How the Template of Relationships with Parents is Applied to Romantic Relationships and Self-Esteem During the Transition to Emerging Adulthood: New Considerations of the Role of Fathers, Stability of Representations, and Bidirectional Effects

by

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ABSTRACT

The current study examined effects of representations of relationships with parents on young adults' representations of romantic relationships and self-esteem, with particular attention paid to the role of fathers, instability of representations, and bidirectional effects. Data were obtained from two waves (Waves 4 and 5) of a five-wave study. At wave 4, 287 young adults (mean age = 20) participated, and at Wave 5, 276 young adults (mean age = 22) participated. One-time interviews (Behavioral Systems Questionnaires; BSQ) were conducted to measure the level of representations of relationships with parents. Nightly diary checklists (7 nights at Wave 4, and 5 nights at Wave 5) were used to measure the level and instability of representations of romantic relationships (BSQ) and self-esteem (Rosenberg Self Esteem Scale). Two styles of representations, including secure versus dismissing (e.g., relying on parents or romantic partners when distressed versus not relying on them) and preoccupied (e.g., worrying about rejection and excessive dependency) were measured for relationships with parents and romantic partners. The results showed evidence for unique roles of fathers, instability of representations, and bidirectional effects. Relationships with fathers affected young adults' self-esteem. More nightly fluctuations in security with romantic partners predicted higher levels of security with romantic partners, but only in the context of more secure relationships. More nightly fluctuations in self-esteem predicted more dismissive representations of fathers. Bidirectional effects involved young adults' representations of both romantic relationships and self-esteem, and their representations of relationships with parents. The relation between instability of representations of romantic relationships and later security in romantic relationships might represent learning about romantic

relationships. The relation between instability of self-esteem and later dismissive styles with fathers (e.g., not relying on fathers when distressed) at this age might be an indication of learning to become autonomous from fathers. Finally, I also hypothesize that during emerging adulthood, fathers tend to encourage children to solve their stress or problems by themselves, while mothers tend to still provide help when children are distressed. These suggested hypotheses should be examined in future research.

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Introduction

Numerous researchers have suggested that the "template" of adolescents' relationships with their parents is transferred to adolescents' developing romantic relationships and self-esteem (Adams, 2005; Clarke-Stewart & Dunn, 2006). However, limited understanding of how adolescents' relationships with parents affect relationships with romantic partners (Doyle, Lawford, & Markiewicz, 2009) and inconsistent associations between relationships with parents and self-esteem (Harris et al., 2015) suggest that important factors in the mechanisms of transfer have been overlooked. I will employ measures of young adults' representations of relationships with parents and romantic partners, and self-esteem in order to look for evidence of the effects of the following factors: (a) an independent role of fathers, (b) stability versus level of representations of the romantic relationships and self-esteem, and (c) bidirectional effects.

Representations of relationships with parents and romantic partners

Theoretical support. A theoretical framework of how representations of relationships with parents transfer to romantic relationships has been provided by attachment theory (Bowlby, 1969, 1973). According to attachment theory, representations of relationships with parents form an internal working model, which provides fundamental beliefs and expectations about other relationships including romantic relationships (Bowlby, 1969, 1973; Shomaker & Furman, 2009). Three distinct representational styles with parents are related to differences in quality of romantic relationships (Furman, Simon, Shaffer, & Bouchey, 2002). The secure style is characterized by the ability to maintain trust in close relationships. The dismissing style is

characterized by avoidance of intimacy and closeness. The preoccupied style is characterized by worry about rejection and excessive dependency. Furman et al. (2002) found moderate within-style correlations across adolescents' relationships (with mothers, fathers, friends, and romantic partners), indicating that the attachment styles between different relationships might be related, but that each relationship also has its own uniqueness. Instead of using the three attachment styles, using a single continuum that has *secure* and *insecure* at two opposite ends of the continuum has been proposed, but a challenge to the scoring different styles on the single continuum has been addressed (Cummings, 2003). Researchers generally consider that individuals are *securely* attached if they have high scores of the secure style and low scores of the dismissing and preoccupied styles, and that individuals are *insecurely* attached if they have low scores of the secure style and high scores of the dismissing and preoccupied styles.

Role of father. The contribution of father-child relationships to adolescents' development has been neglected, probably due to early attachment theory's emphasis on a main caregiver, usually the mother (Bowlby, 1973). However, a unique role of fathers has been theoretically described in attachment research. For example, Bowlby (1982) stated that fathers are more trusted figures than mothers as play companions to children. Grossmanns, Grossmann, Fremmer-Bombik, Kinder, Scheuerer-Englisch, and Zimmermann (2002) examined the effects of infants' attachment at age 12 months (by Stranger Situation Procedure; SSP) and parental play sensitivity at age 24 months (by observation) on children's later attachment at ages 6 (by Separation Anxiety Test; SAT), 10 (by Attachment and Current Relationship Interview: ACRI), and 16 (by Adult Attachment Interview; AAI). They found that the children's attachment at age 6 was

predicted by the infants' attachment with mothers and fathers measured at age 12 months. The children's attachment at age 10 was predicted by the infants' attachment with mothers at age 12 months and the fathers' play sensitivity measured at age 24 months. Finally, they found that the children's attachment at age 16, including secure and dismissing styles, was predicted only by the fathers' play sensitivity measured at age 24 months. Although this study did not differentiate specific relationships (e.g., attachment with mothers, fathers, or peers) for the children's attachment that was measured at ages 6, 10, and 16, the findings suggested different mechanisms between attachment with mothers and fathers, and an important role of fathers during adolescence.

Adolescents' social development, especially their peer relationships has been focused on as one of the developmental areas that the role of fathers is closely related to (Leidy, Schofield, & Parke, 2013), but less is known about the links between relationships with fathers and romantic relationships. Three studies on the direct links between representations of relationships with parents and representations of romantic relationships during adolescence were found (Black & Schutte, 2006; Miller & Hoicowitz, 2004; Walper & Wendt, 2015). First, a study by Black and Schutte (2006) was conducted with 205 undergraduate students. Adolescents' childhood experiences with parents were measured by questions from the Adult Attachment Interview (AAI), and their romantic relationships were measured by Adult Attachment Scales (Brennan & Shaver, 1995). Their correlational analysis indicated that adolescents who had more positive and loving relationships with mothers showed more trust in their romantic relationships and sought comforts from their romantic partners when distressed. Furthermore, adolescents who had more positive and loving relationships with fathers

also sought comforts from their romantic partners when distressed, and they also felt more comfortable about relying on their romantic partners.

Second, a study by Miller and Hoicowitz (2004) was conducted with 118 undergraduate students. Adolescents' attachments to mothers, fathers, friends, and romantic partners were measured by Brennan et al.'s (1998) attachment anxiety and avoidance scales as predictors. Average lengths and global qualities of friendships and romantic relationships were measured as outcome variables. The authors stated that they ran separate regression analyses for mothers and for fathers because of sample size and multicollinearity. Regarding romantic partners, their findings revealed that the anxiety with mothers significantly predicted the global quality of romantic relationships, and when they entered fathers' variables instead of mothers' variables in the regression analysis, a similar effect was found. They also found that an interaction between anxiety and avoidance was significant for mothers, but not for fathers. High avoidance and high anxiety with mothers predicted low quality of romantic relationships, but high avoidance and low anxiety with mothers predicted high quality of romantic relationships.

Third, a study by Walper and Wendt (2015) was conducted with adolescents whose mean age was 18.61 (Wave 3). The sample was drawn from Wave 2 (2009/2010) and Wave 3 (2010/2011) of longitudinal data. They only included adolescents who were living with both biological parents and who were involved with a romantic partner at Wave 3. Adolescents' emotional insecurity with mothers, fathers and romantic partners were measured by combined subscales of ambivalence and fear of love withdrawal that was adapted from the Munich Individuation Test of Adolescence (MITA, Kruse & Walper, 2008). Three aspects of the relationships, including relatedness, negative

conflict, and dominance versus autonomy with partner, were also measured for mothers, fathers, and romantic partners. They utilized a Bagged (Averaged) Binary Recursive Partitioning method with Minimal Depth. They explained that this method was better with large numbers of predictors than other least square methods, and provided information on importance of predictors. Regarding mothers, emotional security with mothers predicted all four variables for romantic partners. Relatedness with mothers predicted relatedness with romantic partners and autonomy in the romantic relationships. Negative conflict with mothers predicted negative conflict with romantic partners. Regarding fathers, emotional security with fathers predicted emotional insecurity with romantic partners and autonomy in the romantic relationships. Negative conflict with fathers also predicted negative conflict with romantic partners. Furthermore, they reported that the mother variables ranked higher than the father variables when predicting the romantic relationship variables. Based on these findings, they stated that "overall, adolescents' relationship with mother proved more important (7 effects) than their relationship with father (3 effects)" (p. 525), and "overall, our study adds to the evidence that mothers play a more important role than fathers in providing relationship experiences relevant for romantic development" (p. 528-239). However, I think that the authors made overreaching conclusions. The number of significant findings and the rank order for the variables do not indicate that mothers are more important than fathers in adolescents' developing romantic relationships. This conclusion is especially dangerous because this could be misinterpreted by the general public who do not have much knowledge on statistics. Their findings just indicated that the variance of the specific variables of

romantic relationships was more explained by the specific mother variables than the specific father variables.

Although the first two studies were cross-sectional studies, the results showed the evidence for the unique influences of representations of relationships with mothers and fathers on representations of romantic relationships. Furthermore, I think the third study, which was a longitudinal study, also indicated the same conclusion with the first two studies, 'the unique influences of mothers and fathers on romantic relationships', rather than their overreaching conclusion, 'more important roles of mothers than fathers'.

Stability of representations. Bowlby (1973) argued that individuals construct internal working models through experiences with attachment figures, but he did not describe the nature of internal working models in detail. Cognitive psychologists have considered internal working models as scripts or schemas of relationships, which accommodate and assimilate new information (Bretherton, 1990; Baldwin, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1996). More recently, Waters and Waters (2006) proposed that attachment is a script-like representation of experiences. Based on their hypothesis, Bosmans, Walle, Goosesens, and Ceulemans (2014) suggested that representations of attachment can fluctuate, and stability of state attachment can be a feature of trait attachment. They argued that if a secure script is formed through consistent and coherent support from attachment figures the secure script would be more consolidated, but if an insecure script is formed through inconsistent and ineffective support from attachment figures the insecure script would be less consolidated (Waters & Waters, 2006; Bosmans et al., 2014). Thus, if general level of trait attachment is secure, stability of state attachment would be stable.

Two studies examined the relation between level and stability of attachment. Bosmans et al. (2014) found that children aged 9 to 13 who were securely attached to mothers fluctuated less in their daily attachment appraisals than children who were insecurely attached to mothers. This finding indicated that level of attachment was related to stability of daily representations, but their study was only about relationships with mothers. Davila and Sargent (2003) found that undergraduates' instability (when thinking about all their relationships) in daily representation was related to daily experiences, but the path was not moderated by level of trait attachment. This finding indicated that representations of other relationships probably including romantic relationships also were fluctuated daily. Both studies indicated that stability of daily attachment should be explored further.

I hypothesize that level of representations of relationships with parents would affect stability of representations of romantic relationships based on the following theoretical and empirical supports. First, the representations of relationships with parents are related to the representations of romantic relationships, but each relationship has its own uniqueness (Furman, 2002). Second, level of attachment is related to stability of daily attachment (Bosmans et al. (2014). Third, representations of relationships with parents affect representations of romantic relationships (Bowlby, 1969, 1973). I will measure instability via nightly diary entries made while the memories and emotions of the day are activated. The standard deviation of ratings across the week is the measure of instability. I also hypothesize that level of representations of relationships with parents would affect level of representations of relationships with romantic partners. This is the same as others have done when they examine the within-style correlations across

relationships (Furman et al., 2002). The mean of the diary ratings across the week is the measure of level of representations of relationships with romantic partners.

Bidirectional effects. Numerous researchers suggested an important role of romantic relationships during adolescence (Feeney, 2004; Furman & Wehner, 1994, 1997). Freeman and Brown (2001) found that adolescents nominated parents and peers equally as a primary attachment figure. They also found that adolescents with secure styles tended to nominate mothers more than others as a primary attachment figure while adolescents with dismissing and preoccupied styles tended to nominate friends and romantic partners more than parents, suggesting a role of attachment styles in the shift from parents to peers. However, it is difficult to interpret their attachment styles meaningfully because they used the Adolescents Separation Anxiety Test (ASAT), which asks about feelings and justifications regarding separations from both friends and parents. As noted above, the moderate within-style correlations between relationships suggest that individuals can have different attachment styles in different relationships (Furman et al., 2002), so that it is unknown whether an overall internal working model can be measured by asking about both parents and peers. Furthermore, adolescents' attachment cannot be measured just by asking about separations because adolescents' relationships are complex (Furman & Wehner, 1994; 1997).

Based on the theoretical and empirical supports for the importance of romantic relationships during adolescence, I hypothesize that there should be bidirectional effects whereby representations of relationships with romantic partners should affect representations of relationships with parents. For example, suppose there was a girl who was highly preoccupied in the relationship with her father when she was a child. She felt

that she depended on her father emotionally too much, and she worried if her father would reject her. After graduating from high school, she moved to another city for her college, and met a boyfriend who gave her many opportunities of feeling emotionally close through warm and responsive interactions. In this case, the relationship with the boyfriend could change her internal working model which also might change her attitudes to the relationship with her father. However, no empirical studies have examined the potential effects of representations of relationships with romantic partners on representations of relationships with parents.

I will include both level and stability of representations of relationships with romantic partners when examining the effects of representations of relationships with romantic partners on representations of relationships with parents. Furthermore, an interaction between level and stability of representations of relationships with romantic partners will be included. There are no studies on the interaction effects of level and stability of representations of relationships with romantic partners, but there are studies indicating that individuals with high level but unstable self-esteem are at risk for developing healthy relationships (Kernis, 2003, 2005). Thus, I hypothesize that individuals with *secure* (i.e., high level for the secure style, and low level for the dismissing and preoccupied styles) but unstable representations of romantic relationships also could be at risk in terms of developing healthy internal working models which again could affect representations of relationships with parents.

Measurement. The measurement of representations of relationships in adolescence poses unique challenges. While young children's representations of relationships with parents can be measured by proximity-seeking or using parents as a

secure base, adolescents' representations of relationships cannot be measured in the same way. Furman and Wehner (1994; 1997) proposed behavioral systems theory, which explains that adolescents' representations of relationships are formed in the functioning of several systems. One of these is the attachment system. In their view, the attachment system describes what has traditionally been understood as the system in which the child develops and maintains security in a dependent role with the attachment figure. The attachment system operates in adolescents' representations of relationships with parents, and peers (i.e., friends and romantic partners) to the degree that the other person serves as an attachment figure whom the adolescent seeks when distressed. The affiliation system operates in the same relationships, but to the degree that the relationship provides companionship or opportunities of cooperation. The caregiving system also operates in the same relationships, but to the degree that adolescents provide support and comport to others. Finally, the sexual/reproductive system operates in adolescents' representations of relationships with romantic partners to provide sexual fulfillment.

Based on behavioral systems theory, Furman and Wehner developed the Behavioral Systems Questionnaires (BSQ; 1994, 1997). The BSQ is a self-report assessment that measures self-perceptions of representations about each relationship. Three representational styles including secure, dismissing, and preoccupied are assessed in each system, and the representational style scores for each relationship are calculated across all the systems. I used the BSQ to measure representations for mothers, fathers, and romantic partners (see Table 1). For example, a high dismissing style score across attachment, affiliation and caregiving systems with a romantic partner indicates not only rarely turning to the romantic partner as a secure base, but also indicates rarely

cooperating with the friend as an affiliation partner, and rarely providing care to the romantic partner (Furman & Wehner, 1994). The caregiving system will not be included in relationships with parents because taking care of parents is not normally practiced during adolescence. Adolescents' sexual/reproductive system in relationships with romantic partners will also not be included because I want scores of different relationships to be comparable (Furman et al., 2002). The similarities and differences between the BSQ and other measures of relationship representations in adolescence and adulthood such as the Adult Attachment Interview (George, Kaplan, & Main, 1985) and adaptations of the AAI to peers (Furman et al., 2002) remain controversial (Branstetter, Furman, & Cottrell, 2009, Furman & Wehner, 1997).

The BSQ for romantic partners was administered by means of nightly diary across several days in order to assess instability (standard deviation) of the representational styles, as well as level (mean) of the representational styles. For the secure style, it is expected that high level scores (i.e., *secure* representations) would be correlated with more stable representations. For the dismissing and preoccupied styles, it is expected that low level scores (i.e., *secure* representations) would be correlated with more stable representations. However, the strengths of the correlations are expected to be weak or moderate because level and instability would not always go in the expected directions. I especially hypothesized that individuals with *secure* (i.e., high level for the secure style, and low level for the dismissing and preoccupied styles) but unstable representations might develop unhealthy inter-personal relationships as described before. The BSQ for parents was administered in person once during the course of the parents' interview to obtain the measure of level (mean) of representational styles. Representational styles with

parents are likely to be stable by late adolescence, and for this reason the BSQ for parents was not administered in the nightly diaries.

Representations of relationships with parents and self-esteem

Theoretical support and the role of fathers. A theoretical framework for the pathway of parental effects on adolescents' self-esteem is provided by attachment theory. Parents' supportive and consistent interaction behaviors help children develop secure internal working models which lead to positive expectations of self (Bowlby, 1982; Thompson, 2007). Numerous empirical studies examined parental effects on adolescents' self-esteem, but many studies still only focused on mothers (Kim & Cicchetti, 2004; Ojanen & Perry, 2007) or used a composite measure of mothers and fathers (Harris et al., 2015; Parker & Benson, 2004). However, studies that differentiated fathers from mothers clearly showed a role of fathers in adolescents' self-esteem, indicating different pathways between mothers and fathers. For example, Gomez and McLaren (2007) found that adolescents' self-esteem mediated a relation between attachment with a parent and adolescents' aggression for both mothers and fathers. Bulanda and Majumdar (2009) found additive effects of mothers' and fathers' availability, as well as interactive effects of mothers' and fathers' involvement and overall relationships on adolescents' self-esteem.

Stability. The stability of one's self-esteem in the face of daily stresses, in addition to the level of one's self-esteem, has been recognized as an important factor in healthy psychological functioning (Kernis, 2005). While level of self-esteem indicates general representations of self-worth, stability of self-esteem indicates short-term fluctuations that individuals experience in their self-worth (Kernis, 2005). Individuals

with unstable self-esteem tend to be highly responsive to daily positive and negative events, and to relate those events to their self-worth even when those are not (Kernis, 2005). Unstable children were more likely to become angry when they felt their self-esteem was threatened than stable children (Waschull & Kernis, 1996), and stability of self-esteem interacted with daily hassles to predict depressive symptoms, while level of self-esteem did not interact with daily hassles (Kernis, Whisenhunt, Waschull, Greenier, Berry, Herlocker, & Anderson, 1988). Research on parental effects on stability of self-esteem is relatively limited compared to research on level of self-esteem. Foster, Kernis, and Goldman (2007) found that level of self-esteem was related to attachment anxiety and avoidance even after controlling stability of self-esteem, while stability of self-esteem was only related to attachment anxiety. Their study showed different mechanisms between level and stability of self-esteem, but they did not state what specific relationships they measured for the attachment. Kernis, Brown, and Brody (2000) found that father-child communication patterns were related to stability of children's self-esteem. For example, children with unstable self-esteem reported that their fathers were critical, psychologically controlling, and less likely to talk about good things that their children did. Mother-child communication patterns were more consistently related to level of self-esteem.

Bidirectional effects. While numerous researchers suggested parental effects on children's development of self (Bowlby, 1982; Thompson, 2007), the possible effects of self-esteem on relationships with parents during adolescence have not been examined. Considering that adolescents with high self-esteem would think that they could solve

their problems by themselves, I expect that adolescents with high self-esteem would use their parents less as a secure base and worry less about parents' rejection.

Furthermore, Kernis (2003, 2005) argued that individuals with unstable high self-esteem would have difficulty in developing intimate relationships because they tend to interpret others' ambiguous actions negatively, which leads to dysfunctional cycles of interactions in the relationships. Individuals with unstable high self-esteem showed higher level of anger and hostility than stable high and unstable/stable low self-esteem groups (Kernis, Grannemann, & Barclay, 1989), and were related to more defensive reactions to negative events (e.g. anger and blame) and aggrandizing reactions to positive events (e.g., feeling superior to others and boasting to a friend) than individuals with stable high self-esteem (Kernis, Greenier, Herlocker, Whisenhunt, & Abend, 1997). Individuals with unstable high self-esteem experienced threat in failure conditions, which was similar with individuals with stable low self-esteem, while individuals with stable high self-esteem experienced challenge in failure conditions (Seery, Blascovich, Weisbuch, & Vick, 2004). Threat and challenge experiences were measured by total peripheral resistance (TPR), which is one of the physiological measures. Similarly, unstable high self-esteem was related to more depressive symptoms than stable high self-esteem, and stable low self-esteem showed the highest depressive symptoms (Vickey, Sepehri, Evans, & Lee, 2008). Exceptionally, a study by De Man and GUTIERREZ (2002) found that individuals with unstable low self-esteem showed higher suicide ideation than stable low self-esteem, and there was no difference in suicide ideation between individuals with stable high self-esteem and unstable high self-esteem. In the current study, effects of level, stability, and the interaction between level and stability of

self-esteem on relationships with parents (representations and interactions) will be examined as well as effects of relationships with parents (representations and interactions) on level and stability of self-esteem.

Measurement. The Rosenberg Self Esteem Scale (RSES) will be used via a nightly diary method to measure both level and instability of self-esteem. Level and instability are expected to be negatively correlated, indicating that low self-esteem is related to unstable self-esteem. However, the strength of the correlation is expected to be weak or medium because level and instability would not always go in the expected directions. Past studies also showed that correlations between level and instability indices ranged from the low 10s to the low 40s (De man et al., 2002; Kernis et al., 2000; Vickery, Sepehri, Evans, & Lee, 2008; Waschull & Kernis, 1996), reflecting that level and instability are related to each other but the two constructs are distinct features of self-esteem. I especially hypothesized that individuals with high level and unstable security might develop unhealthy inter-personal relationships as described before.

The current study

The current study examined two models. First, bidirectional effects between representations of relationships with parents and representations of relationships with romantic partners were examined. Second, bidirectional effects between representations of relationships with parents and self-esteem were examined. In those two models, I differentiated the effects of mothers and fathers. Two indicators including level and stability were included for representations of romantic partners and self-esteem. When level and stability variables were used as predictors in a model, an interaction between level and stability was also included.

Method

Participants

I used data from the Parents and Youth Study (PAYS) which is a five-wave panel study. This study was conducted in two United States metropolitan areas: Phoenix, Arizona and Riverside, California. Data collection started when children were in grade 7 (Wave 1), and conducted again when children were in grade 8 or 9 (Wave 2), and in grade 10 (Wave 3), when the children's mean age was 20 (Wave 4), and when the children's mean age was 22 (Wave 5). I used data from Wave 4 and Wave 5 for the current study. Wave 1 had 392 young adults that participated. At Wave 4, 287 young adults participated, resulting it 27% attrition from Wave 1 to Wave 4. There were 131 boys and 156 girls, 153 European-American and 134 Mexican-American. One hundred seventy-three young adults were from intact-father families (i.e., young adults living with both biological parents in the same household) and 114 young adults were step-father families (i.e., young adults living more than half the time during the year of recruitment with the biological mother and a man "acting in a father role" who was not the biological father). At wave 5, 276 young adults participated, resulting in 4% attrition from Wave 4 to Wave 5. Families who dropped at wave 4 had lower adjusted incomes (M = $54,337 vs. M = $72,197) than families who were retained.

Procedures

Participants were interviewed in their language of preference (English or Spanish) by different interviewers in different rooms either at home or at a university lab. Participants who moved out of state were interviewed by phone. During the in-person interview, participants were trained how they could complete nightly diary checklists.

And then participants were asked to complete the diary checklists via the internet at Wave 4, and via the internet or paper-and pencil at wave 5. They completed the diary checklists before bedtime for 7 consecutive days at Wave 4 and for 5 consecutive days at Wave 5.

Measures

Representations of relationships with mothers and fathers. Participants responded to attachment system and affiliation system scales from the Behavioral Systems Questionnaire (BSQ) for mothers and fathers, respectively. Each system consisted of 5 items of secure style, 5 items of dismissing style, and 5 items of preoccupied style. Full items of the BSQ for parents are listed in Appendix A. The response choices ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). I excluded one case for fathers that showed the same answers on the entire measurement because I believe those answers reflected response bias. The answers could not be the same since the BSQ included different systems and different styles. Reliabilities of the three styles of each system were good for fathers (αs > .80 at W4 and αs > .85 at W5) and mothers (αs > .80 at W4 and αs > .79 at W5). In each system, secure, dismissing, and preoccupied style scores were created by averaging 5 corresponding items. Overall secure, dismissing, and preoccupied style scores were then composed by averaging scores across attachment and affiliation systems based on the behavioral system theory, which explains that young adults' attachment consists of different systems. Finally, secure-dismissing style was created by subtracting dismissing from secure since secure and dismissing scores were highly correlated for both mothers (r= -.76 at W4 and r =-.80 at W5) and fathers (r = -.74 at W4 and r =-84 at W5). In fact, I think the items of secure and dismissing in the BSQ

ask about the same construct. The only difference is that the items of secure are positive (e.g., it is easy for you to turn to [dad] when you have a problem), while items of dismissing are negative (e.g., you do not like to turn to [dad] when you're bothered about something). This method of combining secure and dismissing has been recommended in previous studies (Branstetter et al., 2009; Shomaker et al., 2007). High scores of secure-dismissing reflect more secure (less dismissing), and low scores of secure-dismissing reflect more dismissing (less secure).

Representations of relationships with romantic partners. Participants responded to attachment, affiliation, and caregiving systems from the Behavioral Systems Questionnaire (BSQ) for romantic partners, via nightly diary checklists. Each system consisted of 5 items of secure style, 5 items of dismissing style, and 5 items of preoccupied style. Full items of the BSQ for romantic partners are listed in Appendix B. The response choices ranged from 1 (*strongly disagree*) to 10 (*strongly agree*). I excluded cases that showed the same answers on the entire measurement for each day because I believe those answers reflected response bias. The answers could not be the same since the BSQ included different systems and different styles. Table 2 shows raw numbers of participants by number of participated days and final cases after excluding the response bias cases. After excluding the response bias cases, 182 young adults at Wave 4 and 179 young adults at Wave 5 were found to respond to BSQ for romantic partners at least 1 day. Reliabilities of the three styles of the three systems were acceptable (αs > .73 at W4 and αs > .82 at W5) for all days. For each day, scores of secure-dismissing and preoccupied styles were created with the same procedure as the BSQ for parents. Correlations between secure and dismissing scores showed moderate to

high associations (*r*s= -.46 to -.61 at W4 and *r*s= -.59 to -.72 at W5) for all days. Means of the scores across days were used as level indicators of secure-dismissing and preoccupied styles. Standard deviations of the scores across days were used as stability indicators. Because high scores of standard deviations indicate more unstable representations, a term of *instability* will be used in further analyses.

Self-esteem. Participants responded to 10 items from the Rosenberg Self Esteem Scale (RSES) via nightly diary checklists. Full items of the RSES are listed in Appendix C. The response choices ranged from 1 (*strongly disagree*) to 10 (*strongly agree*). I excluded cases which showed the same answers on the entire measurement for each day because I believe those answers reflected response bias. The answers could not be the same because some items were positive and others were negative. Table 3 shows raw numbers of participants by number of participated days and final cases after excluding the response bias cases. After excluding the response bias cases, 211 young adults at Wave 4 and 184 young adults at Wave 5 were found to respond to RSES at least 1 day. Several items were reverse coded for high scores to indicate better self-esteem. Reliabilities were good for all days (αs > .86 at W4 and αs > .88 at W5). For each day, a total score of self-esteem was created by averaging the 10 items. Finally, mean scores of the total scores across days were used as mean indicators of self-esteem. Standard deviation scores of the total scores across days were used as stability indicators of self-esteem. Because high scores of standard deviations indicate more unstable representations, a term of *instability* will be used in further analyses.

Results

Analytical Plan

Autoregressive and cross-lagged models were utilized in a Structural Equation Modeling (SEM) framework using *M*plus version 7. An example model from Selig and Little's chapter (2012) is presented in Figure 1. Autoregressive and cross-lagged models can control previous levels of variables, which are represented as autoregressive paths (i.e., β_1 and β_4), and estimate the effects of one variable to another, which are represented as cross-lagged paths (i.e., β_2 and β_3; Selig & Little, 2012). Selig and Little (2012) stated that bidirectional effects between variables can be easily estimated in the autoregressive and cross-lagged models. A Maximum likelihood (ML) method was used to handle missing data. The ML method has been recommended as one of the best modern techniques for handling missing data as well as Multiple Imputations (MI; Baraldi & Enders, 2010). The ML uses all available data to generate parameters which best explain the raw data (Baraldi & Enders, 2010). Both ML and MI produce unbiased parameters with missing data, but ML can be more easily used than MI in most softwares by just adding a simple command (Baraldi & Enders, 2010).

Two models (i.e., representations of relationships with parents and romantic partners, and representations of relationships with parents and self-esteem) were examined. Variables at Wave 4 were used as predictors and variables at Wave 5 were used as outcome variables. Level and instability variables at Wave 4 were centered to create interaction variables. Instability variables at both Wave 4 and Wave 5 were log-transformed because of the non-normality. Interaction patterns were further explored for significant interaction effects.

Exploratory analyses to obtain valid diary data

Participants were asked to complete the nightly diary checklists for 7 days at Wave 4 and for 5 days at Wave 5, but some participants completed the checklists for only a few days. This is a problem because level and instability scores of those participants might not be valid. For example, level and instability scores of self-esteem of participants who only responded for two days might not properly represent how they generally (or typically) felt about themselves across time and context, and how much their feelings fluctuated with daily experiences, respectively.

Past studies that included both level and instability of self-esteem used various methods to obtain the level and instability scores. Some studies used a one-time measurement to obtain the level scores, and used diary checklists to obtain the stability scores (Foster et al., 2007; Kernis et al., 2000; Kernis, Cornell, Sun, Berry, & Harlow, 1993; Kernis et al.,1997; Waschull et al., 1996; Kernis, Whisenhunt et al., 1998; Zeigler-Hill & Showers, 2007). Other studies used diary checklists to obtain both the level and instability scores by calculating means and standard deviations across days (Bentall, Myin-Germeys, Smith, Knowles, Jones, Smith, & Tai, 2011; de Man et al., 2002; Seery et al., 2004; Vickery et al., 2008). When studies used diary checklists, they selected cases using a number of participated days to obtain valid scores. However, they used different standards for the cut-off number of participated days across studies. Some studies only used scores of participants who completed 'at least 6 out of 8 assignments' (Forster et al., 2007; Kernis et al., 1988, 1993, 1997; Seery et al., 2004; Vickery et al., 2008), others used scores of participants who completed 'at least 7 out of 10 assignments' (Kernis et al., 2000), '4 out of 10 assignments' (Bentall et al., 2011), or '5 out of 7 days and 10 out

of 14 days' (Zeigler-Hill et al., 2007). No studies provided good rationales for the standards.

In the current study, exploratory analyses were performed to decide on the standard for the cut-off number of participated days. Two models (i.e., romantic partner model and self-esteem model) were fitted to the data with different cut-off numbers of participated days; at least for 2 days, for 3 days, for 4 days, and for 5 days. Models with the cut off of at least for 1 day were not examined because instability indices cannot be calculated with one-time point. The models with the cut off of 'at least for 5 days' showed consistent paths that have also been shown in other models. Other models showed spurious paths that disappeared in the model with the cut off of 'at least for 5 days.' Thus, I decided to only use scores of participants who responded at least for 5 days. Final sample for variables of romantic partners were 115 at W4 and 158 at W5, and final sample for variables of self-esteem were 144 at W4 and 166 at W5. All the following analyses were performed with these final variables.

Models of romantic relationships using different cut-off numbers of participated days (i.e., at least for 2 days, for 3 days, and for 4 days) are presented in Appendix C, and models of self-esteem using different cut-off numbers of participated days (i.e., at least for 2 days, for 3 days, and for 4 days) are presented in Appendix D. The spurious paths that disappeared in the models with the cut off of 'at least for 5 days' are presented as dotted lines in the figures. The models with the cut off of 'at least for 5 days' are final models in the current study, and are presented in Figure 2 and Figure 4. These final models are described in detail in the corresponding section below.

Exploratory analyses for outliers

To consider a possibility that outliers, which are unusual extreme scores, might distort the analyses, exploratory analyses for outliers were conducted. First, Mahalanobis distance, which considers relations among variables to detect outliers, was calculated in the romantic relationships and self-esteem models to detect outliers. Eight participants were detected as suspected outliers in the romantic relationships models, and 6 participants were detected as suspected outliers in the self-esteem models. Among those, 5 participants were the same people who were found as suspected outliers in both models. Generally, after detecting suspected outliers by Mahalanobis distance, researchers check the raw data to see if those are really unusual cases that should be removed from an analysis. However, it was not possible to confirm if the suspected outliers showed unusual relation patterns with other variables by just checking the raw data in the current study because many variables were included in the models of the current study. Indeed, none of cases that were detected as suspected outliers looked like an actual outlier in terms of relations to other variables. However, just to confirm that those were not the actual outliers that should be removed from the analyses of the current study, I decided to run exploratory model analyses after taking out the 5 cases that were detected as suspected outliers.

Compared to the romantic partner model with the suspected outliers (Figure 2), a model without the suspected outliers showed two additional paths. First, level of preoccupied with romantic partners at Wave 4 positively predicted preoccupied with fathers at Wave 5 ($p<.05$). Second, instability of preoccupied with romantic partners at Wave 4 positively predicted preoccupied with mothers at Wave 5 ($p<.05$). Compared to the self-esteem model with the suspected outliers (Figure 4), in a model without the

suspected outliers, the path from instability of self-esteem to secure-dismissing with fathers became marginally significant (β=-.14, p=.068) from significant (β=-.17, p<.05). Since any path in the models with the suspected outliers did not disappear in the models without suspected outliers (although the path from instability of self-esteem to secure-dismissing with fathers changed from 'significant' to 'marginally significant'), I decided to keep the models with the suspected outliers as the final models.

Descriptive Analyses

Correlations, means, and standard deviations of final variables for each model were examined. Table 4 included variables for a model of representations of relationships with parents and romantic partners. Within the same wave, I checked if study variables are working in the way they should be. First, I expected that secure-dismissing would be negatively correlated with preoccupied. For mothers, secure-dismissing and preoccupied were negatively correlated at both waves. For fathers, secure-dismissing and preoccupied were only significantly correlated at Wave 5. For romantic partners, level of secure-dismissing and level of preoccupied were negatively correlated at both waves. Second, I expected that level and instability of secure-dismissing with romantic partners would be negatively correlated, and level and instability of preoccupied with romantic partners would be positively correlated, and the expected correlations were found. Some might argue that these correlations are just artifacts of a ceiling effect of level of secure-dismissing and a floor effect of level of preoccupied. To check this possibility, the mean, skewness and kurtosis of level indicators were examined. The means of secure-dismissing (*Ms* = 4.37 at W4 and 4.84 at W5) were not extremely high, and the means of preoccupied (*Ms* =3.20 at W4 and 3.22 at W5) were not extremely low. Furthermore, the

skewness (from -.88 to .83) and kurtosis (from -.44 to 1.08) were within acceptable ranges.

Next, within the same wave, I checked basic attachment predictions that relationships with mothers and fathers would be related to relationships with romantic partners. Secure-dismissing with mothers and secure-dismissing with fathers were significantly correlated at both waves, and preoccupied with mothers and preoccupied with fathers were significantly correlated at both waves. Secure-dismissing with mothers was significantly correlated with level of secure-dismissing with romantic partners at both waves, but secure-dismissing with fathers was only significantly correlated with level of secure-dismissing with romantic partners at Wave 5. Preoccupied with mothers was significantly correlated with level of preoccupied with romantic partners at both waves, and preoccupied with fathers was significantly correlated with level of preoccupied with romantic partners at both waves.

Finally, I checked evidence for directional paths between parents and romantic partners across waves. Regarding possible effects of relationships with parents on change in relationships with romantic partners, preoccupied with mothers and fathers at Wave 4 were significantly correlated with all romantic partner variables at Wave 5, and secure-dismissing with mothers at Wave 4 was positively correlated with secure-dismissing with romantic partners at Wave 5. Regarding possible effects of relationships with romantic partners on change in relationships with parents, level of secure-dismissing with romantic partners at Wave 4 was correlated with all parental variables at Wave 5, and level of preoccupied with romantic partners at Wave 4 was correlated with all parental variables except for secure-dismissing with fathers. Instability of preoccupied with romantic

partners at Wave 4 was correlated with all parental variables except for secure-dismissing with mothers at Wave 5.

Table 5 included final variables for a model of representations of relationship with parents and self-esteem. First, within the same wave I checked if variables of self-esteem are working in the way they should be. As predicted, level of self-esteem was negatively correlated with instability of self-esteem at both waves. To check the possibility of a ceiling effect of level, the mean, skewness, and kurtosis of level indicators were examined. Means were high (*Ms* = 7.86 at W4 and 8.54 at W5), but the skewness (-.88 at W4 and -.90 at W5) and kurtosis (.49 at W4 and -.09 at W5) were within acceptable ranges.

Next, within the same wave, I checked basic attachment predictions on inter-correlations between relationships with parents and self-esteem. As predicted, secure-dismissing with both mothers and fathers was positively correlated with level of self-esteem at both waves, and preoccupied with both mothers and fathers was negatively correlated with level of self-esteem at both waves.

Finally, I checked evidence for directional paths between parents and self-esteem across waves. Regarding possible effects of relationships with parents on change in self-esteem, preoccupied with mothers and fathers at Wave 4 were significantly correlated with both level and instability of self-esteem at Wave 5, and secure-dismissing with mothers at Wave 4 was positively correlated with level of self-esteem at Wave 5. Regarding possible effects of self-esteem on change in relationships with parents, level of self-esteem at Wave 4 was correlated with all parental variables at Wave 5. Instability of

self-esteem at Wave 4 was correlated with all parental variables at Wave 5 except for secure-dismissing with mothers.

Mean differences for sex, family type, and ethnicity. Table 6 shows mean differences in study variables regarding sex, family type, and ethnicity. T-tests were conducted. Young adults in step-families were more preoccupied with mothers and felt less secure with fathers than those in intact-families at both waves. Young adults in step-families were more stably preoccupied with romantic partners than those in intact-families. Mexican-Americans were more preoccupied with mothers and fathers at both waves than European-Americans. Mexican-Americans felt the security more stably with romantic partners at Wave 5 than European-Americans. Boys felt less secure and more preoccupied with both mothers and fathers at Wave 4. At Wave 5, boys felt less secure with mothers than girls, but did not show differences in other representation styles with parents. Finally, boys felt less secure with romantic partners than girls, but they felt the security more stably than girls at Wave 5.

A model for representations of relationships with parents and romantic partners

Figure 2 shows a model for representations of relationships with parents and romantic partners. First, regarding effects of representations of relationships with parents on representations of relationships with romantic partners, secure-dismissing with mothers at Wave 4 positively predicted level of secure-dismissing with romantic partners at Wave 5 ($\beta = .21$, $p < .05$), and preoccupied with mothers at Wave 4 positively predicted level of preoccupied with romantic partners at Wave 5 ($\beta = .31$, $p < .01$). Second, regarding effects of representations of relationships with romantic partners on representations of relationships with parents, level of secure-dismissing with romantic

partners at Wave 4 positively predicted secure-dismissing with fathers at W5 (β = .20, p < .01), and negatively predicted preoccupied with fathers at Wave 5 (β = -.23, p < .05). Level of preoccupied with romantic partners at Wave 4 also positively predicted preoccupied with mothers at Wave 5 (β = .27, p < .01). Third, within the relationships with parents, secure-dismissing with fathers at Wave 4 positively predicted secure-dismissing with mothers at Wave 5 (β = .16, p < .01). Fourth, within the relationships with romantic partners, an interaction between level and instability of preoccupied with romantic partners at Wave 4 positively predicted level of secure-dismissing with romantic partners at Wave 5 (β = .39, p < .01). The interaction pattern was plotted with simple slopes of three different levels (Figure 3; Aiken & West, 1991; Aiken, 2003). Only the slope for high level of secure-dismissing with romantic partners at Wave 4 was statistically significant (p<.05, N=68), indicating that when young adults showed high level of secure-dismissing with romantic partners at Wave 4, 'unstable' representations were related to later high level of secure-dismissing with romantic partners.

A model for representations of relationships with parents and self-esteem

Figure 4 shows a model for representations of relationships with parents and self-esteem. First, regarding effects of representations of relationships with parents on self-esteem, secure-dismissing with fathers at Wave 4 negatively predicted level of self-esteem at Wave 5 (β = -.17, p < .05). This path was unexpected because positive relationships with parents are normally related to high self-esteem. Second, regarding effects of self-esteem on representations of relationships with parents, level of self-esteem at Wave 4 negatively predicted preoccupied with mothers at Wave 5 (β = -.34, p < .001). Furthermore, instability of self-esteem at Wave 4 negatively predicted secure-

dismissing with fathers at Wave 5 (β = -.17, $p < .05$). Third, within the relationships with parents, secure-dismissing with fathers at Wave 4 positively predicted secure-dismissing with mothers at Wave 5 (β = .17, $p < .01$). Fourth, within self-esteem, level of self-esteem at Wave 4 negatively predicted instability of self-esteem at Wave 5 (β = -.30, $p < .01$).

A **quadratic relation between secure-dismissing with fathers and level of self-esteem**

The meaning of the negative path from secure-dismissing with fathers to level of self-esteem needs to be further explored because the path was not expected. The negative path means that high dismissing (i.e., low secure-dismissing) with fathers was related to high self-esteem, and high secure (i.e., high secure-dismissing) with fathers was related to low self-esteem. The relation between high dismissing with fathers and high self-esteem could be explained by Bartholomew and Horowitz's model for adult attachment (1991). Based on Bowlby's theory on internal working models of others and self, Bartholomew and Horowitz (1991) categorized attachment styles into four categories; secure (positive self and positive other), preoccupied (negative self and positive other), dismissing (positive self and negative other), and fearful (negative self and negative other; Kang et al., 2014). According to their classifications, individuals with the dismissing style would not necessarily have low self-esteem because they have positive self-representations. Although dismissing individuals do not form close personal relationships and do not use the personal relationships to handle their stress, they try to handle their stress by themselves and value self-competence (Park, 2004). Some empirical studies actually found a positive relation between dismissing and self-esteem (Kang, 2014; Bylsma, Cozzarelli, & Sumer, 1997).

If high dismissing (i.e., low secure-dismissing) with fathers is related to high self-esteem, it is possible that a quadratic relation, not a linear relation, would actually explain the relation between secure-dismissing with fathers and level of self-esteem. In other words, high secure (i.e., high secure-dismissing) and high dismissing (i.e., low secure-dismissing) might be related to high self-esteem, while uncertain secure (i.e., medium secure-dismissing) with fathers might be related to low self-esteem. The negative linear relation between secure-dismissing with fathers and level of self-esteem that was found in the model might be an incorrect result due to the use of a linear function to the quadratic relation.

A possibility of the quadratic relation between secure-dismissing with fathers at Wave 4 and level of self-esteem at Wave 5 was explored. First, a simple correlation coefficient between secure-dismissing with fathers and level of self-esteem was .07, p=.416 (see Table 5). This correlation supports the possibility of the quadratic relation between secure-dismissing with fathers and level of self-esteem. If high secure (i.e., high secure-dismissing) and high dismissing (low secure-dismissing) are related to high self-esteem, while uncertain secure (i.e., medium secure-dismissing) is related to low self-esteem, the correlation between secure-dismissing with fathers and self-esteem would be around '0'. Second, a scatterplot between the variables was examined to see the relation between the variables in details (Figure 5). The scatterplot showed a quadratic pattern between secure-dismissing with fathers and self-esteem. Finally, to confirm the quadratic relation, I created a quadratic term of secure-dismissing with fathers, and ran a regression analysis as controlling all other independent variables. Results showed that the quadratic term of secure-dismissing with fathers significantly predicted level of self-esteem (β

= .22, $p < .05$; Table 7). Thus, young adults with high secure (i.e., high secure-dismissing) and high dismissing (i.e., low secure-dismissing) tended to have high level of self-esteem, while young adults with uncertain security (i.e., medium secure-dismissing) tended to show low level of self-esteem.

Exploratory Moderation tests

Exploratory moderation tests for sex, family type, and ethnicity were conducted on significant paths. The moderations were examined using multiple group analyses and chi-square difference tests between nested models where paths of interest were constrained to be equal and models where paths were free to vary across groups. Only 6 moderations among 36 tests (12 significant paths in the two models X 3 moderations) were significant. Since the tests did not suggest consistent and interpretable results, probably due to small sample size for each group, I will just report the findings, but will not provide further interpretations on the moderations.

First, the path from secure-dismissing with mothers to level of secure-dismissing with romantic partners was significantly moderated by sex ($\chi^2_{diff} = 6.83$, $df_{diff} = 1, p < .01$). The path was significant for boys ($\beta = .40, p < .001$), but not for girls ($\beta = .03, p = .788$). Second, the path from secure-dismissing with mothers to level of secure-dismissing with romantic partners was also significantly moderated by family type ($\chi^2_{diff} = 6.36$, $df_{diff} = 1, p < .05$). The path was significant for intact-father families ($\beta = .32, p < .001$), but not for step-father families ($\beta = -.00, p = .986$). Third, the path from level of secure-dismissing with romantic partners to secure-dismissing with fathers was significantly moderated by family type ($\chi^2_{diff} = 6.04$, $df_{diff} = 1, p < .05$). The path was significant for intact-father families ($\beta = .43, p < .001$), but not for step-father families ($\beta = .04, p = .759$). Fourth, the

path from level of secure-dismissing with romantic partners to secure-dismissing with fathers was also significantly moderated by ethnicity ($\chi^2_{diff} = 7.82$, $df_{diff} = 1, p < .01$). The path was significant for European Americans ($\beta = .34, p < .001$), but not for Mexican Americans ($\beta = .05, p = .662$). Finally, the path from an interaction between level and stability of secure-dismissing with romantic partners to level of secure-dismissing with romantic partners was significantly moderated by family type ($\chi^2_{diff} = 7.25$, $df_{diff} = 1, p < .01$), and sex ($\chi^2_{diff} = 4.86$, $df_{diff} = 1, p < .05$). The interaction pattern was plotted for intact families and step families (Figure 6). None of simple slopes of both family types were statistically significant, probably because of the lack of statistical power due to the small sample size (N for intact families = 48, and N for step families = 20), but I included the plots for future research. The interaction pattern for intact families was the same as the overall pattern, indicating that when young adults showed high level of secure-dismissing with romantic partners, 'unstable' representations were related to later high level of secure-dismissing with romantic partners. However, for step families, 'unstable' representations seemed to be related to high level of secure-dismissing with romantic partners for all different level scores, and the relation seems to be stronger for the low level group than other level groups. Next, the interaction pattern was plotted for males and females (Figure 7). For females, the interaction pattern was the same as the overall pattern with the significant simple slope for high level of secure-dismissing with romantic partners was statistically significant ($p<.05$, $N = 47$). For males, none of simple slopes were statistically significant, probably because of the lack of statistical power due to the small sample size ($N = 21$), but I included the plots for future research. For males, 'unstable' representations seemed to be related to low level of secure-dismissing with

romantic partners regardless of different level scores, and the relation seems to be stronger for the low level group than other level groups.

Discussion

Bowlby (1969, 1973) suggested that as a result of experiences with an attachment figure, a child develops an internal working model of relationships, which is a set of expectations that the child unconsciously uses to interpret others' behaviors as either acceptance or rejection of the self, and simultaneously to interpret the self as worthy of love and acceptance or not. This study is an examination of change in working models during emerging adulthood, as evidenced by reciprocal effects among representations of self and representations of relationships with mothers, fathers and romantic partners. I examined romantic relationships in late adolescence as one impetus for change in relationships with parents. Young adults bring to their romantic relationships their working model of relationships, which has been established by their history with their parents. If the romantic partner behaves in ways contrary to the expectations of the model, it can cause changes to the model. A young adult with an insecure relationship history with parents who now has an important attachment relationship with a secure romantic partner could gradually come to expect acceptance rather than rejection from an attachment figure. This modified internal working model could in turn then be applied to re-interpreting the parents' behaviors as more accepting. For example, fathers' unresponsiveness could now be seen as a result of other demands on his time rather than from a lack of caring. In this way, I would expect to find that romantic relationships would explain changes in representations of relationships with parents from Wave 4 to Wave 5 in the current study.

I examined self-esteem in emerging adulthood as a second impetus for change in relationships with parents. Children's self-esteem is developed through secure relationships with parents because high responsiveness from parents makes children feel loved and accepted. Those your adults who have high self-esteem could feel that they could solve their problems by themselves, which in turn could lead them to see, and use, their parents less as a secure base or a source of emotional support. Thus I would expect to find that high self-esteem at Wave 4 would explain changes in representations of relationships with parents at Wave 5.

In the context of these two sets of bidirectional relations -- between parents and romantic partners and between parents and self-esteem -- I compared changes associated with relationships with mothers and fathers, and I examined changes at the level of daily fluctuations in representations of romantic relationships and self-esteem.

Romantic relationships

The current study revealed that only representations of relationships with mothers affected change in young adults' representations of romantic relationships. The absence of longitudinal effects of relationships with fathers on romantic relationships is not consistent with Walper and Wendt (2015). They found that relationships with both mothers and fathers predicted young adults' romantic relationships although the number of effects of fathers was smaller than the number of effects of mothers. One possible reason for the difference in the findings between the two studies might be due to the difference in participants' ages. In Walper and Wendt (2015), the mean age when romantic partners were measured was 18.61, but in the current study, the mean age of young adults at Wave 5 was 22. Thus, it is possible that effects of fathers on romantic

relationships gradually disappear from the late teenage years to the early twenties, while effects of mothers on romantic relationships are still present in the early twenties.

The current study found that young adults' romantic relationships at Wave 4 predicted changes in relationships with both mothers and fathers at Wave 5. The effects of romantic relationships on relationships with parents indicate that new working models that are developed in romantic relationships could lead young adults to re-interpret their parents' behaviors as evidenced by changes in their representations of their security with their parents. Future research on this mechanism including the process of re-interpreting parental behaviors will be necessary to confirm the mechanism.

The finding of the current study on the presence of daily fluctuations in representations of romantic relationships supports the hypothesis that an internal working model is a script-like representation, which can fluctuate with daily experiences. A hypothesis that an internal working model is a script-like representation has been proposed (Waters & Waters, 2006). Based on this hypothesis, Bosman et al. (2014) proposed that insecure attachment would be related to unstable representations, and secure attachment would be related to stable representations. Furthermore, the current study found expected concurrent relations between level and instability of representations. For secure-dismissing with romantic partners, high level scores (i.e., secure representations) were related to stable representations, and for preoccupied with romantic partners, high level scores (i.e., insecure representations) were related to unstable representations. I also expected to find directional paths from level of representations of relationships with parents to instability of representations of romantic relationships. Interestingly, however, the result did not show any expected paths. In other

words, secure attachment did not lead to stable representations, and insecure attachment did not lead to unstable representations.

Contrary to expectations, I found that more fluctuations in secure-dismissing with romantic partners at Wave 4 predicted higher level of secure-dismissing with romantic partners at Wave 5, but only when the level of secure-dismissing with romantic partners at Wave 4 was high. I hypothesize that more fluctuations here might represent experiences in romantic relationships from which young adults could learn about the nature of romantic relationships. For healthy romantic relationships, young adults need to learn characteristics of romantic relationships, which are different from characteristics of relationships with parents. For example, children might ask parents for help whenever they want, but in romantic relationships, they might need to consider partners' moods, situations, or even their personalities to decide about when they can ask for help. Thus, I think that the instability of representations in the current study represented necessary learning experiences for romantic relationships. Moreover, the finding that the positive effect of instability occurred only when the level of secure-dismissing at Wave 4 was high might indicate that the learning experiences might happen only when their basic level of security with romantic partners was high. Because of the basic high level of security, young adults could use those experiences as learning opportunities (e.g., my boyfriend does not want me to ask help during weekdays because he is working), instead of just thinking those experiences as signs of bad romantic relationships (e.g., my boyfriend does not want me to ask help because he does not love me).

Self-esteem

The only parental effect on young adults' self-esteem was found in the quadratic effect from secure-dismissing with fathers at Wave 4 to level of self-esteem at Wave 5. High dismissing with fathers, as well as high secure, predicted better self-esteem. The positive effect of high dismissing with fathers on young adults' self-esteem was not expected, because high dismissing with parents is normally considered as negative relationships with parents, which is related to negative developmental outcomes. The hypothesis by Bartholomew and Horowitz (1991), which argues that individuals with the dismissive type have positive self-concepts and negative inter-personal representations, can explain the positive effect of high dismissing on self-esteem. They found that undergraduate students who were classified as the dismissing type showed high self-confidence. Another study by Bylsma, Cozzarelli, and Sumer (1997) also found that the dismissing group of undergraduate students had high global self-esteem. However, they did not assess attachment styles in relationships with mothers versus fathers, but only asked about individuals' prototypical attachment styles in close relationships. Thus, their hypothesis does not explain why the current study found the relation between high dismissing and high self-esteem only in the relationships with fathers, but not in the relationships with mothers.

I hypothesize that young adults with high dismissing scores with fathers are those who are beginning to obtain independence and autonomy from their fathers. Literally, high dismissing scores on the BSQ mean that they reported not relying on or seeking out their fathers when they were stressed, and not trying to spend time to see or talk with their fathers. Considering the mean age of the participants (mean = 20) at Wave 4, these behaviors could be interpreted as young adults trying to solve their problems by

themselves instead of relying on their fathers, and that they had their own personal relationships that they focused on (e.g., friendship and romantic relationships) more than the relationships with fathers. However, these behaviors do not necessarily mean that they had *bad relationships* with their fathers. For example, they could still love their fathers and think that their fathers were still important for their lives. They just became to be able to solve their stress by themselves and became to have other inter-personal relationships that they needed to focus on.

This interpretation of the relation between high dismissing with fathers and young adults' achievement of autonomy is supported by Kruse and Walper (2008). They measured adolescents' individuation in relation to mothers and fathers by the Munich Individuation Test of Adolescence (MITA; Walper, 1998), which included 5 dimensions: nurturance-seeking, denial of attachment needs, engulfment anxiety, fear of love withdrawal, and ambivalence. By cluster analyses, they found clusters that showed similar patterns for mothers and fathers. They found that relationships with mothers showed three clusters (securely individuated, dependent ambivalent, and avoidant). However, for relationships with fathers they found the same three clusters and one additional cluster, which they named 'detached autonomous'. The 'detached autonomous' cluster showed low scores on all 5 dimensions. This means that they did not seek out nurturance from their fathers, did not feel anxiety and ambivalence from the relationships with fathers, and did not have fear of love withdrawal. However, they did not deny the attachment needs, which meant that they still needed their fathers' affection. This additional group in their study is similar with the group of high dismissing with fathers in the current study. In the current study, high dismissing with fathers meant that

young adults did not rely on their fathers, but it did not necessarily mean that they did not need their fathers' affection or they did not love their fathers. Furthermore, their study found that detached autonomous adolescents showed higher self-confidence than other insecure groups, which is consistent with the current study's finding on the positive effect of high dismissing with fathers on self-esteem.

Additionally, Kruse and Walper (2008) reported that relationships with step-fathers were more likely to be detached-autonomous compared to random sample (average nuclear sample). I checked the current data, and also found that high dismissing with fathers (i.e., less than -2 in the secure-dismissing with fathers; *N*=26) showed higher proportion of step-father families compared to high secure with fathers (i.e., more than 2 in the secure-dismissing with fathers; *N*=58; Table 8). They explained that specific stressors including divorce, or high conflicts might help successful individuation by leading insecurities (e.g., I do not rely on my parents because I do not trust them) or early independence, but evidence for the suggested mechanism should be examined in future research.

The current study suggests that young adults tend to obtain autonomy from their fathers faster than from their mothers. Attachment theorists suggested different roles of mothers and father in children's development (e.g., Grossman et al., 2002). They proposed that while mothers tend to provide security when children are emotionally distressed, fathers tend to provide support when children face challenges. Considering that obtaining independence and autonomy from their parents is a big challenge for young adults, fathers might encourage children to solve their problems by themselves, while mothers still try to give emotional support to the children. However, although

obtaining autonomy from mothers might take longer than obtaining autonomy from fathers, young adults should also obtain autonomy from their mothers because obtaining autonomy from both parents is an important developmental task for young adults to become independent adults. Figure 8 shows scatterplots for the relation between secure-dismissing with mothers at Wave 4 and self-esteem at Wave 5, and for the relation between secure-dismissing with mothers at Wave 5 and self-esteem at Wave 5. At Wave 4 there was only a few young adults who showed high dismissing with mothers. However, at Wave 5 more young adults showed high dismissing with mothers than at Wave 4, and high dismissing with mothers at Wave 5 was related to high self-esteem at Wave 5.

Interestingly, secure-dismissing with fathers at Wave 4 also predicted secure-dismissing with mothers at Wave 5. Considering that the mean of secure-dismissing with mothers dropped from Wave 4 (M= 1.79) to Wave 5 (M= 1.54), and that more young adults became high dismissing with mothers at Wave 5 compared to Wave 4 (Figure 8), it is possible to interpret that high dismissing with fathers at Wave 4 predicted high dismissing with mothers at Wave 5. One possible mechanism for the path is that young adults who obtained autonomy from their fathers at Wave 4 might have desire or tendency to obtain autonomy from their mothers as well. If this mechanism is true, it is highly possible that young adults might initiate this process by solving their problems by themselves in the relationships with mothers, rather than that their mothers initiate the process by encouraging young adults to solve their problems by themselves. This is opposite to the proposed mechanism for obtaining autonomy from fathers, which was described above. For relationships with fathers, fathers might initiate the process of

young adults' achievement of autonomy from fathers by encouraging young adults to solve their problems by themselves. The different mechanisms for young adults' achievement of autonomy from mothers and from fathers might be an interesting topic for future research, which can provide more details on the process of obtaining autonomy from their parents.

The negative effect of uncertain security with fathers (i.e., medium secure-dismissing) on self-esteem provides information on what types of relationships with fathers then can be harmful for young adults' self-esteem. To understand the meaning of uncertain security with fathers, I checked how secure scores and dismissing scores were composed in the uncertain security group. Three compositions were possible to generate the medium secure-dismissing scores: high secure score/high dismissing score, medium secure score/medium dismissing score, and low secure score/low dismissing score. Young adults who had higher scores than -1 but lower score than 1 in secure-dismissing with fathers at Wave 4 were categorized as the 'uncertain security with fathers (N=102)'. Among the young adults in the uncertain security group, 95 young adults showed medium secure scores (more than 2, but less than 4) and medium dismissing scores (more than 2, but less than 4). This indicates that the most young adults in the uncertain security group responded that they sometimes relied on their fathers, but other times they did not. They sometimes tried to spend time with their fathers, but other times they did not. Thus I suspect that uncertain security with fathers indicates young adults who did not show consistent expectations to their fathers, probably because their fathers were not reliable figures who could offer a consistent secure base or consistent affiliation opportunities to the young adults.

Kernis (2005) suggested that instability of self-esteem is a unique feature of self-esteem as well as level of self-esteem, and also argued that individuals with unstable high self-esteem would have difficulties developing healthy relationships. The presence of instability of self-esteem in the current study supports his hypothesis that instability of self-esteem is a unique feature of self-esteem. However, the independent path from instability of self-esteem to secure-dismissing with fathers is not consistent with his hypothesis on the negative role of unstable high self-esteem. One possible reason for the current study's finding might be related to the hypothesis that high dismissing with fathers might indicate young adults who obtained autonomy from their fathers. If high dismissing with fathers indicates young adults who obtained autonomy, it is possible that instability of self-esteem would represent failures and successes that young adults experienced in the process of being autonomous from their fathers. For example, let's suppose that there was a boy who used to ask his father for help whenever he had problems with his girlfriend. When he became 20 years old, he started to solve his problems by himself. Some days he might feel frustrations about himself because he thought he could not solve his problems without his fathers' help, but in other days, he found solutions by himself so he might feel confidence about himself. Thus, the path from instability of self-esteem to secure-dismissing with fathers might indicate the process that young adults' failures and successes in the process of being autonomous from fathers lead to their achievement of autonomy from their fathers.

Finally, the current study found effects of level of self-esteem on changes in preoccupied with mothers and changes in instability of self-esteem. First, high self-esteem in young adults at Wave 4 made young adults worry less about their mothers'

rejection at Wave 5. I also expected that young adults with high self-esteem would use their parents less as a secure base because with high self-esteem would try to solve their problems by themselves rather than relying on their mothers. However, the current study found no effects of young adults' self-esteem on how much they relied on their parents (i.e., secure-dismissing with parents). These findings remove a possibility that young adults with high self-esteem worry less about their mothers' rejection because they use their mothers less as a secure base. Rather, these findings indicate that young adults with high self-esteem worry less about their mothers' rejection directly because of their confidence that they could handle their problems.

Second, level of self-esteem at Wave 4 predicted changes in instability of self-esteem at Wave 5. Young adults with high self-esteem had more fixed stable self-esteem later. Thus, the following overall picture can be drawn from the findings of the self-esteem model. Young adults experience failures and successes in the process of trying to solve their problems by themselves. These experiences shake their self-esteem, which is represented as unstable self-esteem. Through these experiences, they become autonomous from their fathers, which in turn leads to high self-esteem. Once young adults have high self-esteem, their self-esteem becomes stable over time, and leads them to worry less about mothers' rejection. Some people might misinterpret these findings that individuals with high self-esteem then would not become autonomous from their fathers because their self-esteem would not fluctuate. However, this is not correct because the effect of instability of self-esteem was the result after controlling the level of self-esteem. It means that when we suppose that their level of self-esteem is the same, individuals with more unstable self-esteem would become autonomous from their fathers.

In other words, although high self-esteem would fluctuate less than low self-esteem, for every different level of self-esteem group (e.g., low, medium, and high), more unstable self-esteem predicts being autonomous from their fathers.

Implications from both models

A first interesting finding from the two models is that the processes of being autonomous from parents and of having romantic partners as main attachment figures instead of parents happened in the relationships with fathers faster than in the relationships with mothers. The fact that the two processes have something in common suggests a possibility that those two processes might be related to each other. The followings are possible relations between the two processes. First, being autonomous from fathers might cause romantic partners to become main attachment figures instead of fathers. Since fathers' encouragement was suggested as a possible reason for why young adults become autonomous from their fathers, this first possibility can be expanded to the possible path from fathers' encouragement to being autonomous from fathers to having romantic partners as main attachment figures. Second, having romantic partners as main attachment figures might cause being autonomous from fathers. This possibility seems less plausible than the first possibility because if this possibility is true, it means that without romantic relationships, young adults cannot be autonomous from their fathers. Third, there might be the same mechanism that causes both being autonomous from fathers and having romantic partners as main attachment figures instead of fathers, but no directional path between the two. As proposed above, fathers' encouragement for young adults to solve their problems by themselves might be the mechanism that causes the two

processes. Further explorations on the relation between the two processes are necessary to confirm the proposed possibilities.

It should be noted that being autonomous from fathers does not necessarily mean that they would have better romantic relationships. The model did not show any path from secure-dismissing with fathers to romantic relationships, and also supplementary regression analyses including a quadratic term of secure-dismissing with fathers for secure-dismissing with romantic partners (β = .04, p = .790; Table 9) and for preoccupied with romantic partners (β = .08, p = .536; Table 10) did not show the effect of the quadratic term of secure-dismissing with fathers. Thus although being autonomous from their fathers might be related to the fact that romantic partners become main attachment figures instead of fathers, being autonomous from their fathers does not necessarily mean that they would have better romantic relationships.

Another interesting finding from both models is that there were no autoregressive paths between Wave 4 and Wave 5 for all instability variables. The correlations between Wave 4 and Wave 5 were even not significant, and small (r = -.07 for instability of secure-dismissing with romantic partners, r = .17 for instability of preoccupied with romantic partners, and r = .15 for instability of self-esteem). This lack of stability of instability variables in the current study might be due to the fact that the young adults in the current study were in the developmental transition. At Wave 4, the mean age of young adults was 20. This age period is a critical period when young adults experience their romantic relationships without their parents' control, and when they experience failures and successes in the process of obtaining autonomy from their parents. Table 11 shows means, standard deviations, skewness, and kurtosis for the instability variables at

Wave 4 and Wave 5. The means and standard deviations became smaller, and the skewness and kurtosis became larger at Wave 5, which means that the representations became stable and the range of scores became smaller from Wave 4 to Wave 5. This interpretation also supports the unique developmental roles of the instability of representations of romantic relationships and self-esteem at Wave 4 which were described above.

Finally, while level of representations of self-esteem affected changes in instability of representations of self-esteem, level of representations with romantic relationships did not affect changes in instability of representations with romantic relationships. This difference might indicate possible different mechanisms for self-esteem and romantic relationships. Another possibility is that the directional path from level to instability for romantic relationships might be found only when level and instability were measured within the romantic relationship that lasted long with the same person. Future research needs to check this possibility.

Questions for future research

The current study has some limitations, which leads to questions for future research. First, the current study did not ask young adults about whether they were in the same romantic relationships from Wave 4 to Wave 5, or how long they had been in the same romantic relationships. Inclusion of such factors as moderators or control variables would provide clearer understanding on romantic relationships. Second, the current study assumes that there would be one internal working model for each individual. However, the findings on different mechanisms between mothers and fathers in relations to romantic relationships and self-esteem suggest a possibility of separate internal working

models for mothers and fathers. Furthermore, the findings on possible different mechanisms for romantic relationships and self-esteem suggest a possibility of separate internal working models for inter-personal relationships and self. Future research including a construct for an internal working model (e.g., latent construct encompassing different relationships and self) would be necessary to clarify the assumption on the internal working model. Third, the current study was designed to explore bidirectional relations -- between parents and romantic partners and between parents and self-esteem -- with the considerations of a role of fathers and instability of representations. Thus, many findings in the current study are new in this research area, and many proposed explanations for the new findings in the current study have not yet empirically examined. Future research will need to verify the findings and proposed explanations.

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APPENDIX A

TABLES AND FIGURES

Table 1

Creating BSQ Style Scores for Each Relationship

Style	Mother-Adolescent		Father-Adolescent		Romantic partner-Adolescent		
	Attachment system	Affiliation system	Attachment system	Affiliation system	Attachment system	Affiliation system	Caregiving system
Secure	Single score		Single score		Single score		
Dismissing	Single score		Single score		Single score		
Preoccupied	Single score		Single score		Single score		

Table 2

Number of Raw and Final (Deleting Response Bias) Cases by Number of Participated Days for BSQ

		7 days	6 days	5 days	4 days	3 days	2 days	1 day	0 day	Total
Wave 4	Raw cases	117	9	6	6	10	17	30	92	287
	Final cases	93	14	8	6	14	18	30	104	287
Wave 5	Raw cases	--	--	159	7	3	4	6	97	276
	Final cases			158	6	3	6	6	97	276

Table 3

Number Raw and Final (Deleting Response Bias) Cases by Number of Participated Days for Self-Esteem

		7 days	6 days	5 days	4 days	3 days	2 days	1 day	0 day	Total
Wave 4	Raw cases	133	12	8	4	10	17	27	76	287
	Final cases	115	17	12	6	11	20	30	76	287
Wave 5	Raw cases	--	--	168	6	2	3	5	92	276
	Final cases			166	7	2	4	5	92	276

Table 4

Means, Standard Deviations, and Intercorrelations for Variables of a Romantic Partner Model

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Wave 4																
1. S-D with M	--															
2. P with M	-.41**	--														
3. S-D with D	.33**	-.27**	--													
4. P with D	-.19**	.52**	-.10	--												
5. Level of S-D with RP	.19*	-.33**	.09	-.26**	--											
6. Instability of S-D with RP	-.21*	.17	-.06	.04	-.22*	--										
7. Level of P with RP	-.07	.27**	-.19*	.25**	-.37**	.07	--									
8. Instability of P with RP	-.12	.19*	-.18	.15	-.26**	.44**	.36**	--								
Wave 5																
9. S-D with M	.57**	-.26**	.38**	-.12	.26**	-.16	-.20*	-.11	--							
10. P with M	-.21**	.47**	-.25**	.32**	-.29**	.06	.44**	.27**	-.38**	--						
11. S-D with D	.22**	-.27**	.67**	-.14*	.34**	-.15	-.20	-.23*	.41**	-.32**	--					
12. P with D	-.07	.32**	-.20**	.54**	-.40**	.08	.43**	.26*	-.18**	.48**	-.28**	--				
13. Level of S-D with RP	.28**	-.25**	.09	-.27**	.53**	-.12	-.28*	-.12	.30**	-.28**	.17*	-.26**	--			
14. Instability of S-D with RP	-.13	.19*	-.12	.17*	-.09	-.07	.09	-.01	-.03	.15	-.11	.12	-.33**	--		
15. Level of P with RP	-.13	.35**	-.15	.22**	-.14	-.02	.60**	.23	-.04	.34**	-.19*	.34**	-.30**	.17*	--	
16. Instability of P with RP	-.11	.22*	-.13	.20*	.01	.02	.29*	.17	.00	.16	-.11	.28**	-.18*	.31**	.47**	--
M	1.79	2.03	0.52	2.12	0.00	0.00	0.00	0.00	1.54	1.96	0.60	2.06	4.84	-0.44	3.22	-1.06
Range	-4-4	1-5	-4-4	1-5	--	--	--	--	--	--	-4-4	1-5	-4-4	1-5	-9-9	--
SD	1.28	0.64	1.75	0.63	3.06	0.74	1.76	0.84	1.43	0.65	1.77	0.73	2.80	0.78	1.83	1.04

Note. S-D with M = Secure-dismissing with mom. P with M = Preoccupied with mom. S-D with D = Secure-dismissing with dad. P with D = Preoccupied with dad. S-D with RP = Secure-dismissing with romantic partners. P with RP = Preoccupied with romantic partners. Instability indicators at both Wave 4 Wave 5 were log-transformed. * $P < .05$. ** $P < .01$.

Table 5

Means, Standard Deviations, and Intercorrelations for Variables of a Self-esteem Model

	1	2	3	4	5	6	7	8	9	10	11	12
Wave 4												
1. S-D with M	--											
2. P with M	-.41**	--										
3. S-D with D	.33**	-.27**	--									
4. P with D	-.19**	.52**	-.10	--								
5. Level of self-esteem	.29**	-.37**	.27**	-.25**	--							
6. Instability of self-esteem	-.24**	.22**	-.19*	.11	-.37**							
Wave 5						--						
7. S-D with M	.57**	-.26**	.38**	-.12	.29**	-.16	--					
8. P with M	-.21**	.47**	-.25**	.32**	-.45**	.22*	-.38**	--				
9. S-D with D	.22**	-.27**	.67**	-.14*	.35**	-.25**	.41**	-.32**	--			
10. P with D	-.07	.32**	-.20**	.54**	-.35**	.18*	-.18**	.48**	-.28**	--		
11. Level of self-esteem	.18*	-.23**	.07	-.21*	.67**	-.22*	.21**	-.40**	.18*	-.17*	--	
12. Instability of self-esteem	-.01	.19*	-.13	.20*	-.35**	.15	-.03	.31**	-.19*	.30**	-.50**	--
M	1.79	2.03	0.52	2.12	0.00	0.00	1.54	1.96	0.60	2.06	8.54	-1.20
Range	-4-4	1-5	-4-4	1-5	--	--	--	-4-4	1-5	-4-4	1-5	1-10
SD	1.28	0.64	1.75	0.63	1.50	0.85	1.43	0.65	1.77	0.73	1.23	0.97

Note. S-D with M = Secure-dismissing with mom. P with M = Preoccupied with mom. S-D with D = Secure-dismissing with dad. P with D = Preoccupied with dad. Instability of self-esteem at Wave 4 and Wave 5 were log-transformed. * $P < .05$. ** $P < .01$.

Table 6

Mean differences in study variables by sex, family type, and ethnicity

	Sex			Family type			Ethnicity		
	Boy	Girl	*p*	Intact	Step	*p*	EA	MA	*p*
Wave 4									
S-D with M	1.43	2.10	.000	1.79	1.79	.993	1.82	1.76	.724
P with M	2.16	1.93	.002	1.94	2.18	.002	1.88	2.20	.000
S-D with D	0.26	0.74	.020	0.92	-0.09	.000	0.57	0.47	.622
P with D	2.22	2.03	.009	2.16	2.06	.186	1.97	2.29	.000
Level of S-D with RP	-0.36	0.18	.378	-0.22	0.49	.248	0.11	-0.14	.662
Instability of S-D with RP	-0.01	0.01	.902	-0.01	0.02	.858	-0.06	0.08	.331
Level of P with RP	-0.16	0.08	.503	-0.15	0.34	.167	-0.03	0.04	.851
Instability of P with RP	-0.16	0.08	.167	-0.09	0.20	.092	-0.06	0.08	.371
Level of Self-esteem	0.18	-0.09	.303	-0.02	0.05	.804	-0.04	0.05	.738
Instability of Self-esteem	0.04	-0.02	.697	-0.06	0.13	.231	-0.14	0.18	.026
Wave 5									
S-D with M	1.14	1.88	.000	1.59	1.48	.543	1.45	1.65	.255
P with M	1.95	1.97	.778	1.89	2.07	.020	1.82	2.13	.000
S-D with D	0.41	0.74	.134	0.96	-0.03	.000	0.65	0.53	.584
P with D	2.10	2.04	.528	2.12	1.97	.131	1.94	2.21	.002
Level of S-D with RP	4.05	5.36	.004	4.64	5.20	.231	4.86	4.82	.935
Instability of S-D with RP	-0.26	-0.56	.018	-0.46	-0.41	.673	-0.58	-0.26	.011
Level of P with RP	3.37	3.13	.413	3.06	3.52	.128	3.20	3.25	.882
Instability of P with RP	-0.95	-1.13	.294	-1.20	-0.80	.021	-1.08	-1.02	.691
Level of Self-esteem	8.62	8.49	.532	8.62	8.40	.264	8.47	8.63	.424
Instability of Self-esteem	-1.27	-1.15	.419	-1.25	-1.11	.383	-1.25	-1.14	.494

Note. S-D with M = Secure-dismissing with mom. P with M = Preoccupied with mom. S-D with D = Secure-dismissing with dad. P with D = Preoccupied with dad. S-D with RP = Secure-dismissing with romantic partners. P with RP = Preoccupied with romantic partners. Instability indicators at Wave 5 were log-transformed.

Table 7

A Regression Analysis for a Quadratic Term of Secure-Dismissing with Fathers at Wave 4 on Level of Self-Esteem at Wave 5 as Controlling Other Independent Variables

	B	*SE B*	*β*	*t*	*p*
Secure-dismissing with mothers at W4	-.071	.100	-.074	-.718	.475
Preoccupied with mothers at W4	-.043	.239	-.022	-.178	.859
Secure-dismissing with fathers at W4	-.121	.065	-.171	-1.882	.064
Preoccupied with fathers at W4	.344	.272	.160	1.265	.210
Level of self-esteem at W4	.751	.097	.806	7.759	.000
Instability of self-esteem at W4	.127	.181	.094	.703	.484
Interaction between level and instability of self-esteem at W4	.003	.102	.004	.032	.975
A quadratic term of secure-dismissing with fathers at W4	.069	.033	.216	2.084	.040

Note. W4 = Wave 4. Except for the quadratic term of secure-dismissing with fathers at W4, all variables are linear terms.

Table 8

Number of Cases and Proportion of Family Type between 'High Dismissing (i.e., Low Secure-Dismissing) with Fathers' and 'High Secure (i.e., High Secure-Dismissing) with Fathers'

	Family type				
	Intact N (%)	Step N (%)	Total N (%)	χ^2	p
High dismissing with fathers	7 (26.9)	19 (73.1)	26 (100)	18.03	.000
High secure with fathers	44 (75.9)	14 (24.1)	58 (100)		

Table 9

A Regression Analysis for a Quadratic Term of Secure-Dismissing with Fathers at Wave 4 on Level of Secure-Dismissing with Romantic Partners at Wave 5 as Controlling Other Independent Variables

	B	*SE B*	*β*	*t*	*p*
Secure-dismissing with mothers at W4	.004	.268	.002	.015	.988
Preoccupied with mothers at W4	-.050	.693	-.012	-.072	.943
Secure-dismissing with fathers at W4	-.119	.185	-.073	-.644	.522
Preoccupied with fathers at W4	-.928	.866	-.194	-1.072	.288
Level of secure-dismissing with romantic partners at W4	.306	.128	.333	2.397	.020
Instability of secure-dismissing with romantic partners at W4	.136	.549	.034	.248	.805
Interaction between level and instability of secure-dismissing with romantic partners at W4	.314	.163	.234	1.922	.060
Level of preoccupied with romantic partners at W4	-.293	.190	-.191	-1.538	.130
Instability of preoccupied with romantic partners at W4	.250	.539	.084	.463	.645
Interaction between level and instability of preoccupied with romantic partners at W4	.113	.275	.064	.410	.684
A quadratic term of secure-dismissing with fathers at W4	.026	.097	.036	.267	.790

Note. W4 = Wave 4. Except for the quadratic term of secure-dismissing with fathers at W4, all variables are linear terms.

Table 10

A Regression Analysis for a Quadratic Term of Secure-Dismissing with Fathers at Wave 4 on Level of Preoccupied with Romantic Partners at Wave 5 as Controlling Other Independent Variables

	B	*SE B*	*β*	*t*	*p*
Secure-dismissing with mothers at W4	.060	.183	.043	.329	.743
Preoccupied with mothers at W4	.614	.473	.217	1.298	.200
Secure-dismissing with fathers at W4	.026	.126	.023	.209	.836
Preoccupied with fathers at W4	.158	.591	.048	.267	.790
Level of secure-dismissing with romantic partners at W4	.011	.087	.018	.130	.897
Instability of secure-dismissing with romantic partners at W4	-.375	.375	-.135	-1.001	.321
Interaction between level and instability of secure-dismissing with romantic partners at W4	.050	.111	.054	.448	.656
Level of preoccupied with romantic partners at W4	.568	.130	.540	4.380	.000
Instability of preoccupied with romantic partners at W4	-.049	.368	-.024	-.133	.895
Interaction between level and instability of preoccupied with romantic partners at W4	-.163	.188	-.135	-.868	.389
A quadratic term of secure-dismissing with fathers at W4	.041	.066	.083	.623	.536

Note. W4 = Wave 4. Except for the quadratic term of secure-dismissing with fathers at W4, all variables are linear terms.

Table 11

Means, Standard Deviations, Skewness, and Kurtosis of Instability Variables at Wave 4 and Wave 5

	Mean	Standard deviation	Skewness	Kurtosis
Wave 4				
Instability of S-D with RP	1.12	2.11	2.11	5.56
Instability of Preoccupied with RP	0.76	0.93	0.93	0.32
Instability of self-esteem	0.75	1.27	1.27	1.25
Wave 5				
Instability of S-D with RP	0.85	0.76	3.48	17.39
Instability of Preoccupied with RP	0.50	0.38	1.69	3.70
Instability of self-esteem	0.42	0.35	2.18	6.97

Note. S-D with RP = Secure-dismissing with romantic partners. P with RP = Preoccupied with romantic partners.

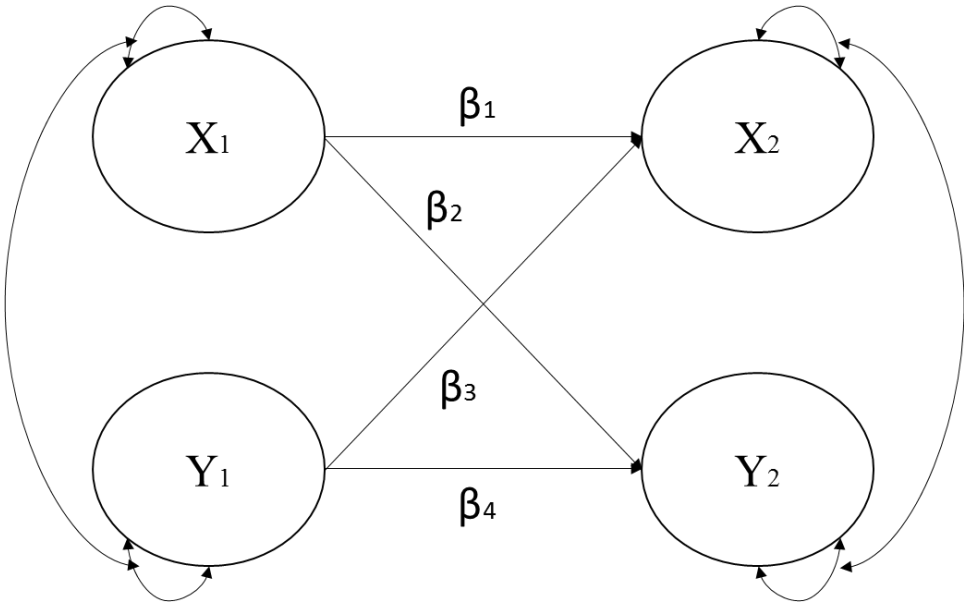


Figure 1. An example model of autoregressive and cross-lagged panel model for a two-wave from Selig and Little (2012)

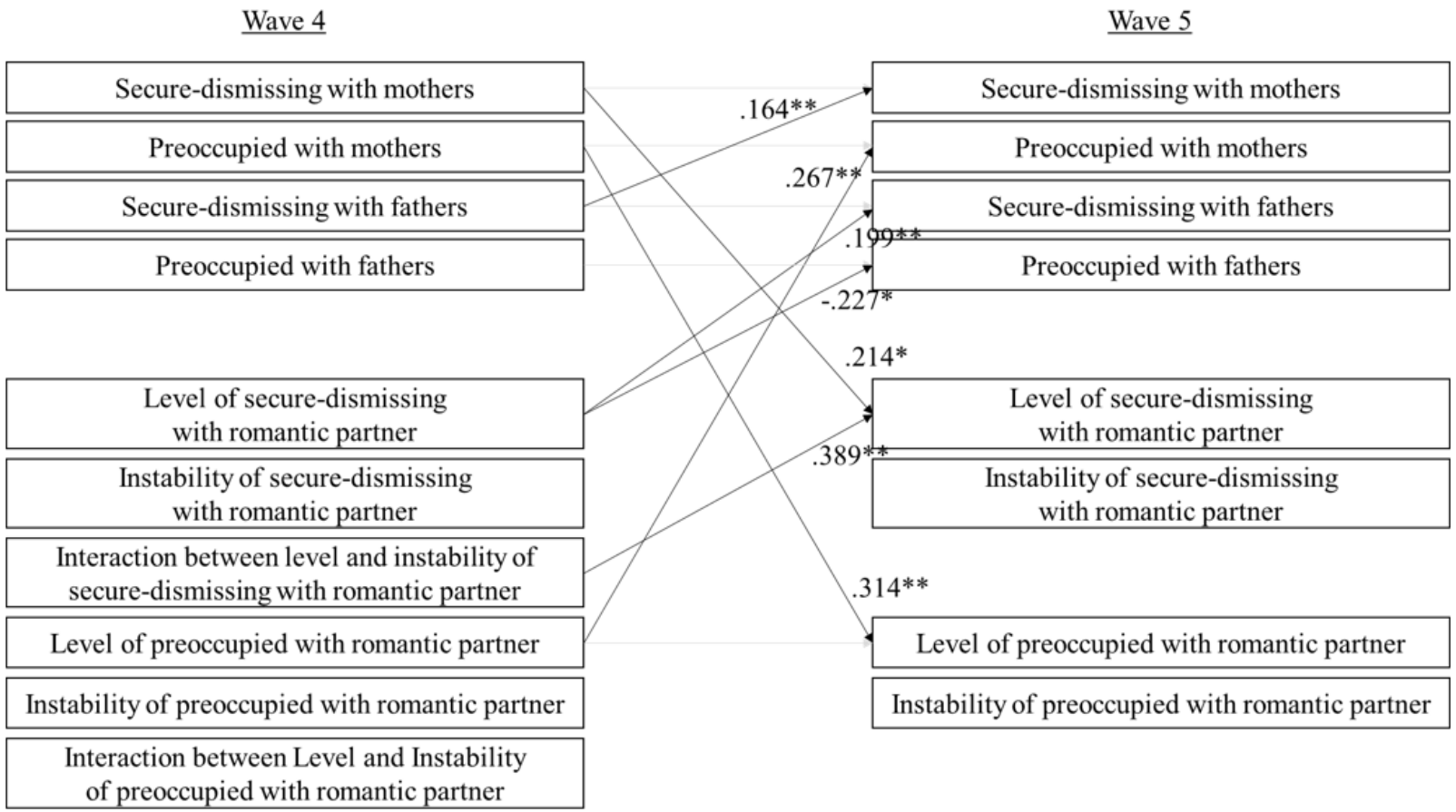


Figure 2. A model of representations of relationships with parents and representations of relationships with romantic partners. Non-significant paths and correlations between variables within the same wave are omitted for ease of interpretation. The grey paths are significant auto-regressive paths. *p < .05. **p < .01. ***p < .001.

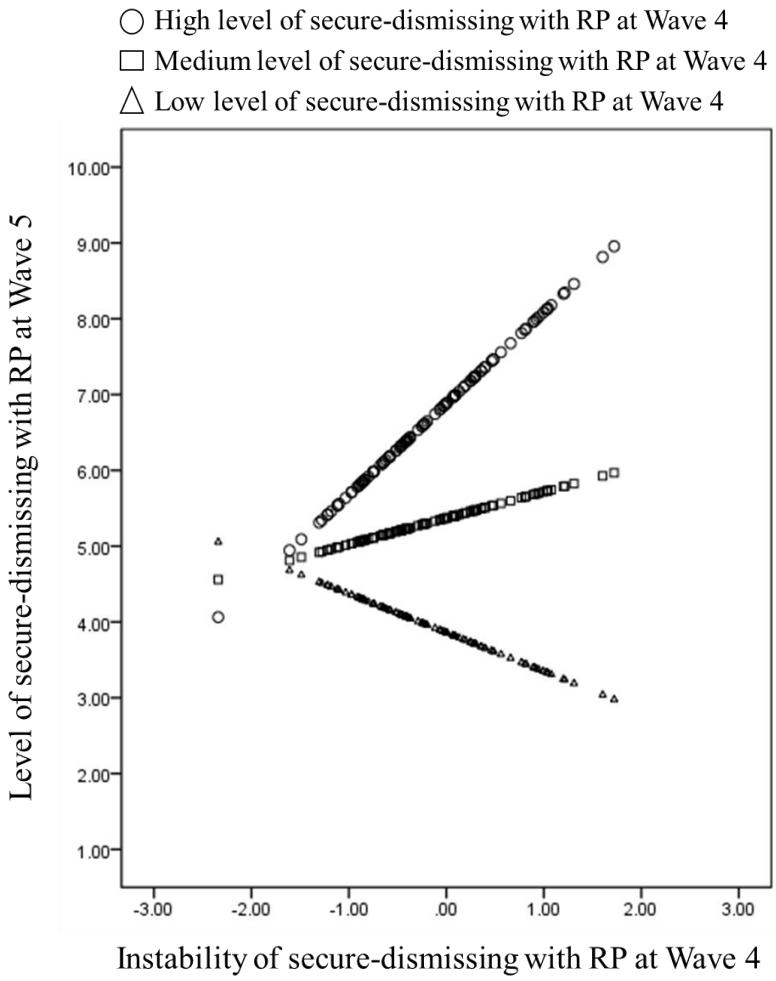


Figure 3. Interaction pattern between level and instability of secure-dismissing with romantic partners at Wave 4 for level of secure-dismissing with romantic partners at Wave 5 (*N*=68).

Note. RP = Romantic partners. W4 = Wave 4. W5 = Wave 5. Only the simple slope for the high level of secure-dismissing with romantic partners at Wave 4 was statistically significant ($p<.05$).

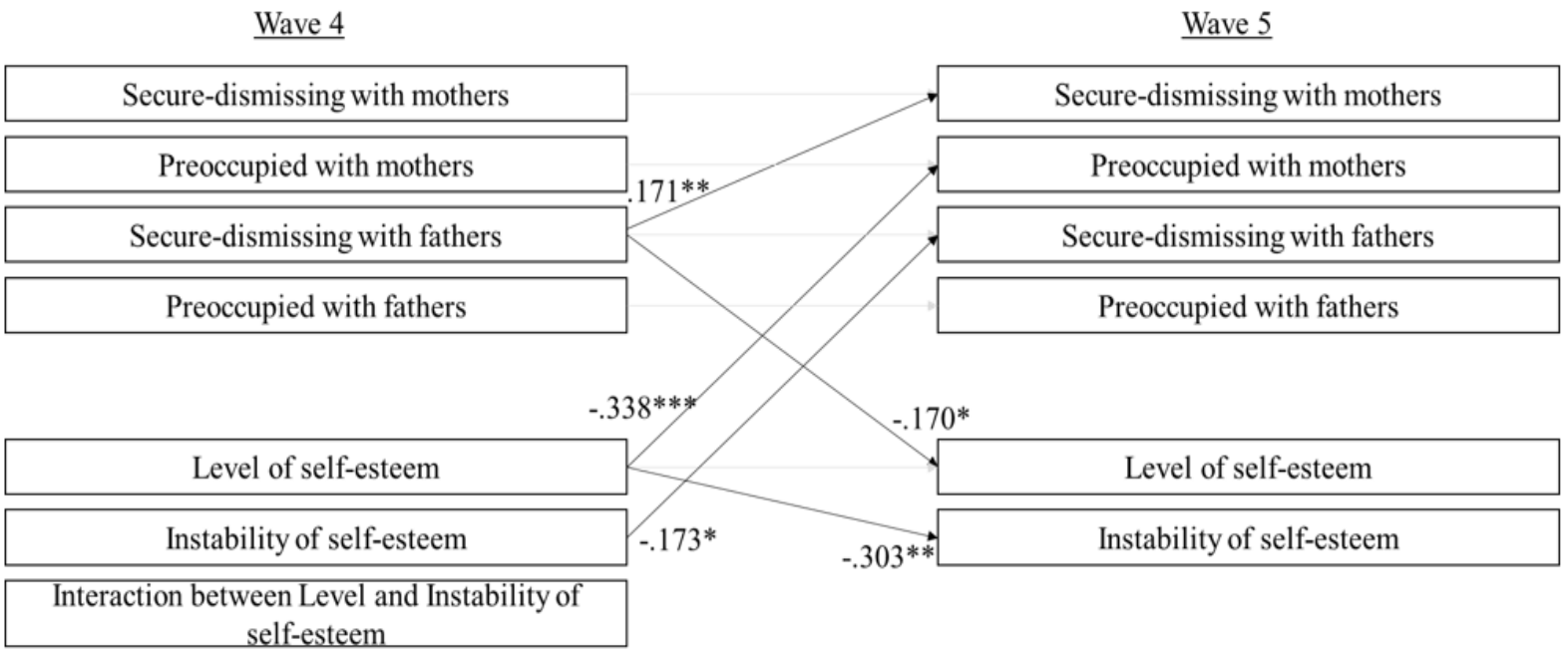


Figure 4. A model of representations of relationships with parents and self-esteem. Non-significant paths and correlations between variables within the same wave are omitted for ease of interpretation. The grey paths are significant auto-regressive paths. *p < .05. **p < .01. ***p < .001.

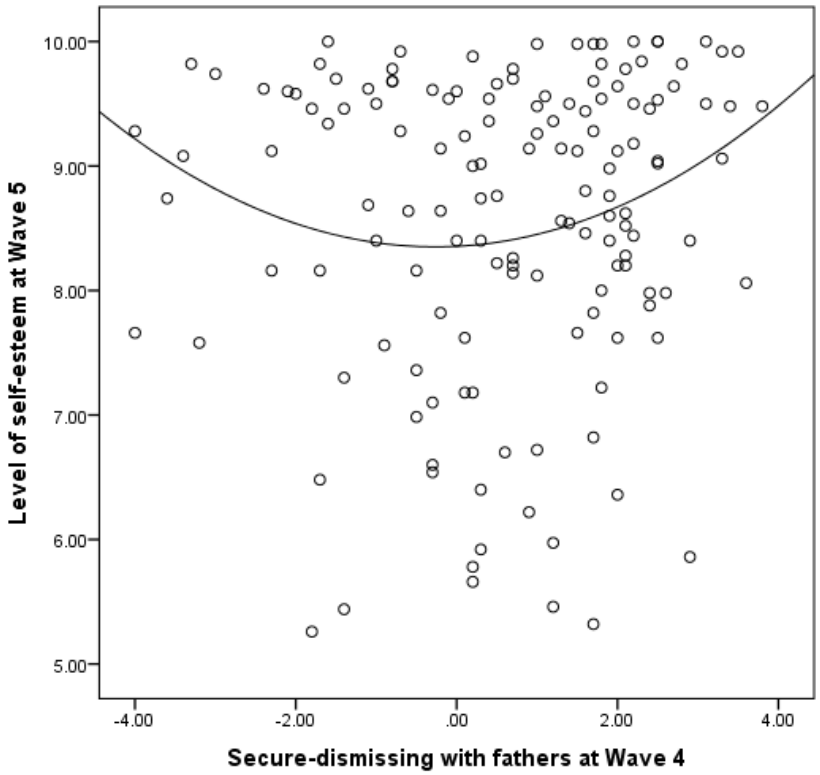


Figure 5. A scatterplot between secure-dismissing with fathers at Wave 4 and level of self-esteem at Wave 5 with a quadratic regression line.

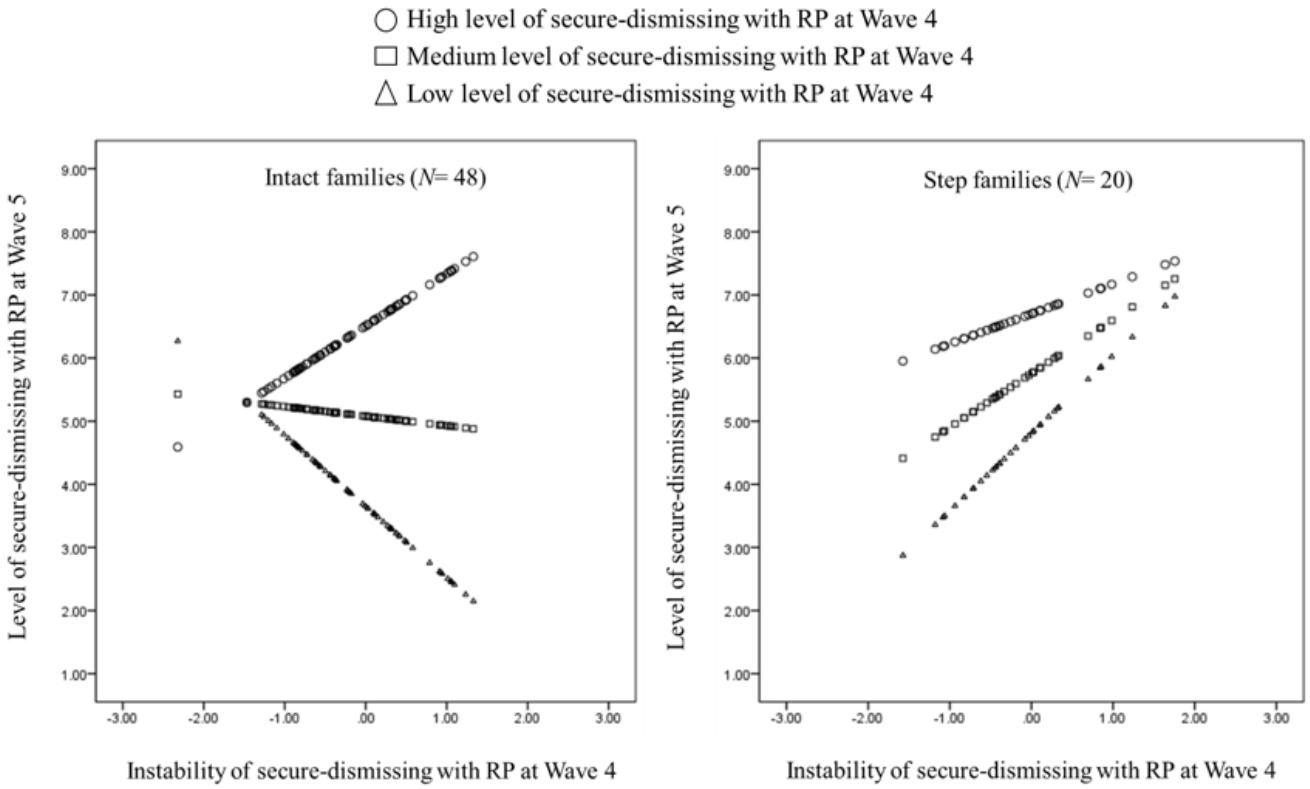


Figure 6. Interaction pattern between level and instability of secure-dismissing with romantic partners at Wave 4 for level of secure-dismissing with romantic partners at Wave 5 for intact families and step families.

Note. RP = Romantic partners. W4 = Wave 4. W5 = Wave 5. None of simple slopes were statistically significant.

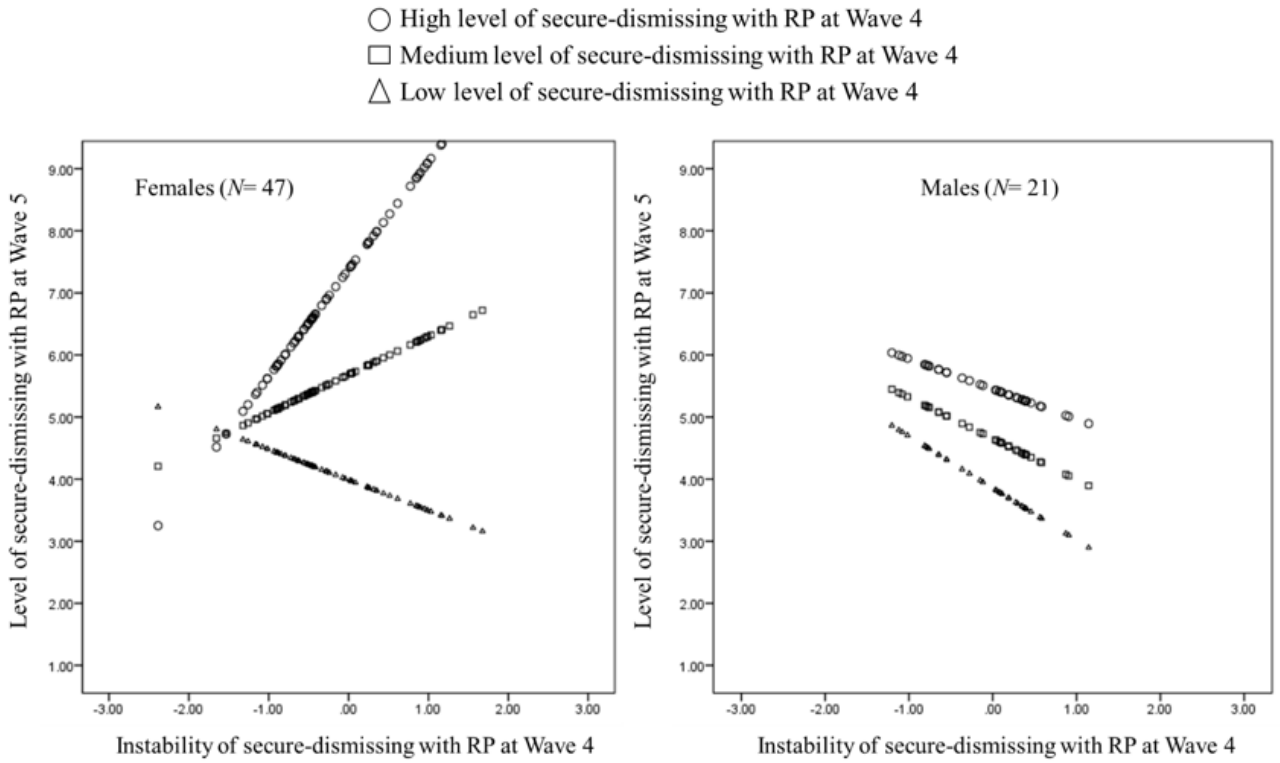


Figure 7. Interaction pattern between level and instability of secure-dismissing with romantic partners at Wave 4 for level of secure-dismissing with romantic partners at Wave 5 for females and males.

Note. RP = Romantic partners. W4 = Wave 4. W5 = Wave 5. Only the simple slope for the high level of secure-dismissing with romantic partners at Wave 4 for females was statistically significant (p<.05).

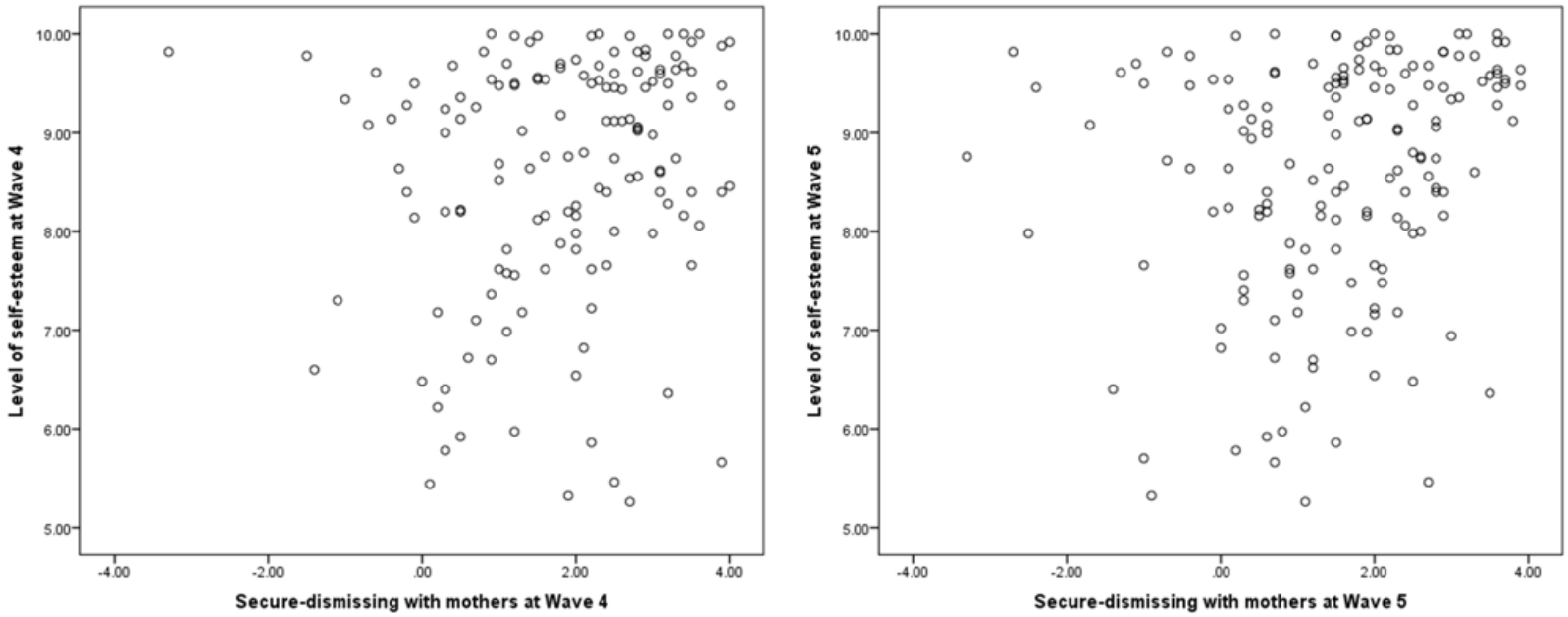


Figure 8. Scatterplots for the relation between secure-dismissing with mothers at Wave 4 and level of self-esteem at Wave 5, and the relation between secure-dismissing with mothers at Wave 5 and level of self-esteem at Wave 5.

APPENDIX B

MESURES

Behavioral Systems Questionnaire (BSQ) for mothers and fathers

Attachment system

Secure items = 2, 4, 8, 12, 13

Dismissing items = 5, 6, 10, 11, 14

Preoccupied items = 1, 3, 7, 9, 15

1. Your mom/dad acts as if you count on her/his too much.

2. You consistently turn to your mom/dad when you are upset or worried.

3. You are afraid that you turn to your mom/dad more often than she/he wants you to.

4. You seek out your mom/dad when something bad happens.

5. You are not the kind of person who quickly turns to your mom/dad in times of need.

6. You do not often ask your mom/dad to comfort you.

7. You feel that your mom/dad believes that you depend on her too often.

8. You rely on your mom/dad when you're having troubles.

9. You worry that your mom/dad thinks you need to be comforted too much.

10. You rarely feel like you need help from your mom/dad

11. You rarely turn to your mom/dad when you are upset.

12. You seek out your mom/dad for comfort and support.

13. It is easy for you to turn to your mom/dad when you have a problem.

14. You do not like to turn to your mom/dad when you're bothered about something.

15. You are afraid that your mom/dad thinks you are too dependent.

Affiliation system

Secure = 2, 6, 9, 10, 15

Dismissing = 4, 5, 8, 12, 14

Preoccupied = 1, 3, 7, 11, 13

1. You contribute more to making your relationship work than your mom/dad does.

2. Both your mom/dad and you make frequent efforts to see or talk with each other.

3. Spending time together is more important to you than to your mom/dad.

4. Truthfully, your relationship with your mom/dad are just not very important to you.

5. You do not want to put much energy into your relationship with your mom/dad.

6. Your mom/dad and you jointly make the important decisions in your relationship.

7. You want to do more things with your mom/dad than she/he wants to do.

8. You do not put much effort into trying to have good relationship with your mom/dad.

9. Your mom/dad and you both contribute a lot to your relationship.

10. Your relationship is valued by both your mom/dad and you.

11. You find that your mom/dad is reluctant to get as close as you would like.

12. You are not very invested in your relationship with your mom/dad

13. You want to be closer to your mom/dad than she/he wants to be with you.

14. You are not very interested in making your relationship with your mom/dad the best it could be.

15. Your mom/dad and you really try to understand each others' points of view.

Behavioral Systems Questionnaire (BSQ) for romantic partners

Attachment system

Secure items = 2, 4, 8, 12, 13

Dismissing items = 5, 6, 10, 11, 14

Preoccupied items = 1, 3, 7, 9, 15

1. “My romantic partners” act as if I count on them too much.

2. I consistently turn to “my romantic partners” when upset or worried.

3. I am afraid that I turn to “my romantic partners” more often than they want me to.

4. I seek out “my romantic partners” when something bad happens.

5. I am not the kind of person who quickly turns to “my romantic partners” in times of need.

6. I do not often ask “my romantic partners” to comfort me.

7. I feel that “my romantic partners” believe that I depend on them too often.

8. I rely on “my romantic partners” when I’m having troubles.

9. I worry that “my romantic partners” think I need to be comforted too much.

10. I rarely feel like I need help from “my romantic partners.”

11. I rarely turn to “my romantic partners” when upset.

12. I seek out “my romantic partners” for comfort and support.

13. It’s easy for me to turn to “my romantic partners” when I have a problem.

14. I do not like to turn to “my romantic partners” when I’m bothered about something.

15. I am afraid that “my romantic partners” think that I am too dependent.

Caregiving system

Secure items = 3, 6, 8, 11, 12

Dismissing items = 1, 2, 5, 9, 13

Preoccupied items = 4, 7, 10, 14, 15

1. I would rather “my romantic partners” work out their problems by themselves.

2. I am not comfortable dealing with “my romantic partners” when they are worried or bothered about a problem.

3. I enjoy being able to take care of “my romantic partners.”

4. I often help “my romantic partners” more than they need or want.

5. I do not like having to comfort or reassure “my romantic partners.”

6. I find it easy to be understanding of “my romantic partners” and their needs.

7. I get too wrapped up in my “my romantic partners” worries.

8. I feel comfortable with “my romantic partners” coming to me for help.

9. I do not like “my romantic partners” to depend on me for help.

10. I create difficulties by taking on “my romantic partners” problems as if they were mine.

11. I am comfortable with the responsibilities of caring for “my romantic partners.”

12. It is relatively easy to respond to “my romantic partners” needs.

13. I want “my romantic partners” to be independent and not need me.

14. I get over-involved in “my romantic partners” problems.

15. Sometimes I try to comfort “my romantic partners” more than the situation calls for.

Affiliation system

Secure = 2, 6, 9, 10, 15

Dismissing = 4, 5, 8, 12, 14

Preoccupied = 1, 3, 7, 11, 13

1. I contribute more to making our relationship work than “my romantic partners” do.

2. Both “my romantic partners” and I make frequent efforts to see or talk with each other.

3. Spending time together is more important to me than to “my romantic partners.”

4. Truthfully, my relationships with “my romantic partners” are just not that important to me.

5. I do not want to put much energy into my relationship with “my romantic partners.”

6. “my romantic partners” and I jointly make the important decisions in our relationship.

7. I want to do more things with “my romantic partners” than they want to.

8. I do not put much effort into trying to have good relationships with “my romantic partners.”

9. " my romantic partners” and I both contribute a lot to our relationship.

10. Our relationship is valued by both “my romantic partners” and me.

11. I find that “my romantic partners” are reluctant to get as close as I would like.

12. I am not very invested in my relationships with “my romantic partners.”

13. I want to be closer to “my romantic partners” than they want to be with me.

14. I am not very interested in making my relationships with “my romantic partners” the best they could be.

15. “my romantic partners” and I really try to understand each other’s points of view.

Rosenberg Self Esteem Scale (RSES)

1. I feel that I do not have much to be proud of

2. I certainly feel useless at times

3. I feel that I'm a person of worth at least on an equal plane with others

4. I wish I could have more respect for myself

5. All in all, I am inclined to feel that I am a failure

6. I take a positive attitude toward myself

7. On the whole, I am satisfied with myself

8. At times I think I am no good at all

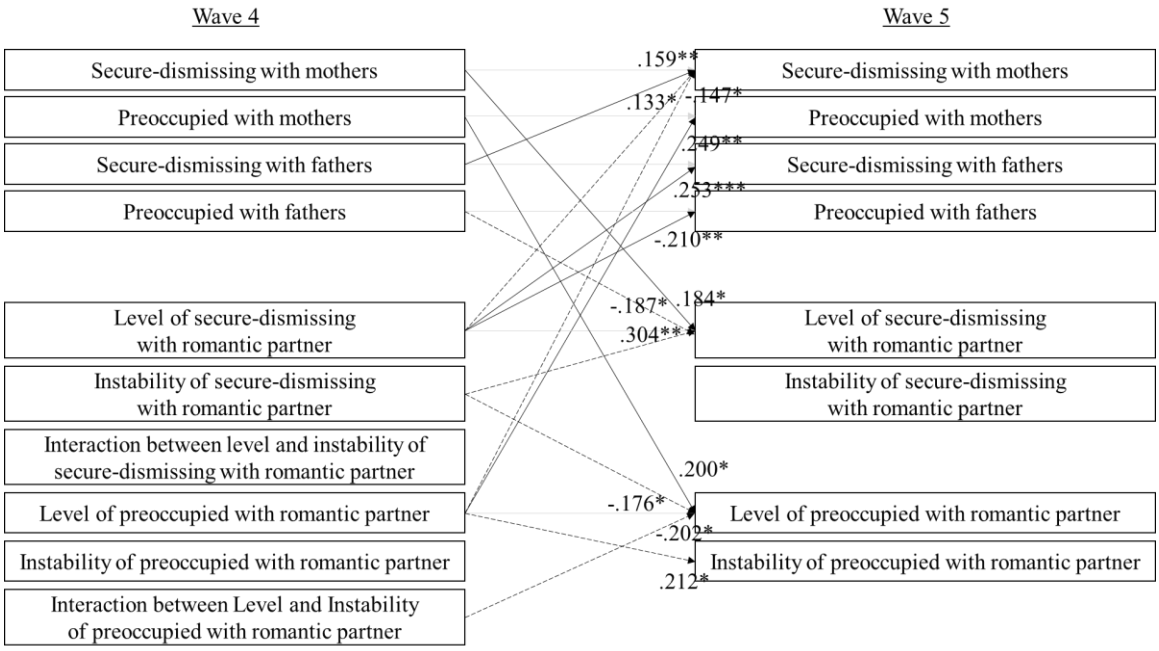
9. I feel that I have a number of good qualities

10. I am able to do things as well as most other people 80

APPENDIX C

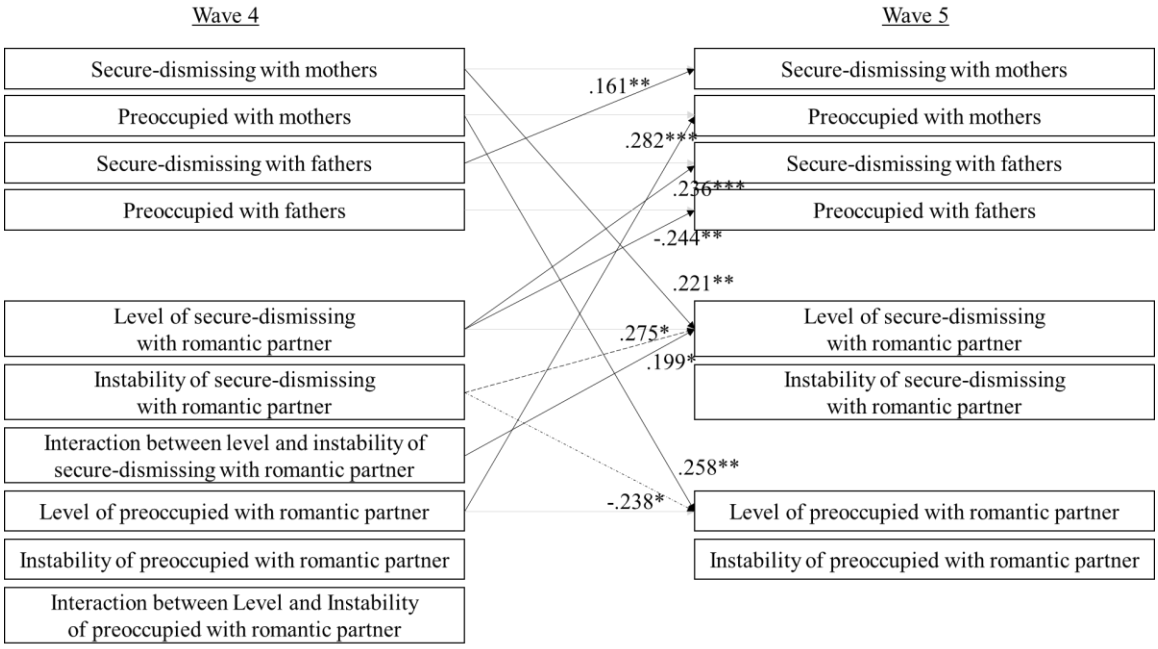
EXPLORATORY ANALYSIS FOR ROMANTIC RELATIONSHIPS

A model of representations of relationships with parents and romantic partners with cases that participated at least for 2 days



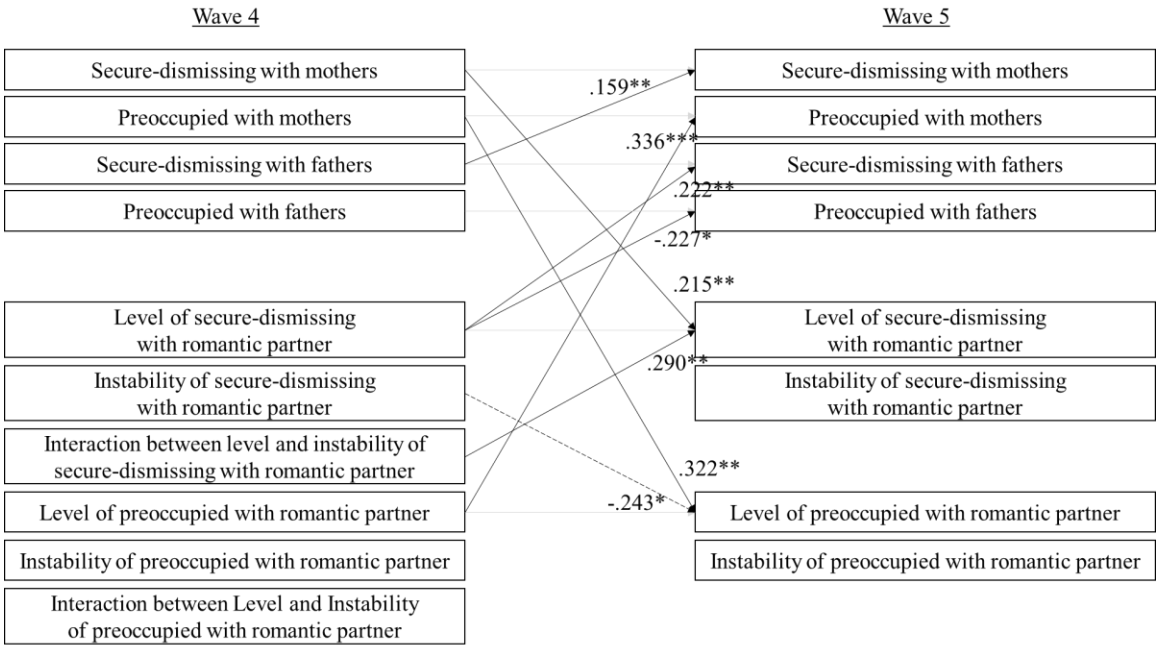
Note. Non-significant paths and correlations between variables within the same wave are omitted for ease of interpretation. The grey paths are significant auto-regressive paths. The dotted lines are spurious paths that disappeared in a model with cases that participated at least for 5 days. *p < .05. **p < .01. ***p < .001.

A model of representations of relationships with parents and romantic partners with cases that participated at least for 3 days



Note. Non-significant paths and correlations between variables within the same wave are omitted for ease of interpretation. The grey paths are significant auto-regressive paths. The dotted lines are spurious paths that disappeared in a model with cases that participated at least for 5 days. *p < .05. **p < .01. ***p < .001.

A model of representations of relationships with parents and romantic partners with cases that participated at least for 4 days

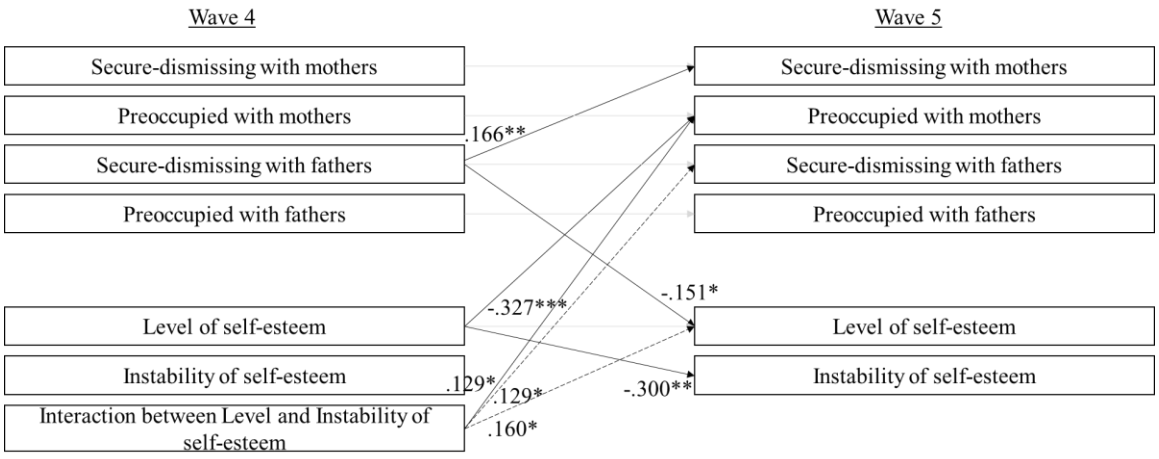


Note. Non-significant paths and correlations between variables within the same wave are omitted for ease of interpretation. The grey paths are significant auto-regressive paths. The dotted lines are spurious paths that disappeared in a model with cases that participated at least for 5 days. *p < .05. **p < .01. ***p < .001.

APPENDIX D

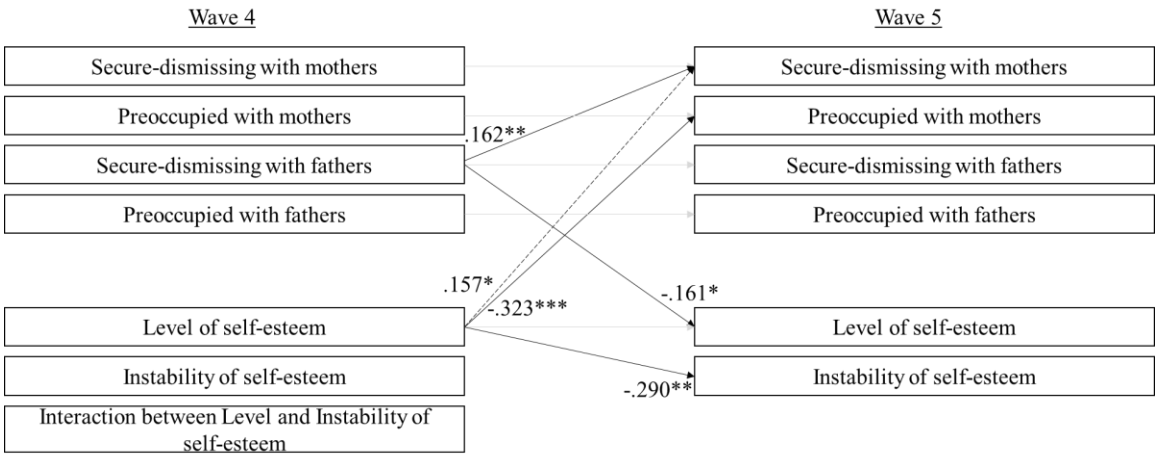
EXPLORATORY ANALYSIS FOR SELF-ESTEEM

A model of representations of relationships with parents and self-esteem with cases that participated at least for 2 days



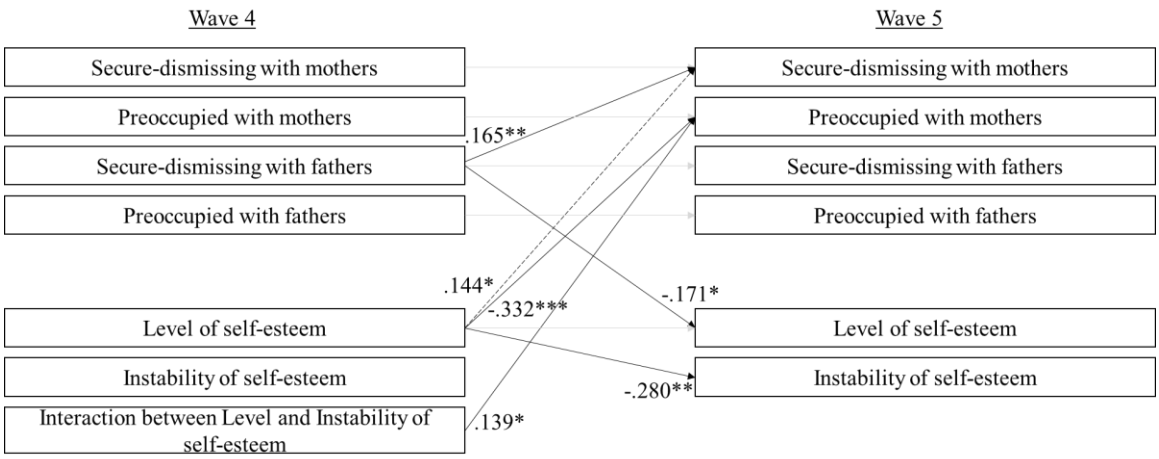
Note. Non-significant paths and correlations between variables within the same wave are omitted for ease of interpretation. The grey paths are significant auto-regressive paths. The dotted lines are spurious paths that disappeared in a model with cases that participated at least for 5 days. *p < .05. **p < .01. ***p < .001.

A model of representations of relationships with parents and self-esteem with cases that participated at least for 3 days



Note. Non-significant paths and correlations between variables within the same wave are omitted for ease of interpretation. The grey paths are significant auto-regressive paths. The dotted lines are spurious paths that disappeared in a model with cases that participated at least for 5 days. *p < .05. **p < .01. ***p < .001.

A model of representations of relationships with parents and self-esteem with cases that participated at least for 4 days



Note. Non-significant paths and correlations between variables within the same wave are omitted for ease of interpretation. The grey paths are significant auto-regressive paths. The dotted lines are spurious paths that disappeared in a model with cases that participated at least for 5 days. *p < .05. **p < .01. ***p < .001.