed properly. Another possibility is that some correlate of shyness helps to explain parents' critical, rejecting reactions. In a recent study, shy youths were found to be overrepresented among adolescent peer crowds, such as punks and goths, that adopt unconventional, even startling, styles of hair, makeup, and clothing; for instance, green, spiky hair or white face paint with painted-on blood stains around the eyes (Bešić & Kerr, 2009). These peer crowds tend to be small, so parents' reactions to these styles are unlikely to be a complete explanation of the effect, but it might be one part of a multidetermined phenomenon. A better understanding of this phenomenon might ultimately lead to parent education efforts that can improve parent-youth relationships.

Although the current findings are consistent with our theoretical reasoning and findings from research on younger children (Dadds & Barrett, 2001; Hastings et al., 2010; Masia & Morris, 1998; Wood et al., 2003), they are contrary to findings from a recent study looking at directions of effects between maternal psychological control and social anxiety (Loukas, 2009). Counter to predictions, Loukas (2009) found that social anxiety was associated with *decreasing* levels of psychological control over time rather than increasing levels. As described in this article's introduction and as discussed by the author, there is much to suggest that this was a suppressor effect. Still, with so little evidence in the literature regarding longitudinal relations between shyness and parenting in adolescence, some caution

should be exercised in interpreting the current findings. Additional studies are needed to reveal robust effects.

Many of the youths in this study were undergoing multiple transitions—school transitions and pubertal transitions. We do not know to what extent these transitions might have had differential effects on shy youths and on their perceptions of parenting, as well as their actual relationships with their parents. Researchers have hypothesized that the transition to junior high school might increase the impact of parenting on anxious children's emotional well-being (Papini & Roggman, 1992). Friends can buffer stressful experiences such as school transition or difficulties with parents (Cohen, Sherrod, & Clark, 1986), but shy youths tend to have fewer friends (Asendorpf & Wilpers, 1998) and experience more loneliness during the transition from high school to college (Mounts et al., 2006). Moreover, the buffering effects of friends on school transition seem to occur only for individuals low in social anxiety (Cohen et al., 1986). Further research is warranted on how lack of friends might impact shy youths' perceptions of parenting and how various transitions might affect shy youths more than others.

Parental behaviors might influence children's and youths' shyness in other ways that have not been considered in this study. For example, parents who are excessively troubled with other people's views may create a fear of negative evaluation in their children due to the parents' constant reminders that other people are noticing the children's appearance and social behaviors (Buss, 1980). Parents of shy children are thought to raise their children in nonsociable environments, perhaps due to their own anxieties and social fears (Bruch & Heimberg, 1994), and this could also increase adolescents' shyness over time. These alternatives remain to be explored.

To what extent might these findings be influenced by the Swedish cultural context or even be specific to our Swedish sample? Even though Sweden is generally thought of being ideologically similar to other Western European countries, previous research suggests that shyness is better accepted in Sweden than in many other Western societies (Kerr, 2001). Additionally, some differences between Swedes and Americans have been identified regarding how shyness affects career and marriage paths for men and women, although many similarities were also found (Kerr, Lambert, & Bem, 1996). The link between parenting and social withdrawal also differs across cultures (Nelson, Nelson, Hart, Yang, & Jin, 2006; Rubin & Asendorpf, 1993). However, if Swedish people accept shyness better than people in other Western societies, our results might be conservative regarding the directional links between shyness and parenting. Hence, the links between shyness and perceptions of parenting in early adolescence might

turn out to be even stronger in societies in which shyness is less accepted than in Sweden. It would be of interest to replicate these findings with samples from other cultures.

One noteworthy finding was the lack of gender differences in our model. Some previous research points to a more positive treatment of shyness in girls than boys (Simpson & Stevenson-Hinde, 1985; Stevenson-Hinde & Glover, 1996), but our results did not show gender differences in perceived parental reactions to shyness. In that way, our results are similar to those in a recent study on parenting and social anxiety (Loukas, 2009). As most of the previous research regarding parenting and shyness is with children rather than adolescents, this might be an age-related phenomenon. Specifically, parents' reactions to shyness are typically thought to be based on concern about the child's interactions with others. Parents might be less aware of adolescents' shy behavior toward peers than they are of children's and, therefore, might not react in the same way as they would to children's. This is only speculation, however. It remains for future research to substantiate this age difference and test possible explanations.

The current study has several limitations that should be mentioned. First, we only have youths' reports of shyness and parental behaviors. Concerning shyness, multiple reports might have been preferable. Studies on shyness, however, suggest that individuals themselves might be the only valid informants of their social fears, because those who experience shyness do not always appear shy to others (Spooner, Evans, & Santos, 2005; Zimbardo, 1977). Zimbardo (1977) concluded that individuals should be considered shy if they, themselves, say that they are shy, regardless of how they appear to others. Concerning the parenting measures, our results might represent only youths' views of the parents' behaviors rather than the reality. Previous research has shown that parents and youths do not necessarily agree about parental behaviors; however, children's reports correspond better than parents' with those of an independent observer (Sessa et al., 2001). Still, we do not know whether this applies to shy youths. A second limitation is that shyness was more stable over time than the parenting variables. This means that there was less change (in shyness) to be predicted by parenting than there was (in parenting) to be predicted by shyness. This might explain why shyness was a stronger predictor of parenting than parenting was of shyness. However, these findings might reflect the psychological reality as much as the statistical reality. Shyness is often viewed as stable trait (Briggs, 1988), and as such it might affect parenting behaviors, which presumably are not as trait-based, more than parenting affects shyness. Another limitation is the use of separate parenting measures for some measures, but not all.

It would have been preferable to include assessments of both parents for all measures. It should be said, however, that few studies in the literature on parenting adolescents distinguish between mothers and fathers. Thus, this limitation is shared by most studies in the literature.

Despite these limitations, the study has several strengths. Two are the large sample and the high participation rate. In addition, this is the first study to our knowledge that has employed longitudinal data and structural equation modeling with a large number of participants to address the question about the directions of effects between youth shyness and their perceptions of parents' child-rearing practices. Researchers have previously pointed out the importance of examining bidirectional links between parenting and shyness, but to date only a single study on social anxiety has come close to doing so (Loukas, 2009). Hence, this study contributes uniquely to the current knowledge about youth shyness.

Parents cannot choose what predisposition their children will have, nor can children choose how their parents will react to them. Our study shows that youths' behavioral characteristics, such as shyness, might play just as big a role in shaping their perceptions of parental behaviors as parental behaviors do in shaping youth behavior. This does not mean that parents have nothing to do with how their children turn out. It is merely a reminder of the complexity of these developmental processes. Shyness is often seen as something negative in today's Western society, as it also results in poorer peer relationships (Asendorpf & Wilpers, 1998), social lives (Mounts et al., 2006), romantic involvement (Kerr, 2001), and emotional adjustment (Elovainio et al., 2004). Social competence is most often valued over bashfulness. The guilt and embarrassment about their children appearing awkward around others might prompt parents to be intrusively controlling, criticizing, or less warm toward their children in hopes of avoiding embarrassing situations or getting their child to change. Or it might be that shy youths' are somehow oversensitive to parents' behaviors, perceiving them as more controlling, rejecting, and less warm than they actually are. Essentially, however, all of these interactions are products of both parties involved. Maybe parents whose children show shy behavior can help by being aware of their children's oversensitivity and their own responses to their children.

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