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Who Dates? The Effects of Temperament, Puberty, and Parenting on Early Adolescent Experience with Dating: The TRAILS Study

Katya Ivanova[1], René Veenstra[1], and Melinda Mills[1]

Abstract

This article focuses on how temperament, pubertal maturation, and perception of parenting behaviors affect the propensity to date in early adolescence (mean age = 13.55). Hypotheses are tested with a representative sample of 2,230 Dutch adolescents, the TRacking Adolescents' Individual Lives Survey (TRAILS). The results suggest that adolescents are more likely to have experience with dating when they score higher on the need for high-intensity pleasure, pubertal maturation, and perceived parental rejection. Shyness, on the other hand, has the opposite effect. In addition, a moderation effect is observed such that the more rejecting the parents are perceived to be, the less effect the temperament characteristic of high-intensity pleasure has on dating. Future research should investigate in further detail whether dating could be seen as a way for early adolescents to establish their grown-up status or as a way to compensate for heightened parental rejection.

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romantic/dating relationships, temperament, puberty, parenting

The past decade has seen a rediscovery of Sullivan's (1953) notion that the establishment of romantic relationships during adolescence is one of the most important developmental tasks of that age (Furman & Shaffer, 2003). At the age of 12, about a quarter of U.S. adolescents report having had a romantic relationship (Carver, Joyner, & Udry, 2003). Studies among Canadian youth have shown that at the mean age of 12 to 13 years, 58% of adolescents reported at least some dating activity (Friedlander, Connolly, Pepler, & Craig, 2007). In addition to being rather common among adolescents, romantic relationships have been found to be far from inconsequential for adolescent psychosocial development. Whereas some studies have established associations between having a boyfriend/girlfriend and maladjustment (depression—Joyner & Udry, 2000; higher drug use—Kobus, 2003; lower school achievement—Quatman, Sampson, Robinson, & Watson, 2001), others have shown that adolescents involved in romantic relationships report higher life satisfaction (Overbeek, Vollebergh, Engels, & Meeus, 2003) and score better on measures of social competence and feelings of self-worth (Collins, 2003; Furman & Shaffer, 2003). Researchers have suggested that the mixed nature of the findings could be attributed to the highly diverse timing of these romantic relations—adolescents vary widely in the age at which they begin dating (Furman, 2002; Neeman, Hubbard, & Masten, 1995).

A developmental pathway has been established in research from same-sex best-friend bonds before the beginning of adolescence, to participation in mixed-sex groups where some dating behaviors can take place during early and mid-adolescence, to more exclusive opposite-sex romantic relationships (Connolly, Craig, Goldberg, & Pepler, 2004). Previous work on the effects of dating on adolescent adjustment has suggested that significant deviations from this developmental pathway (such as overinvolvement in romantic bonds at an early age) can be associated with poorer psychosocial outcomes than romantic relationships at later ages (Zimmer-Gembeck, Siebenbruner, & Collins, 2001). Therefore, it is not that dating is a problem behavior per se but rather, when early adolescents initiate such bonds, they can potentially be associated with negative consequences.

Despite the significance of romantic involvement for early adolescent well-being, the study of what makes someone more likely to date at that age is rather limited. In order to advance the understanding of adolescent dating behavior, specific research into the determinants of those romantic relationships

is necessary (Zimmer-Gembeck et al., 2001). Knowing who is likely to engage in such intimate bonds in early adolescence can help explain why these relationships can at times be associated with negative outcomes.

The aim of the current study was to add to existing research on the factors associated with early adolescent dating. In this work, we approached adolescent dating as a facet of social development that has been defined by Schaffer (1996) as "the behaviour patterns, feelings, attitudes, and concepts children manifest in relation to other people" (p. 1). In line with previous work on social development, we expected that the factors that would affect adolescent propensity to date originate both from the individual and from the environment (Sanson, Hemphill, & Smart, 2004). In our work, we focused on adolescent physical maturation, a set of relatively stable individual characteristics (temperament), and adolescent perceptions of parental rearing behaviors. In addition, we considered whether these parental rearing behaviors moderated the effect of the individual characteristics on early adolescent propensity to date.

Individual Characteristics and Dating

Temperament has been defined as a set of relatively stable characteristics that make children more or less easily influenced by environmental factors (Rothbart, Ahadi, & Evans, 2000). These predispositions that appear in childhood affect social development by influencing the individual's inhibition or initiation of behaviors in the social environment (Buss & Plomin, 1984). Research has also suggested that characteristics of behavioral individuality, such as temperament, are of high importance during periods of multiple transitions like the entry into adolescence when youth face, among others, the onset of puberty, change of school, and a heightened interest in cross-sex interactions (Talwar, Nitz, & Lerner, 1990). We focused on three of Putnam, Ellis, and Rothbart's (2001) broad temperament factors that were likely to affect early adolescent success with peers (and, in turn, potential dating partners): surgency or the tendency to approach novel situations, effortful control or the ability to regulate behavior, and affiliation or the desire for closeness with others.

A large body of literature exists on the direct relationship between temperament and the social development of adolescents (Sanson, Hemphill, & Smart, 2004). For example, temperament has been shown to affect adolescent likelihood of establishing peer relationships (e.g., research on inhibition and social withdrawal; Sanson, Hemphill, & Smart, 2004) and the quality of these relationships (e.g., positive association between sociability and friendship quality;

Zimmer-Gembeck et al., 2001). In turn, high-quality peer interactions have been found to be related to an earlier age of onset of romantic relationships (Zimmer-Gembeck et al., 2001). In addition, higher standing among peers has been shown to be positively associated with the likelihood of having dating experience (e.g., Franzoi, Davis, & Vasquez-Suson, 1994; Miller et al., 2009). In other words, adolescents who are less socially inhibited and more open to others, appear to also be more successful in their peer relationships and, thus, are more likely to report having dating experience. In line with the outlined earlier research, we hypothesized that adolescents who score high on surgency, low on effortful control, and high on affiliation will be more likely to have experience with romantic relationships.

The final individual characteristic that we focused on was adolescent pubertal maturation. As Natsuaki, Biehl, and Ge (2009) state, "Puberty is the most salient biological event during adolescence" (p. 48). Previous research has already reported that adolescent pubertal maturation is positively associated with the likelihood of dating. Adolescents in a more advanced stage of puberty are more likely to report dating activity (e.g., Friedlander et al., 2007; Phinney, Jensen, Olsen, & Cundick, 1990). Often, however, a self-rated measure of pubertal maturation has been used, and, as the authors themselves have noted, this could lead to a biased inflation in the scores (Friedlander et al., 2007). In contrast, we used a more conservative, parent-rated measure of this individual characteristic. In line with earlier work, we expected that adolescents who were more advanced in their pubertal maturation would be more likely to date.

Parenting and Dating

Parents are the principle persons with whom children interact at an early age, and thus, parenting is one of the most significant dyadic processes that can affect subsequent development. In his review of the field of parent–adolescent relationships, Steinberg (2001) elaborated that research in the past few decades has shown that parents play a crucial role in facilitating positive adolescent development. Even though in adolescence the peer group becomes increasingly more influential, a high-quality relationship with one's parents has consistently been found to be beneficial for adolescents (Steinberg, 2001). Research has shown that an emotionally warm, accepting, and affectionate bond with parents is linked with psychosocial adjustment, whereas a rejecting, unsupportive relationship is related to maladjustment such as delinquency (Hoeve et al., 2009; Khaleque & Rohner, 2002). As for

the effects of parenting on adolescent dating, previous research has focused on how the quality of parent–child interactions can affect the quality of adolescent romantic relationships in mid/late adolescence as well as in emerging adulthood (e.g., Collins, Cooper, Albino, & Allard, 2002; Roisman, Booth-LaForce, Cauffman, & Spieker, 2009; Scharf & Mayseless, 2001). We focused on how the perception of one's parents can affect adolescent dating status in early adolescence.

In order to specify the expected effect of parenting on early adolescents' likelihood of dating, we used Interdependence theory's assumptions (Kelley & Thibaut, 1978). Kelley and Thibaut's work provides a useful framework for the examination of people's choices to engage in or leave certain interpersonal relationships. Interdependence theory postulates that an individual needs a certain relationship as long as it satisfies particular needs (the need for intimacy and companionship) and those needs cannot be met more efficiently outside the present relationship. This theory has been applied rather successfully to understanding the dynamics of adult romantic relationships and their likelihood to persist over time (Dainton, 2000; Finkel, Rusbult, Kumashiro, & Hannon, 2002; Le & Agnew, 2003). Even though the affection and love that adolescents receive from a romantic relationship and from their bond with parents could be qualitatively different, research has shown that adolescents' feeling of being accepted by their peers can buffer for perceived parental rejection with respect to both internalizing and externalizing problems (Sentse, Lindenberg, Omvlee, Ormel, & Veenstra, 2010). Therefore, it appears that, at least to a certain extent, the two contexts can compensate for each other.

On the basis of these assumptions, we expected that adolescents who perceived their parents as accepting and emotionally warm would be less likely to have experience with romantic relationships because their need for emotional warmth was satisfied within the family. At the same time, previous research has shown that if parental control of the adolescent's life is experienced as overprotective, intrusive, and denies adequate autonomy, problem behavior increases (e.g., risky sexual behavior; Kotchick, Shaffer, Forehand, & Miller, 2001). These findings also tie into Moffitt's work (1993), where adolescent rule-breaking behaviors were shown to serve as means to establish one's "grown-up" status. Therefore, perceived parental overprotection was expected to be associated with an increase in the likelihood of dating as a mean to establish one's autonomy. Finally, high parental rejection was expected to be associated with a higher probability of engagement in romantic relationships due to a search for an alternative source of intimacy and companionship.

Possible Moderation Effects

The final step in our work was to investigate whether interactions exist between parenting practices and individual characteristics in the prediction of early adolescent experience with romantic relationships. As mentioned earlier, abundant work exists on main-effect models in which individual characteristics and parenting uniquely contribute to the explanation of adolescent social development, which includes dating. In addition, however, conditional models of influence have been suggested according to which the precise nature of parental influence on development depends, in part, on the individual characteristics of the child, such as temperament and pubertal maturation (for overviews, see Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Sanson, Hemphill, & Smart, 2004). In other words, parental socialization plays different roles for adolescents with different temperaments (Gallagher, 2002). Empirical research has shown consistent support for those models. For example, in their study on the development of problem behavior, Sentse, Veenstra, Lindenberg, Verhulst, and Ormel (2009) found that when parents display low emotional warmth, the temperament characteristic of fearfulness could actually serve as a protective factor for adolescent externalizing problems. This recognition of the interactions between temperament and parenting has proven influential in the study of social development (Gallagher, 2002; Kochanska, Aksan, & Joy, 2007; Van Leeuwen, Mervielde, Braet, & Bosmans, 2004). Alongside temperament, pubertal status has been identified as an important characteristic that can not only affect behavior (earlier initiation of sexual intercourse; Zimmer-Gembeck & Helfand, 2008) but also interact with parenting practices in influencing adolescent social development. For example, in their study of externalizing behaviors among African American children, Ge and colleagues (2002) found that early maturing adolescents affiliated less with deviant peers when they received supportive, involved parenting and more when exposed to harsh and inconsistent parenting behaviors. With respect to adolescent likelihood of dating, only one study has investigated the interaction between parental behavior and individual characteristics. In their work, Friedlander and colleagues (2007) found that an increase in parental monitoring was associated with a lower number of dating activities only for boys.

In line with the previously outlined findings about the moderating role of temperament in the relationship between parenting and social development, we also investigated whether interactions exist between parenting practices and individual characteristics in the prediction of early adolescent romantic involvement. It was for example possible that children who perceived their

parents as rejecting, and had a heightened need for affiliation with others, would be even more likely to engage in romantic relationships than their low-in-affiliation peers. Therefore, we explored whether individual characteristics moderated the effect of parenting on early adolescent likelihood of dating.

In summary, in this article we looked into the factors associated with the likelihood of dating in early adolescence. We considered both the main effects and the possible interactions between temperament, pubertal maturation, and parenting. We tested our hypotheses with the TRacking Adolescents' Individual Lives Survey (TRAILS), an ongoing prospective cohort study of Dutch youth. We controlled for relevant background characteristics such as composition of the parental household (i.e., divorced and single-parent households vs. children living in intact families), socioeconomic status, sex, and age.

Method

Sample

The current study used the TRacking Adolescents' Individual Lives Survey (TRAILS), an ongoing prospective cohort study of Dutch youth focused on the development of mental (ill)health from childhood to adulthood. We used data from the first (Time 1; collected between March 2001 and July 2002) and second (Time 2; September 2003 to December 2004) waves.

Of all children and parents approached for participation in the TRAILS study, 76.0% gave their consent that resulted in an initial sample of 2,230 participants. Nonrespondents at baseline were more likely to be boys, from lower socioeconomic background, and had worse school performance than respondents. The mean age at Time 1 was 11.09 years (SD = 0.55, range: 10-12 years), 50.8% were girls, 10.6% of the children had at least one parent born in a non-Western country, and 21.4% had 2 parents with a low educational level (elementary or lower tracks of secondary education). Of the 2,230 Time 1 participants, 96.4% (n = 2,149) agreed to participate in the second wave. The mean age at Time 2 was 13.55 (SD = 0.54, range: 12-15 years), and 51.2% were girls. Attrition analysis showed that at baseline as well as at Time 2, there were no indications of differences between the psychopathology of participants and nonparticipants. However, nonparticipants at Time 2 were more likely to come from low socioeconomic status, $t(2186) = 4.65$, $p < .05$, Cohen's $d = 0.54$, and nonintact families, $\chi^2(2230) = 8.24$, $p < .05$, Cramer's $\varphi^2 = 0.06$. No differences in age or sex were found between Time 2 participants and nonparticipants. With respect to the predictors of interest for this study, nonparticipants at Time 2 differed from participants only on parent-reported maturation

level at Time 1 ($M = 2.11$ and $M = 1.87$, respectively), $t(2227) = -2.41$, $p < .05$, Cohen's $d = 0.29$. This difference between participants and nonparticipants should be considered when discussing the findings and their generalizability. A more detailed description of the TRAILS design, sampling procedures, data collection, measures, and attrition analyses can be found in De Winter et al. (2005) and Huisman et al. (2008).

Measures

Adolescent experience with dating. The dependent variable, *experience with romantic relationships*, was assessed at Time 2 by asking the participants two questions: "Have you ended a romantic relationship in the past two years?" and "Have you started a romantic relationship in the past two years?" (for both, 0 = no, 1 = yes). Adolescents who answered "yes" to either one of the two questions were coded as "daters."

Preadolescent perception of parents' rearing behavior. To assess the perception of actual parental rearing by the participants at Time 1, we used the Egna Minnen Beträffande Uppfostran (My Memories of Upbringing—for Children [EMBU-C]; Markus, Lindhout, Boer, Hoogendijk, & Arrindell, 2003). The original version of the EMBU-C contains 81 items. For this study, the shorter Markus et al.'s version was used while dropping the Favoring Subject factor due to a low internal consistency (Cronbach's α below .60). The remaining three scales, Overprotection, Rejection, and Emotional Warmth, have shown satisfactory test–retest stability over a 2-month period ($r = .78$ or higher; Muris, Meesters, & van Brakel, 2003). The overprotection scale contained 12 items with a Cronbach's alpha of .70 for fathers and .71 for mothers. This scale measured the perceived parental concern and anxiousness for the child's safety (e.g., "Does your father/mother forbid you to do things that your classmates are allowed to do because he/she is afraid of something happening to you?") and parental intrusiveness (e.g., "When you have a secret, do your parents want to know it too?"). The Rejection scale contained 12 items with an internal consistency of .84 for fathers and .83 for mothers. It measured the extent of hostility, punishment (both physical and nonphysical), and blaming of the preadolescent (e.g., "Does your father/mother sometimes punish you even though you haven't done anything wrong?"). The final EMBU-C subscale measured parental Emotional Warmth (internal consistency of .91 for both father and mother). This scale tapped into the feeling of being unconditionally loved and praised by one's parents (e.g., "Does your father/mother make it clear that he/she loves you?"; "Does your father/mother hug you?"). The preadolescents answered on a 4-point Likert-type scale, with

responses ranging from 1 = *no, never*; 2 = *yes, sometimes*; 3 = *yes, often*; to 4 = *yes, always*. Due to the high correlations between the scores for paternal and maternal Overprotection ($r = 0.81$, $p < .001$), Rejection ($r = 0.68$, $p < .001$), and Warmth ($r = 0.79$, $p < .001$), the final scores for parenting practices were created by taking the mean of the two.

Preadolescent temperament. The parent version of the Early Adolescent Temperament Questionnaire—Revised (EATQ-R; Ellis, 2002; Putnam et al., 2001) was used at Time 1 to assess preadolescents' temperament. All parent-rated variables in TRAILS were rated by the one participating parent who, in 95.6% of the cases, was the mother. We used the parent version because its factor structure was superior to that of the child version in our sample. The EATQ-R is a 62-item questionnaire was based on the temperament model developed by Rothbart and colleagues (e.g., Putnam et al., 2001; Rothbart & Putnam, 2002). The four subscales that are used for the current study are High-intensity Pleasure, Shyness, Effortful Control, and Affiliation. More information on the composition and testing of the EATQ-R with the TRAILS sample can be found in Oldehinkel et al. (Oldehinkel, Hartman, de Winter, Veenstra, & Ormel, 2004). The 6-item High-intensity Pleasure subscale assessed the pleasure derived from novel and high-intensity actions (e.g., "My child wouldn't be afraid to try a risky sport like deep sea diving"; Cronbach's $\alpha = .77$). The 4-item Shyness subscale assessed behavioral inhibition to novelty and challenge (e.g., "My child feels shy about meeting new people"; $\alpha = .84$). Effortful control was composed of 11 items and tapped into the ability to voluntary regulate behavior and attention (e.g., "My child finds it easy to really concentrate on a problem"; $\alpha = 86$). Finally, the 6-item Affiliation scale assessed the desire for warmth and closeness with others, independent of shyness and extraversion (e.g., "My child finds it important to have close relationships with other people"; $\alpha = .66$). The parents rated how accurately these statements describe their child on a 5-point Likert-type scale where the response options ranged from 1 = *almost never*, 3 = *sometimes*, to 5 = *almost always*.

Preadolescent pubertal maturation. Stage of pubertal maturation was reported at Time 1 (i.e., at the mean age of 11.09) by the parents using schematic drawings of secondary sex characteristics corresponding to the five standard Tanner stages of pubertal maturation (Marshall & Tanner, 1969, 1970). The Tanner stages are a widely accepted standard for assessing physical maturation and have demonstrated good reliability, validity, and parent–child agreement (Dorn, Susman, Nottelmann, Inoff-Germain, & Chrousos, 1990). Based on the parent ratings of which (sex appropriate) drawing looked "most like my child," the participants were classified into five stages of puberty, in

which Stage 1 corresponded to infantile and Stage 5 to complete puberty. For the 2.5% of the children who had missing data on this variable, the Tanner stage was imputed on the basis of available data for their age, weight, and height (see Oldehinkel, Verhulst, & Ormel, 2010).

Family structure. Of the 2,230 children participating at Time 1, 8.4% had divorced parents and currently lived with one of the parents and a stepparent; another 12.9% had divorced parents but currently lived only with one of the parents, and 2.4% had lived their entire lives with a single parent. In total, 76.3% of the children lived in intact families from birth to the beginning of data collection.

Socioeconomic status (SES). The family SES was assessed at Time 1 based on the educational and occupational levels of both parents and the family income level. Educational level was divided in 5 categories, and occupational level was coded according to the International Standard Classification for Occupations (Ganzeboom, De Graaf, & Treiman, 1992). Low family income was defined as a net income of less than €1,135 per month, which approximately equals a welfare payment. SES was measured as the average of the 5 standardized items. The measurement captured 61.2% of the variance in the 5 items and had a Cronbach's α of .84.

Analyses

Differences in temperament, pubertal maturation, and parenting practices between daters and nondaters were examined by means of *t* tests. The significant predictors (from the univariate analyses) were entered in a logistic regression with dating at Time 2 as the dependent variable. All independent continuous variables were standardized to $M = 0$ and $SD = 1$.

In order to ensure sufficient power for the interaction effects, separate logistic regression analyses were performed to test the interactions between adolescent characteristics and parenting practices. Subsequently, interactions that were significant in the separate analyses were included in the final model.

To interpret the outcomes of the logistic regression, we used marginal effects (Borooah, 2001; Liao, 1994). The marginal effect for a dummy variable is the difference between belonging to the "1" category as compared to the "0" category. The marginal effect for a continuous variable is the added effect of that variable on the outcome with every point increase in the score of the continuous predictor.

To facilitate interpretation and give an impression of the strength of the significant interactions, we wrote out multiple equations using simple slope analysis (Aiken & West, 1991), with high and low levels of the predictors

indicating 1 standard deviation above and below the mean, while holding all other variables to the sample mean. All analyses were carried out in Stata (Long & Freese, 2006).

Results

Descriptive Analyses

At Time 2, out of the 2,149 participants, 902 (42%) reported experience with a romantic relationship in the preceding 2 years; 1,189 (55.3%) reported never having had a romantic partner. There were 58 (2.7%) children who did not provide an answer to the question. Girls were more likely to have experience with dating than were boys, $\chi^2(2091) = 12.49$, $p < .001$. Those who had experienced parental divorce or were raised by a single parent were more likely to have experience with dating than were adolescents who came from intact families, $\chi^2(2091) = 16.33$, $p < .001$. Dating was unrelated to age and family SES.

The means, standard deviations, and *t*-test statistics for temperament, pubertal maturation, and parenting are displayed in Table 1, separately for dating and nondating adolescents. Several significant differences between daters and nondaters emerged. With respect to temperament, daters scored higher on Affiliation and High-intensity Pleasure and lower on Shyness than nondaters. Dating adolescents were also further along in their pubertal maturation at Time 1 than nondating adolescents. As for parenting, daters experienced more parental Overprotection and Rejection than did nondating adolescents. No significant differences were found for parental Warmth between daters and nondaters.

Logistic Regression Analysis

The significant predictors from the univariate analyses were entered in a logistic regression, using dating status at Time 2 as the dependent variable. We controlled for sex and family structure because of the differences found between daters and nondaters. Two significant interactions between individual characteristics and parenting emerged from the separate analyses (between parental Rejection and High-intensity Pleasure and between parental Overprotection and Shyness). Those were included in the final model. Table 2 displays the parameter estimates for the predictors in the final model. Separate models for boys and girls were not run because no significant interactions of temperament or parenting with sex were found.

Table 1. Means (*SD*) of Temperament, Pubertal Development, and Parenting for Nondating and Dating Adolescents

	Nondaters, *M* (*SD*)	Daters, *M* (*SD*)	*t* test (*df*)	Cohen's *d*
Affiliation	3.84 (0.58)	3.93 (0.54)	−3.45 (1874)**	0.16
Effortful control	3.25 (0.68)	3.20 (0.69)	1.81 (1875)	0.07
Shyness	2.56 (0.90)	2.43 (0.86)	3.35 (1874)**	0.15
High-intensity pleasure	3.26 (0.92)	3.39 (0.93)	−3.12 (1870)**	0.14
Pubertal development	1.81 (0.71)	1.94 (0.76)	−4.24 (2088)**	0.18
Parental overprotection	1.84 (0.37)	1.88 (0.38)	−2.10 (2071)*	0.11
Parental rejection	1.46 (0.28)	1.51 (0.34)	−3.20 (2071)**	0.16
Parental warmth	3.23 (0.49)	3.21 (0.50)	0.69 (2072)	0.04

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

Our model indicated that, when adolescents scored at the mean level of all other variables, there was a 42.9% chance that they would have experience with dating. With respect to background characteristics, being a boy significantly decreased those odds by 8.2% (with all other variables at their mean), whereas coming from a nonintact family significantly increased that likelihood by 8.5%. In other words, according to our model, the likelihood for girls from nonintact families to be dating was 51.4%, and, for boys from intact families, that likelihood was 34.7%. Scoring high on affiliation did not significantly increase the odds of being a dater. In contrast, High-intensity Pleasure and Shyness had the expected significant results. Our model indicated that if adolescents scored 1 standard deviation above the mean for High-intensity Pleasure, their chance of being a dater increased by 2.8%; the same increase in their Shyness scores resulted in a drop in the probability of dating by 3.0%. We also found the expected results for parent-reported pubertal maturation; scoring 1 standard deviation above the mean on that variable resulted in an increase by 4.3% in the likelihood of dating. As for parenting practices, only parental Rejection had the expected effect by increasing the probability of dating by 4.4%.

Of the two significant interactions that appeared in the separate analyses, only the one between parental Rejection and High-intensity Pleasure remained significant in the final model. We used Aiken and West's (1991) guidelines to clarify the meaning of this interaction. We concluded that, when parental Rejection is high, High-intensity Pleasure does not make a difference in predicting the likelihood of dating. However, when parental

Table 2. Parameter Estimates for the Logistic Regression Model Predicting the Effects of Temperament, Pubertal Development, and Parenting on the Likelihood of Dating at Time 2

	Wald χ^2	B (*SE*)	Odds ratio (95% confidence interval)	Marginal effects (%)
Background characteristics				
Being a boy	10.77**	−0.34 (0.10)	0.71 (0.58-0.87)	−8.2
Family break-up	9.02**	0.34 (0.11)	1.41 (1.13-1.76)	8.5
Adolescent characteristics				
Affiliation	2.56	0.08 (0.05)	1.08 (0.98-1.20)	2.0
Shyness	5.38*	−0.12 (0.05)	0.88 (0.80-0.98)	−3.0
High-intensity pleasure	4.85*	0.11 (0.05)	1.12 (1.01-1.24)	2.8
Pubertal development	12.62**	0.18 (0.05)	1.19 (1.08-1.31)	4.3
Parenting practices				
Parental overprotection	0.16	0.02 (0.05)	1.02 (0.92-1.14)	1.0
Parental rejection	11.45**	0.18 (0.05)	1.20 (1.08-1.33)	4.4
Interactions				
High-intensity pleasure by parental rejection	4.97*	−0.12 (.005)	0.89 (0.80-0.99)	−2.8
Shyness by parental overprotection	3.71	0.09 (0.05)	1.10 (1.00-1.21)	2.3

Note: $N = 1{,}854$; χ^2 of full model ($df = 10$) = 72.54, $p < .01$.
*$p < .05$. ** $p < .01$.

Rejection is low (1 standard deviation below the mean), the difference in the likelihood of dating between adolescents with a low (–1 SD) and a high (+1 SD) level of High-intensity Pleasure is 11.2% (with all other variables at their mean). The interaction is plotted in Figure 1. In terms of model improvement, every consecutive step of the analysis significantly improved the model fit: final model, $\chi^2(10) = 72.54$, $p < .01$.

Discussion

In the current study, we focused on the effects of several individual characteristics and perception of parenting practices in preadolescence on the probability of dating in early adolescence. Previous work has suggested that whereas adolescent dating cannot be seen as a problem behavior in and of itself, the early engagement in such bonds can be associated with negative outcomes and that research into the determinants of those romantic relationships is

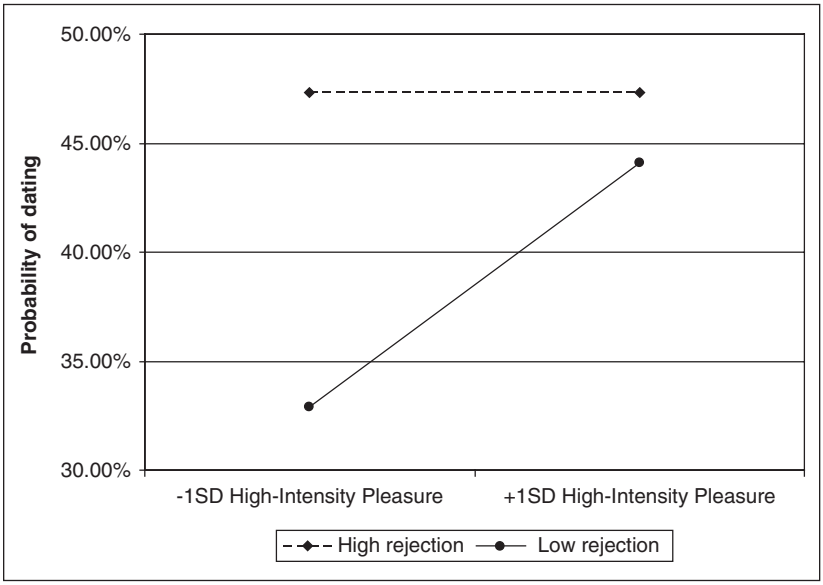

Figure 1. High-intensity Pleasure by Parental Rejection Interaction

necessary (e.g., Zimmer-Gembeck, Siebenbruner, & Collins, 2001). Therefore, our main aim was to clarify who those dating early adolescents were in terms of their temperament, level of pubertal maturation, and perception of parenting behaviors.

We found that early adolescents with dating experience scored higher on preadolescent pubertal maturation, need for high-intensity pleasure, lower on shyness, and higher on perceived parental rejection. Furthermore, when preadolescents reported high levels of parental rejection, the need for high-intensity pleasure no longer had a significant effect on the likelihood of dating.

In line with previous work, our analyses revealed that girls and adolescents from nonintact families were more likely to date than were boys and youth from intact families, respectively (Cavanagh, Crissey, & Raley, 2008). Our findings were in line with most of our expectations about the effects of individual characteristics on the likelihood of having dating experience. We found that when youth were rated as more open and likely to approach novel situations in preadolescence (measured as higher need for high-intensity pleasure and lower shyness), they were also more likely to report romantic experience in early adolescence. These uninhibited adolescents have

previously been found to have higher success with peer relationships (e.g., Sanson, Hemphill, & Smart, 2004). Therefore, it did not come as a surprise that they were also more likely to have experience with dating. It is within the context of the peer group that adolescents meet and get closer with potential romantic partners for the first time (Connolly, Craig, Goldberg, & Pepler, 2004). In addition, in line with previous research (Friedlander, Connolly, Pepler, & Craig, 2007), we found that a more advanced pubertal status in preadolescence was associated with higher odds of dating in early adolescence. Whereas earlier studies have pointed out that the often used self-reported measures of pubertal maturation might be biased due to overestimation (Friedlander et al., 2007), we demonstrated that when using the possibly more conservative parent assessment of adolescent pubertal maturation, it rendered similar findings.

Contrary to our expectations, we did not find the anticipated effects of low-effortful control and heightened need for affiliation with others on early adolescent likelihood of dating. It is possible that this lack of significant findings was due to the gradually increasing amount of dating from the early adolescence stage (Carver, Joyner, & Udry, 2003). In other words, from early adolescence onwards, youth become substantially more likely to show interest in and engage in dating. Therefore, it is possible that the factors that can additionally boost the likelihood of having experience with romantic relationships are limited only to ones that particularly predispose adolescents to dating. Being shy could hinder the adolescent from approaching potential partners, whereas scoring lower on effortful control or higher on the need for affiliation with others does not necessarily affect one's chances of finding a partner.

In terms of parenting practices, we found a main effect only for perceived parental rejection. In agreement with the outlined assumptions of Kelley and Thibaut's (1978) work, we found that youth who perceived their parents as rejecting were more likely to have experience with dating in early adolescence. In addition, we found one significant interaction between temperament and parenting practices. Whereas the main effects of both parental rejection and high-intensity pleasure indicated an increase in the odds of dating, their interaction had a negative effect on that probability. In other words, when preadolescents perceived their parents as rejecting, they were more likely to have experience with dating in early adolescence, irrespective of their need for high-intensity pleasure. However, when the parents were rated as low in rejection, high-intensity pleasure boosted the likelihood of having experience with romantic relationships.

Our finding about the moderating role of high-intensity pleasure on the relationship between child-perceived parental rejection and adolescent dating

status could be due to the so-called negativity bias (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Rozin & Royzman, 2001) that postulates that negative entities are stronger than equivalent positive entities. Research has shown that people are more attentive to and influenced by negative rather than positive experiences and information (Baumeister et al., 2001; Rozin & Royzman, 2001). Our measure of high-intensity pleasure tapped into the preadolescent's openness to novel and stimulating experiences (e.g., "My child likes it when something exciting or new happens at school"). It is possible that when the adolescents were deprived of a warm and nurturing environment at home, their need to compensate for it was already so strong that it no longer mattered whether they were open to new experiences in determining whether or not they would establish romantic relationships. Previous work has demonstrated that the experience of parental rejection is the most consistent predictor of adolescent problem behavior, irrespective of adolescent temperament (Sentse, Veenstra, Lindenberg, Verhulst, & Ormel, 2009). This particular interplay between temperament and parenting, however, remains particularly puzzling, and subsequent studies should help determine whether this is a consistent finding.

The results of this study suggested that dating in early adolescence could possibly function as a mean to establish one's "grown-up" status. In our study, we found that if preadolescents were more advanced in their physical maturation, they were more likely to get report experience with romantic relationships in early adolescence. Moffitt's work (1993) on adolescent externalizing behavior suggests that for some adolescents, rule-breaking behavior is a means to establish one's maturity in an age when the discrepancy between one's physiological maturation and limited social rights and freedoms is especially palpable. However, parental overprotection did not contribute to the explanation of adolescent engagement in dating neither independently nor in interaction with pubertal status that was expected, based on Moffitt's work. Therefore, an alternative explanation could be that adolescents, who are more advanced in their physical maturation than their peers and want to establish their autonomy, keep different company. The association with older, more mature adolescents might be the driving force behind the increased likelihood of dating. Because we did not consider the peer context in this investigation, it is beyond the scope of the current work to unravel the mechanism behind this finding.

At the same time, our findings indicated that early adolescent romantic relationships could serve a "compensatory" function. The results showed that the perception of one's parents as rejecting was associated with higher odds of having dating experience (even irrespective of one's temperament

characteristics such as the need for high-intensity pleasure). In agreement with Kelley and Thibaut's Interdependence theory (1978), it appeared that early adolescents were more likely to engage in romantic bonds when their fundamental need for belongingness and intimacy (Baumeister & Leary, 1995) was not met within the family. Our finding was also in line with work that has demonstrated the compensating role that peer acceptance played when the adolescents perceived their parents as rejecting in the prediction of problem behaviors (Sentse, Lindenberg, Omvlee, Ormel, & Veenstra, 2010). It appeared that even though romantic partners and parents could be sources of different kinds of intimacy and companionship, when adolescents were deprived of these at home, they searched for alternatives elsewhere. Interestingly, the hypothesized reverse connection was not found; we did not find that preadolescents who perceived their parents as warm and accepting were less likely to date in early adolescence. This could be due to the previously mentioned "negativity bias" (Rozin & Royzman, 2001). Rejection within the family could be felt much stronger and, thus, initiated compensatory mechanisms, whereas the presence of warmth and unconditional acceptance was taken for granted and did not affect the likelihood of dating in early adolescence.

A few limitations of this study should be mentioned. It is likely that multiple factors could play a role in early adolescents' likelihood of having experience with dating (e.g., peers' involvement in romantic relationships, popularity status, physical attractiveness). As we mentioned previously, taking the peer context into account could help clarify further some of the effects that we found. Yet in the current study we chose to focus only on a few relevant individual and parenting predictors that previous work has overlooked with respect to adolescent dating. Our results point to a few possible mechanisms underlying early adolescents' choice to initiate romantic relationships. Another weakness of the current study is that we were unable to control for dating behaviors at Time 1. Whereas the mean age at Time 2 allowed us to investigate adolescents' earliest experiences with romantic relationships, future research should also take into account preceding dating status. Another point is that all of our measures were based on questionnaires. It is likely that in relation to parenting behaviors in particular, observational studies could be more accurate. However, keeping in mind the large scale of our study ($N = 2{,}149$) this was essentially impossible. Furthermore, we believe that it is the adolescent's perception of the parents that truly matters. In the case of rejection, for example, if the adolescents themselves do not feel rejected by their parents, it is unlikely that any compensatory behavior will be initiated. An additional limitation of our work is the fact that we took the mean of perceived paternal

and maternal parenting behaviors instead of investigating their effects on early adolescent dating separately. Previous work has suggested that, for example, maternal overprotection is experienced as rather "normative," whereas paternal overprotection can have negative effects on adolescent adjustment (Sentse, 2010). However, in our work, the perceptions of paternal and maternal parenting behaviors were highly correlated. Separately ran univariate analyses showed that the two measures were similarly associated with early adolescent dating. Thus, we do not think that what we find is a "masking effect" of one measure of parental overprotection by the other.

Despite its limitations, this study makes an important contribution to identifying who is likely to engage in romantic relationships in early adolescence. Frequently, the selection of possible predictors of early adolescent dating has been restricted to the same factors that have been found to be associated with early initiation of sexual activity. Whereas both early sexual and dating activity can be viewed as related behaviors, it is misleading to equate them with each other and assume that the factors that drive adolescents to start a romantic relationship are the same as those that drive youth to become sexually active. In light of our findings, one can see why early adolescent dating can be at times associated with maladjustment. Previous research has shown that youth who score high on the broad temperament dimension of surgency, are more advanced in their pubertal maturation, and have negative experiences with their parents are also more likely to get involved in rule-breaking and risk-taking behaviors (e.g., French & Dishion, 2003; Oldehinkel et al., 2004; Sentse, 2010). Future research should, therefore, investigate whether romantic relationships in early adolescence are indeed related to negative outcomes even after controlling for *who* those dating early adolescents are with respect to individual characteristics and experiences within the family.

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