

Paternal Investment and Young Adults' Commitment Readiness

by

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This thesis was prepared under the direction of the candidate's thesis advisor, Dr. Michael Maniaci, Department of Psychology, and has been approved by all members of the supervisory committee. It was submitted to the faculty of the Charles E. Schmidt College of Science and was accepted in partial fulfillment of the requirements for the degree of Master of Arts.

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Abstract

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The current study examined the association between retrospectively recalled paternal investment and current levels of commitment readiness in young adults. Various aspects of the participants' relationship with their fathers during childhood were measured in a sample of 250 undergraduate students. Participants were also asked questions about how ready they are to be involved in a committed romantic relationship. The results did not support the main hypotheses: there were no significant associations between retrospectively recalled paternal investment and commitment readiness. Exploratory analyses revealed that attachment avoidance was significantly negatively correlated with both paternal investment, including measures of nurturant fathering and father involvement, and commitment readiness.

This paper is dedicated to my family, who has supported me throughout my progress in this endeavor. I also dedicate this to my partner, Emily, who has stuck by my side and encouraged me to persevere throughout this process.

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Paternal Investment and Young Adults' Commitment Readiness

In recent times, shifts in societal perspectives have influenced the roles of mothers and fathers, many of which are being shared now that were not previously. In the context of child rearing however, the mothers often provide most of the heavy lifting. The mother is tasked with carrying the unborn child during pregnancy, going through the dangerous act of birthing the child, and traditionally serving as the main source of nutrients for the child through breastfeeding. These are some of the most important initial aspects of raising a child and it is very often the responsibility of the mother to do them. Despite the presence of newer methods of childrearing relieving mothers of some of these burdens (e.g, baby formulas assisting in nourishing infants), mothers are still more involved in childcare than fathers in every traditional human society (Bjorklund, 2020). Taking this into consideration, it is understandable that mothers are put on a “pedestal” of sorts when it comes to modern psychological research on child development. Doing so, however, risks downplaying the important role that fathers may play in raising a child, and ensuring their sufficient development, survival, and quality of life. More specifically, this paper will be looking at paternal investment as a possible predictor of commitment readiness in young adults. Exploratory analyses were also conducted to examine the association between parental investment and measures of attachment (e.g. attachment avoidance and attachment anxiety).

The Favorite Parent?

It is widely understood that mothers, due to various biological and social reasons, invest more in their offspring, although the amount fathers can invest and care for their offspring in similar ways is often not studied to the same extent (Boller et al., 2006). Previous research has found that mothers and fathers tend to behave in many similar ways, such as both feeling similar levels of anxiety about leaving their infants in another person's care, behaving in similar ways when first introduced to their newborns, and effectively altering their speech patterns when talking to infants versus adults (Lamb, 2002). Since both parents express such similar patterns of sensitivity towards their children, it is important for parental research and models to focus on fathers in addition to mothers. While the number of studies on fathering has increased substantially in recent decades, many methods developed by researchers may still be inadequate in the study of fathers as opposed to the study of mothers (Roggman et al., 2002). More specifically, many of these models used in research are based on templates developed to study mother involvement rather than being developed exclusively for studying fathers (Boller et al., 2006). Other measures also often focus on what behaviors fathers do *not* exhibit, rather than the parental behaviors they do exhibit (Russell & Radojevic, 1992). There is a great disparity between the amount of research conducted on fathers and mothers, and due to this, it is important for future studies to include paternal measures with maternal ones to better understand and examine the role played by fathers and how it compares to the role played by mothers in family systems.

Documented Differences between Paternal and Maternal Caregiving

From the existing models of paternal and maternal behavior, there appear to be more universal patterns in the behavior of mothers than in the behavior of fathers (Roggman et al., 2002). This finding suggests that fathers may be more susceptible to their own experiences (e.g., environmental, and cultural influences) in how they parent than mothers are. Family structure is one factor that may influence how a father behaves and interacts with his children, such as whether a father is more likely to tease his children or be more sensitive towards them (Cabrera et al., 2014). This dynamic capability of behavior also supports the idea that a child will develop in the healthiest way in the presence of a primary caregiver and another adult who is committed to providing support to the primary caregiver (Bronfenbrenner, 1986). As the act of parenting is mainly thought of as a two-person role in a traditional sense, even serving as the support to the primary caregiver still carries a lot of responsibility and has the potential to influence a child's development. Changing cultural notions of how family systems should function also place a new sense of importance on the study of paternal investment.

Do Fathers Really Need to Invest?

Unlike mothers, from an evolutionary perspective, the survival of a father's offspring does not depend on a substantial amount of investment from the father. Further, when fathers do invest time and resources into their offspring, their ability to invest in mating opportunities with other potential partners, and producing separate offspring, is hindered. This tradeoff is emphasized in parental investment theory (Trivers, 1972). Trivers refers to parental investment as any behavior performed by the parent that

increases the chance of survival of the offspring while limiting the parent's ability to invest in other offspring. Investment in parental behavior is often separate from investment in mating behavior; meaning if a man were to invest in potential mating opportunities, it would take away from his ability to invest in parental opportunities. Men are affected more by this tradeoff of interests than women due to the major divide of responsibility between the two sexes regarding the production of offspring. The minimum amount of investment required by men to successfully reproduce is the initial fertilization of the woman's egg. Conversely, reproduction requires that women carry out a pregnancy for around 9 months, undergo the dangerous procedure of childbirth, and then typically serve as the child's main source of nutrition during their initial stages of life. After observing the different minimum levels of required investment from each parent for reproduction, it is thus unclear why men often choose to invest more in parenting than mating.

From an evolutionary perspective, being able to successfully pass on one's genes is a very important reason for men to invest in parenting. By investing heavily in mating behavior and less in parenting, men can produce more separate offspring at the cost of reducing the likelihood of his other offspring's survival and later success in life. Historical evidence has demonstrated the death rate of infants is higher when their father is absent than when their father invests more in them (Geary, 1998). Another factor linked to paternal investment in humans is the lengthy period of development that children undergo. Compared to our close evolutionary relatives, human children require a longer period to develop their brains to be prepared to engage with and be successful in our complex social world (Bjorklund & Shackelford, 1999). Unlike other species, such as

animals with large litters, humans tend to produce fewer offspring over their lifespans.

While this is in part due to humans' extended childhood development, it is also a result of biological reasons. Women can only have so many children with each pregnancy, usually only one or two. The duration of pregnancy and nursing limit the capability of the woman to invest much in mating during this period. Eventually, usually around the middle of life, women will undergo menopause and become unable to bear any more children. As a result of all these factors, humans tend to have a generally small number of offspring and thus can invest more into parenting for each of them.

Paternity Certainty

Due to the increased parental investment required by human offspring and the biological implications to support investing more in fewer offspring, paternity certainty must be high enough for the father to be willing to fulfill these responsibilities (Geary, 2015). Paternity certainty refers to how confident a man is that his mate's offspring is genetically related to him. Maternity certainty is often a trivial topic due to the nature of human childbirth as most women will know that the child they gave birth to is genetically related to them. However, since the process of fertilization and prenatal development is an internal and unseen process, it is not certain whether the offspring is truly related to the father or not until at least when the child is born. Since human offspring require a large amount of investment, it has been evolutionarily important that men do not waste time and resources investing in another man's child, rather than being able to invest in their own biological offspring who can pass on the father's own genes. By investing in offspring unrelated to the father, the man would lose the opportunity to invest more into mating and pass on his genes and instead spend his time helping a "competitor." A man

can increase his paternity certainty by investing more time and resources into ensuring his mate's wellbeing, which in turn decreases the likelihood of her having to turn to, and thus reproducing with, another man.

Other Paternal Motivations

Despite the seemingly major downsides of investing in another man's offspring, fathers today are often observed to invest in children not biologically related to them. This flexibility of human investment strategies can be seen when studying the relationships between men and their stepchildren. If a man forms a relationship with a woman who already has children, he will likely still invest time and resources in them despite them not carrying his genes. Some researchers have viewed this behavior less as a form of parental investment and more as a form of mating investment (Bjorklund et al., 2020). By investing in his mate's offspring, these men demonstrate their potential to invest in any possible future offspring they may have with their mate. This then increases his chances of retaining sexual access to the offspring's mother and ensuring greater paternity certainty if he does have any future children with her. In fact, men tend to contribute more to the offspring of their current mate than genetic or step-offspring of previous mates (Anderson et al., 1999). This finding suggests that men may tend to invest more into parenting as a form of investing in potential mating opportunities than current or past parental opportunities. A possible explanation for this could be that a man's current mate is more likely to have a younger child who has not reached sexual maturity yet than a previous mate whom the man has already raised to maturity, thus making it more beneficial to invest in the current mate's offspring to better ensure their reproductive success and the passage of the man's genes.

In modern cultures, men investing in their offspring is also due to grander social norms of what is expected of fathers. These societal ideas state that men should bear part of the responsibility for raising a child and actively invest time and resources in them. This sentiment is often shared by the men who have children as well; with men being more likely to emphasize the love and emotional satisfaction provided by children rather than their ability to extend his bloodline when asked why they wanted to reproduce (Mackey, 1996 as cited in Roggman et al., 2002). So-called deadbeat dads are generally looked down upon by society for shirking the role they signed up for and not contributing as much as they should, compared to the mother of the child who does not share the same freedom to shed this responsibility. More specifically, fathers are often expected to bear the responsibility of financial investment and the mother to be responsible for emotional investment in the child. Cultural shifts, however, have enabled new structures for family systems, such as single-mothers and single-fathers. In both instances the parent is tasked with assuming part of the responsibility of the absent parent for the sake of the child's well-being.

Environmental Influences on Child Development

Beyond societal expectations, there are several legal aspects that have been implemented to ensure some level of responsibility from the parents, such as federal child support. Child support, for example, is a way for the government to ensure that fathers contribute to their child and previous, or current, mate in a financial way. However, data suggests that as programs successfully increase financial collections from fathers, a large portion of these fathers become less involved with their child in other ways (Carlson & McLanahan, 2002). The types of involvement these programs discourage from these men

are more informal types of investment, such as spending time with their child or being emotionally supportive, at the cost of ensuring he provides formal investment in the form of financial support. Child support programs often do not scale proportionately to the father's economic status, meaning that fathers may be tasked with providing most of their income to formally pay child support to the mother of his child. This limits the father's financial freedom to provide for his child in other informal ways and may even prevent him from spending as much time with his child as he would like if he were required to work more to be able to afford the child support payments. Unemployed fathers or those who are unable to provide financial investments for the child may even be exiled from the family and be prevented from seeing their child by the child's mother or grandmothers serving as sort of "gatekeepers" (Edin & Lein, 1997; Marsiglio & Cohan, 2000 as cited in Carlson & McLanahan, 2002). It is also important to understand how children themselves are affected by these environmental influences.

Studies have shown that child well-being is positively affected by paternal investment regardless of if they reside with their father or not (Carlson & McLanahan, 2002). Despite single-parent families generally being at a disadvantage in regard to this compared to families with both parents, any form of paternal investment has been shown to improve child well-being. This is true both for when the father is providing for the family or fostering a relationship with them. When single-parent families where the mother is the primary caregiver receive lower amounts of paternal financial investment for instance, the primary caregiving parent, in this case the mother, is then given more responsibility of providing for the family financially which then impacts other factors of the family's dynamics, such as time spent together. Childhood environments with lower

levels of parental investment from either the father or mother tend to be more unstable than environments with consistent levels of parental investment (Chang et al., 2019). Children's development tends to occur differently in response to these unpredictable environments. Life history theory suggests that the speed of development itself can increase or decrease because of these environments (Ellis et al., 2012). Faster life history strategies, present in unstable environments, are correlated with an earlier onset of puberty and faster biological aging. They are also correlated with an earlier sexual debut, more sexual partners, and engaging in more casual romantic relationships. Faster life history strategies also correlate with an earlier age of reproduction, producing a higher number of offspring, and investing less in those offspring overall. These qualities are consistent with those found in the unstable childhood environments that these children grew up in. This is consistent with previous claims that the level of investment a father provides for their child influences the amount of investment they provide for their offspring (Belsky, Steinberg, & Draper, 1991 as cited in Bjorklund & Shackelford, 1999). Faster life history strategies are also correlated with a higher likelihood of seeking immediate gratification rather than saving money, emulating the unstable environment the individual experienced as a child. In contrast, children growing up in more predictable environments tend to adopt more "slow" life history strategies such as prolonged physical development, reproducing at a later age, and investing more in offspring (Chang et al., 2019). Predictable environmental influences on children can take on several forms, such as having secure emotional attachments to multiple parents and having access to their required amount of resources to develop successfully.

Relational Influences on Child Development

Higher father involvement with children has been observed to be associated with enhanced cognitive ability, self-confidence, and exploration (Palkovitz, 2002). In this light, a father's role is often to provide a more secure base than the mother can provide on her own for the child to develop more successfully; meaning that the more investment a child receives, the better off they will be. When children grow up in an environment with little to no exposure to the father, they are more likely to form an insecure attachment to their parents (Bjorklund & Shackelford, 1999). Insecure attachments can also be formed when present parents do not exhibit consistently sensitive behavior (Colonnesi et al., 2011). In these scenarios, the child does not recognize the presence of a secure base in their parent, or parents, and is unable to develop to the same extent as their securely attached peers. Insecure attachment styles during childhood may also lead to negative experiences later in life. Adults who developed insecure attachments during childhood may learn to distance themselves from social interactions and thus be seen as less likable by peers (Colonnesi et al., 2011). The presence of two parents in a family system assists the child in developing social competence and talents (Biller, 1993 as cited in van Schaick & Stolberg, 2001). The parents' relationship with each other also serves an important role in the child's development, serving as a sort of model for how male-female relations can function. If this relationship is poor or non-existent, such as in many divorced families, then the child does not possess as useful of an example of romantic relationships and can lead to the child developing unsatisfactory relationships later in life (Amato, 1996 as cited in van Schaick & Stolberg, 2001). Furthermore, the child may experience less life satisfaction if they suffer from a lack of resources as well. This is less

common in families where both the mother and father invest in their child (Biller, 1993 as cited in van Schaick & Stolberg, 2001). This suggests that individuals who were not properly prepared to engage with the social world during their childhood development may have difficulty connecting with peers and forming committed romantic relationships as an adult.

Commitment Readiness

Relationship receptivity theory introduces a way to study how ready adult individuals may be to form a committed romantic relationship. Relationship receptivity theory is the idea that an individual's readiness to be involved in a longer-term relationship can vary at any given time (Hadden & Agnew, 2020). The authors developed *commitment readiness* as a variable capable of measuring this level of preparedness. Agnew et al. (2019) define commitment readiness specifically as the feeling of how ready an individual is to be in a long term committed relationship. Higher levels of commitment readiness demonstrate that an individual is more likely to behave in a way that is beneficial in maintaining a committed relationship. This measure is similar but still distinct from the measure of relationship commitment; which serves as a measure of how committed an individual is to, or how willing they are to continue in, their current relationship (Arriaga & Agnew, 2001, Kelley, 1983). While commitment and commitment readiness as separate measures describe different phenomena, they are still interrelated. An individual who reports experiencing higher levels of commitment readiness, may then also exhibit higher levels of commitment if they are in a committed relationship. Based on relationship receptivity theory, this individual should then exhibit higher levels of behaviors conducive to maintaining their relationship. If the levels of

either commitment or commitment readiness tend to be lower in an individual, however, they are less likely to exhibit these behaviors (Agnew et al., 2019).

Unlike the measure of relationship commitment, the feeling of commitment readiness is not limited to individuals currently in a committed relationship, however, as the measure describes whether an individual is able to handle a committed relationship at a specific point in time (Hadden & Agnew, 2020). An individual's relationship status may not always correlate with their reported readiness to be in one. Just as an individual who is single may be prepared to be in a committed relationship despite not currently being in one, an individual currently in one may not think of themselves as being capable of behaving in a way conducive to maintaining their relationship. Similarly, since relationship commitment can only be measured from individuals currently in a committed relationship, an individual's reported level of relationship commitment can only change during this relationship. Since an individual's readiness to be in a committed relationship is not inherently linked to any specific relationship, the measure has the potential to vary across any point in the individual's life. Relationship receptivity theory suggests several influences for how one may report their level of commitment readiness at any point in time. Some of these influences include current factors, such as relational situations, social norms, expectations, and one's own development (Hadden & Agnew, 2020).

When studying commitment readiness in adults, it is important to measure various factors of their life. One such factor is the adult individual's childhood development and the relationships they experienced and learned from during it. The most important of these childhood relationships is widely thought to be those of the child and their parent, or parents. The child's mother is thought to play an especially important role in their

development; so much so that studies examining this relationship have arguably overshadowed the role played by fathers in a child's development. However, as seen in several studies, such as those looking at attachment and life history strategies, the role of the father is important to a child's overall development (Bjorklund & Shackelford, 1999, Ellis et al., 2012, Chang et al., 2019). It is for these reasons that the current study seeks to add to the growing body of research into the roles of fathers and measure paternal investment as a possible predictor of commitment readiness in young adults.

The Current Study

The current study examines the effect of paternal investment on young adults' readiness to form romantic relationships. This study measures the current level of individuals' reported commitment readiness and specifically focuses on a target demographic of young adults. An online survey was used to measure the participants' commitment readiness and aspects of participants' relationships with their fathers and mothers during their childhood. I predicted that young adults with lower retrospectively recalled paternal investment will also have lower commitment readiness. The hypotheses and methods were pre-registered prior to data collection on AsPredicted (https://aspredicted.org/ZB7_XXM).

Hypotheses

1. Higher levels of retrospectively recalled paternal investment during childhood development predict higher levels of commitment readiness during young adulthood.
2. The association between paternal investment and commitment readiness remains significant after controlling for maternal investment.
3. The association between paternal investment and commitment readiness are stronger for men than for women.

Method

Participants and Procedure

A total of 250 undergraduate students were recruited from Florida Atlantic University's Department of Psychology Research Participation System. The sample size was determined a priori to give at least .80 power to detect an effect size of $r = .20$, even after anticipated exclusions. For participants retained in analyses, ages ranged from 18-31 years with a mean age of 18.65 years and standard deviation of 1.35 years. For gender, 32% of participants identified as male and 66% identified as female. In terms of race and ethnicity, 65% of participants identified as White only, 19% as Black or African American only, and 15% as other or multiple options. A total of 33% also identified as Hispanic or Latino. In terms of relationship status, 39% of participants reported currently being in a committed romantic relationship and 61% reported not being in a relationship.

All participants received credit toward a course requirement upon their completion of the study. Participants were excluded from analyses if they missed more than one of three attention check questions or completed the survey too quickly (spending an average of less than 1 second per question throughout the survey). A total of 11 participants were excluded based on these criteria, leaving 239 participants for analyses.

Participants completed an online survey with questions about being in a committed romantic relationship. Following the survey regarding commitment readiness, participants answered questions about their relationship with their father during their childhood developmental period.

One question included in the survey asked participants if they had grown up with a father for most of their childhood; and if so, what type of father. A similar question was included asking about mothers. If the participant answered yes to these questions, they would also be presented a question what type of parent fulfilled the respective role for most of their childhood, being able to choose from biological parent, stepparent, adoptive parent, or an “Other” option with a textbox to specify their response. For father type, 79.5% of participants retained in analyses grew up with a biological father, 1.7% grew up with a stepfather, 0.4% grew up with an adoptive father, and 2.1% selected “other.” The remaining 16.3% of participants reported that they did not grow up with a father for most of their childhood, although 13.0% had at least some contact with a father. For mother type, 95.0% of participants retained in analyses reported primarily growing up with a biological mother, 0.4% grew up with a stepmother, 0.4% grew up with an adoptive mother, and 0.8% selected “other.” The remaining 3.3% of participants reported that they did not grow up with a mother for most of their childhood, although all these participants had at least some contact with their mother.

Another question in the survey asked participants to best describe their family living situation during their childhood, being able to say they lived primarily with both parents, primarily with their mother, primarily with their father, or an “Other” option with a textbox to specify their response. For this question, 68.2% of participants retained in analyses lived with both parents, 22.2% lived primarily with their mother, 3.3% lived primarily with their father, and 6.3% selected “other.”

Questions asking participants about their estimated family income during childhood (using income bands ranging from “\$20,000 or less” to “more than

\$120,000”), relationship status and length, and if they experienced parental divorce were also included in the survey. In terms of parental divorce, 26.8% of participants retained in analyses reported that their parents divorced during their childhood, 67.8% reported that their parents did not divorce, and 5.4% selected “other.”

Measures

Commitment readiness was assessed with the Readiness Scale (Agnew et al., 2019). It is an 8-item measure ($\alpha = .94$), each rated on a 7-point scale with answers ranging from “Strongly disagree” to “Strongly agree.” It contains questions asking about an individual’s readiness to be in a committed romantic relationship (ex. “Considering all of the factors in my life right now, I am receptive to being in a committed romantic relationship.”).

Nurturant fathering was assessed with the Nurturant Fathering Scale (Finley & Schwartz, 2004). It is a 9-item measure ($\alpha = .95$), each rated on a 5-point scale with the answer choices on the scale varying between questions. It contains questions asking about an individual’s relationship with their father (ex. “How much do you think your father *enjoyed* being a father?”).

Father involvement was assessed with the Father Involvement Scale (Finley & Schwartz, 2004). It is a 20-item measure ($\alpha = .97$), each rated on a 5-point scale with answers ranging from “Always involved” to “Never involved.” It contains questions asking about how involved an individual’s father was in their life over several domains (such as Intellectual development).

Nurturant mothering was assessed with the Nurturant Mothering Scale (Finley, Mira & Schwartz, 2008). It is a 9-item measure ($\alpha = .94$), each rated on a 5-point scale

with the answer choices on the scale varying between questions. It contains questions asking about an individual's relationship with their mother (ex. "How much do you think your mother *enjoyed* being a mother?").

Mother involvement was assessed with the Mother Involvement Scale (Finley, Mira & Schwartz, 2008). It is a 20-item measure ($\alpha = .96$), each rated on a 5-point scale with answers ranging from "Always involved" to "Never involved." It contains questions asking about how involved an individual's mother was in their life over several domains (such as Intellectual development).

Attachment anxiety and *Attachment avoidance* were assessed with the ECR-12 (Lafontaine et al., 2016). It is a 12-item measure with 6 items measuring adult attachment anxiety (ex. "I worry about being abandoned") ($\alpha = .89$), and 6 items measuring adult attachment avoidance (ex. "I don't feel comfortable opening up to romantic partners") ($\alpha = .88$).

Results

The results, found in Table 1, were inconsistent with the main hypotheses in that, retrospectively recalled paternal investment (father involvement and nurturant fathering) did not significantly predict young adults' commitment readiness. This was evaluated by examining the correlations between commitment readiness and each measure of retrospectively recalled paternal investment: father involvement, measured using the Father Involvement Scale, and nurturant fathering, measured using the Nurturant Fathering Scale (Finley & Schwartz, 2004). Father involvement was not significantly associated with commitment readiness, $B = -.07$, $F(1, 237) = .660$, 95% CI $[-.241, .100]$, $p = .417$. Nurturant fathering was also not significantly associated with commitment readiness, $B = -.003$, $F(1, 237) = .001$, 95% CI $[-.179, .174]$, $p = .977$.

Retrospectively recalled maternal investment variables also did not significantly predict young adults' commitment readiness. Mother involvement was not significantly associated with commitment readiness, $B = -.183$, $F(1, 237) = 2.448$, 95% CI $[-.413, .047]$, $p = .119$. Nurturant mothering was also not significantly associated with commitment readiness, $B = -.07$, $F(1, 237) = .332$, 95% CI $[-.307, .168]$, $p = .565$.

Separate linear regression analyses examined whether the relationship between retrospectively recalled paternal investment and commitment readiness was statistically significant after controlling for parallel measures of maternal investment (mother involvement and nurturant mothering, respectively). The results remained nonsignificant. Mother and father involvement did not significantly predict commitment readiness:

mother involvement, $B = -.172$, $t(236) = -1.456$, 95% CI $[-.405, .061]$, $p = .147$; father involvement, $B = -.051$, $t(236) = -.584$, 95% CI $[-.223, .121]$, $p = .560$. Nurturant mothering and fathering also did not significantly predict commitment readiness: nurturant mothering, $B = -.07$, $t(236) = -.575$, 95% CI $[-.310, .170]$, $p = .566$; nurturant fathering, $B = .003$, $t(236) = .035$, 95% CI $[-.174, .181]$, $p = .973$.

Secondary analyses examined whether gender moderated the association between paternal investment and commitment readiness, with the prediction that the association would be stronger for men than for women. No significant gender differences were found in the association between paternal investment and commitment readiness. Gender did not significantly moderate the association between father involvement and commitment readiness, $B = .078$, $t(231) = .408$, 95% CI $[-.297, .452]$, $p = .684$. Gender also did not significantly moderate the association between nurturant fathering and commitment readiness, $B = .229$, $t(231) = 1.172$, 95% CI $[-.156, .613]$, $p = .242$.

No significant gender differences were found in the association between maternal investment and commitment readiness in additional exploratory analyses. Gender did not significantly moderate the association between mother involvement and commitment readiness, $B = -.471$, $t(231) = -1.848$, 95% CI $[-.973, .031]$, $p = .066$. Gender also did not significantly moderate the association between nurturant mothering and commitment readiness, $B = -.036$, $t(231) = -.128$, 95% CI $[-.596, .523]$, $p = .898$.

The survey included additional measures for descriptive and exploratory purposes, including demographic characteristics and a brief measure of attachment anxiety and avoidance (the ECR-12). The socioeconomic status (SES) of participants was not significantly correlated with their scores of commitment readiness, $\rho = -.014$, $p =$

.835. However, participants' SES was significantly positively correlated with both paternal investment variables: father involvement, $\rho = .288, p < .001$; and nurturant fathering, $\rho = .294, p < .001$. Participants' SES was not significantly correlated with either maternal investment variables: mother involvement, $\rho = .132, p = .053$; or nurturant mothering, $\rho = .111, p = .102$.

Participants who were in a relationship reported significantly higher levels of commitment readiness ($M = 5.94, SD = .94$) than participants who were not in a relationship ($M = 4.10, SD = 1.27$), $d = 1.60, t(236) = 12.08, p < .001$. Relationship status was not significantly related to any of the father or mother investment variables (all $ps > .17$). Exploratory analyses were also conducted to measure the association between attachment avoidance and attachment anxiety with commitment readiness. Attachment avoidance was significantly negatively associated with commitment readiness, $B = -.528, F(1, 237) = 66.379, 95\% \text{ CI } [-.655, -.400], p < .001$. No significant gender differences were found in the association between attachment avoidance and commitment readiness, $p = .421$. Attachment anxiety was not significantly associated with commitment readiness, $B = .013, F(1, 237) = .040, 95\% \text{ CI } [-.114, .139], p = .841$.

As shown in Table 1, exploratory analyses revealed that nurturant fathering was significantly negatively correlated with both attachment avoidance and anxiety, and father involvement was significantly negatively correlated with attachment avoidance. Nurturant mothering and mother involvement were both significantly negatively correlated with attachment anxiety.

Discussion

The results were not consistent with the main hypotheses, in that higher levels of retrospectively recalled paternal investment did not significantly predict higher levels of current commitment readiness in young adults. Furthermore, controlling for maternal investment did not alter the nonsignificant associations among paternal investment and commitment readiness. There were also no significant gender differences in the associations among paternal investment and commitment readiness, inconsistent with Hypothesis 3.

In exploratory analyses, however, higher levels of the paternal investment variables, father involvement and nurturant fathering, were associated with lower levels of attachment avoidance (see Table 1). Lower levels of attachment avoidance were also associated with higher levels of commitment readiness (see Table 1). This shows that while the paternal investment variables did not have a direct significant positive correlation with commitment readiness, they both shared a significant negative correlation with attachment avoidance. This is also notable because attachment avoidance was not significantly correlated with either of the maternal investment variables, as seen in Table 1. The shared significant negative associations that paternal investment and commitment readiness showed with attachment avoidance emphasize an aspect of the role that fathers play in their child's development, which in the current study is allowing the child to learn to be comfortable receiving support from others. Why the maternal investment variables, mother involvement and nurturant mothering, do not share this

association is unclear and could be examined in future research. Given that these analyses were exploratory, these associations should also be replicated in future confirmatory research.

Another possibility is that commitment readiness as a variable may not effectively measure the effects of received childhood paternal investment on current young adult romantic relationships. Participants' relationship status was significantly correlated with their scores of commitment readiness, meaning people were more likely to report higher levels of commitment if they were in a relationship than if they were not. Future research could look at other variables to assess relationship functioning, such as commitment, satisfaction or perceived support. Future studies measuring commitment, for instance, would need to limit these analyses only to participants who are in romantic relationships. Looking at other outcome variables could reveal different patterns of results.

In further exploratory analyses, it was revealed that SES of participants was not significantly correlated with their scores of commitment readiness. However, participants' SES was significantly positively correlated with both paternal investment variables: father involvement and nurturant fathering. This could suggest that the higher an individual's annual household income was during their childhood, the more their fathers were able to invest in them. Similar to the exploratory analyses examining the positive correlation between paternal investment and attachment avoidance, this relationship does not exist in the same form for the maternal investment variables. Participants' SES was not significantly correlated with either reported mother involvement or nurturant mothering. This suggests that an individual's amount of received paternal investment may be more susceptible to external and environmental

factors, such as household income, than the amount of received maternal investment. This could be in part due to the typical roles fathers and mothers are expected to play in society, with men providing for the family while the mother cares for the children. Parents in higher SES families then may have the privilege to provide more equal levels of investment in their children.

Due to the data being collected from an undergraduate participant pool, these results may differ in other participant populations. While the racial profile of participants was rather diverse, recruiting participants with a wider range of ages in future studies could be beneficial in understanding the associations in the data. Future studies could also examine paternal investment as a possible predictor of other relationship constructs, such as commitment, attachment anxiety and avoidance.

It is important to measure different aspects of an individual's life and experiences when attempting to understand how they function in relationships. One of the most influential parts of an individual's can be the relationship with their parents. This study has shed some light on various factors of individuals' adult lives that are correlated with the amount of investment they received from their father or mother during childhood. However, as noted in this study, the factors each parent's investment influence may differ. These data serve to highlight the important, and unique, role that different parents play in childhood development. The knowledge gained from these data can then be used to form a better framework for supporting parents and families to ensure healthy development for their children.

Appendices

Appendix A: Tables

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Table 1

Zero-Order Variable Correlations

| | Nurturant Fathering | Father Involvement | Nurturant Mothering | Mother Involvement | Anxiety | Avoidance | Mean | Standard Dev. | Range |
|-------------------------|------------------------|-----------------------|------------------------|-----------------------|---------|-----------|------|------------------|-----------------|
| Commitment Readiness | .00 | -.05 | -.04 | -.10 | .01 | -.47*** | 4.82 | 1.46 | 1.00 to 7.00 |
| Nurturant Fathering | -- | .92*** | .11 | .13 | -.17** | -.16* | 3.62 | 1.06 | 1.00 to 5.00 |
| Father Involvement | | -- | .072 | .15* | -.09 | -.14* | 3.62 | 1.10 | 1.00 to 5.00 |
| Nurturant Mothering | | | -- | .82*** | -.22** | -.01 | 4.28 | 0.79 | 1.56 to 5.00 |
| Mother Involvement | | | | -- | -.15* | .04 | 4.25 | 0.81 | 1.05 to 5.00 |
| Anxiety | | | | | -- | -.03 | 4.59 | 1.48 | 1.00 to 7.00 |
| Avoidance | | | | | | -- | 3.02 | 1.29 | 1.00 to 7.00 |

Note. This table shows the zero-order correlations between variables of interest in this study for all participants. Mean, standard deviations, and range for applicable variables are listed at the right of the table. * $p < .05$; ** $p < .01$, *** $p < .001$.

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