

Mama's Baby, Papa's Maybe: Links Between Child-Father Resemblance and Child-Reported Paternal Investment

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Background

- Because conception occurs internally to the human female, ancestral males did not have 100% certainty of their paternity.
- Evolutionary theorists have proposed that males are sensitive to an offspring's resemblance to them as a cue of paternity (Daly & Wilson, 1982), and calibrate their investment accordingly.
- In support of this proposal, research has shown that young adults who perceive themselves as resembling their father also report higher quality relationships with their father (Gallup et al., 2015).
- Further, outsiders' ratings of the degree to which offspring resemble their fathers have been positively related to offspring's reports of the quality of the relationship they have with their father (Prokop, Obertova, & Fedor, 2010).

Study Objectives

- We aimed to replicate the previously documented positive link between offspring resemblance to fathers and fathers' investment in offspring, using both self- and other-perceived ratings of father-offspring resemblance.
- A second aim was to extend upon previous research by showing that the link between resemblance and investment is stronger for fathers than for mothers.

Method

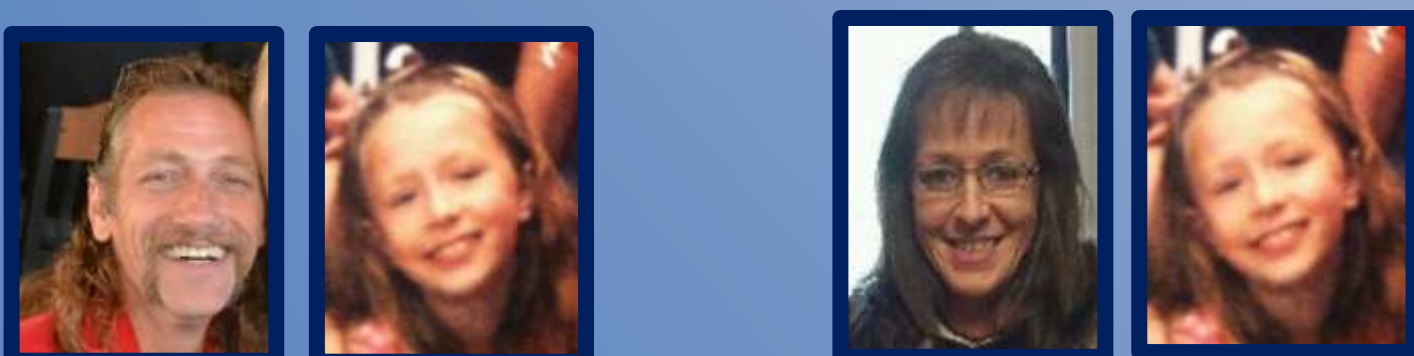
Phase 1

- 251 students came into the lab to complete a questionnaire on their family history, perceptions of investment from each parent, and perceptions of their resemblance to each parent.
- Parental investment was captured by items representing eight domains (listed in Table 1) (Bradford et al. 2002).
- Self-perceived resemblance to each parent was assessed with physical and psychological elements.
- Participants also downloaded four photos: self at age 10, self currently, father currently, and mother currently.

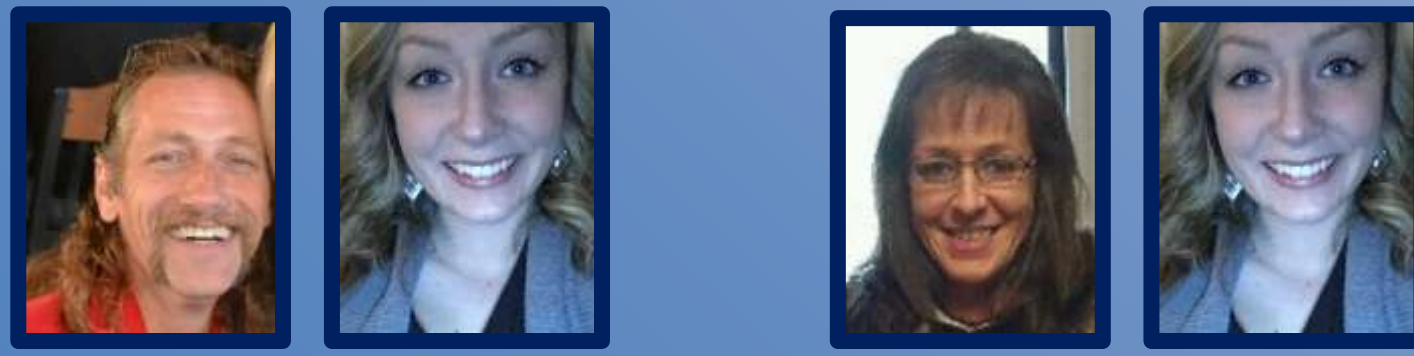
Phase 2

- We collected outside (naïve) observers' ratings of resemblance using four different slideshows. Each rater viewed one of four slideshows.
- Each slide included a pair of pictures from Phase 1 participants. Phase 2 raters were asked, "How much do these people resemble each other?" Raters used a seven point scale ranging from 1 (Not at All) to 4 (Some) to 7 (A Lot).

1. Father & Student ~Age 10 (N=20) 3. Mother & Student ~Age 10 (N=15)



2. Father & Student Currently (N=16) 4. Mother & Student Currently (N=15)



Results

- Table 1 shows that students' perceptions of the degree to which their father (and mother) had invested in them were internally consistent and, on average, high.
- Table 2 shows that our measures of student resemblance to their parents were consistent – the more that participants perceived themselves as physically resembling their mother or father, the more outside raters perceived them as resembling their parents.
- Table 3 shows the results of our hypothesis tests. As we expected and as shown in the scatter plots below, students' perceptions of physical resemblance to their father was tied to higher ratings of investment from their father; and as expected, this association between resemblance and investment did not occur for participants and their mothers. When we pursued links between outsiders' resemblance ratings and participants' reports of fathers' investment, only 3 of 16 subscale correlations were statistically significant. These analyses offer some, but not consistent, support for hypothesis.

Table 1: Participants' Perceptions of Investment from Mother and Father

Father Investment	α	$M (SD)$
Teaching Responsibility (5 items)	.82	3.85 (0.73)
School Encouragement (3 items)	.76	4.43 (0.75)
Providing Necessities (2 items)	.89	4.74 (0.56)
Time Together (5 items)	.89	3.86 (0.82)
Praise and Affection (4 items)	.85	4.12 (0.87)
Developing Talents (3 items)	.68	4.39 (0.75)
Reading Homework (3 items)	.66	3.22 (0.95)
Attentiveness (2 items)	.61	4.23 (0.87)
Total Investment (27 items)	.87	4.12 (0.58)
Mother Investment	α	$M (SD)$
Teaching Responsibility (5 items)	.78	3.97 (0.75)
School Encouragement (3 items)	.81	4.64 (0.57)
Providing Necessities (2 items)	.91	4.76 (0.59)
Time Together (5 items)	.91	4.24 (0.71)
Praise and Affection (4 items)	.87	4.56 (0.59)
Developing Talents (3 items)	.76	4.62 (0.54)
Reading Homework (3 items)	.73	3.73 (0.83)
Attentiveness (2 items)	.72	4.60 (0.62)
Total Investment (27 items)	.88	4.38 (0.47)

Note: $N = 223 - 236$, Values range from 1 (Never) to 5 (Always)

Table 3: Correlations Between Perceptions of Physical Resemblance and Parents' Investment During Childhood

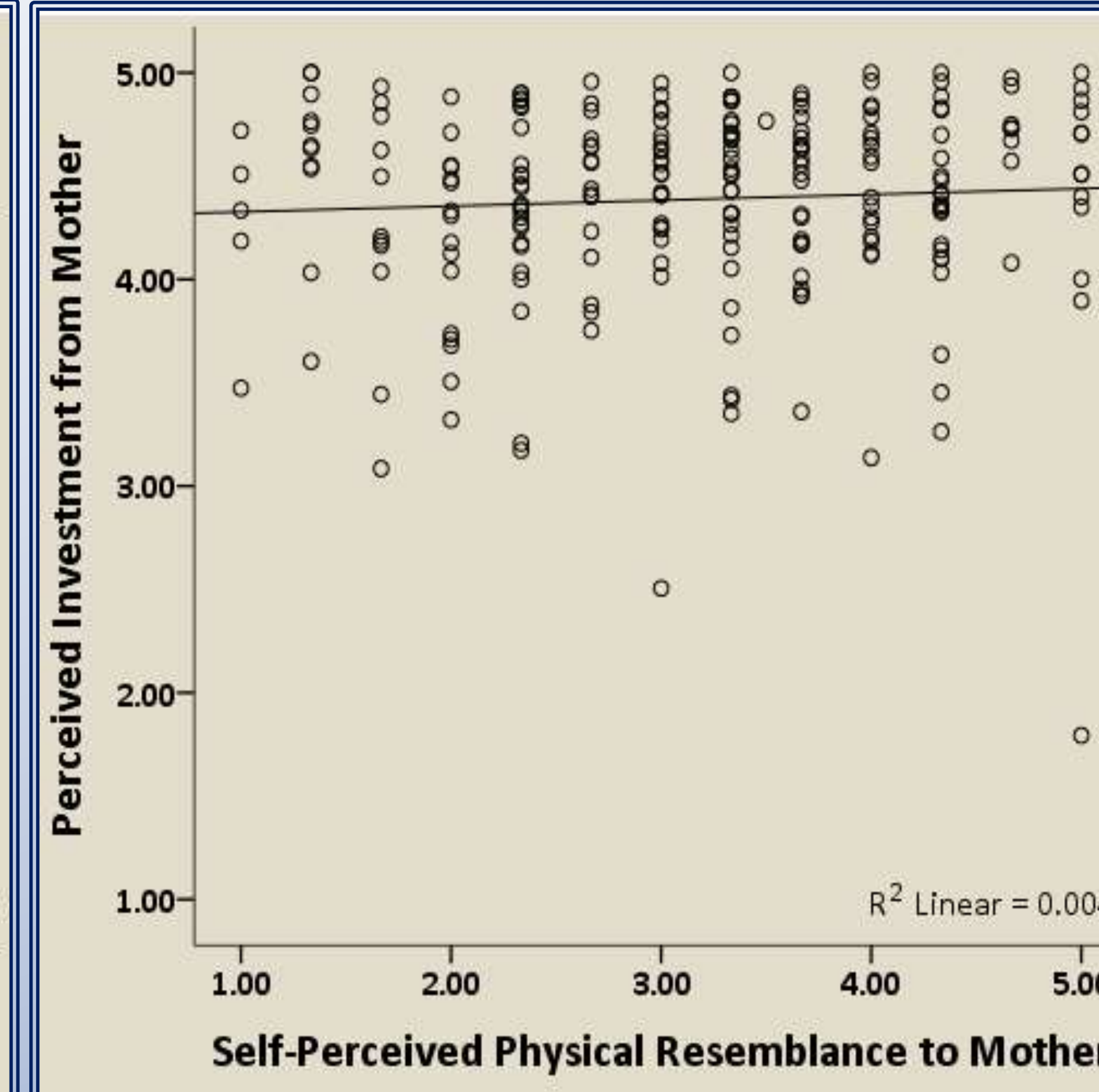
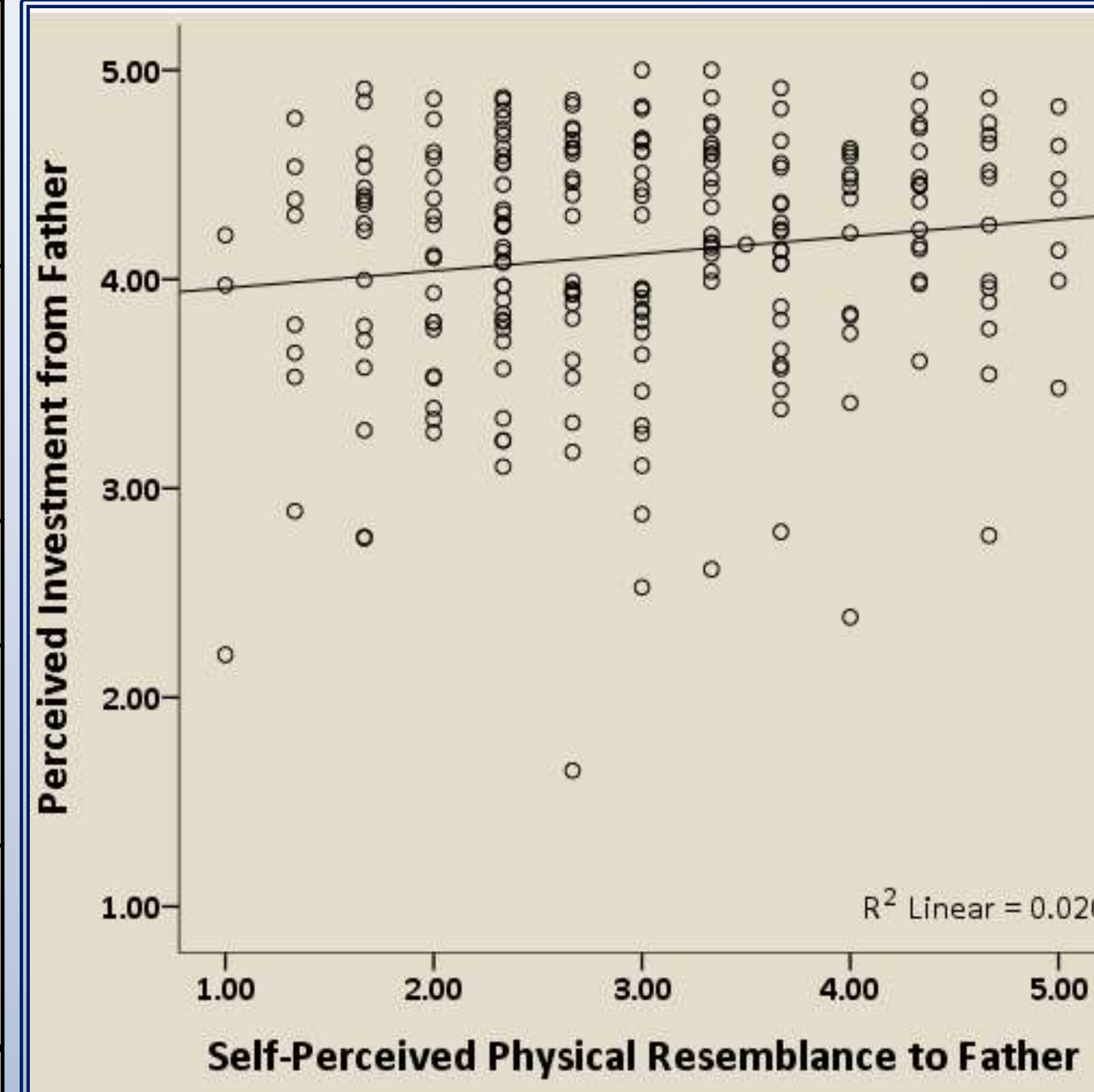
Father Investment	Self-Perceived Resemblance	Rater-Perceived Resemblance (child)	Rater-Perceived Resemblance (current)
Teaching Responsibility	.00	-.02	.03
School Encouragement	.13	-.01	-.01
Providing Necessities	.03	.06	.03
Time Together	.21**	.05	.09
Praise and Affection	.20**	.08	.09
Developing Talents	.07	.16*	.07
Reading Homework	.10	.08	.16*
Attentiveness	.05	.14*	.09
Investment Composite	.16*	.06	.12
Mother Investment	Self-Perceived Resemblance	Rater-Perceived Resemblance (child)	Rater-Perceived Resemblance (current)
Teaching Responsibility	.06	-.18**	.10
School Encouragement	-.01	.03	.06
Providing Necessities	-.07	-.07	.02
Time Together	.09	-.12	.09
Praise and Affection	.03	-.11	.13
Developing Talents	.01	-.04	.04
Reading Homework	.00	-.09	.07
Attentiveness	.16*	.05	.14*
Investment Composite	.07	-.12	.10

Note: N s are in parentheses, * $p < .05$, ** $p < .01$

Table 2: Mean Perceptions of Resemblance, and Convergence Among Resemblance Ratings (Father=Upper Diagonal; Mother=Lower Diagonal)

	Self-Perceived Resemblance	Rater-Perceived Resemblance (child)	Rater-Perceived Resemblance (current)
Self-Perceived Resemblance	---	.16* (201)	.22** (202)
Rater-Perceived Resemblance (child)	.23** (202)	---	.41** (212)
Rater-Perceived Resemblance (current)	.20** (202)	.40** (213)	---
Mean (SD) Resemblance to Father ($\alpha=.87$)	3.01 (1.00)	4.16 (0.87)	3.90 (0.81)
Mean (SD) Resemblance to Mother ($\alpha=.87$)	3.17 (1.04)	4.14 (1.00)	4.31 (0.90)

Note: N s are in parentheses, * $p < .05$, ** $p < .01$.



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Discussion

- This study was conducted to test the hypothesis that males utilize offspring's resemblance to them as a cue of paternity (Daly & Wilson, 1982), and calibrate their investment accordingly; thus, child-father resemblance should be positively correlated with fathers' investment. We aimed to expand upon previous support for this hypothesis by (1) gathering both self-ratings and outsiders' ratings of resemblance, and (2) including mothers as a comparison group.
- As expected, participants' perceptions of how much they physically resembled their father were correlated with their perceptions of their father's overall investment, but not with their mother's. In addition, although raters' judgments of resemblance did not correlate with perceptions of either parent's overall investment, raters' judgments of resemblance were correlated with participants' ratings of their fathers' devotion to developing their talents, checking over their homework, and being attentive.
- There are several potential explanations for our failure to detect a stronger, more consistent link between outside raters' judgments of resemblance and participants' ratings of fathers' investment. Because raters commented to us that judging resemblance was fun but not easy, we initially speculated that outsiders' ratings of resemblance possessed substantial error. However, judges showed consistency. Analyses revealed strong interrater reliability, with coefficients ranging from .82 to .89 for the four sets of raters. Moreover, ratings of participants' childhood resemblance to their father correlated well with ratings of participants' current resemblance to their father; and, outsiders' resemblance ratings correlated significantly with participants' own resemblance ratings.
- A more likely explanation for the weak associations is the restricted range we were working against on the criterion side. That is, participants rated their fathers as being highly investing overall, with several investment scales at ceiling. It is hard to account for variance in investment behavior when there is not much variance there to explain. Future researchers might consider sampling from the broader community, where more substantial differences in paternal investment behavior are likely to exist.

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