

## Research Article

# Daddy, May I? The Interaction of Fathers' Parenting Styles and Their Children's Personality

#### **Amber Massey-Abernathy**

Psychology Department, Missouri State University, USA E-mail: amberabernathy@missouristate.edu

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**Abstract:** While some research suggests that all types of parenting might be beneficial when the context is accounted for, a large body of literature has shown that warm parenting has the most beneficial outcomes for children. Additionally, because of the variable and discretionary role fathers often play, it is even more important to study the outcomes related to their parenting styles. The current study seeks to test relationships between parenting styles and the development of children's personality traits, specifically the development of Machiavellianism and conscientiousness. One hundred and seven undergraduate students (age 18-22) participated in the current study. The results suggest fathers who employ warm parenting styles showed significant effects on the development of children's personality traits. Moderation results showed an enhancing effect that as children's conscientiousness and warm fathers increased, children's Machiavellian personality scores decreased. Thus, a connection between parenting styles, conscientiousness, and Machiavellianism can be seen.

Keywords: parenting, fathers, Machiavellianism, conscientiousness

## 1. Introduction

## 1.1 Parenting

Parents have long been considered one of the most important aspects related to a child's development. Not only do biological parents provide genes that predispose the child to certain conditions, but they also provide unique environments to each of their offspring. The parental care and nurturing of offspring between conception and independence is universal among mammals (Bjorklund et al., 2002). Evolutionary research would suggest that different parenting styles might serve different functions based on the environment, and therefore variability is important (Ellis & Boyce, 2008). Given these findings, attention should be paid to the level of care and nurturing as well as the child outcomes in every parent-child dyad. Parenting is often examined with two dimensions: acceptance-/responsiveness-rejection and demanding-permissiveness (Ebrahimi et al., 2017; Miller & Neumeister, 2017). The first dimension characterizes parents as being either accepting or rejecting, which involves the level of intimacy parents have with their children. Accepting parents are often supportive, whereas rejecting parents can restrict the autonomy of the child, be forceful, inconsistent, neglectful, insensitive, and may value obedience and punishment (Baumrind, 1967; Ebrahimi et al., 2017). Demanding-permissiveness refers to supervision of the child and expectations of the parents (Pellegrini & Bohn, 2005). Four parenting styles are often derived from the two dimensions of acceptance and demanding:

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authoritative, authoritarian, permissive, and neglecting (Baumrind, 1966). Similarly, Skinner et al. (2005) studied parenting by examining six dimensions including warmth, rejection, structure, chaos, autonomy support, and coercion. Previous research has created two dimensions from these six dimensions that overlap with acceptance and demanding. These two new dimensions are perceived warmth (warmth, structure, and autonomy) and perceived negative (rejection, chaos, and coercions) dimensions (Byrd-Craven et al., 2012; Massey-Abernathy & Byrd-Craven, 2016). The dimensions are listed as perceived because they are subjective experiences reported by the children about the parenting they experienced. Examining parenting using these two dimensions is important as it gives not only acceptance and demanding characteristics but also aspects relating to ways one might implement these characteristics. For example, acceptance is a high level of warmth that can be implemented through a familiar structure. When examining parenting in these two dimensions, it is also important to note that some might score high or low in both strategies, as is seen in the two dimensions of acceptance-/responsiveness-rejection and demanding-permissiveness. Overall, it is important to determine which aspect is related to better outcomes for the child. For the current study, perceived warmth and perceived negative will be used to examine parenting.

Warmth is conceptualized as a reward system that motivates children and helps facilitate compliance and acceptance. Warm and responsive parenting often overlaps with secure attachment, though not always (MacDonald, 1992). Parental warmth has been shown to be related to a child's self-concept (Parish & McCluskey, 1992), psychological adjustment (Lila et al., 2007), moral development (Hoffman, 1970), social and emotional competencies (Anaya & Pérez-Edgar, 2019), and prosocial behaviors (Farrant et al., 2012). The type of parenting can be strongly influential in a child's development because what is often demonstrated by the parents is then learned and observed by the child. For example, negative affectivity observed by a parent can lead to a decrease in peer competency (Carson & Parke, 1996). Additionally, parents who were more skilled at communicating had adolescents that were better able to recover from stressful interactions (Afifi et al., 2015). It appears that warm parenting can help with many aspects of development. Unfortunately, not everyone experiences warm parenting.

Negative parenting often involves parental intrusiveness, dominance, and pressure (Anaya & Pérez-Edgar, 2019). Negative or harsh parenting has been shown to be related to maladaptive perfectionism (Kawamura et al., 2002), externalizing symptoms (Rinaldi & Howe, 2012), and decreased creativity (Miller et al., 2012). Overcontrolling parenting is related to the child's decreased emotion regulation and inhibitory control which can lead to future problems for the child (Perry et al., 2018). Taken together, it appears that the quality of parenting can have a large impact on many aspects of the child's development.

#### 1.2 Parenting and child's personality

Parenting style has shown to be important for many factors but, one of the largest might be the impact it has on a child's personality. Research has shown that personality traits are relatively stable and have a heritability of approximately 41% to 61% (Jang et al., 1996). Although this is relatively high, environments (such as parenting style) still play the largest role in personality adaptation. This means that the parents might impact the child's personality in two ways: genetically and through environmental factors. Although genetic predisposition cannot be changed, environmental factors can be altered (Massey-Abernathy & Robinson, 2021).

When looking at parenting and personality traits, warm parenting (including acceptance and responsiveness) has been shown to be related to increases in the child's creativity, positive emotionality, effortful control, agreeableness, conscientiousness, and decreases in child's neuroticism (Lim & Smith, 2008; Schofield et al., 2012; Wilson & Durbin, 2012). Negative parenting (including overreactivity, intrusiveness, and punishing/harshness) has been shown to be related to decreases in child's benevolence, conscientiousness, extraversion, self-directedness, and increases in child's imagination, harm avoidance, and neuroticism (De Haan et al., 2010; Reti et al., 2002).

One specific personality trait that has been shown to be related to parenting styles is Machiavellianism. Machiavellianism refers to an individual who is motivated by self-interest, lacks interpersonal closeness, desires control, and may endorse unethical behaviors (Massey-Abernathy & Byrd-Craven, 2016). Specifically, low quality or irregular parental care was associated with higher levels of Machiavellianism when examining the parent-child dyad (Jonason et al., 2013). Family disengagement, chaoticness, less cohesion, less flexibility, and poorer communication were also associated with increased Machiavellian scores in adolescence (Láng & Birkas, 2014). For adolescent boys, perceived interparental conflict and poorer quality co-parenting were shown to be related to higher levels of Machiavellianism (Láng

& Abell, 2018).

Machiavellianism, in turn, has been associated with other personality traits (specifically the Big Five) within the individual. Several studies, using a variety of ages including adolescence, found increased Machiavellianism to be related to decreased extraversion, openness, agreeableness, and increased neuroticism (Austin et al., 2007; Fernándezdel-Río et al., 2020; Jonason et al., 2013; Kückelhaus et al., 2020; Muris et al., 2017; Szijjarto & Bereczkei, 2015). Interestingly, findings regarding the relationship between conscientiousness and Machiavellianism have shown mixed results. Many studies have shown that increased Machiavellianism is related to decreased conscientiousness (Austin, et al., 2007; Fernández-del-Río et al., 2020; Jonason et al., 2013; Kückelhaus et al., 2020; Muris et al., 2017; Szijjarto & Bereczkei, 2015). However, other research has shown that when examining Machiavellian behaviors in the workplace, increased conscientiousness is often seen (Collison et al., 2018; Kessler et al., 2010). Specifically, one study examined Machiavellianism in terms of antagonism (i.e., manipulativeness, selfishness), agency (i.e., achievement, assertiveness, competence), and planfulness (i.e., deliberation, order). Both Machiavellianism agency and Machiavellianism planfulness were positively related to conscientiousness, while antagonism was negatively correlated (Collison et al., 2018). Similarly, another study examined Machiavellianism through power, management, and manipulation. Both Machiavellian power and Machiavellian management were positively related to conscientiousness while Machiavellian manipulation was negatively related (Kessler et al., 2010). For the current study, Machiavellianism will be measured as a single component, but sub-components of the questionnaire include tactics, morality, and view. This questionnaire was used in previous studies (Austin et al., 2007; Kückelhaus et al., 2020; Szijjarto & Bereczkei, 2015). Because Machiavellianism and personality have both been shown to be related to parenting (Jonason et al., 2013; Wilson & Durbin, 2012), we must look at how these aspects can overlap. This can include the role of only the mother or the father (Bornstein, 2012).

# 1.3 Variability of fathers' and mothers' parenting

The parental investment theory, a branch of the life history theory, helps explain that for humans, mothers are often more likely to invest heavily in their offspring than fathers (Trivers, 1972). Human males do devote more time to "parenting" than the vast majority of mammals (Clutton-Brock, 1991). However, mother's interactions often involve caregiving, and most babies seek comfort from mothers when they are distressed (Lamb, 1979). One study found that in the United States, mothers reported greater acceptance and warmth of children than fathers (Putnick et al., 2012). Interactions with fathers involve vigorous play that is often referred to as "rough-and-tumble" play (Parke & O'Leary, 1976, pp. 653-663). It involves the parental dimensions of warmth and control, which helps teach obedience and involves sensitivity (Hofferth et al., 2010; Paquette, 2004). Physical play occurs less frequently with authoritarian (high acceptance and high control) fathers (Paquette, 2004). Father's early interactions through play and competition often help with the development of the child's openness to the world by encouraging risks while still maintaining safety and security (Paquette, 2004). Many studies have shown that a father's presence is positively associated with the child's emotional regulation, academic achievement, and social competence (Cabrera et al., 2000). Additionally, a father's absence is related to lower social status, and a higher mortality rate, and for females can result in dissatisfaction or maladjustment in interaction with potential mates (Geary, 2000). It should be noted that fathers' absence can confound variables, so the overall outcome may be an indirect effect (i.e., emotional distress or economic difficulties). Overall, it appears that mothers and fathers play different roles in the developmental outcomes of the child. It is important to examine their distinct roles, specifically the role of the father, as there is more variability in the role of the father.

#### 1.4 Father's parenting and child's personality

As seen in the literature above, research on fathers is lacking and the role they play is unique for the child's personality development (Geary, 2000). It is believed that this impact starts exceedingly early in life. For example, the father's level of sensitivity in play during infancy is related to the child's working model of attachment in adolescence. This impact was not seen in mothers (Grossmann et al, 2002; Lucassen et al., 2011). Sensitivity can involve many facets. For example, the emotional tone of the father, as well as the amount of affection, has been shown to be associated with greater social and academic competencies in children (Parke & Buriel, 2007) as well as decreases in aggression and depression later in life (Florsheim et al., 1996; Rohner, 1998). Similarly, the father's quality interactions at 54

months were related to the child's social skills in third grade. Additionally, those quality interactions at 54 months were related to a warm father-child relationship in the first grade, but this was only seen for daughters, not sons (Webster et al., 2013). Some research has shown it is not just sensitivity and quality but the complexity of the fatherchild interaction that impacts child development. For example, greater complexity in father-toddler social toy play/ exchange/communication predicted better cognitive development, language development, and emotional regulation in childhood (Parke, 1995; Parke & Buriel, 2007; Pleck, 1997). However, in one study, the relationship was impacted by the father's psychological well-being and time spent in playgroups (Roggman et al., 2004). Similarly, positive fatherchild interactions in first grade were related to the father's parenting beliefs, child's language skills, and child's social skills during that time (Holmes & Huston, 2010). Another study found the father's supportiveness led to increased children's school readiness but, only when the mother scored average or below in supportiveness. In this instance, the father might function as a buffer to a negative interaction with the mother (Martin et al., 2010). Some research suggests that father-child relationships in later childhood and adolescence are also influential. Kaplan et al. (1995, 1998) found that parental investment in the form of time and money leads to increased social status for the child and even higher socioeconomic status in adulthood. Studies have also found that father-child interactions can impact the physiological levels and physiological responses of the child. One study reported that warm father-daughter relationships had lower pre-task cortisol levels and more attuned cortisol responses to problem discussion with a friend. This demonstrates that father-daughter relationships might impact hypothalamic-pituitary-adrenal reactivity to stressors in women (Byrd-Craven et al., 2012).

Contrary to the way that warm fathers or warm father-child relationships have been found to be beneficial, negative fathers have been shown to be detrimental. The study mentioned above by Byrd-Craven et al. (2012) also found that father-daughter relationships characterized as negative had higher pre-task cortisol levels and elevated cortisol levels in response to problem discussion with a friend. Research also indicates that they were more likely to self-disclose about psychosocial stressors which can lead to unhealthy levels of co-rumination. Another study examining cortisol found that fathers' negativity was related to the child's increased cortisol level in response to an emotional challenge at the age of seven months and overall cortisol level at 24 months (Mills-Koonce et al., 2011). Negative fathers have also been shown to impact the biological development of the child. Disordered paternal behavior was shown to be related to increased family disruption which was associated with increased menarche timing for females (Tither & Ellis, 2008). Finally, low scores on sensitivity and high scores on non-responsiveness of the father were related to externalizing behaviors in children (Trautmann-Villalba et al., 2006).

When examining the personality trait of Machiavellianism, it has been found to be related to fathers, but there is not a large amount of literature available. One study found that children high in Machiavellian traits appeared to be more resistant to harsh fathering (Massey-Abernathy & Byrd-Craven, 2016). For boys only, low intensity and quality of verbal communication with the father was related to increased Machiavellianism. This same study found that girls' maternal alienation led to increased levels of Machiavellianism (Láng & Birkas, 2014).

Although there is some research regarding the impact of the father's parenting style, the research currently does not address the impact on the child's Big Five personality traits. That research has been done with both parents (as reported above) but, not examined with just the father.

#### 1.5 The current study

The current study examines the relationship between perceived parenting style and a child's personality scores, specifically Machiavellianism. Because Machiavellianism has been shown to be related to the Big Five personality factors, this relationship is also examined. A combination of retrospective and current perceived parenting styles was used to determine a summative level of parenting as levels of structure, autonomy, and coercion might change with the age of the child. Participants in the study are in the late adolescent phase (18-22) which allows for a long period of parental engagement and various levels of support, and Machiavellian traits are often seen as early as childhood and are often self-reported as early as middle to late adolescence (Massey et al., 2015). Based on previous studies, fathers are of particular interest (Massey-Abernathy & Byrd-Craven, 2016). Specifically, the connection between fathers' parenting styles, children's Machiavellianism, and children's conscientiousness is examined in more detail as previous studies have shown mixed results relating to the direction of the relationship between Machiavellianism and conscientiousness.

Specific hypotheses include the following:

- i. Fathers' parenting styles would impact children's Machiavellian scores more than mothers parenting styles. Specifically, perceived negative fathers would be positively related to children's Machiavellian scores.
- ii. Children's Machiavellian scores would be related to children's Big Five personality traits. Specifically, as replication of previous studies, children's Machiavellian scores would be positively related to neuroticism, and negatively related to extraversion, openness, and agreeableness (Austin et al., 2007; Fernández-del-Río et al., 2020; Jonason et al., 2013; Kückelhaus et al., 2020; Muris et al., 2017; Szijjarto & Bereczkei, 2015). Although mixed results have been shown previously relating to the direction of the relationship between Machiavellianism and conscientiousness, it is expected that the relationship will be negative as the scale used for the current study examines Machiavellianism in everyday life and not in workplace settings. Additionally, this should replicate previous findings where the Machiavellianism Personality scale (MACH-IV) was related to decreased levels of conscientiousness (Austin et al., 2007; Kückelhaus et al., 2020; Szijjarto & Bereczkei, 2015).
- iii. Fathers' parenting styles would be related to children's Big Five personality traits. Previous research has not only examined fathers, but also the impact of warm and negative parenting. Findings suggest that warm (fathers) would be positively related to extraversion, agreeableness, and conscientiousness while negatively related to openness and neuroticism (Lim & Smith, 2008; Schofield et al., 2012; Wilson & Durbin, 2012). Negative (fathers) would be negatively related to extraversion, agreeableness, and conscientiousness while positively related to openness and neuroticism (De Haan et al., 2010; Reti et al., 2002).
- iv. Once the previous relationships have been found, follow-up analysis will look at how a child's personality might also be related to the father's parenting styles and Machiavellian personality traits. Because conscientiousness has shown mixed results relating to Machiavellianism, it might need to be examined in terms of low, average, and high scores to see the role it plays. Research has shown environmental context can impact the relationship between other variables. Several researchers have suggested the importance of examining the role of parenting context as a moderator of developmental links (Anaya & Pérez-Edgar, 2019; Lianos, 2015). Children's characteristics and later-life outcomes are often examined. For example, De Clercq et al. (2008) found that negative parental control mediated the relationship between disagreeableness and externalizing problems while positive parenting mediated the relationship between disagreeableness and internalizing problems. The current study is looking at two children's personality characteristics but, Machiavellian personality scores are also related to later-life outcomes. For instance, fathers' parenting styles have previously been found to moderate the relationship between Machiavellian personality scores and skin conductance levels (Massey-Abernathy & Byrd-Craven, 2016). The current study will examine if fathers' parenting moderates the relationship between children's conscientiousness and their Machiavellian personality scores, as that relationship needs further exploration.

## 2. Methods

#### 2.1 Participants

One hundred and seven undergraduates participated in the study and were recruited through a subject pool website and given partial course credit for participating (males n = 25, females n = 82, age range 18 to 22, M = 18.84, SD = 1.04, 96% Caucasian).

#### 2.2 Procedures

This study was approved by the university's Institutional Review Board. Participants were recruited through psychology courses in a large mid-western university. All procedures took place online. Undergraduate students signed up to take part in an online study and were given a link to a survey using Qualtrics online software. Students must be 18 years old or older to participate. Participants started by filling out a consent form. Next, they complete a demographics

questionnaire, the MACH-IV, the six dimensions of parenting questionnaire, and a personality inventory.

#### 2.3 Measures

#### 2.3.1 Demographics

This questionnaire informed researchers of each individual's age, sex, relationship status, ethnicity, and grade level.

#### 2.3.2 *MACH-IV*

A 20-item self-report measure designed to assess the personality facets of Machiavellianism (tactics, morality, and views). For the current study, a composite score was created as participants rated each item on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The scale had internal consistency reliability of  $\alpha = .82$  and a mean inter-item correlation of .19 (Christie, 1970). For the current study reliability was  $\alpha = .71$ .

#### 2.3.3 Six dimensions of parenting

Skinner et al. (2005) created a motivational model based on the six dimensions of parenting. The questionnaire used for this study was based on their model and modified for this study to reflect the relationship of the participant with their father and mother. The original questionnaire stated, "my parents". The modified version used in the current study gave instructions for participants to answer based on their overall relationship with their father and mother (separately). Therefore, they completed two separate questionnaires about parenting, one with questions stating, "my father" and one with questions stating, "my mother". Participants were asked to identify if their primary male caregiver growing up was their father, stepfather, adopted father, male relative, or other. Similarly, they were asked if their primary female caregiver growing up was their mother, stepmother, adopted mother, female relative, or other. They were informed that the questionnaire would state mother or father but, they should answer based on their primary male and female caregivers. The questionnaire includes six major factors. Warmth (e.g., My father and I do special things together,  $\alpha =$ .77), structure (e.g., My father's expectations for me are clear,  $\alpha = .66$ ), and autonomy support (e.g., My father expects me to say what I really think,  $\alpha = .73$ ) are the three warm/positive dimensions. Rejection (e.g., Sometimes I feel like my father thinks I'm difficult to like,  $\alpha = .69$ ), chaos (e.g., My father changes the rules a lot at home,  $\alpha = .67$ ), and coercion (e.g., I often get into power struggles with my father,  $\alpha = .74$ ) are the three negative dimensions. To create a parsimonious discussion of questionnaire dimensions and for ease of analysis, warmth, structure, and autonomy support were combined into a single composite perceived warm father/mother variable ( $\alpha = .84$ ). Rejection, chaos, and coercion factors were combined into a single composite perceived negative father/mother variable ( $\alpha = .83$ ). This combination of variables has been seen in previous research (Byrd-Craven et al., 2012; Massey-Abernathy & Byrd-Craven, 2016). The combination of variables to create two dimensions is beneficial as it helps overlap with the research on accepting and demanding parenting (Ebrahimi et al., 2017; Miller & Neumeister, 2017) while expanding on ways those behaviors are implemented or observed in the parent-child dyad. For the current study, perceived warm father/mother had a reliability of  $\alpha = .93$ , while perceived negative father/mother had a reliability of  $\alpha = .93$ .

#### 2.3.4 Personality inventory (Big Five - International Personality Item Pool)

This questionnaire consists of 100 items: 20 items for each of the Big Five personality traits are extraversion, agreeableness, conscientiousness, neuroticism, and openness. To complete this scale, participants were asked to rate how accurate each item was to them on a five-point scale ranging from *very inaccurate* to *very accurate*. Coefficient alphas for extraversion, agreeableness, conscientiousness, neuroticism, and openness for the 100-item International Personality Item Pool were found to be .91, .88, .88, .91, and .90 respectively, with low intercorrelations (mean intercorrelation = .31; Goldberg, 1992). For the current study, reliability was found to be .95, .89, .93, .89, and .92. Reverse scoring is conducted on denoted items and scores calculated for each Big Five trait, with higher scores indicating higher associations with traits.

#### 2.4 Data analysis

A power analysis was conducted with alpha = .05, power = .08, and effect size = .15. The sample size needed to run statistical analysis was 77 participants. Hypotheses were investigated using correlations and a multiple linear regression equation was conducted through IBM SPSS Statistics Software 22. Alpha was set as .05 for all inferential tests in this paper. Table 1 lists all descriptive statistics for variables examined in the study. Materials and data for this study are available by emailing the corresponding author.

	M	SD
1. Warm Father	37.82	9.71
2. Negative Father	24.85	12.10
3. Warm Mother	39.46	9.21
4. Negative Mother	23.62	10.38
5. Machiavellianism	49.37	7.91
6. Conscientiousness	77.67	13.66
7. Neuroticism	55.88	15.59
8. Agreeableness	79.73	11.32
9. Extraversion	67.60	17.01
10. Openness	72.47	14.71

Table 1. Descriptive statistics for variables of interest

## 3. Results

Because mothers have been known to impact a child's development (including personality), a multiple regression was conducted to investigate whether warm fathers, negative fathers, warm mothers, and negative mothers could predict a child's Machiavellian personality scores. The results of the regression indicated that the model explained 14.9% of the variance and that the model was a significant predictor of a child's Machiavellian traits, F(4, 102) = 4.45, p = .002. Upon further analysis, it appears that only warm fathers contributed significantly to the model (B = -.192, P = .04), while negative fathers (B = .075, P = .24), warm mothers (B = -.109, P = .25), and negative mothers (B = .110, P = .13) did not.

Children's Machiavellian scores were found to be correlated with three of the Big Five personality traits. Specifically, Machiavellianism was correlated with neuroticism [r(107) = .24, p = .01], agreeableness [r(107) = -.60, p < .01], and conscientiousness [r(107) = -.41, p < .01]. Extraversion and openness were not significantly correlated with Machiavellianism [r(107) = -.11, p = .28; r(107) = -.02, p = .83, respectively].

Although warm fathers were found to be related to Machiavellianism, both warm and negative fathers were examined in relationship to children's personality traits. Again, it was found that only warm fathers were related. Specifically, warm fathers were correlated with extraversion [r(107) = .33, p = .01], openness [r(107) = -.19, p < .05], neuroticism [r(107) = -.25, p = .01], agreeableness [r(107) = .27, p < .01], and conscientiousness [r(107) = .19, p < .05]. Once the above relationships were determined, further analysis was done. To test the hypothesis that Machiavellian personality scores are a function of multiple factors, and more specifically whether the child's conscientiousness moderated the relationships between warm fathers and Machiavellian personality scores, a hierarchical multiple regression analysis was conducted (see Figure 1). In the first step, two variables were included: the child's conscientiousness and warm fathers. These variables accounted for a significant amount of variance in child Machiavellian personality scores,  $R^2 = .219$ , F(2, 104) = 14.62, p < .001. To avoid potentially problematic high multicollinearity with the interaction term, the variables were centered and an interaction term between the child's conscientiousness level and warm fathers was created (Aiken & West, 1991). Next, the interaction term between child's conscientiousness and warm fathers was added to the regression model, which accounted for a significant proportion of the variance in child's Machiavellian personality scores,  $\Delta R^2 = .04$ ,  $\Delta F(1, 103) = 6.15$ , p = .01, b = -.013, t(103) =

-2.48, p = .015. Examination of the interaction plot showed an enhancing effect that as the child's conscientiousness and warm fathers increased, the child's Machiavellian personality scores decreased. At low conscientiousness, the child's Machiavellian personality scores were similar for low, average, or high levels of the warm father. Children with high warm fathers and high conscientiousness scores had the lowest level of Machiavellian personality scores (see Figure 1).

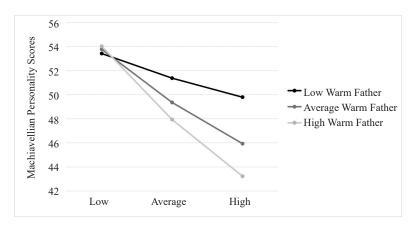


Figure 1. Moderation by warm father

# 4. Discussion

As seen in previous literature, fathers' parenting styles are related to children's Machiavellian traits (Láng & Birkas, 2015; Massey-Abernathy & Byrd-Craven, 2016). However, unlike previous findings, the current study found it was warm fathers that are related to a decrease in Machiavellianism. Given that this sample is mainly female college students, it might be that they were more impacted by the positive interactions with their father figures (Ellis et al., 1999; MacDonald, 1992). It still appears that the level of the father's sensitivity, control, and quality interactions might be related to children's Machiavellian view of the world and might impact the use of Machiavellian tactics (Láng & Birkas, 2015; Massey-Abernathy & Byrd-Craven, 2016). However, it might be additional environmental context or children's traits that make a difference in the overall impact as causal relationships were not determined in the current study.

It is important to note that Machiavellian scores can be related to other personality traits. Specifically, previous research has found a link between Machiavellianism and all the Big Five personality traits (Austin et al., 2007; Fernández-del-Río et al., 2020; Kückelhaus et al., 2020; Muris et al., 2017; Szijjarto & Bereczkei, 2015). Interestingly, the direction of the relationship between conscientiousness and Machiavellianism has shown mixed results (Austin et al., 2007; Collison et al., 2018; Fernández-del-Río et al., 2020; Kessler et al., 2010; Kückelhaus et al., 2020; Muris et al., 2017; Szijjarto & Bereczkei, 2015). The current study supported previous research in that Machiavellianism was positively correlated with neuroticism and negatively correlated with agreeableness. Conscientiousness was negatively correlated with Machiavellianism, and this was found when the MACH-IV was used previously (Austin et al., 2007; Kückelhaus et al., 2020; Szijjarto & Bereczkei, 2015). In the current study, extraversion and openness were not significantly associated with Machiavellianism. Research has shown that although personality is relatively stable, small changes in extraversion and openness do occur often in the twenties (Costa & McCrae, 1994). Given that a portion of the sample falls in that age range, it could be that the changes in those personality traits impacted the relationship between these traits and Machiavellianism.

Previous research has also suggested that both warm and negative parenting can impact personality traits (De Haan et al., 2010; Lim & Smith, 2008; Reti et al., 2002; Schofield et al., 2012; Wilson & Durbin, 2012). Specifically, warm parenting is related to increases in extraversion, agreeableness, and conscientiousness and negatively related to openness and neuroticism. The opposite has been found for negative parenting. The current study examined only fathers' parenting styles and found that only warm fathers were related to children's personality traits in the same direction as

previous findings (Lim & Smith, 2008; Schofield et al., 2012; Wilson & Durbin, 2012). It might be that the specific and unique role of the father as an additive warmth can impact the personality traits. For example, Putnick et al. (2012) found that in the United States, mothers reported greater acceptance and warmth than fathers. Therefore, an increased level of warmth might create differences in environmental context and allow for more positive personality attributes. However, this was not examined fully in the current study.

Finally, the results of the current study suggest that fathers' parenting styles might not only be related to Machiavellianism but many of the Big Five personality traits, and there appears to be an interplay between these aspects. Although conscientiousness was found to be negatively related to Machiavellianism, other research has shown mixed results. Therefore, conscientiousness might need to be examined in terms of low, average, and high scores to see the role it plays. The current study found that conscientiousness acts as a moderator between warm fathers and children's Machiavellianism when examined this way. Children with low conscientiousness and low levels of warm fathers had the highest levels of Machiavellian personality scores. Children, high in consciousness and with warm fathers, had the lowest level of Machiavellianism. So, although fathers' personality styles might be related to Machiavellianism levels in children, the child's other personality traits might also be related to this interaction. It can be that the child's personality evokes certain responses from the parent. It might also be that the father impacts not only the Machiavellianism level but the conscientiousness level of the child as well through the facilitative role they play.

An important point to make regarding the current study is that, although personality and context (such as parenting) might interact, this interaction might also be impacted by other environmental factors. For example, specific phenotypes might have advantages in certain social environments (Boyce & Ellis, 2005). High levels of Machiavellian personality traits have been shown to be beneficial given the right circumstances (Jones, 2016). Additionally, warm parenting is not always beneficial (Li et al., 2022). Therefore, the social environment of the current study (college students that were primarily female) might greatly impact the results of this study.

#### 4.1 Limitations

A lot of literature examines an overall parenting style but does not differentiate between mothers and fathers. The current study helps to shed light on the importance of examining fathers' and mothers' parenting styles separately. Furthermore, information such as divorce, single parenting, and gender should be examined. Divorce or any large changes in the family dynamic might impact the child's personality, specifically conscientiousness, and that can impact the results (Sodermans & Matthijs, 2014). Additionally, the results might be affected if only one caregiver is present, as the interplay between caregivers has been shown to change outcomes. For example, one study revealed that having both parents display an authoritative parenting style leads to the best outcome, but if only one caregiver displayed authority, it could lead to an increase in school maladjustment for boys and high personal adjustment for girls (Panetta et al., 2014). Gender is also an important variable to examine as previous research has found parental conflict impacts males and females differently when related to Machiavellian scores. Finally, because parenting involves many complex aspects, controlling for parents' characteristics (for example, their personality traits) would strengthen the results. It should also be noted that this study is only correlational, and no causal explanations can be drawn from these results.

# 4.2 Conclusion and future directions

The current study examines the importance of looking at the variable roles of fathers as well as the interaction between children's personalities and parenting styles. This information is beneficial as attachment research suggests that the expectation of the parent should match with the temperament of the child, known as the goodness of fit (Seifer, 2000). When examining if parenting techniques are beneficial or not, it appears that the child's personality might play a role in the overall outcome. Although this has been studied before, the current study highlights the need for examining fathers as they might impact outcomes involving moral selection or psychopathy (Jonason et al., 2013). Future studies would benefit from examining not just parenting styles but attachment as well. The personality of the child plays an integral part in both, and attachment styles are often studied in relation to adult interactions (Diehl et al., 1998). It appears that early attachment might be a better predictor of personality as it is developed relatively early in life, and some suggest prenatal attachment occurs (Muller & Mercer, 1993). Therefore, it might be that attachment and personality are developed early in life, and parenting just strengthens the already existing traits.

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## **Conflict of interest**

The author declares no conflict of interest to disclose.

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