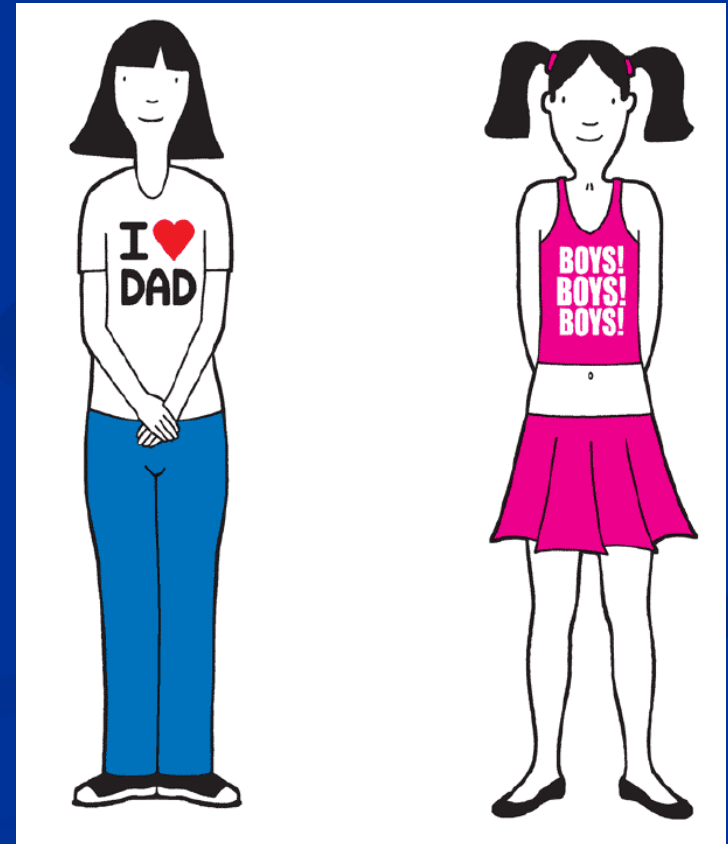


The Role of Paternal Investment in Regulating Daughter's Sexual Development and Behavior

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It was my first day of kindergarten and I really wanted to ride the bus for the first time ever. Being the very shy kid I was, I was so scared to ride alone ... To make me feel at ease my Dad suggested I ride the bus and he would follow in the car behind all the way to school. I remember being picked up on the bus and making sure I had a seat where I could see my Dad in our car behind the bus. My stop was one of the first stops and he faithfully smiled and waved through every other stop and then gave me a huge thumbs up when I walked off the bus to class.

Female, age 33

One special event where I needed and wanted my dad's support was my high school graduation...I was hoping he would show up to see me get my diploma. I had a rough senior year and struggled to achieve my goal of graduating. I was the first girl in my family to accomplish this. At the ceremony I was up on the bleachers looking out into the crowd hoping he would show. But there was still no sign of him. As my name was called I could hear my mom and sister and brother cheering for me. I had a great support team but I was still very disappointed that he was not in the crowd...what should have been an exciting day turned into a hurtful disappointing day. I felt unwanted by my dad. Like he didn't care about me. I figured there [were] better things he had to do [than] see me graduate.

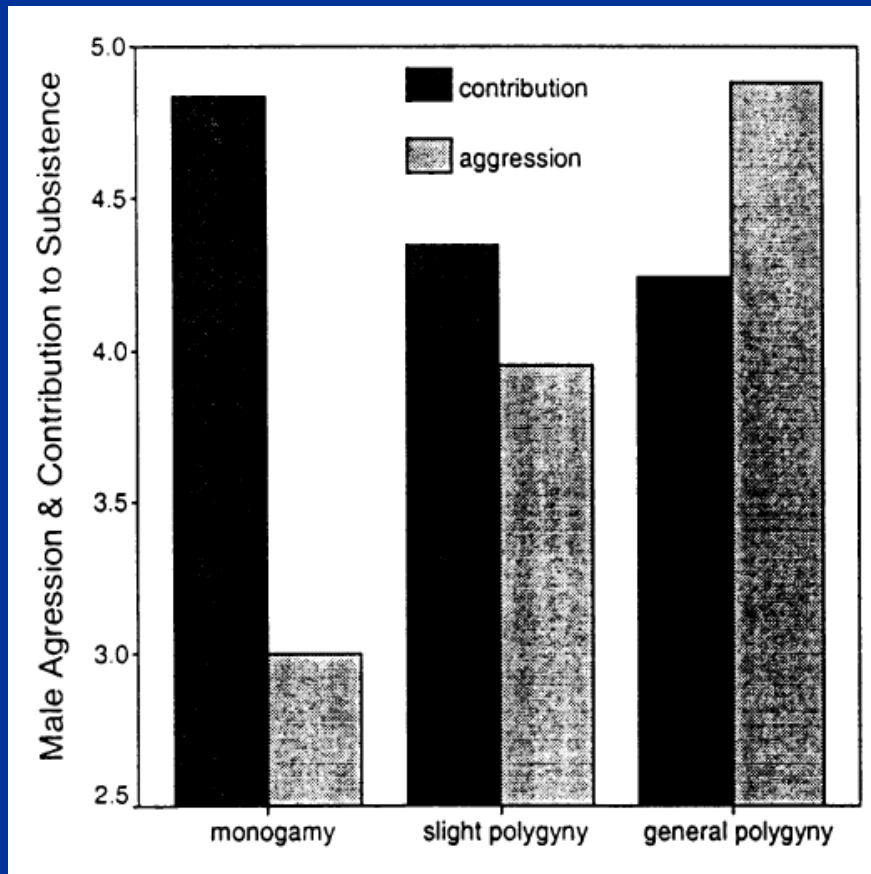
Female, age 30

Draper, P., & Harpending, H. (1982). Father absence and reproductive strategy: An evolutionary perspective. *Journal of anthropological research*, 38(3), 255-273

- Proposed that children show evolved, sensitive-period learning (first 5-7 years)*
- Cued by paternal behavior and mother's pair-bond status/attitude toward males
 - Key indicators of mating ecology
- Functions to regulate development of reproductive strategies. Father absence:
 - early expression of sexual interest and assumption of sexual activity, negative attitudes toward males, and poor ability to establish long-term relationships with one male.

Draper, P., & Harpending, H. (1982). Father absence and reproductive strategy: An evolutionary perspective. *Journal of anthropological research*, 38(3), 255-273

- Two key assumptions
 - quality and quantity of paternal investment is—and presumably always has been—widely **variable** across and within human societies
 - variability in paternal investment, much more than maternal investment, is **diagnostic** of the local mating system (degree of monogamy vs. polygyny) and associated levels of male–male competition and provisioning.
- High signaling value!*



- Standard Cross-Cultural Sample of traditional human societies.
- Male contribution to subsistence and male aggressiveness by mating system ($n = 80$).*
- Male aggressiveness negatively correlated with father–infant proximity ($r = -.33$, $P < .01$, $n = 69$)

Marlowe, 2000, *Behavioural Processes*

Paternal Investment Theory

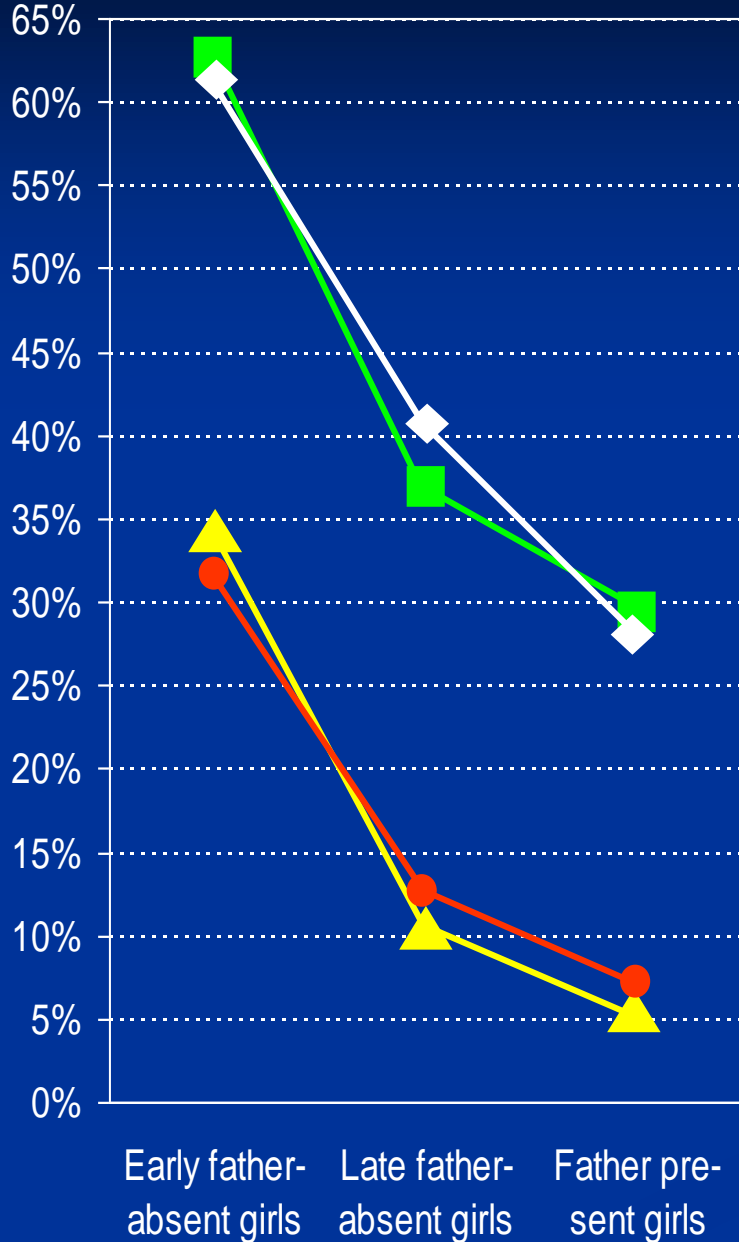
(Draper & Harpending; Ellis, 2004)

- Posits a unique and central role for quality of paternal investment in regulation of daughters' sexual development, separate from the effects of other dimensions of psychosocial stress and support in the child's environment.*

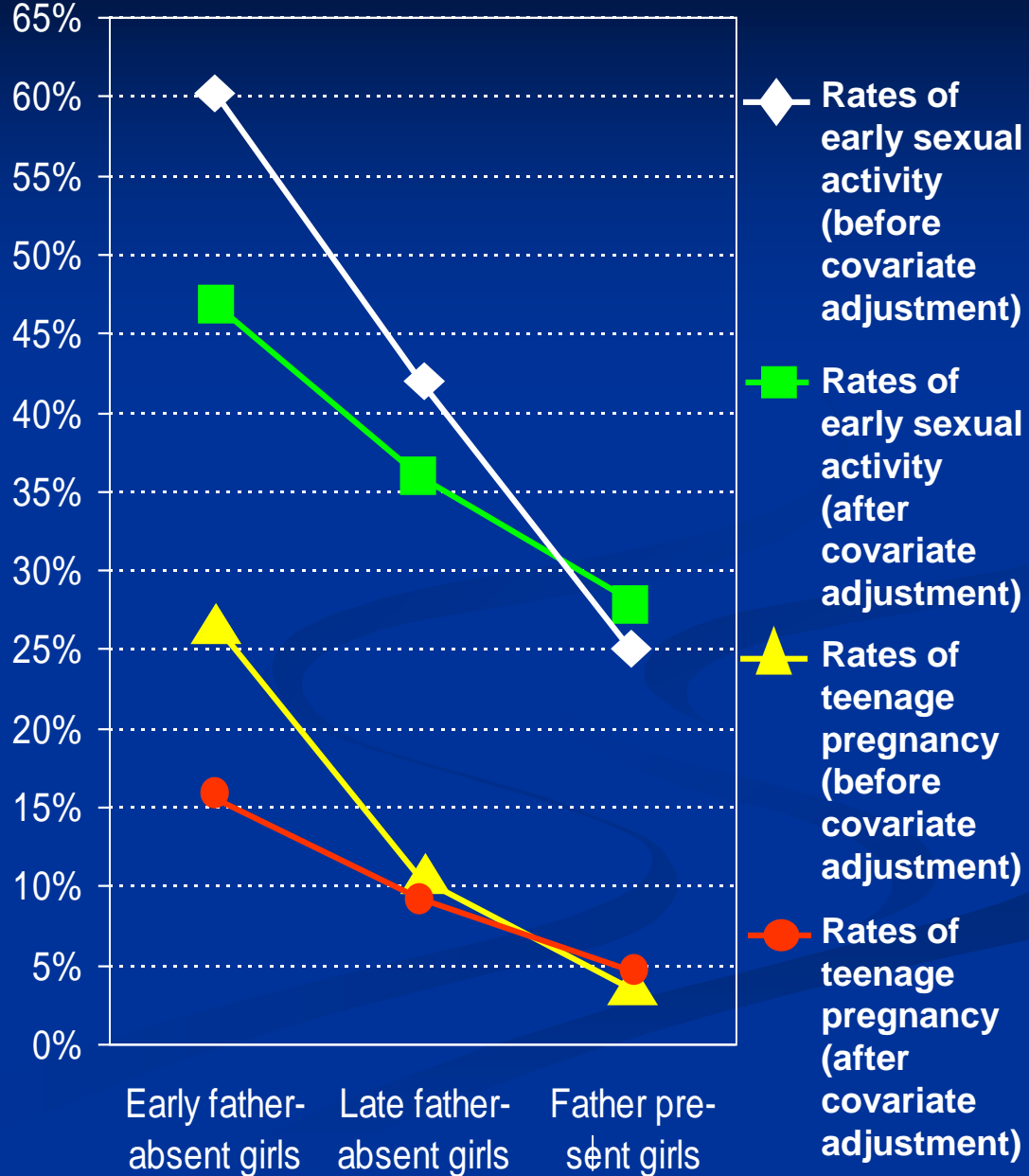
Ellis, B.J. (2004). Timing of pubertal maturation in girls: An integrated life history approach. *Psychological Bulletin*, 130, 920-958



United States



New Zealand

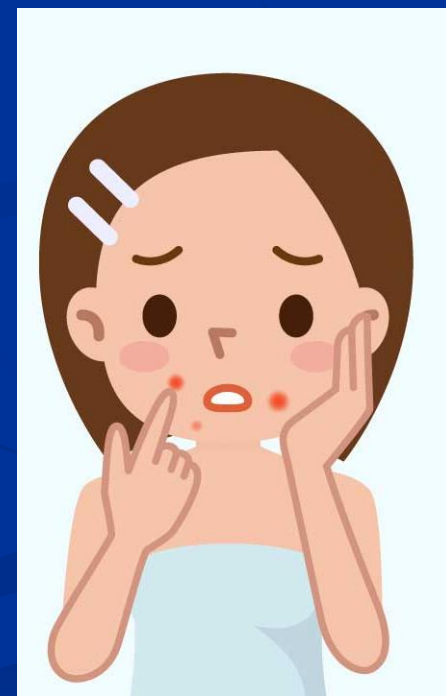


Relations between fathers' investment and daughters' pubertal timing (Ellis et al., 1999, *JPSP*)

<u>Fathers' Investment</u>	<u>N</u>	<u>7th Grade Pubertal Development</u>
Father absence in 1 st 5 years* (single mother families vs. biologically intact families)	149	Completed puberty (45% vs. 24%) (OR: 2.62)
Father-daughter affectionate-positivity within biologically intact families	41	-.43**
Time spent by father in childcare within biologically intact families	107	-.24*

* $p < .05$

** $p < .01$



Lingering Question: Causation

- According to paternal investment theory, fathering quality has causal impact on daughters' sexual and reproductive strategies
- Does fathering quality **cause** changes in sexual development?
 - Temporal precedence
 - Strict control of relevant covariates
- Cannot fully control for unmeasured genetic or environmental factors
 - E.g., gene-environment correlations

Utilizing a “natural experiment”

A study of sisters in the same family

Differential sibling-exposure design

*Eliminates shared environmental confounds

Randomizes genetics



Tither, J.M., & Ellis, B.J. (2008). Impact of fathers on daughters' age at menarche: A genetically- and environmentally-controlled sibling study. *Developmental Psychology, 44*, 1409-1420.

Differential Sibling-Exposure Design

■ Four studies

- Employ sibling design to test for casual effects of father absence and fathering quality
 - **Outcomes:** Study 1: age at menarche; Study 2: risky sexual behavior
 - **Proposed social mediators:*** Study 3: parental monitoring (“daughter guarding”), affiliation with sexually promiscuous peers.
 - **Proposed Cognitive mediator:** Study 4: investment expectations from mating partners

Employed community-based samples of full biological sister-pairs (New Zealand and United State) from families in which either:

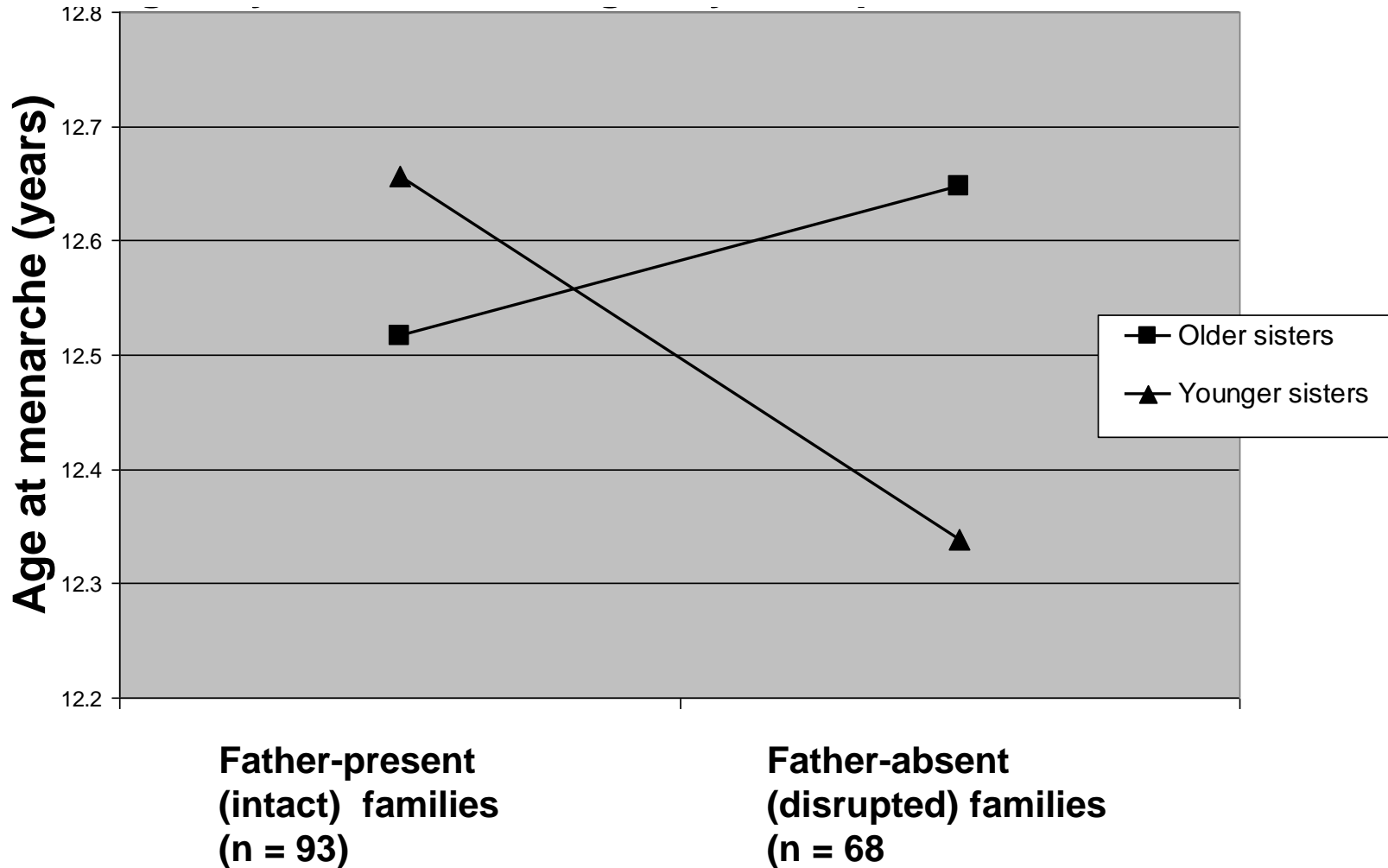
- a) the biological parents had separated before the younger sister reached age 14,
- or
- b) the biological family unit had remained intact until (at least) the younger sister's 18th birthday.*

Retrospective data collected from adult sister-pairs (ages: 19-36 years; **at least 4 years apart in age**).

**Study 1. New Zealand:
Impact of fathers on daughters' age at menarche:
A genetically- and environmentally-controlled
sibling study. (Tither & Ellis, 2008, *Developmental Psychology*).**

- Hypothesis: Younger sisters, who have greater exposure to father absence, should experience earlier age at menarche than their older sisters.

Differences between sisters in age at menarche in father-present vs. father-absent families



Study 2. United States: Impact of Fathers on Risky Sexual Behavior (Ellis, Schlomer, Tilley, & Butler, 2012, *Development and Psychopathology*)

- Examine effects of father absence and behavior
 - Assessment of fathering quality
 - Not all dads are equal*
- Effects on risky sexual behavior in sisters
 - Early, frequent, unprotected sex
 - Sex in conjunction with substances



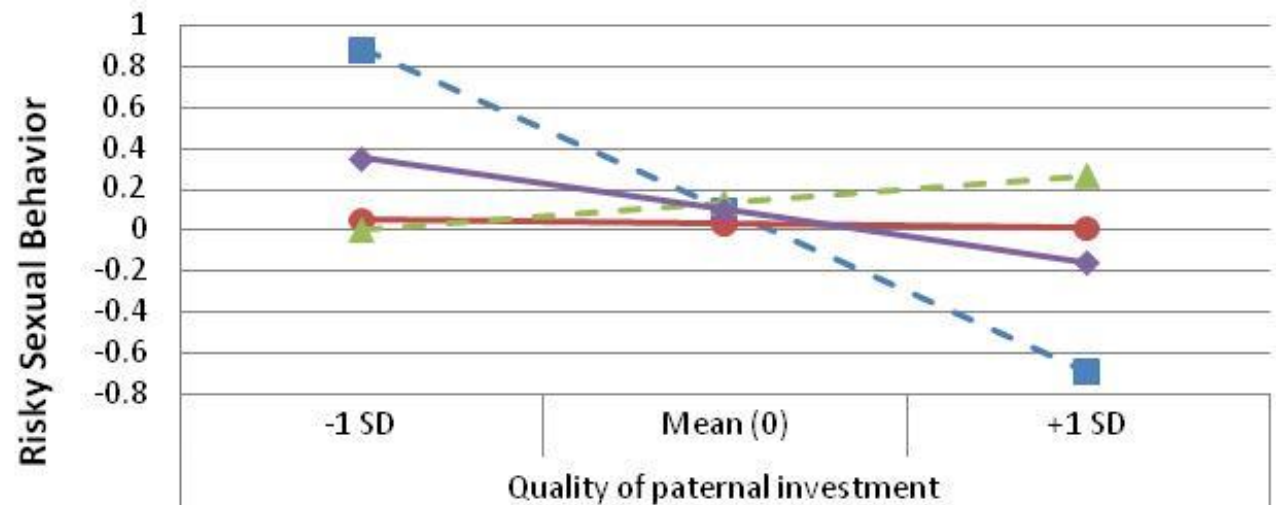
Study 2. United States: Impact of Fathers on Risky Sexual Behavior (Ellis, Schlomer, Tilley, & Butler, 2012, *Development and Psychopathology*)

- Causal Hypothesis:
 - Greater developmental exposure to high quality fathering reduces levels of risky sexual behavior in daughters.
 - More exposure within families is protective.
 - Testing for interaction between father absence (dosage) and fathering quality
 - Distinguished between sisters with relatively large age gaps (e.g., 8 years) vs. relatively small age gaps (e.g., 4 years).*

Quality of Paternal Investment

- Harsh-coercive paternal behavior (Conflict Tactics Scale)
 - “My father swore (cursed) at me”
 - “My father insulted me or put me down”
 - “My father pushed, grabbed, or slapped me.”
- Paternal warmth-supportiveness (Parental Bonding Inventory)
 - “My father spoke to me with a warm and friendly voice.”
 - “My father appeared to understand my problems and worries.”
- Validity of measure supported by the strong correlation between younger and older sister reports on quality of paternal investment
 - Intact: $r [42] = .73, p < .001.$
 - Divorced: $r [59] = .66, p < .001.$

Impact of Quality of Paternal Investment on Risky Sexual Behavior in Daughters in Divorced Families



	-1 SD	Mean (0)	+1 SD
Older Sister; Age Gap (+1 SD)	0.8796	0.09121	-0.6972
Younger Sister; Age Gap (+1 SD)	0.04574	0.02661	0.007469
Older Sister; Age Gap (-1 SD)	0.001632	0.1329	0.2641
Younger Sister; Age Gap (-1 SD)	0.348	0.09487	-0.1583

Summary

- Intact families:
 - No differences between sisters
 - Not a birth order effect
- Divorced families
 - Given large age gap between sisters, more exposure to higher quality fathering (paternal investment) was protective against risky sexual behavior in older daughters but not in younger daughters
 - (Only older daughters lived with their fathers throughout most of childhood)
 - No such effect occurred in divorced families with small age gap between sisters.

Study 3: Intervening Mechanisms*

- Employ sibling design to test for casual effects of father presence-absence/fathering quality
 - **parental monitoring**
 - **affiliation with sexually promiscuous peers**
- proposed mediators of the effect of fathers on daughters' risky sexual behavior

Study 3. United States: Impact of Fathers on Parental Monitoring of Daughters and their Affiliation With Sexually Promiscuous Peers (DelPriore, Schlomer, & Ellis, 2017, *Developmental Psychology*)

■ Parental Monitoring:

Knowledge parents had about participants' lives when they were high school age (14-17 yrs old)*

- E.g., who their friends were, how they spent their money, where they went after school

■ Affiliation with Sexual Promiscuous Peers:

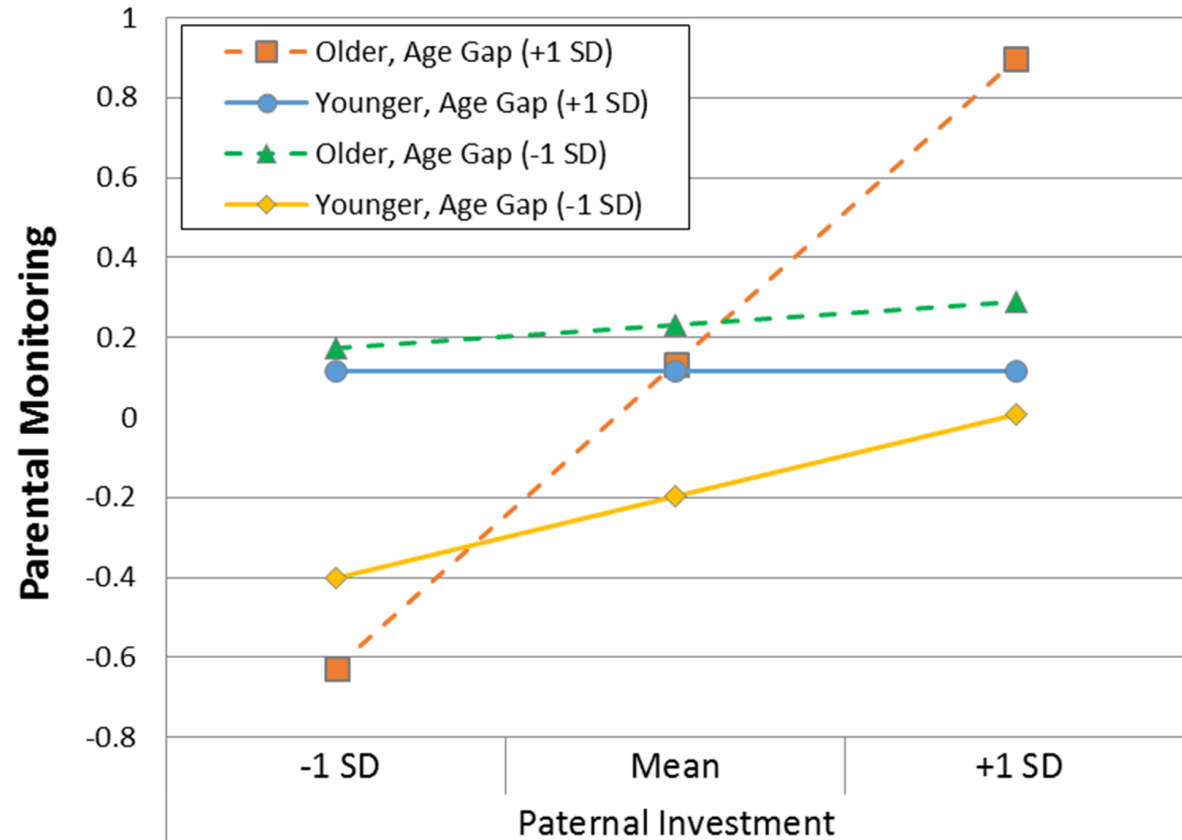
Frequency participants' friends engaged in risky sexual behaviors when they were high school age (14-17 yrs old)

- E.g., dressed in a sexually provocative manner; were sexually promiscuous; contracted STDs

Study 3. United States: Impact of Fathers on Parental Monitoring of Daughters and their Affiliation With Sexually Promiscuous Peers (DelPriore, Schlomer, & Ellis, 2017, *Developmental Psychology*)

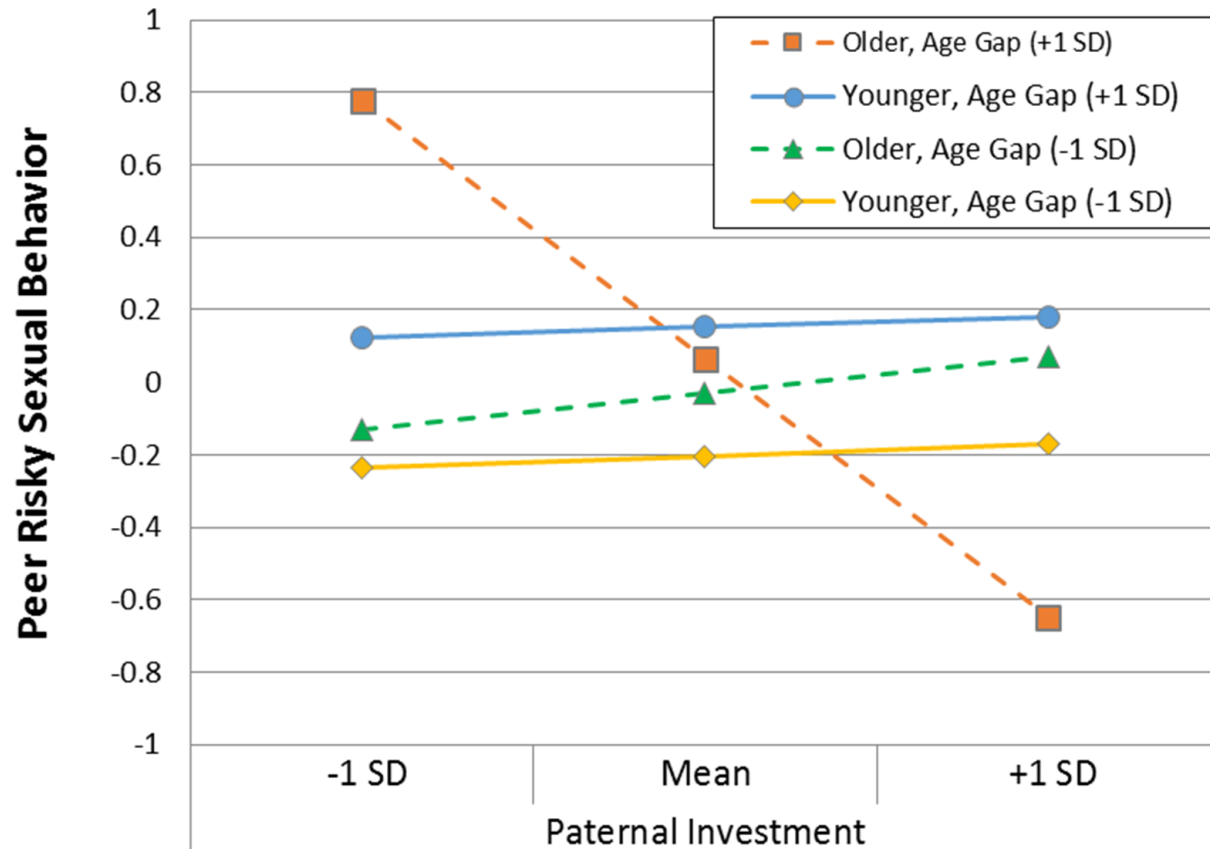
- Causal Hypothesis:
 - Greater developmental exposure to high quality fathering reduces daughters' affiliation with sexually promiscuous peers and supports greater parental monitoring of daughters
 - More exposure within families is protective.

Parental Monitoring



	-1 SD	Mean	+1 SD
Older, Age Gap (+1 SD)	-0.6273	0.1346	0.8965
Younger, Age Gap (+1 SD)	0.1163	0.1161	0.1159
Older, Age Gap (-1 SD)	0.1733	0.2309	0.2886
Younger, Age Gap (-1 SD)	-0.403	-0.1968	0.0094

Peer Sexual Risk



	-1 SD	Mean	+1 SD
Older, Age Gap (+1 SD)	0.7778	0.0649	-0.648
Younger, Age Gap (+1 SD)	0.125	0.1535	0.1821
Older, Age Gap (-1 SD)	-0.1326	-0.0317	0.0692
Younger, Age Gap (-1 SD)	-0.2369	-0.2035	-0.1701

Summary

- Intact families:
 - No differences between sisters
- Divorced families
 - Given large age gap between sisters, more exposure to higher quality paternal investment **enhanced parental monitoring** and was **protective against affiliation with sexually promiscuous peers** in older daughters but not in younger daughters
 - (Only older daughters lived with their fathers throughout most of childhood)
 - No such effect occurred in divorced families with small age gap between sisters.

Draper, P., & Harpending, H. (1982). Father absence and reproductive strategy: An evolutionary perspective. *Journal of anthropological research*, 38(3), 255-273

- Children show evolved, sensitive-period learning
- Linked to paternal behavior and mother's pair-bond status/attitude toward males
 - Key environmental cue
- Functions to regulate development of reproductive strategies.
 - Father-absent females show early expression of sexual interest and assumption of sexual activity, **negative attitudes toward males**, and poor ability to establish long-term relationships with one male.

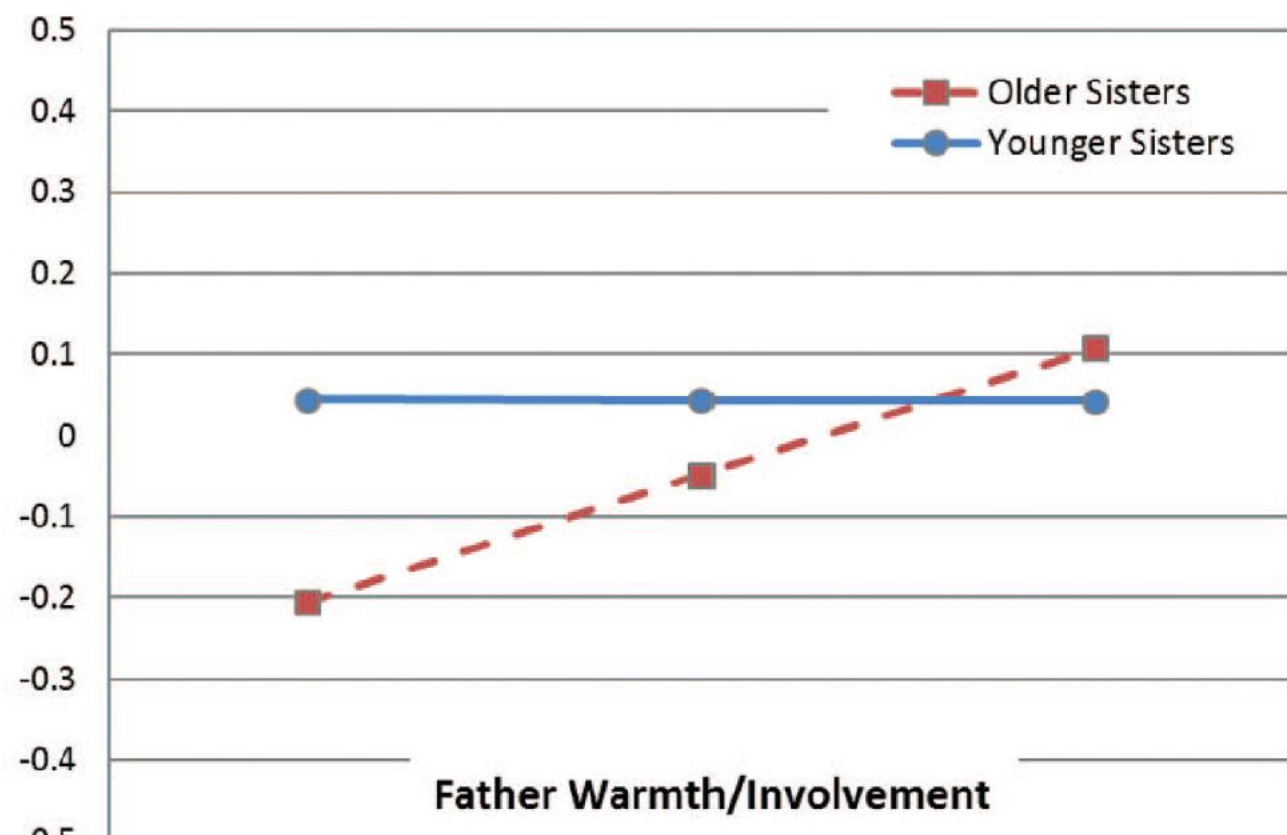
Study 4: Cad vs. Dad* (perceptions of potential mates)

- “Imagine that you are single and looking for a relationship. Think about the pool of men who you could potentially date. Realistically, how likely is a potential dating partner to do the following things?”
 - “Dad” relationship behaviors (7 items):
 1. Regularly spend his free time with you rather than doing other things or seeing other people
 2. Make plans for the future, such as discuss living together, getting married, or having children
 - “Cad” relationship behaviors (6 items):
 1. Have sex with other women while involved with you
 2. Do risky things like gambling and fighting**

**Study 4. United States:
The Effects of Paternal Investment on Daughters'
Expectations for Male Behavior and Sociosexuality**
(DelPriore, Shakiba, Schlomer, Hill, & Ellis, 2019, *Developmental Psychology*)

- Causal Hypothesis:
 - Greater developmental exposure to high quality fathering increases daughters' expectations for high levels of male investment in mating relationships

Expectations for Men as Partners



	Father Warmth/Involvement		
	-1 SD	Mean	+1 SD
Older Sisters	-0.2054	-0.0485	0.1083
Younger Sisters	0.0445	0.0436	0.0428

Conclusions

- In cultures and populations characterized by absent or low-investing fathers:
 - Men generally expend much time and energy on mating activities and accrual of skills and resources necessary for success in the mating domain.*
 - Father absence, harsh or rejecting paternal behavior, or paternal disengagement more generally, may be key indicators of the social/mating ecology.
 - *Mating effort vs. parental effort (reliability of investment)*
 - *Girls' brains and bodies are sensitive to what fathers, and males more generally, are doing.*

Conclusions

- **What:** Calibrates female sexual development
 - Earlier pubertal development
 - Earlier sexual debut
 - More sexual partners and other risky sexual behaviors
 - Higher rates of teenage pregnancy
- **How (cognitive):** Promotes psychological shifts among women toward lower expectation for male investment
- **How (social):** Increases affiliation with sexually promiscuous peers and mitigates parental monitoring
- Timing/Dosage of paternal absence is important
- Quality of fathering matters.

Thank you!

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