

Parental Psychological Control and the  
Development of Identity in Emerging Adulthood

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### Abstract

Parenting plays a significant role in processes of identity development during emerging adulthood. In particular, excessive parental psychological control may foster ruminative exploration and dysfunctional individuation, two maladaptive processes of identity development. Prior research has shown that psychological control, ruminative exploration, and dysfunctional individuation have been associated with lower psychological well-being. However, there has been little research on the ways in which the interrelation of these constructs may lead to negative outcomes in emerging adults. The current study proposes two mediation models wherein the relationship between parental psychological control and depression is mediated by (a) dysfunctional individuation and (b) ruminative exploration. Longitudinal data was collected at three time points from 289 students at a private Midwestern university (174 female;  $M_{age} = 20.9$  years). Participants completed a measure of psychological control derived from the Barber Parenting Scales (Barber, Maughan, & Olsen, 2005), the Dimensions of Identity Development Scale (Luyckx et. al, 2008), the Dysfunctional Individuation Scale (Stey, Hill & Lapsley, 2013), and a shortened version of the Depression Anxiety Stress Scales (Henry & Crawford, 2005). Neither dysfunctional individuation nor ruminative exploration mediated the relationship between parental psychological control and depressive symptoms. Paternal and maternal control had significant direct effects on depressive symptoms, unstandardized parameter estimate = 0.61,  $p < .001$ , unstandardized parameter estimate = 0.33,  $p = .038$ , respectively, but had no direct effect on dysfunctional individuation or ruminative exploration. However, both ruminative exploration and dysfunctional individuation had direct effects on depressive symptoms, unstandardized parameter estimate = 0.15,  $p = .004$ , unstandardized parameter estimate = 0.05,  $p = .040$ , respectively. The results of this study suggest that psychological control may not be

particularly influential on processes of identity development during emerging adulthood.

Additionally, both dysfunctional individuation and ruminative exploration can be harmful to an individual's psychological well-being during emerging adulthood.

*Keywords:* psychological control, dysfunctional individuation, ruminative exploration

### Parental Psychological Control and the Development of Identity in Emerging Adulthood

Over the course of a child's development, there may be great variation in the parent-child relationship. The role of a parent in an infant's life is very different from the role of a parent in an adolescent's life. Some of the biggest changes in parental roles come during the important developmental stage of emerging adulthood, a time when an individual attempts to make a successful transition from adolescence into young adulthood (Arnett, 2000). Parenting factors have been shown to play an important role in the success of an emerging adult in making this transition (Nelson, Padilla-Walker, Christensen, Evans, & Carroll, 2010; Soenens, Vansteenkiste, & Sierens, 2009). Therefore, it is important to examine the different parenting techniques used during emerging adulthood and determine which styles are most beneficial in fostering a successful transition from adolescence to young adulthood.

Arnett (2000) defined emerging adulthood as the developmental stage characterized by significant exploration and experimentation with different identity roles, occurring roughly between the ages of 18 and 25. While the ultimate goal of emerging adulthood is to establish a long-term and stable adult role in society, the developmental period itself is mainly a period of transition. Most emerging adults tend to perceive themselves as somewhere in between adolescence and young adulthood. When asked if they felt like they had reached adulthood, approximately 60% of emerging adults said that in some ways they felt like an adult, but in other ways they did not (Arnett, 2000). Generally, commitment to the identity of an adult indicates a successful transition through emerging adulthood.

Emerging adulthood is an extremely important developmental period, as some of the biggest and most influential life decisions are made starting as early as 18 years old (Martin & Smyer, 1990). Furthermore, because some of these decisions may lead to significant challenges

in the emerging adult's life (Litalien, Lüdtkke, Parker, & Trautwein, 2013), there is an interest in determining how the emerging adult reacts to these challenges and how these reactions affect the achievement of a successful transition and overall well-being. In general, emerging adulthood seems to be a time of psychological well-being. Over the course of emerging adulthood, individuals show less depressive symptoms, less expressed anger, and higher self-esteem (Galambos, Barker, & Krahn, 2006). However, certain individual and family characteristics can influence the course of a specific individual's development and affect the psychological well-being they present by the end of emerging adulthood (Galambos et al., 2006). Thus, only by successfully transitioning through emerging adulthood will an individual be able to fully participate in adult society. An unsuccessful transition, characterized by unrealistic expectations and uncertainty about one's adult identity, may negatively impact an individual's adjustment into adult society (Arnett, 2007).

The parent-child relationship is an interesting example of how relationships change during emerging adulthood. Before emerging adulthood, adolescents are dependent upon their parents, and parents may exert high levels of control over their children's activities. However, upon entering emerging adulthood, children begin the process of forming their own identities, which requires making decisions based on values and attitudes they have established for themselves. In order to complete emerging adulthood successfully, individuals must rely less on the opinions of their parents and more on their own values and opinions when it comes to making life decisions (Galambos et al., 2006).

Another way to approach this changing relationship between parents and their children is to consider it from the parents' point of view. If the emerging adults' goal is to develop an identity based on their own values, then parents will need to step back and allow their children to

make life decisions on their own, without the parents imposing their own decision-making. This is an adjustment for parents who may be accustomed to having control over their children's lives, and depending on the parents' reaction to this adjustment, there may be more variation in parenting styles used with emerging adults. Thus, an important issue during emerging adulthood is how various parenting styles foster or inhibit the transition from adolescence into young adulthood. Studies show that good parenting styles, such as authoritative parenting, lead to better outcomes, such as lower levels of psychological distress symptoms. Furthermore, less effective parenting styles, such as neglectful parenting, can result in psychological distress that may affect an emerging adult's ability to successfully develop an adult identity (Shucksmith, Hendry & Glendinning, 1995).

One method of parenting that may have a negative impact on the child is that of excessively high parental psychological control (Barber, Olsen, & Shagle, 1994). Parental psychological control affects the psychological and emotional development of children (Barber, 1996) by targeting children's emotional states in order to manipulate their thoughts and behaviors. For example, love withdrawal involves parents acting less friendly towards their children or refusing to talk to them altogether. Another example is guilt induction, which involves parents reminding their children of everything they "owe" their parents, and bringing up instances when the child made a mistake and disappointed the parent (Soenens, et al., 2009). In using these methods of controlling their child, parents may disregard or even act disparagingly towards their child's emotional and psychological needs, as well as inhibit the child's independent expression and development of self-efficacy (Barber, 1996). Whereas this method of parenting tends to be destructive in all stages of development, it may be particularly harmful during emerging adulthood due to its tendency to impair a child's ability to explore and

experiment with different identities (Barber, 1996), and ultimately prevent them from establishing a healthy adult role in society.

Research indicates that parental psychological control does seem to have a negative impact on identity development, and is correlated with adverse effects later in life (Barber & Harmon, 2002; Baumrind, 1966; Becker, 1964), such as high anxiety and depressive disorders (Barber et al., 1994; Nelson et al., 2010). However, the link between parental psychological control and psychological well-being may not be as straightforward as it first appears. In a study by Bean, Barber, & Crane (2006), maternal psychological control was only moderately correlated with depression, while paternal psychological control showed no significant correlation with depression at all. Furthermore, there is little existing research on how the relationship between psychological control and depression is established. One exception is a study by Soenens, Vansteenkiste, Luyten, Duriez, & Goossens (2005), which established a mediational role of intra-personal aspects of perfectionism, such as concern over mistakes and doubts about actions, in the relationship between psychological control and depression. This study establishes the possibility of a more complex relationship between psychological control and depression, and further research must be conducted to investigate the complexities of this association.

Psychological control can affect two important processes that occur during emerging adulthood: identity development and individuation. Identity development is the process of preparing to form an adult identity in the context of previous childhood identities (Erikson, 1956), while individuation involves forming an independent adult identity in the context of ongoing relationships (Blos, 1962). Both of these processes are involved with forming an adult identity, and therefore are directly connected to the main goal of emerging adulthood.

Furthermore, they both may be affected by the use of parental psychological control, in that psychological control may impair the ability to engage in either of these exploratory processes (Kins, Soenens, & Beyers, 2012; Luyckx et al., 2007).

Identity development is the main goal of emerging adulthood. Specifically, emerging adults strive to successfully develop an adult identity in society. The theory of identity development includes four identity statuses (Erikson, 1956; Marcia, 1966), which can be defined in terms of two dimensions; identity exploration, the process of seeking out and evaluating different identity alternatives, and identity commitment, the degree to which a person is invested in any given identity alternative (Marcia, 1966). Thus, a person with identity achievement status has explored many different identity alternatives, and has committed to an identity based on this exploration. Alternatively, a person with identity diffusion status is low in both identity commitment and identity exploration; that is, has not started the exploration process or made a commitment. Identity foreclosure status involves being highly committed to an identity, without having explored different identity alternatives. This is apparent in emerging adults whose parents have high expectations regarding their child's future, and the child, feeling like there are no alternatives, neglects to attempt the identity exploration process. Finally, a person in identity moratorium status is in the midst of the identity exploration process, but has yet to make a commitment to an identity. Moratorium can be seen as the precursor to identity achievement (Marcia, 1980).

The most recent research has elaborated on the dimensions of exploration and commitment (Luyckx, Goossens, Soenens, & Beyers, 2006; Luyckx et al., 2008). The two facets of commitment are "commitment making", describing the degree to which emerging adults have made choices about their identity, and "identity with commitment", describing the degree to



which emerging adults internalize these decisions. Similarly, identity exploration can be described as having three different facets. “Exploration in breadth” is the degree to which emerging adults are searching for different identity alternatives, while “exploration in depth” is the degree to which emerging adults evaluate the decisions to which they are already committed (Luyckx et al., 2006). The final facet, “ruminative exploration”, is a particularly interesting dimension because it is the dimension most highly correlated with negative outcomes.

Ruminative exploration describes the degree to which emerging adults may get “stuck” in the exploration process. The individual becomes overwhelmed and distressed by the decision-making process, and starts to dwell on many identity alternatives to ensure that he or she is making the “perfect” choice. Ruminative exploration is significantly correlated with psychological distress (Luyckx et al., 2008; Schwartz et al., 2011), as well as neuroticism (Klimstra, Luyckx, Goossens, Teppers, & De Fruyt, 2013), depressive symptoms, anxiety, and low psychological well-being (Ritchie et al., 2013). Whereas the research presents a fairly consistent and intuitive picture of ruminative exploration and its outcomes, most of the existing literature is very recent and exploratory. Therefore, it is important to continue studying this relatively new construct and its effects on emerging adults.

Another important aspect of emerging adulthood is the process of individuation. Individuation is related to emerging adulthood in that it involves the issue of the emerging adult’s responsibility to develop an identity while maintaining a healthy relationship with his or her parents (Blos, 1962). Successful individuation occurs when an individual is able to express a unique identity while interacting with the people on whom his or her identity previously relied. The parent-child relationship is not replaced or terminated, but is instead transformed into a mature relationship between two adults (Josselson, 1980). Dysfunctional individuation is known

to be associated with high levels of anxiety and depression, as well as low psychological adjustment (Holmbeck & Wandrei, 1993; McClanahan & Holmbeck, 1992).

Whereas identity development and individuation have been clearly established as relevant constructs in emerging adulthood, there is less research looking into their interaction with parenting, and parental psychological control in particular. However, the current research does suggest that psychological control can impact both identity development and individuation. Luyckx et al. (2007) looked specifically at the relationship between psychological control and the dimensions of identity exploration and commitment. This study showed that psychological control is negatively associated with both commitment making and identity with commitment, but positively correlated with exploration in breadth. However, this study was performed before ruminative exploration had been established as another dimension of exploration, and therefore presents no information concerning the relationship between psychological control and this dysfunctional form of identity development. It is possible that the ruminative exploration dimension was captured in the measure of exploration in breadth, considering both are characterized by high levels of exploration of alternative identities. Furthermore, the intra-personal aspects of perfectionism described by Soenens et al. (2005) seem conceptually related to ruminative exploration. Concern over mistakes and doubt about actions are two attributes of perfectionists that are also likely to be observed in individuals who are overly concerned with making the “perfect” identity choice. If ruminative exploration is conceptually similar to these perfectionistic qualities, and these qualities are positively correlated with psychological control, it may be reasonable to expect a similar positive relationship between ruminative exploration and psychological control. However, further research is needed to establish an empirical basis for this relationship.

Parenting also plays an important role in the process of individuation. While the emerging adult is held accountable for the success of the individuation process, parents are able to promote successful individuation by encouraging their child to develop a unique identity while still making an effort to maintain a healthy parent-child relationship (Quintata & Laspley, 1990). The process of individuation is dependent on developing greater psychological separation from parents (Kins et al., 2012), which suggested that high levels of parental psychological control would inhibit the individuation process. Again, there is little research looking at the relationship between psychological control and individuation. An exception is the study done by Kins, Soenens, and Beyers (2012), which showed emerging adults with parents who are high in dependency-oriented and achievement-oriented psychological control show higher levels of dysfunctional dependence and dysfunctional independence, two indicators of dysfunctional individuation. While this study is relatively recent, it suggests that a positive relationship may be expected between high psychological control and dysfunctional individuation.

Although the literature suggests that parental psychological control would be related to dysfunctional identity development (i.e., ruminative exploration) and dysfunctional individuation, research involving these relationships is relatively recent and is still lacking in some areas. Furthermore, there is little research on the process by which parental psychological control leads to negative outcomes in emerging adulthood. It is possible that psychological control may not directly cause negative outcomes, but instead may lead to higher ruminative exploration and dysfunctional individuation, which in turn increase negative outcomes in emerging adulthood (Figure 1). A similar model is presented in Soenens et al. (2005), where perfectionistic qualities, which seem to be conceptually similar to ruminative exploration, mediated the relationship between parental psychological control and depression. Therefore,

there is value in exploring ruminative exploration and other potential mediational constructs to further explain the complex relationship between depression and psychological control.

The purpose of the current study is to examine the longitudinal relationship between parenting practices and important developmental processes of emerging adulthood. In particular, it will focus on the ways in which parental psychological control relates to ruminative exploration and dysfunctional individuation, as well as the relationship of these three constructs with depression. Finally, this study will supply research in areas where there are inconsistencies or little existing research, particularly in the areas of ruminative exploration and the effects of parental psychological control on successful individuation and identity development.

### **Hypotheses**

Two mediation models are proposed wherein the relationship between parental psychological control and depression is mediated by (a) dysfunctional individuation and (b) ruminative exploration.

## **Method**

### **Participants**

Participants were randomly selected from a private Midwestern university. Participants had to be enrolled as undergraduates at the university to be included in the study. There were no exclusion criteria. The sample at Time 1 included 443 students (56% female,  $n = 248$ ; 44% male,  $n = 194$ ;  $M_{\text{age}} = 20.1$  years,  $SD = 1.26$ , age range: 17-23 years). The sample included only undergraduate students (25.5% freshmen,  $n = 113$ ; 31.6% sophomores,  $n = 140$ ; 15.1% juniors,  $n = 67$ ; 25.7% seniors,  $n = 114$ ), and was predominantly Catholic (71.1% Catholic,  $n = 315$ ; 15.1% no religious affiliation,  $n = 67$ ; 4.3% other Christian,  $n = 19$ ). Participants were also asked for information about their primary and secondary major, as well as their current GPA. All

participants were treated within the ethical guidelines of the American Psychological Association.

There was 22% retention rate for the second wave of data with a sample of 361 students (58% female,  $N = 210$ ; 42% male,  $N = 151$ ;  $M_{\text{age}} = 20.6$  years,  $SD = 1.2$ , age range: 18-24 years). The sample from Time 2 included undergraduate students and graduates (27.7% sophomores,  $n = 100$ ; 32.7% juniors,  $n = 118$ ; 18.0% seniors,  $n = 65$ ; 21.1% graduates,  $n = 76$ ), and was predominantly Catholic (72.6% Catholic,  $n = 262$ ; 14.4% no religious affiliation,  $n = 52$ ; 4.2% other Christian,  $n = 15$ ). T-tests showed that participants at Time 2 only differed significantly from participants at Time 1 in terms of age,  $t(158.38) = 2.12$ ,  $p = 0.036$ , and class,  $t(171.30) = 2.62$ ,  $p = 0.014$ .

There was 20% retention rate for the third wave of data with a sample of 289 students (60% female,  $N = 174$ ; 40% male,  $N = 115$ ;  $M_{\text{age}} = 20.9$  years,  $SD = 1.2$ , age range: 19-24 years). The sample from Time 3 included undergraduate students and graduates (30.4% sophomores,  $n = 8$ ; 33.2% juniors,  $n = 96$ ; 15.2% seniors,  $n = 44$ ; 20.8% graduates,  $n = 60$ ), and was predominantly Catholic (72.0% Catholic,  $n = 208$ ; 17.0% no religious affiliation,  $n = 49$ ; 3.1% other Christian,  $n = 9$ ). T-tests showed that participants at Time 3 did not differ significantly from participants at Time 2 on any of the independent or dependent variables measured in this study.

## Measures

**Dysfunctional individuation.** Participants completed the Dysfunctional Individuation Scale (DIS; Stey et al., 2013), a 10-item scale that measures an individual's failure to balance both dependence and independence in his or her relationships with others ( $\alpha = .82$ ; e.g., "Often, when I am in a close relationship, I find that my sense of who I am gets lost"). Items are rated on

a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicating greater dysfunctional individuation. All 10 items fit to one latent factor in a confirmatory factor analysis, CFI = .97, TLI = .96, RMSEA = .042, SRMR = .043, Satorra-Bentler  $\chi^2$  (35, N = 245) = 49.87,  $p = .049$ , with comparable factor loadings across all items. The DIS has been shown to have concurrent validity (Stey et al., 2013) in that it correlates in the expected directions with subscales of the Separation Individuation Test of Adolescence (SITA; Levine et al., 1986); there were positive correlations with the Dependency Denial subscale,  $r(237) = .38, p < .001$ , the Separation Anxiety subscale,  $r(236) = .54, p < .001$ , and the Engulfment Anxiety subscale,  $r(233) = .27, p < .001$ , and a negative correlation with the Healthy Separation subscale,  $r(238) = -.42, p < .001$ . The DIS also shows convergent validity due to its positive correlations with several psychiatric symptoms from the Brief Symptom Inventory (BSI; Derogatis, 1993), including depression,  $r(235) = .48, p < .001$ ; anxiety,  $r(237) = .44, p < .001$ ; obsessive compulsion,  $r(237) = .50, p < .001$ ; and phobic anxiety,  $r(237) = .34, p < .001$  (Stey et al., 2013). The DIS is also correlated with the Beck Depression Inventory II (BDI-II; Beck et al., 1996),  $r(428) = .49, p < .001$ , and it is a strong predictor of depression even after controlling for age and gender,  $b = 0.28 (.02), \beta = .50, t(412) = 11.78, p < .001$ , and neuroticism,  $b = 0.18 (.02), \beta = .32, t(422) = 7.89, p < .001$  (Stey et al., 2013). Finally, Stey et al. (2013) have shown for this convergent validity for the DIS due to its positive correlation with the Interpersonal Problems,  $r(236) = .60, p < .001$ , Family Problems,  $r(238) = .35, p < .001$ , and Self-Esteem Problems,  $r(237) = .56, p < .001$ , subscales of the College Adjustment Scales (CAS; Anton & Reed, 1991).

**Identity development.** Degree of identity development was measured using the Dimensions of Identity Development Scale (DIDS; Luyckx et al., 2008). The DIDS is a 25-item scale that measures identity development along the following subscales: commitment making (5

items;  $\alpha = .88$ ; e.g., “I have decided on the direction I want to follow in life.”), identity with commitment (5 items;  $\alpha = .79$ ; e.g., “I sense that the direction I want to take in life will really suit me.”), exploration in breadth (5 items;  $\alpha = .78$ ; e.g., “I try to figure out regularly which lifestyle would suit me.”), exploration in depth (5 items;  $\alpha = .61$ ; e.g., “I think about the future plans I have made.”), and ruminative exploration (5 items;  $\alpha = .76$ ; e.g., “I keep wondering which direction my life has to take.”). Participants rate the extent to which they agree or disagree with each statement on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores are calculated for each subscale individually, with higher scores indicating a higher endorsement of that dimension of identity development.

Luyckx et al. (2008) showed that subscales of the DIDS were correlated with each other in the expected directions. The two subscales that measure dimensions of commitment, Commitment Making and Identity with Commitment, were positively correlated,  $r(426) = .62, p < .001$ . Two of the subscales measuring dimensions of exploration, Exploration in Breadth and Exploration in Depth, were highly correlated with each other,  $r(426) = .54, p < .001$ , and both also correlated positively with the third subscale measuring exploration, Ruminative Exploration,  $r(426) = .24, p < .001, r(426) = .28, p < .001$ , respectively. Despite the high intercorrelations between the exploration dimensions, correlation patterns with other variables differed between Exploration in Depth and Exploration in Breadth and Ruminative Exploration (Luyckx et al., 2013), demonstrating some subtle differences in the constructs of exploration in breadth and exploration in depth. Ruminative Exploration was positively correlated with depressive symptoms,  $r(426) = .36, p < .001$ , and anxiety symptoms,  $r(426) = .29, p < .001$ , but demonstrated a negative correlation with self-esteem,  $r(426) = -.35, p < .001$ . The other two exploration dimensions, Exploration in Depth and Exploration in Breadth, were not significantly

correlated with depressive symptoms, anxiety symptoms, or self-esteem. Furthermore, whereas Exploration in Breadth and Exploration in Depth showed positive correlations with self-reflection,  $r(426) = .12, p < .05$ ;  $r(426) = .27, p < .001$ , respectively, Ruminative Exploration showed a positive correlation with self-rumination,  $r(426) = .34, p < .001$ .

**Parental psychological control.** The Barber Parenting Scales (Barber, Maughan, & Olsen, 2005) were used to measure the amount of parental psychological control perceived by the participant. This 20-item scale contains three subscales: Physical Affection (2 items; e.g., “My mother is a person who hugs me often.”), Knowledge/Monitoring (5 items; e.g., “How much does your father really know about what you do with your free time?”), and Psychological Control (3 items; e.g., “My mother is a person who is always trying to change how I feel or think about things.”), with each item from the subscale being asked once in terms of maternal parenting, and again in terms of paternal parenting. Cronbach’s alphas for maternal Physical Affection, Knowledge/Monitoring, and Psychological Control were  $\alpha = .78$ ,  $\alpha = .83$ , and  $\alpha = .62$ , respectively, while alphas for paternal Physical Affection, Knowledge/Monitoring, and Psychological Control were  $\alpha = .79$ ,  $\alpha = .88$ , and  $\alpha = .55$ , respectively. Scores were rated on a 3-point Likert scale ranging from 1 (*Not like him/her; Doesn’t know*) to 3 (*A lot like him/her; Knows a lot*), with higher scores on a subscale indicating a higher tendency for that parent to exhibit that particular parenting technique.

For hypothesis testing, this study used only the Psychological Control subscale of the Barber Parenting Scales, which is a shortened version of the Psychological Control Scale-Youth Self-Report (PCS-YSR; Barber, 1996). Barber (1996) demonstrated construct validity for the PCS-YSR by showing that parental psychological control significantly predicted delinquency (maternal control,  $\beta = .27, t = 5.94, p < 0.005$ ; paternal control,  $\beta = .30, t = 4.19, p < 0.005$ ) and



depression (maternal control,  $\beta = .34$ ,  $t = 6.65$ ,  $p < 0.005$ ; paternal control,  $\beta = .25$ ,  $t = 5.48$ ,  $p < 0.005$ ). Luyckx, Soenens, Vansteenkiste, Goossens, and Berzonsky (2007) also supported the convergent validity of the PCS-YSR by showing an inverse relationship between psychological control and commitment making ( $\beta = -.09$ ) and weaker identification with commitment ( $\beta = -.12$ ).

**Depressive symptoms.** The Depression Anxiety Stress Scales-Short Form (DASS21; Lovibond & Lovibond, 1995) was used to measure the extent to which participants exhibit symptoms of depression. The DASS21 has been shown to produce similar diagnosis patterns as the long form of the Depression Anxiety Stress Scales with both clinical and non-clinical groups (Antony, Bieling, Cox, Enns, & Swinson, 1998). The DASS21 is a 21-item scale, and asks participants to indicate the frequency or severity of particular symptoms within the last week on a 4-point Likert scale ranging from 0 (*Did not apply to me at all*) to 3 (*Applied to me very much, or most of the time*). The scale includes three 7-item subscales: Stress ( $\alpha = .84$ ; e.g., “I felt that I was using a lot of nervous energy.”), Anxiety ( $\alpha = .82$ ; e.g., “I felt scared without any good reason.”), and Depression ( $\alpha = .91$ ; e.g., “I couldn’t seem to experience any positive feeling at all.”). Scores were calculated for each subscale, with higher scores indicating greater expression of the symptoms of that condition. Scoring instructions for the DASS21 require subscale scores to be doubled so they may be compared to scores on the long form of the Depression Anxiety Stress Scales, which have diagnostic implications. For the purposes of this study, subscale scores were doubled but were not used for diagnostic purposes.

This study used only the Depression subscale of the DASS21 for hypothesis testing. Lovibond and Lovibond (1995) demonstrated a high correlation between the Depression subscale from the 42-item version of the DASS and the BDI ( $r = .74$ ), providing evidence for

concurrent validity for this subscale. Finally, Antony, Bieling, Cox, Enns, and Swinson (1998) assessed concurrent validity of the Depression subscale of the DASS21, and found that this subscale was highly correlated with the BDI ( $r = .79$ ).

### **Procedure**

In Spring 2013, a random sample of 3,000 students' names and email addresses was obtained from the university. The researchers then randomly selected 1,000 of these students to be emailed and asked to participate in the survey, created by Qualtrics (Qualtrics, 2013). The email included a short explanation of the study and a link to the online survey. A consent form was presented on the first page of the survey, and participants supplied an online signature on this consent form in order to begin the survey. The data for this study were taken from a larger study, which involved a survey that included a total of six measures (DIS, CAS, DIDS, Barber Parenting Scales, Emotion Regulation Questionnaire, and DASS) and a demographic questionnaire. The order in which the measures appeared in the survey was randomized for each participant. Participants were compensated \$5 for participating in the study. Before data were collected for the second and third time points, participants who graduated were emailed and asked for an updated email address so they could be contacted for future waves of data collection. Data collected from the participants were stored on a password-protected computer in the Adolescent Psychology Lab. Finally, the statistical program, R (R Core Team, 2013), was used for data cleaning and analysis.

## **Results**

### **Missing Data**

There was some attrition in the sample over the three longitudinal time points. This first wave of data was collected from a sample of undergraduates in the spring semester of 2013. For

some participants, this was their last semester as undergraduates, and after graduation the email address that was used to contact them for the study became invalid. While some provided an updated email address with which to contact them for future waves of data collection, many did not update this information, and could no longer be contacted for future waves. This can explain a significant amount of the attrition rate and missing data in this study. The missing data in this study was missing at random. This means that although there was a substantial amount of attrition over the three waves of this study, participants in this study did not drop out due to any of the independent or dependent variables measured or analyzed in this study (Schafer & Graham, 2002).

### **Preliminary Analyses and Summary Statistics**

Means and standard deviations of the variables used in this study can be found in Table 1. Maternal psychological control, paternal psychological control, and depressive symptoms all showed positive skew; therefore, bootstrapping methods were used for hypothesis testing.

Correlations among the variables at Time 1, Time 2, and Time 3 can be found in Table 2, Table 3, and Table 4, respectively. Most variables correlated with each other in the expected directions. Maternal and paternal psychological control correlated with each other at all three time points,  $r(464) = .43, p < .001$ ,  $r(343) = .39, p < .001$ , and  $r(290) = .48, p < .001$ , respectively. Ruminative exploration was correlated with depression at all three time points,  $r(450) = .32, p < .001$ ,  $r(333) = .27, p < .001$ , and  $r(287) = .33, p < .001$ , respectively, as was dysfunctional individuation,  $r(454) = .44, p < .001$ ,  $r(335) = .45, p < .001$ , and  $r(287) = .47, p < .001$ , respectively. One exception was that Time 2 ruminative exploration was not significantly related to either type of parental psychological control. This is an interesting finding in light of the fact that these variables had a significant relationship at both Time 1 and Time 3.

All scores at Time 1 were significantly correlated with scores of the same construct at Time 2 and Time 3, and scores at Time 2 were significantly correlated with scores of the same construct at Time 3. Correlations among the same variables at different time points ranged from  $r(327) = .48, p < .001$  (depressive symptoms at Time 1 and Time 2) to  $r(254) = .73, p < .001$  (maternal psychological control at Time 2 and Time 3). Linear growth curve models were used to test the developmental changes in scores across the three time points. Dysfunctional individuation significantly decreased over the three time points, unstandardized parameter estimate =  $-0.71, p = .004$ . Similarly, ruminative exploration significantly decreased over time, unstandardized parameter estimate =  $0.26, p = .027$ . While maternal psychological control significantly increased over the three time points, unstandardized parameter estimate =  $0.07, p = .042$ , paternal psychological control did not significantly change over time, unstandardized parameter estimate =  $0.03, p = .351$ . Finally, depressive symptoms significantly decreased over the three time points, unstandardized parameter estimate =  $-0.27, p = .019$ .

### **Hypothesis Testing**

Autoregressive SEM models similar to those described in Maxwell, Cole, and Mitchell (2011) were used to test the mediation hypotheses. The model testing the indirect effect of dysfunctional individuation on the relationship between maternal psychological control and depressive symptoms is depicted in Figure 2. While significant direct effects were found for dysfunctional individuation as a predictor of depressive symptoms at both Time 2 (unstandardized parameter estimate =  $0.06, p = .014$ ) and Time 3 (unstandardized parameter estimate =  $0.05, p = .040$ ), maternal psychological control did not have a significant direct effect on dysfunctional individuation at either time point or depressive symptoms at Time 3. Furthermore, there was no significant indirect effect of dysfunctional individuation on the

relationship between maternal psychological control and depressive symptoms (unstandardized parameter estimate = 0.02,  $p = .200$ ).

The mediation model for the indirect effect of dysfunctional individuation on the relationship between paternal psychological control and depressive symptoms is found in Figure 3. Significant direct effects were found for dysfunctional individuation on depressive symptoms at Time 2 (unstandardized parameter estimate = 0.06,  $p = .018$ ) and Time 3 (unstandardized parameter estimate = 0.04,  $p = .049$ ), and for paternal psychological control on depressive symptoms at Time 3 (unstandardized parameter estimate = 0.61,  $p < .001$ ). Paternal psychological control did not have a significant direct effect on dysfunctional individuation at either Time 2 or Time 3, and there was no significant indirect effect of dysfunctional individuation on the relationship between paternal psychological control and depressive symptoms (unstandardized parameter estimate = 0.02,  $p = .254$ ).

Figure 4 depicts the model used to test the indirect effect of ruminative exploration on the relationship between maternal control and depressive symptoms. Significant direct effects were found for ruminative exploration at Time 2 on depressive symptoms at Time 3 (unstandardized parameter estimate = 0.15,  $p = .004$ ) and for maternal psychological control at Time 1 on depressive symptoms at Time 3 (unstandardized parameter estimate = 0.33,  $p = .038$ ). No significant direct effects were found for maternal psychological control on ruminative exploration at either time point, or for ruminative exploration at Time 1 on depressive symptoms at Time 2, and no significant indirect effect was found for ruminative exploration in this model (unstandardized parameter estimate = -0.00,  $p = .964$ ).

Finally, Figure 5 depicts the model used to test the indirect effect of ruminative exploration on the relationship between paternal psychological control and depressive symptoms.

Ruminative exploration at Time 2 had a significant direct effect on depressive symptoms at Time 3 (unstandardized parameter estimate = 0.13,  $p = .007$ ), as did paternal psychological control (unstandardized parameter estimate = 0.64,  $p < .001$ ). No significant direct effects were found for paternal psychological control on ruminative exploration at either time point, or for ruminative exploration at Time 1 on depressive symptoms at Time 2. No significant indirect effect was observed for ruminative exploration on the relationship between paternal psychological control and depressive symptoms (unstandardized parameter estimate = -0.00,  $p = .903$ ).

### **Discussion**

The results of this study do not support either of the proposed mediation hypotheses. Neither ruminative exploration nor dysfunctional individuation showed significant mediation effects on the relationship between psychological control and depressive symptoms. Increases in psychological control did generally lead to a significant increase in depressive symptoms, but had no direct effect on either ruminative exploration or dysfunctional individuation. Finally, both increases in ruminative exploration and increases in dysfunctional individuation led to significant increases in depressive symptoms in emerging adults.

These findings provide insight into the mechanisms by which psychological control impacts depressive symptoms in emerging adults. The results of this study suggest that while ruminative exploration and dysfunctional individuation both play a role in causing depressive symptoms, they are not involved as mediators in the mechanism by which psychological control causes depressive symptoms. This lack of mediation is most likely explained by the fact that psychological control had no significant direct effects on either ruminative exploration or dysfunctional individuation, despite its direct effect on depressive symptoms.

Extant literature supports the finding that psychological control is related to depressive symptoms in emerging adulthood (Barber et al., 1994; Nelson et al., 2010). However, very little research has explored the ways in which psychological control impacts the developmental processes of ruminative exploration and dysfunctional individuation. This study suggests the possibility that psychological control may be less threatening to these developmental processes than would be expected intuitively. An alternative explanation is that there may be protective factors at play that are shielding the emerging adult from the otherwise destructive effects of this maladaptive parenting style on identity development. For example, a study by Lengua, Wolchik, Sandler, and West (2010) suggests that certain aspects of an adolescent's temperament, such as positive emotionality, may act as protective factors against the impact of negative parenting on adjustment problems. Furthermore, it is possible that quality of other important relationships held by the emerging adult can play a protective role against the adverse influence of negative parenting (Lansford, Criss, Pettit, Dodge, & Bates, 2003). Future research should consider these kinds of potential moderation effects when exploring the relationship between psychological control and negative outcomes such as depression.

Both ruminative exploration and dysfunctional individuation demonstrated the expected causal relationships with depressive symptoms, indicating that an increase in either of these developmental constructs leads to an increase in depressive symptoms. These findings support extant research that promotes the negative impact that both ruminative exploration (Luyckx et al., 2008; Ritchie et al., 2013) and dysfunctional individuation (Holmbeck & Wandrei, 1993; McClanahan & Holmbeck, 1992) can have on outcomes of psychological well-being during emerging adulthood. However, it is important to note that, in this study, neither of these developmental constructs was directly affected by excessive parental psychological control.

Therefore, future research should look into what other factors, if any, may cause an emerging adult to adopt these maladaptive developmental processes.

While some direct effects followed the hypothesized patterns, such as the direct effects of ruminative exploration and dysfunctional individuations on depressive symptoms, there were also some expected direct effects that were ultimately found to be insignificant. One such finding is that maternal control did not have a significant direct effect on depressive symptoms in the model proposing dysfunctional individuation as a mediator. This suggests that in the relationship between maternal control, dysfunctional individuation, and depressive symptoms, maternal control does not significantly contribute to the cause of depressive symptoms relative to the contribution of dysfunctional individuation. This is an interesting finding in light of the fact that the equivalent model exploring dysfunctional individuation as a mediator for paternal control did show a significant direct effect of paternal control on depressive symptoms. Furthermore, maternal control also had a significant direct effect on depressive symptoms in the ruminative exploration mediation model. This suggests that there may be something unique in the relationship between maternal control and dysfunctional individuation that makes maternal control less harmful relative to dysfunctional individuation.

This study fills gaps in the literature concerning the relationship between psychological control, ruminative exploration and dysfunctional individuation by providing evidence that psychological control may not play a particularly influential role in either of these developmental processes. Furthermore, it provides insight into the mechanisms by which psychological control may lead to negative outcomes during emerging adulthood, suggesting that developmental constructs do not mediate the process by which psychological control leads to depressive symptoms. This study also reports longitudinal data, which leads to a more complete



understanding of these constructs by explaining how they change and relate to each other over time, as well as the possibility of drawing conclusions about the causal relationships between these constructs.

While this study reports some interesting and unexpected findings, there are a few limitations that should be taken into account when interpreting the data. First of all, the fit indices for the SEM models used to test the hypothesis for this study were not excellent. While model fit was generally better for the models testing ruminative exploration as a mediator than models testing dysfunctional individuation as a mediator, this still puts some limitations on the conclusions that can be drawn from the analysis of this data. Second, the scale measuring parental psychological control in this study included only three items, and had very low alpha values for both the paternal and maternal measure. This may provide another explanation for the lack of significant direct effects found for psychological control on both ruminative exploration and dysfunctional individuation. Future studies may benefit from using multiple reliable scales to measure psychological control in order to get a more accurate and comprehensive idea of the emerging adult's experience of psychological control. Third, the measurement of psychological control was solely from the perspective of the emerging adult, and not from the parents' points of view. Parent reports of their own use of psychological control, in addition to child reports of this information, may present a more reliable picture of what parenting techniques are really being used in the family and what impact they have on the family environment as a whole. Finally, the data for this study was only collected over the course of one year. It is possible that the constructs observed in this study remain relatively stable over this amount of time, and that more dynamic effects would have been evident had the data been collected over a longer period of time. For example, a longitudinal study following students from their first year to their last year

of college might capture more fluctuation in the identity development processes, especially around freshman year, when students are transitioning into college, and senior year, when students are transitioning out of college.

Future research should continue to explore the relationship between psychological control and the developmental constructs used in this study. In particular, research aimed at further understanding ruminative exploration is critical in order to foster an understanding of this relatively new construct, and specifically the factors that can impact its course and the effects it can have on emerging adults. In addition, research on psychological control could include constructs, such as temperament or aspects of peer relationships, which can serve as moderators or protective factors against the detrimental effects of psychological control.

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*Figure 1.* A model depicting the proposed mediation models wherein dysfunctional individuation and ruminative exploration act as mediators in the relationship between parental psychological control and depressive symptom.

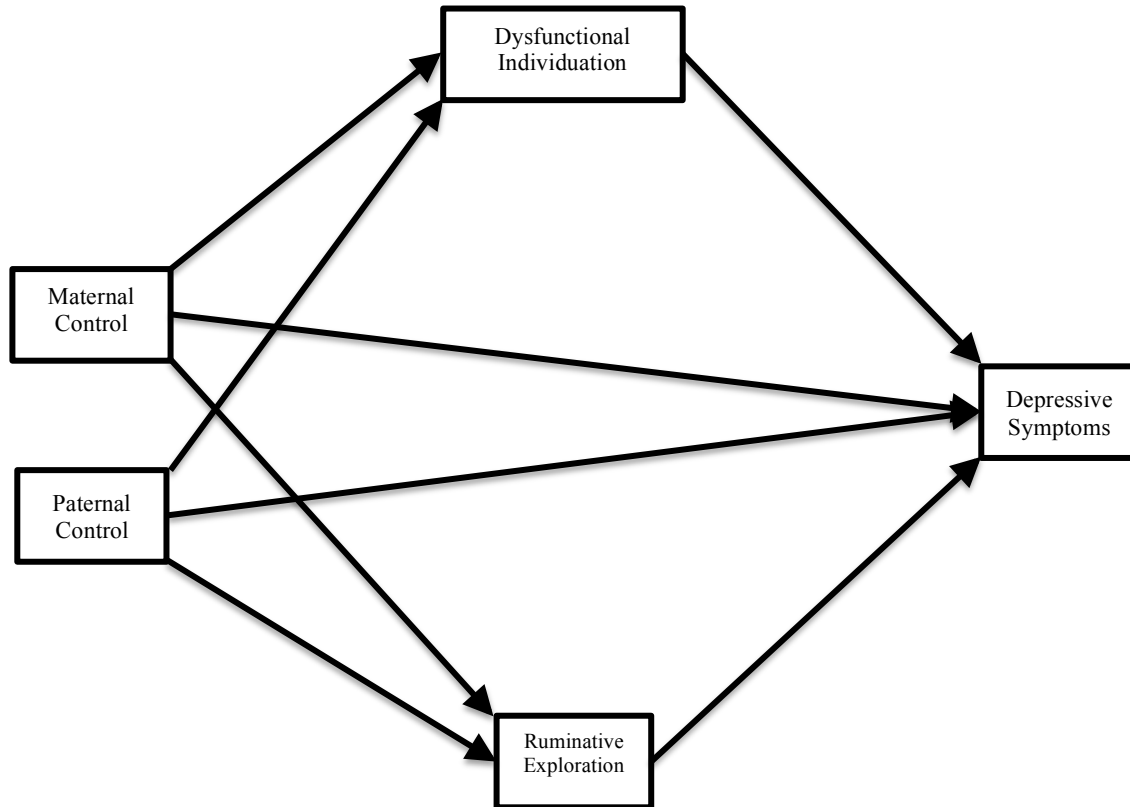


Table 1  
*Means and Standard Deviations of Relevant Variables*

	Time 1 ( <i>n</i> = 443)		Time 2 ( <i>n</i> = 361)		Time 3 ( <i>n</i> = 289)	
Maternal Control Range = 3-9	4.05	(1.32)	4.12	(1.38)	4.13	(1.48)
Paternal Control Range = 3-9	3.83	(1.21)	3.94	(1.28)	3.88	(1.34)
Dysfunctional Individuation Range 10-70	32.79	(9.93)	32.16	(10.31)	31.15	(9.91)
Ruminative Exploration Range = 5-25	17.49	(4.16)	17.43	(4.18)	16.88	(4.20)
Depressive Symptoms Range = 0-21	4.00	(4.63)	4.14	(4.62)	3.35	(4.26)

Table 2  
*Correlation Matrix of Relevant Variables at Time 1*

	1	2	3	4	5	6	7
1. Dysfunctional Individuation	-----						
2. Ruminative Exploration	0.40	-----					
3. Depressive Symptoms	0.44	0.32	-----				
4. Maternal Control	0.30	0.15	0.29	-----			
5. Paternal Control	0.25	0.16	0.30	0.43	-----		
6. Age	0.00	-0.08	0.00	-0.03	0.05	-----	
7. Gender	-0.04	0.09	-0.01	-0.02	-0.03	-0.04	-----

*Note.* All correlations of magnitude greater than .11 are significant at  $p < .05$

Table 3  
*Correlation Matrix of Relevant Variables at Time 2*

	1	2	3	4	5	6	7
1. Dysfunctional Individuation	-----						
2. Ruminative Exploration	0.31	-----					
3. Maternal Control	0.28	0.05	-----				
4. Paternal Control	0.33	0.08	0.39	-----			
5. Depressive Symptoms	0.45	0.27	0.21	0.33	-----		
6. Age	0.05	-0.07	0.06	0.12	-0.01	-----	
7. Gender	-0.08	0.08	-0.04	-0.01	-0.09	-0.04	-----

*Note.* All correlations of magnitude greater than .11 are significant at  $p < .05$

Table 4  
*Correlation Matrix of Relevant Variables at Time 3*

	1	2	3	4	5	6	7
1. Dysfunctional Individuation	-----						
2. Ruminative Exploration	0.34	-----					
3. Maternal Control	0.31	0.13	-----				
4. Paternal Control	0.32	0.18	0.48	-----			
5. Depressive Symptoms	0.47	0.33	0.37	0.44	-----		
6. Age	-0.06	-0.01	0.05	0.07	0.00	-----	
7. Gender	-0.11	0.09	-0.01	0.00	-0.09	-0.07	-----

*Note.* All correlations of magnitude greater than .11 are significant at  $p < .05$

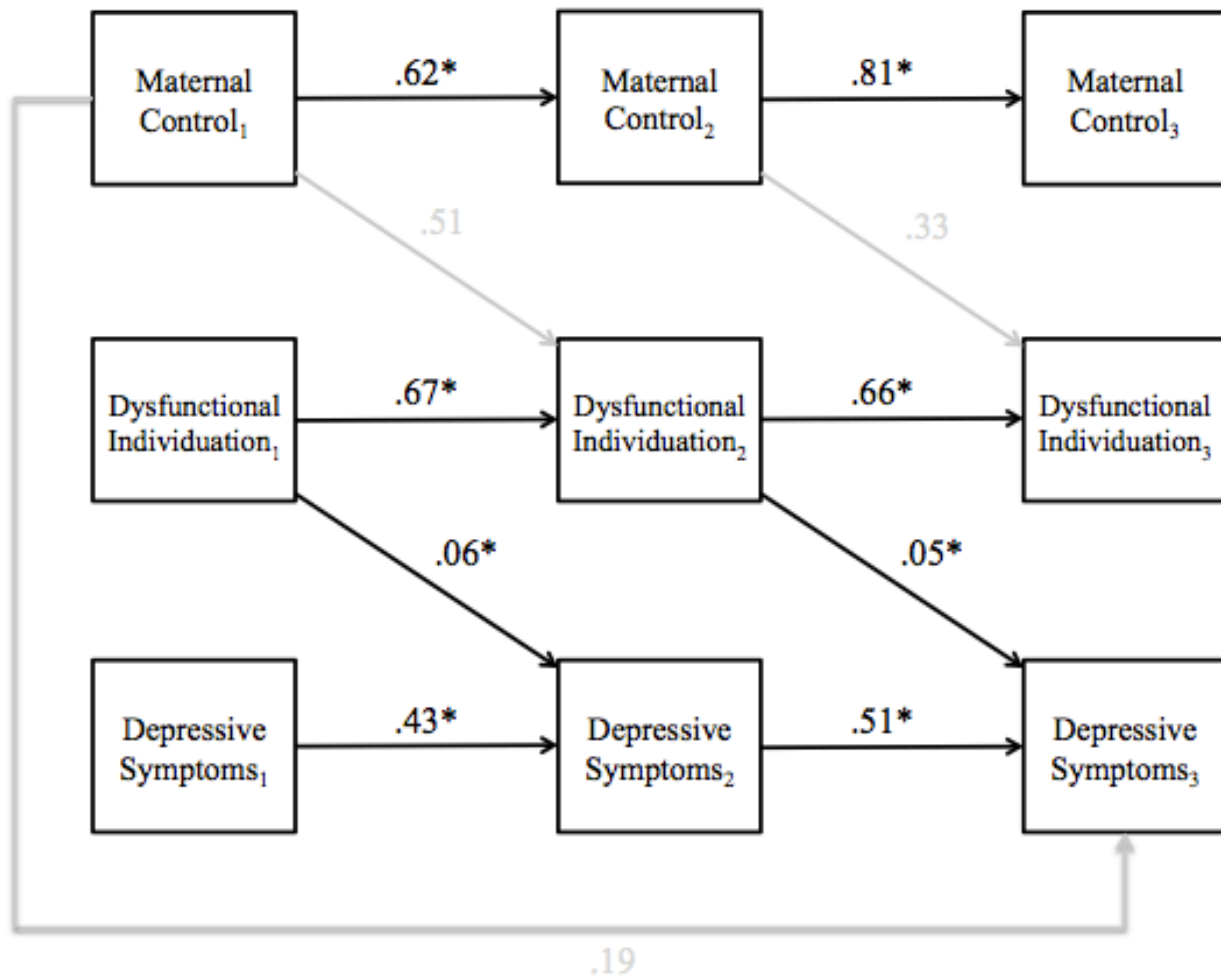


Figure 2. Dysfunctional individuation mediating maternal psychological control and depressive symptoms. Mediation estimate = 0.023,  $p$ -value = 0.200; Model fit: chi-square is 167.14 ( $p$ -value = 0.00),  $RMSEA$  = 0.131,  $SRMR$  = 0.130,  $CFI$  = 0.886; Significant paths are denoted in black, non-significant paths are denoted in grey; Subscript denotes time point at which data was collected.

\* $p$  < .05

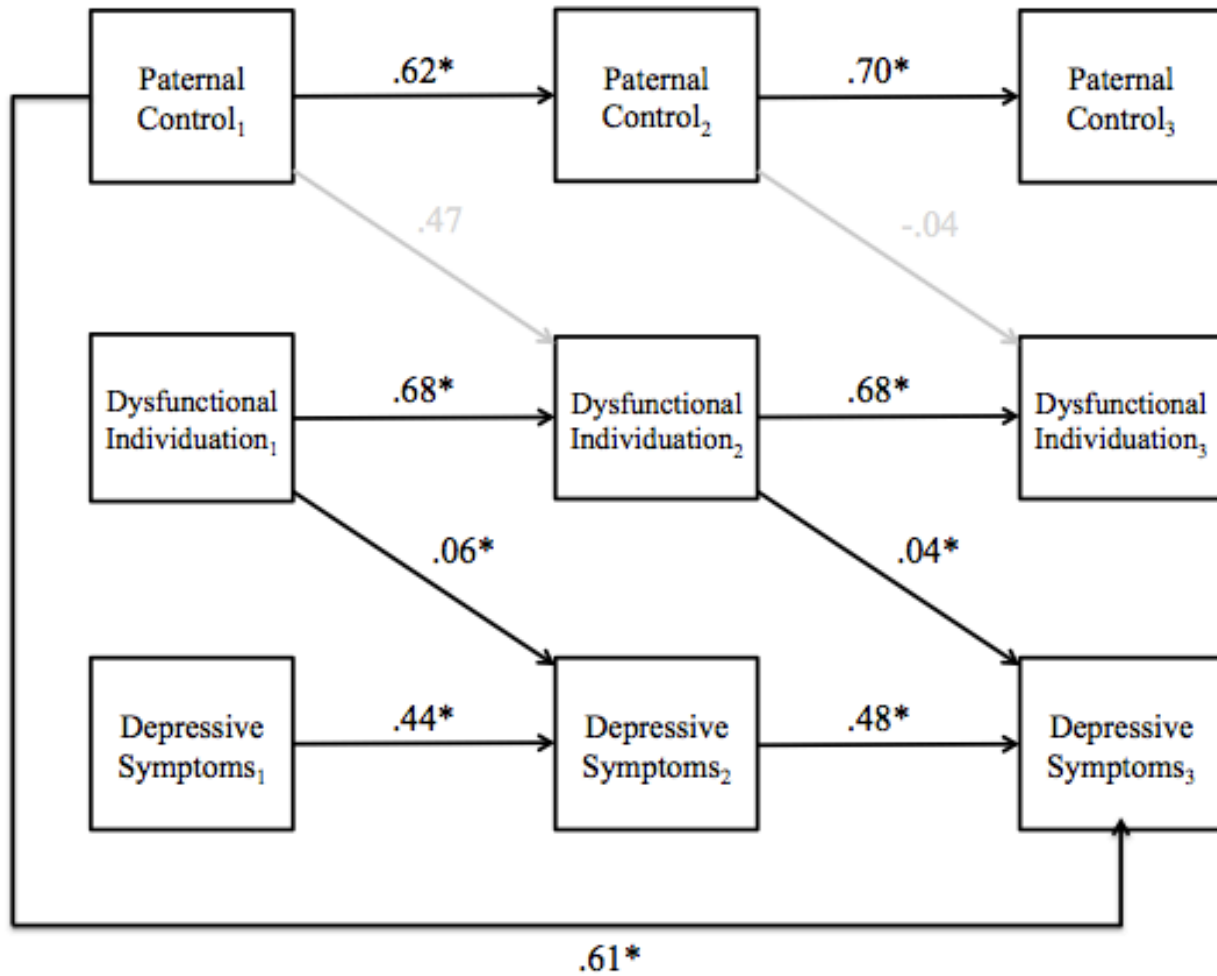


Figure 3. Dysfunctional individuation mediating paternal psychological control and depressive symptoms. Mediation estimate = 0.019,  $p$ -value = 0.254; Model fit: chi-square is 165.46 ( $p$ -value = 0.00),  $RMSEA$  = 0.130,  $SRMR$  = 0.120,  $CFI$  = 0.886; Significant paths are denoted in black, non-significant paths are denoted in grey; Subscript denotes time point at which data was collected.

\* $p$  < .05



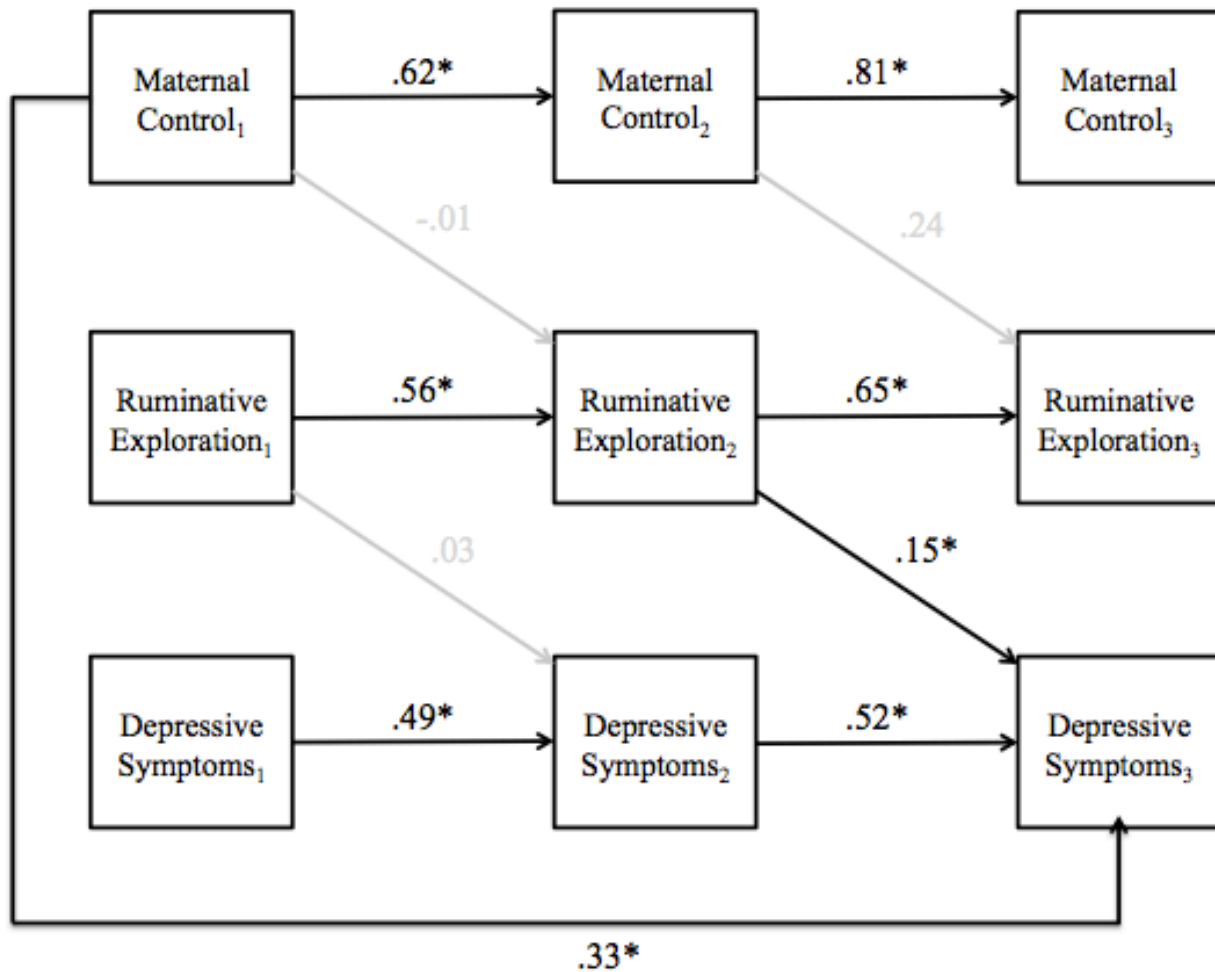


Figure 4. Ruminative exploration mediating maternal psychological control and depressive symptoms. Mediation estimate = -0.001,  $p$ -value = 0.964; Model fit: chi-square is 102.19 ( $p$ -value = 0.00),  $RMSEA$  = 0.102,  $SRMR$  = 0.081,  $CFI$  = 0.918; Significant paths are denoted in black, non-significant paths are denoted in grey; Subscript denotes time point at which data was collected.

\* $p$  < .05

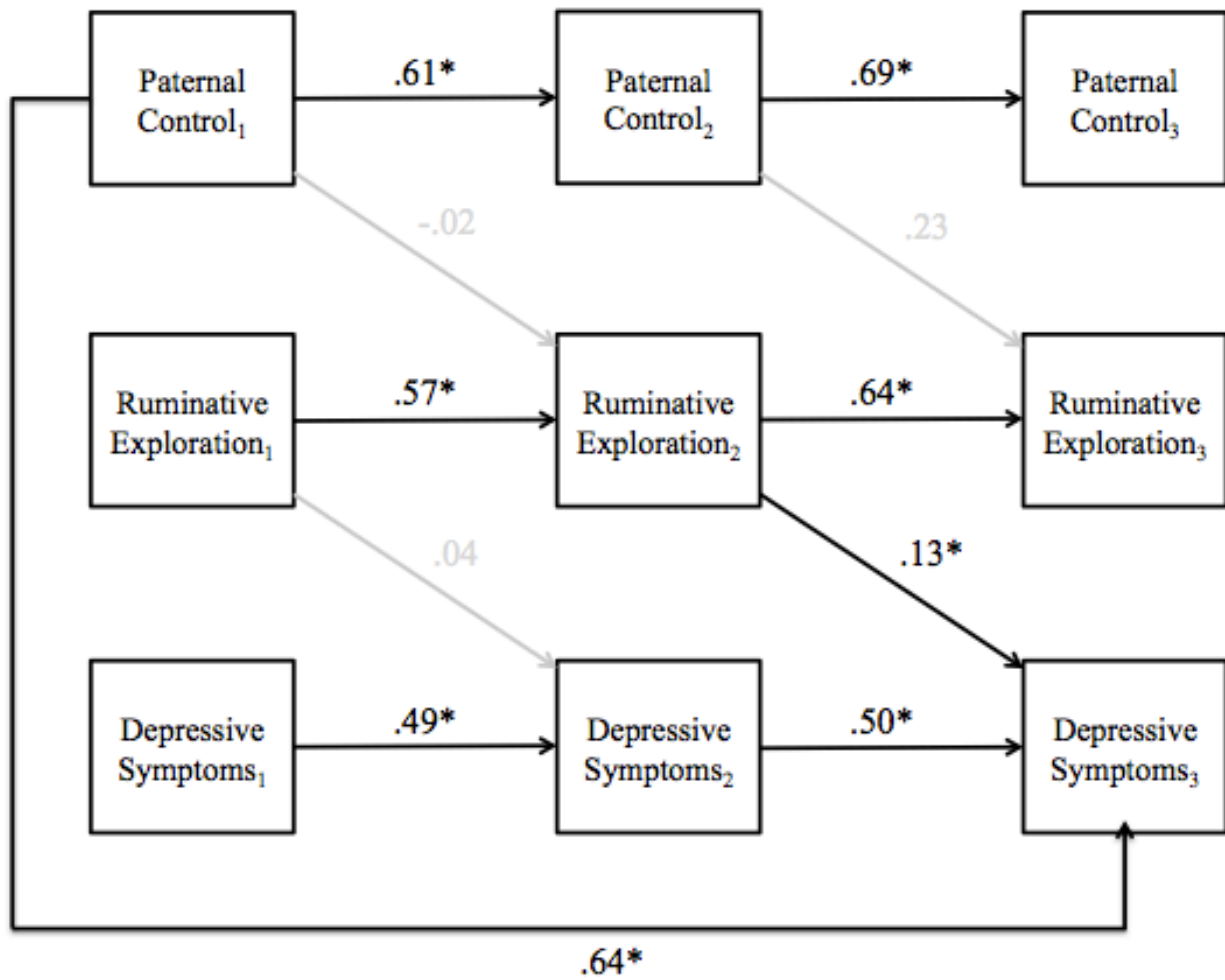


Figure 5. Ruminative exploration mediating paternal psychological control and depressive symptoms. Mediation estimate = -0.002,  $p$ -value = 0.903; Model fit: chi-square is 107.53 ( $p$ -value = 0.00),  $RMSEA$  = 0.105,  $SRMR$  = 0.073,  $CFI$  = 0.912; Significant paths are denoted in black, non-significant paths are denoted in grey; Subscript denotes time point at which data was collected.

\* $p$  < .05