

4-2018

The Other Woman: Mate Poaching Across the Menstrual Cycle

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The Other Woman: Mate Poaching Across the Menstrual Cycle



Honors Thesis

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Abstract

The goal of the present work was to empirically examine how mate poaching, or romantically pursuing an individual already in a committed relationship (Schmitt & Buss, 2001), varies across the menstrual cycle. The existing literature strongly suggests that partnered women are wary of ovulating women because they are deemed threatening rivals (Krems, Neel, Neuberg, Puts, & Kenrick, 2016). The series of experiments described here tested this assumption by examining both the mate poaching behaviors and perceptions of ovulating women across the menstrual cycle. The first experiment examined if ovulating women would be more willing to mate poach an attractive man. The results were significant, finding that normally ovulating women near peak fertility were more likely to engage in mate poaching behaviors to steal the attractive man away from his relationship than they were for the average-looking man. The second and third experiments examined how women viewed other, ovulating women in the context of potential mate poaching across the menstrual cycles of both the rival and the observer. The second experiment finding, which approached significance, was that normally ovulating women were more likely to view rival near peak fertility as more threatening than women on hormonal contraceptives. The third experiment found perception of poaching is impacted by women's own conception risk. Implications of these findings, as well as future directions, are discussed.

Acknowledgements

I would like to express my gratitude to my thesis advisor, Dr. Erin O'Mara, for all the guidance she has provided to bring this thesis to life. I would also like to thank the University of Dayton Psychology Department, Honors Program, and Stander Fellowship for the support provided to complete this research.



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Mate Poaching Across the Menstrual Cycle

When it comes to creating offspring, parental contributions are not equal. Men are required to make a significantly smaller, briefer, and less binding commitment when conceiving offspring, whereas a woman's commitment of carrying, birthing, and nursing a child is significantly greater and more binding. Because of this vastly different commitment to the creation of and care for offspring, women and men require their mates to fulfill different needs and subsequently seek out different qualities in their mates in order to be reproductively successful (Buss, 1988). Men seek women who are more likely to bear healthy, viable offspring. This means that men are attracted to young, physically attractive and fertile women. Women, on the other hand, must balance two needs; a man who has strong genes to pass on to healthy offspring, and a man who is willing to provide resources and protection for the woman and child when the woman is unable to do so herself. Genetic strength and desirability is marked by facial symmetry, masculinity and physical attractiveness (Thornhill, & Gangestad, 1999), while a willingness to provide resources is generally seen through long-term commitment to a relationship. These two needs can theoretically be fulfilled by the same man, however the men who possess each of these qualities are rare and highly sought after. More often than not a man will either be offering high genetic desirability with little or no resource commitment or plenty of resource commitment with little genetic desirability. If she is unable to procure one of the rare men with both high genetic desirability and resource commitment, a woman might be forced to choose between these two qualities or she might find a way to balance each of these qualities separately.

One possible way to balance these conflicting mate needs is offered by the menstrual cycle. A woman's menstrual cycle is characterized by several phases, with the majority of a typical 28-day cycle spent at low fertility. Only in a brief window, when ovulation occurs and conception risk is at its highest, does a woman experience peak fertility. Conception risk is the likelihood of becoming pregnant from any single act of unprotected intercourse on any given day of a woman's menstrual cycle. Conception risk on any given day of a typical cycle has been calculated with actuarial data by Wilcox,

Dunson, Weinberg, Trussell, and Baird (2001). Their research has demonstrated that conception risk increases up to and peaks at the 15th day of a 28-day menstrual cycle, the same day that ovulation typically occurs. This means that a woman has the greatest chance of becoming pregnant when she is at peak fertility. It also means having a mate with high genetic desirability is most useful and therefore most important when the woman is at peak fertility.

The dual-mating strategy takes advantage of this limited need for a mate that is high in genetic desirability. When utilizing the dual-mating strategy, a woman who is pair-bonded with a man of low genetic desirability strays outside her pair-bond when her conception risk is highest and secretly mates with a man of high genetic desirability. By using this strategy successfully, a woman would secure the genes of the genetically desirable man for the conception of her offspring, while maintaining the resource commitment of the less genetically desirable man to raise her offspring. Evidence for the use of this strategy was found by Gangestad, Thornhill, and Garver (2012) in a study in which as the conception risk of women who were pair-bonded with men low in indicators of genetic desirability increased, the women indicated a greater interest in mating outside of their pair-bond, specifically with men of high genetic desirability. The dual-mating strategy holds great potential for women who are in a relationship already, however it does little for those women who are without any partner. Single women must determine which men possess both desirable genes and resource commitment. The former is generally plainly observable; however, the latter can be harder to determine from a glance.

Identifying men with the unobservable qualities such as resource commitment could be done by pursuing men who already display resource commitment by actively being in a romantic relationship. When men are already in a romantic relationship, it signals to other women that those men possess the unobservable positive quality of being able to commit in a relationship. Parker and Burkley (2009) suggested this could be the reason behind their finding that single women reported more interest in pursuing a target who was already in a romantic relationship. A study by Rodeheffer, Leyva, and Hill (2016) further

supports this idea, having found that when men are romantically partnered with attractive women, other women view those men as more attractive relationship partners. However, this identification method poses an obvious issue: The men who are being pursued are off the mate market. This forces the women who are pursuing them to resort to the tactic of mate poaching.

Mate poaching is defined as romantically pursuing another individual who is known to already be in another committed romantic relationship (Schmitt & Buss, 2001). While it may not be the most socially accepted mating tactic, research has found it to be a commonly used tactic, with approximately 50% of participants from one study reporting having made mate poaching attempts at some point in the past (Schmitt & Buss, 2001). However, despite the seemingly frequent use of mate poaching, the tactic still poses a danger to those who use it, successfully or otherwise. These dangers, such as being ostracized from one's social group or being retaliated against by the scorned rival, would have been particularly detrimental for ancestral women, who would have relied heavily on social support for the survival of themselves and their offspring (Davies, Shackelford, & Hass, 2010). This means for mate poaching to have evolved as a viable mating strategy, it had to be used with caution, and only in situations where the potential benefits for a woman outweigh the potential costs to her.

Peak fertility would be a context in which women would potentially benefit by mate poaching a man. At peak fertility, a woman's conception risk is at its highest, meaning mating with a man would be the most productive at this time. A great deal of research has shown that women's mating related priorities, preferences, and behaviors shift across the menstrual cycle. When they are nearing peak fertility, women put more effort into their appearance, wearing nicer and more revealing clothing, as well as wearing more makeup (Haselton, Mortezaie, Pillsworth & Bleske-Rechek, 2007; Durante, Li & Haselton, 2008; Gueguen, 2012). Women also report more interest in attending social gatherings where they might meet men, and more interest in engaging in short-term relationships (e.g. a one night stand) with men of high genetic desirability (Haselton & Gangestad, 2005). Additionally, women near peak fertility have been found to be more intrasexually

competitive (Fisher, 2004). Women near peak fertility have even been found to deceive themselves into believing a man high in indicators of genetic desirability, but low in indicators of commitment, would make a caring father to their children (Durante, Griskevicius, Simpson, Cantu & Li, 2012). On top of this increased motivation to mate near peak fertility, ovulating women are viewed as more attractive than non-ovulating women, when rated by both men and women (Roberts et al., 2004). These behavioral and perceptual changes form women into motivated mating machines who are both more intent on sexual encounters with genetically desirable men, as well as more able to attract men.

In humans, ovulation is concealed. This is divergent from many other animal species, even our closest relatives such as baboons and bonobos. However, concealed ovulation is not undetectable ovulation, and research suggests that both men and women can pick up on cues of fertility, adjusting their behavior accordingly. Valiancourt and Sharma (2011) found that when interacting with an attractive researcher who was dressed in a sexy manner, female participants were more likely to use tactics of social exclusion against the confederate. Tactics of social exclusion have also been used by women to protect their relationships against ovulating potential rivals (Krems, Neel, Neuberg, Puts & Kenrick, 2016) who they deem to be less trustworthy and report more jealousy about (Hurst, Alquist & Puts, 2017). Taken together, these findings suggest that women near peak fertility may be particularly threatening to already existing romantic relationships.

Current Experiments

The current research works to further examine the relationship between mate poaching and the shifting behaviors, priorities, and perceptions seen across the menstrual cycle. Previous research has shown that ovulating rivals are seen as a threat, however little work has been done to examine this assumed threat directly. The following two experiments were designed to address this gap in the literature, as well as contribute to the growing body of research connecting relationship science and evolutionary psychology.

Experiment 1

The increase in women's interest in mating near peak fertility that has been found in past research suggests that women, at the point in their cycle when conception risk is highest, may be more likely to mate poach an attractive, socially dominant man. This would be done in the unconscious hopes of securing his genes for her own children, regardless of such a man's relationship status. The first experiment was designed to examine this notion further. Specifically, it was hypothesized that women would be more willing to mate poach when they were near peak fertility and the mate poaching target was a man with indicators of good genes, such as being physically attractive and socially dominant.

Participants

One hundred and fourteen participants were recruited from the undergraduate participant pool at the University of Dayton. From this sample exclusions were made when participants reported not being heterosexual ($n=3$), a menstrual cycle length of less than 25 days ($n=7$) or more than 36 days ($n=6$), or provided insufficient data to determine their conception risk ($n=10$). After these exclusions, the final sample used for analyses consisted of 88 participants. In exchange for their time, participants received course credit. Participants ranged in age from 17 to 22 years old, with the average age being 18.9 years old. The majority of participants identified themselves as White (82.4%; Latina 7.7%, Black 4.4%, Asian 1.1%, Native American 1.1%, other 3.3%). Thirty-five participants indicated that they were currently in a relationship, while 53 indicated that they were currently single. Of the 88 total participants, 44 indicated that they were currently using some form of hormonal contraceptive, and 44 indicated they were not using any hormonal contraceptives.

Procedure

Each participant was asked to complete a number of initial measures in the lab. Participants were then shown two photographs in a randomized order. Each photograph was of a man and included a brief description adapted from previous research (Durante et al., 2012). Participants were told that these men were both in committed romantic

relationships. After viewing each photograph, the participants were asked to rate the likelihood of engaging in a series of behaviors intended to poach the specific target away from their current relationship. Once completed, participants were asked to provide answers on a set of questions about their menstrual cycle, as well as a set of demographic questions, including their age, race, gender, sexual orientation, relationship status, relationship length, and attractiveness of their significant, other if applicable. Participants were then debriefed.

Materials & Measures

Photographs and descriptions of men. Participants were shown two different photographs of two different men. One photograph showed a physically attractive man, while the other showed a physically average-looking man. In previous work, the photograph of the physically attractive man received an average attractiveness rating of 7.24 on a 9-point scale, while the photograph of the physically average man received average attractiveness rating of 3.68 on a 9-point scale. Accompanying each photograph was a short paragraph describing the characteristics of the pictured man. For the physically attractive man the description read, “The man in the photo above loves the outdoors and being adventurous. He is an avid skier who has won several skiing awards. He is also described by people who know him as being very charismatic, and as a high-status member of his social group.” For the physically average-looking man, the description read, “The man in the photo above is a successful accountant who has worked hard in his career and has won several promotions. He is also described by people who know him as being very dependable and stable, and as a good provider for others.” These descriptions were both used in previous research (Durante et al., 2012).

Conception Risk Assessment. Conception risk was assessed on a continuous scale, with each individual day of the menstrual cycle having a different conception risk. Participants completed a set of menstrual cycle questions including the first day of their most recent cycle, the first expected day of their next cycle and their average cycle length. From this information conception risk was extrapolated using the backwards counting method as outlined in Gangestad and colleagues (2016).

General tendency to mate poach. A measure examining women's general tendency to mate poach was created for this experiment. Ten items were rated on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores indicated the participants were more willing to poach men who were already in committed romantic relationships. The reliability for this measure was moderate ($\alpha = 0.686$). Example items include, "If I am attracted to someone who is already in a relationship, it won't stop me from trying to pursue them," and "It would not bother me to break up a relationship."

Target specific mate poaching. A measure examining the specific mate poaching behaviors that women would endorse for the man in the photograph was created for this experiment. Eighteen items were rated on a scale of 1 (*no, not at all*) to 7 (*yes, definitely*). Higher scores on this measure indicated the participants were more willing to engage in mate poaching behaviors to lure the photographed man away from his current romantic relationship. The reliabilities for this measure for the physically attractive man and the physically average-looking man were both high ($\alpha = 0.952$; $\alpha = 0.944$). Example items include, "You would tell the potential mate that he deserves better than his existing partner," and "You would kiss the potential mate."

Results and Discussion

This experiment had a mixed model design in which target attractiveness was a within-subjects variable, while participant conception risk and hormonal contraceptive use were between-subjects variables. A mixed-model analysis of variance revealed a significant three-way interaction between hormonal contraception use (yes or no), participant conception risk (continuous), and target attractiveness (attractive or average), $F(1, 84) = 3.56, p = .0652$. When decomposed into conception risk and target attractiveness in levels of hormonal contraception use, the interaction between conception risk and target attractiveness was significant for women who did not use hormonal contraceptives, $F(1, 84) = 5.29, p = .0121$, but was not significant for women who did use hormonal contraceptives, $F(1, 84) = 0.00, p = .9884$. Further analysis of the interaction for women not using hormonal contraceptives revealed that when women were at higher levels of

conception risk, they were more likely to engage in mate poaching behaviors to attract the physically attractive target ($M = 3.71$, $SE = 0.32$) than the physically average target ($M = 2.34$, $SE = 0.27$), $F(1, 84) = 22.50$, $p < .0001$. This same effect was not found when women were at low levels of conception risk, $F(1, 84) = 1.66$, $p = .2016$.

These results support our hypothesis that women who are not taking hormonal contraceptives and are near peak conception risk are more willing to mate poach a man with indicators of good genes, such as physical attractiveness. Similar to other work in the field, these results demonstrate that women near peak fertility are more attracted to men who make ideal short-term partners; i.e. men with indicators of good genes such as facial symmetry, masculinity, and physical attractiveness (Thornhill & Gangestad, 1999). However, this work also goes a step further, showing that, not only are women more interested in short-term men near peak fertility, but they are also more willing to use potentially risky mating strategies to procure such men at this point in their cycle. Additionally, these results provide contextual support for research that has found women who are partnered to attractive men are less trusting of, more jealous of, and more likely to mate guard around other, ovulating women, even if those women are their friends (Krems et al., 2017; Hurst et al., 2016). While past studies have only examined women's perception of ovulating potential rivals, our research has demonstrated that the increased suspicion women have of ovulating potential rivals is rooted in the realistic threat ovulating women are to existing relationships.

Experiment 2

Based on the results of the first experiment, we delved further into women's perception of mate poaching across the menstrual cycle. Because of women's increased interest in mating near peak fertility, a heightened awareness of ovulating potential rivals would serve women well, particularly those who are partnered to attractive and poachable men. The second experiment was designed to test this notion. Specifically, it was hypothesized that women would view high fertility rivals as more dangerous than low fertility rivals.

Additionally, it was hypothesized that this threat perception would also be impacted by the conception risk of the participants themselves, such that as participants' conception risk increased, their perception of the rival near peak fertility would increase as well.

Participants

One hundred and twenty-five participants were recruited from the undergraduate participant pool at the University of Dayton. From this sample exclusions were made when participants reported not being heterosexual (n=9), saw the wrong photo (n=16), reported a menstrual cycle length of less than 25 days (n=12), or provided insufficient data to determine their conception risk (n=1). After these exclusions, the final sample used for analyses consisted of 92 participants. In exchange for their time, participants received course credit. Participants ranged in age from 16 to 25 years old, with the average age being 19.2 years old. The majority of participants identified themselves as White (83.7%; Asian 7.6%, Latina 6.5%, Native American 2.2%, Black 2.2%, wish not to answer 2.2%). Thirty-seven participants indicated that they were currently in a relationship, while 55 indicated that they were currently single. Of the 92 total participants, 47 indicated that they were currently using some form of hormonal contraceptive, while 45 indicated they were not using any hormonal contraceptives and thus normally ovulating.

Procedure

In the lab, each participant was asked to complete the same initial measures as in the first experiment. Participants were then randomly assigned to see a photograph of one of 12 women, when the photographed woman was either at high or low fertility.

Accompanying the photograph was a short vignette describing a scenario in which the participant saw the photographed woman, referred to as "Sara," speaking with the participant's significant other alone, off to the side at a party. If participants did not have a significant other they were asked to imagine that they did have one in this scenario. After viewing the photograph and reading the vignette, participants were asked to rate their feelings towards the scenario and Sara in a series of measures, including their perception of her mate poaching behavior, how jealous the interaction made them, how

much they trust Sara, how attractive they think Sara is, and what type of mate guarding behavior they might partake in to protect their significant other from Sara's perceived advances. After completing these questions, participants were asked the same menstrual cycle and demographic questions as participants in experiment 1 and were then debriefed.

Materials & Measures

Several measures that were used in the first experiment were employed again in the second experiment, including the general tendency to mate poach and the menstrual cycle questions.

Photographs of women. There were 24 photographs used in this experiment. Twelve women were photographed twice, once at high fertility and once at low fertility. These photographs were obtained during previous research and were released by the women to be used in future research. The photographs include the women's head and shoulders and participants were asked to keep a neutral expression in the photographs.

Perception of mate poaching. A measure examining women's perceptions of the hypothetical Sara, with whom their significant other interacted in the vignette, was created for this experiment. The measure had two subscales. Eight items examined perceptions of passive mate poaching, while 12 items examined perceptions of active mate poaching, for a total of 20 items on the measure. An example of a passive poaching item was, "My significant other was flirting with Sara," and an example of an active poaching item was, "Sara was flirting with my significant other." These items were rated on a scale of 1 (*no, not at all likely*) to 7 (*yes, very likely*). Higher scores on this measure indicated the participants perceived Sara to be a greater poaching threat. Overall reliability for this measure was high ($\alpha = 0.951$), with the reliability of the passive subscale ($\alpha = 0.886$), and the active subscale ($\alpha = 0.931$) each falling a bit lower.

Jealousy. A measure examining how jealous the description of Sara in the vignette made participants was administered (Hurst et al., 2017). One item, "How jealous did this situation involving Sara make you feel?" was rated on a scale of 0 (*not at all*) to 7

(*extremely*). Higher scores on this measure indicated the described vignette made the participants more jealous.

Trust. A measure examining how trustworthy the participants deemed Sara to be was administered (Krems et al., 2016). One item, “How trustworthy is Sara?” was rated on a scale of 0 (*not at all*) to 7 (*extremely*). Higher scores on this measure indicated the participants found Sara to be more trustworthy.

Sara’s attractiveness. A measure examining how physically attractive the participants found Sara was created for this study. Two items were rated on a scale of 0 (*not at all*) to 7 (*extremely*). These items were, “How physically attractive do you find Sara?” and “How physically attractive do you think most men would find Sara?” Higher scores on this measure indicated the participants found Sara to be more physically attractive. The reliability for this measure was adequate ($\alpha = 0.789$).

Partner’s attractiveness. A measure examining how physically attractive a participant’s partner was administered as applicable. Two items were rated on a scale of 1 (*not attractive*) to 10 (*attractive*). These items were, “How physically attractive do you find your partner?” and “How physically attractive do you think most other women would find your partner?” Higher scores on this measure indicated the participants’ significant other was more physically attractive. The reliability for this measure was extremely high ($\alpha = 1.000$).

Mate guarding behavior. A measure examining the behaviors women would be likely to engage in to protect their significant other from being poached away by Sara was administered (Hurst et al., 2017). Nineteen items were rated on a scale of 0 (*definitely would not*) to 7 (*definitely would*). Higher scores on this measure indicated the participants were more willing to guard their mate from a potential poacher. The reliability for this measure was high ($\alpha = 0.898$). Example items include, “I will not let my partner and Sara out of my sight,” and “I will kiss my partner in front of Sara.”

Results and Discussion

By using an ANOVA to analyze the relationship between hormonal contraceptive use of participants and the fertility status of the potential rival participants were presented with, an interaction approaching significance was revealed, $F(1, 88) = 3.70, p = .0575$. This interaction suggests that women who were not using hormonal contraceptives perceived high fertility rivals as being marginally more threatening and active mate poachers ($M = 4.69, SE = 0.27$) than low fertility rivals ($M = 4.09, SE = 0.27$), $F(1, 88) = 21.35, p = .0793$. However, women who were using hormonal contraceptives did not perceive any difference in the threat of poaching between high and low fertility rivals, $F(1, 88) = 0.82, p = .369$. Contrary to the initial hypothesis, further analyses showed no significant effect of participant's own conception risk, however this is likely due to the low power supplied by the experiment's small sample size.

While not entirely supportive of the hypothesis for this experiment, these results are both promising and intriguing. The finding that women who are using hormonal contraceptives did not perceive high fertility rivals to be more threatening is similar to recent work in the field, which has showed similar interference in evolved relationship mechanisms. Specifically, hormonal contraceptives were found to interfere with a husband's mate guarding behaviors in a marital context (French, Meltzer, & Maner, 2017). Our results expand on this finding, showing that hormonal contraceptives can interfere with evolved relationship mechanisms, such as threat detection, for women as well. Additionally, the finding that normally ovulating women viewed high fertility rivals as marginally more threatening than low fertility rivals conceptually replicates other work in the field that has found that women are more suspicious of rivals near peak fertility (Krems et al., 2016; Hurst et al., 2017).

Experiment 3

To remedy the small sample size of the previous experiment, we ran a similar experiment through the online data collection platform, Prolific. The procedure itself was an abbreviated version of the second experiment, aimed at testing the same hypotheses:

Women will view high fertility rivals as more dangerous than low fertility rivals, and this threat perception would also be impacted by the conception risk of the participants themselves, such that as participants' conception risk increased, their perception of the rival near peak fertility would increase as well.

Participants

Eight hundred and forty participants were recruited from the online data collection platform, Prolific. From this sample exclusions were made when participants reported not being heterosexual (n=4), reported a menstrual cycle length of less than 25 days (n=61) or more than 36 days (n=85), were pregnant (n=1), were currently breastfeeding (n=33), had already experienced menopause (n=12), were not currently in a relationship (n=3), were using some form of hormonal contraceptives (n=39), did not speak English as their first language (n=100), or were missing data (n=9). After these exclusions, the final sample used for analyses consisted of 493 participants. Participation took approximately ten minutes to complete and in exchange for their time, participants received a monetary payment of \$1.50. Participants ranged in age from 16 to 58 years old, with the average age being 34.1 years old. The majority of participants identified themselves as White (91.7%; Asian 6.1%, other 2.6%, Black 1.4%, and Native American 0.6%).

Procedure

Each participant was asked to complete an abbreviated set of initial measures from the first and second experiments. Participants were then randomly assigned to see a photograph of one of 6 women, when the woman was either at high or low fertility. Accompanying the photograph of the woman was the same vignette describing the same scenario with the woman in the photograph referred to as "Sara." After viewing the photograph and reading the vignette, participants were asked to complete an abbreviated set of the same questions as in the second experiment, including their perception of Sara's mate poaching behavior, how jealous the interaction made them, how much they trust Sara, how attractive they think Sara is, and what type of mate guarding behavior they might partake in to protect their significant other from Sara's perceived advances. After completing these questions, participants were asked the same menstrual cycle and

demographic questions as participants in the first and second experiments and were then debriefed.

Materials & Measures

The same measures that were used in the second experiment were used in this third experiment, with the only differences being the number of questions in the perception of mate poaching and mate guarding measures. Participants also saw one of six women instead of one of twelve women, for a total of 12 photos having been used in the third experiment.

Results and Discussion

By using an ANOVA to analyze the relationship between participants' conception risk and their perceptions of poaching and their endorsement of mate guarding behaviors, two significant results were found. First, participants' perception of Sara's poaching behavior varied as a function of their conception risk, such that as participants' conception risk increased, so did their perception that Sara was attempting to poach their significant other, $F(23, 454) = 1.71, p = .022$. Additionally, participants' endorsement of mate guarding behaviors varied as a function of their conception risk, such that as their conception risk increased, they were more likely to endorse mate guarding behaviors to protect against Sara's advances, $F(23, 454) = 1.73, p = .020$. While neither the perception of poaching, nor the endorsement of mate guarding varied as a function of the fertility of the rival with which women were presented, the amount of jealousy reported by women did. Reported jealousy of Sara varied as a function of Sara's fertility level, such that when Sara was at high fertility participants reported significantly more jealousy ($M = 4.81, SD = 2.18$) than when Sara was at low fertility ($M = 4.41, SD = 2.19$), $F(1,491) = 4.04, p = .045$.

The first hypothesis predicted that women would find high fertility rivals to be more threatening poachers, this was partially supported. While there was no effect of rival fertility on poaching perception, there was an impact of rival fertility on participants' jealousy, indicating that they are tapping into the threat at some level. These results are

reminiscent of other research in the field which has found that women report being more jealous of ovulating other women (Krems et al., 2016; Hurst et al., 2017). The second hypothesis was fully supported and stated that participants' conception risk would impact their poaching perception, such that as their conception risk increased, they would be wearier of other women. What was not found was an interaction between participant conception risk and rival fertility level, or a main effect of rival fertility on poaching perception, indicating that a woman's own conception risk may have a greater impact on her perception of potential rivals than the rivals themselves.

General Discussion

The current experiments aimed to further examine the relationship between mate poaching behaviors and perceptions in regards to the shifts associated with women's menstrual cycles. As hypothesized, the first experiment found that women who were not taking hormonal contraceptives were more likely to mate poach attractive targets when they were at a high conception risk. This finding aligns with other work in the field and provides evidence for the assumed relationship between women at high conception risk and mate poaching behaviors that had not previously been empirically tested. The second experiment found initial evidence suggesting that women perceive potential rivals at high conception risk as more active and threatening poachers, when the women themselves are normally ovulating. These findings offer a better understanding of how women's own conception risk impacts their threat detection. The third experiment further demonstrated the impact of conception risk on threat detection, finding that women near peak conception risk perceived a greater poaching threat. The results of each of these experiments is independently exciting, however these results also contribute the growing body of research connecting evolutionary psychology and relationship science, as well as spark future questions.

Limitations

The main limitations of these experiments lie in their samples. First, the sample size of each experiment greatly underpowered the analyses. Gangestad and colleagues (2016)

reported that, in order to achieve adequate power, a sample size for a between-subjects design experiment utilizing the backwards counting method to determine conception risk should aim to have approximately 740 participants. Neither of the first two experiments described above were able to reach nearly that number of participants, mainly due to the small available sample size and limited data collection period. However, using an online sample for the third experiment allowed us to collect a sample of 493, closer to the goal of 740. Future research should continue to recruit larger samples to avoid the limitations of the first two experiments. Second, due to the general homogeneity of the participant pool available both at the University of Dayton and through Prolific, the samples used for these three experiments lacked diversity, in age and race. In order for the results of these experiments to be generalized to the public at large, the sample needs to be reflective of the public at large. Future research should aim to recruit a more diverse sample to decrease the incidence of this limitation.

Future Directions

Despite these limitations, the results of each of these experiments suggest a number of possible directions for the future research. First and foremost, each experiment should be replicated using a larger and more diverse sample to achieve adequate power in order to increase the validity of the initial findings reported here. Once these findings have been further validated through replication, several other lines of research could be pursued. The effects of hormonal contraceptive use on potential threat detection requires additional attention, as threat detection may not be the only evolved relationship mechanism impacted by the standardizing of women's hormone levels. French, Meltzer, and Maner (2017) found that husbands exhibit higher levels of mate guarding behaviors when they sense their wives are low in commitment, however this effect was only seen when wives were not taking hormonal contraceptives. When wives were taking hormonal contraceptives, husbands exhibited no greater levels of mate guarding whether wives were high or low in commitment to their relationship. These results suggest that hormonal contraceptives have the possibility of interfering with evolved relationship mechanisms between partnered women and men. Future research could examine how

hormonal contraceptive use impacts evolve competition mechanisms intrasexually, between women who may be competing with one another.

Another possible line of research could examine the effects of group membership on women's willingness to mate poach. An article from Salvatore, Meltzer, March and Gaertner (2017) found that women's interest in out-group men increased as their conception risk increased. Another line of research, pursued by Tidwell, Eastwick, and Kim (2017), found that men rated the voices of fertile women as more attractive than non-fertile women, but only when the women were in-group members. These results have interesting implications for women's mate poaching behavior as a function of in- and out-group membership. Salvatore and colleagues' results suggest that women would be more interested in poaching men outside of their group, however Tidwell and colleagues' results suggest women would be more successful poaching men within their group. As the photographs of the poaching targets and the majority of our participants were white, the experiments described here were unable to test the effects of in- and out-group membership on women's mate poaching behavior. Future research would benefit from pursuing these questions in a more diverse sample.

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