

# Calibrated Functional Projection of Sexual Interest: A Speed-Dating Cosmetics Experiment

Bryan L. Koenig<sup>1</sup>, John M. Savage<sup>1</sup>, Patric J. Leukel<sup>1</sup>, Laresa M. Coles<sup>1</sup>, Alexia Daugaard<sup>1</sup>, Garrett Brorby<sup>1</sup>, & Carlota Batres<sup>2</sup>

<sup>1</sup> Department of Psychology, Southern Utah University

<sup>2</sup> Psychology Department, Franklin and Marshall College

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## ABSTRACT

An evolutionary analysis suggests that people's perceptions of potential mates' sexual desires should be functionally correlated with their own level of sexual desire so as to moderate the likelihood of decision errors. Our research tests this possibility using experimental methods in a speed-dating context. We attempted to manipulate men's level of sexual interest by having women wear different amounts of cosmetics. The final sample was 76 men and 92 women, with 459 dyadic interactions. Surprisingly, men did not have significantly greater sexual interest in women wearing more cosmetics as compared to women wearing less cosmetics. Men also did not think women wearing more cosmetics had greater sexual interest than women wearing less cosmetics. Despite not finding a cosmetics effect, the study replicates prior findings regarding perceptions of sexual interest. More specifically, men and women projected their own levels of sexual interest onto their dating partners.

## KEYWORDS

Misperception, Functional Projection, Error Management Theory, Sexual interest, Speed-Dating, Cosmetics, Makeup

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## INTRODUCTION

Studies have found that men overperceive women's sexual interest and that women underperceive men's sexual interest (e.g., Abbey, 1982; Bendixen, 2014). Additionally, research shows that both men and women perceive their partner's level of sexual interest to be similar to their own level of sexual interest, suggesting they might "project" their own level of sexual interest onto their partner (Koenig et al., 2007; Lemay & Wolf, 2016; Lenton et al., 2007). These studies finding projection of sexual interest, however, have all been correlational, leaving ambiguity regarding the

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AUTHOR NOTE: Correspondence concerning this article should be addressed to Bryan Lee Koenig, Department of Psychology, Southern Utah University, 351 W. University Blvd., Cedar City, UT 84720. Contact: [bryankoenig@suu.edu](mailto:bryankoenig@suu.edu).

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direction of causality in the relationship between the misperception of sexual interest and the projection of sexual interest. The current study attempts to address this limitation by using speed-dating methods to experimentally manipulate men's sexual interest to see if doing so results in a change in men's perception of women's sexual interest, as would be expected if men were projecting their own level of interest.

### Misperception of Sexual Interest

Why do people systematically misperceive the sexual interest of others? A leading explanation for the misperception of sexual interest is error management theory (EMT; Haselton & Buss, 2000). This theory suggests that humans evolved cognitive biases resulting from asymmetrical fitness costs of outcomes resulting from false positive and false negative errors in judgment. In the context of mating, EMT has been used to explain why men overperceive the sexual interest of women (Haselton & Buss, 2000; Haselton, 2003). According to EMT, over evolutionary history, men who missed sexual opportunities (false negatives) had greater costs than men who perceived sexual opportunities that were not there (false positives), which should have resulted in the evolution of bias in perception favoring men to see sexual interest that is not there.

Building on EMT, functional projection proposes that people evolved a bias to perceive others to be in functionally relevant mental states—mental states that are important to detect in fitness-relevant contexts—depending on the motivational state of the perceiver (Maner et al., 2005). That is, functional projection suggests that people should conditionally overperceive states that would be costly to miss. Maner and colleagues (2005) found that people with activated self-protection motivation perceived more anger in outgroup faces, and in the mating domain that men but not women with experimentally-activated mating motivation perceived attractive members of the opposite sex as having especially high sexual interest.

### *A Calibration Approach to Functional Projection*

EMT proposes men but not women overperceive sexual desire, but it does not address underlying psychological processes (Haselton & Buss, 2000). Functional projection goes beyond EMT by suggesting that the biased perception of sexual interest is state-dependent, depending on the activation of specific psychological processes—a mate-search motivation and related sexual arousal (Maner et al., 2005). However, functional projection does not take into account how motivational systems can be activated by degrees. This variation in degree of activation of motivation systems is important both in terms of expected fitness cost asymmetries and related perceptual biases.

When it comes to mating, not all members of the opposite sex are equal (Buss, 1989; Walter et al., 2020). This continuous variation in mate value suggests continuous variation in asymmetry in costs for false positives and false negatives across mate values of potential mates. For example, a missed mating opportunity with a high quality, fertile mate is more costly than a missed mating opportunity with a low quality, fertile mate, which is more costly than a missed opportunity with an infertile mate. A plausible psychological mechanism for tracking variation in the value of

mating opportunities and related cost asymmetries is sexual desire, which varies with numerous factors such as mate attractiveness and ovulatory status (Haselton et al., 2007; Regan & Berscheid, 1999).

This logic applies to women as well. Women and men both utilize short-term and long-term mating strategies (Buss & Schmitt, 1993). Women's short-term mating is more selective than men's, reflecting their greater obligatory investment in offspring as explained by the theory of parental investment (Trivers, 1972). Most women, most of the time, have less interest in casual sex than men—but a women's sexual desire might be more strongly activated under some circumstances, such as when an exceptionally good potential short-term mate is available or during an ovulatory window (Van Stein et al., 2019). Theoretical considerations thus suggest that sexual desire might moderate sexual interest perception in both women and men.

To recap, we propose that people's perceptions of potential mates' sexual desires should be functionally correlated with their own level of sexual desire so as to moderate the likelihood of decision errors. This contrasts with EMT, which proposes a decision bias that is always on for men but not women and only towards certain targets. Functional projection by comparison proposes an on-off switch whereby sexual interest projection is activated when someone's sexual desire is activated but not otherwise. We propose a calibrated functional projection wherein sexual desire is like a dial that moderates the degree of sexual interest projection. In short, we propose people calibrate their perception of another person's sexual desire based on their own level of sexual desire.

### Logic of the Current Research

Given the theoretical proposition that people project the perception of sexual interest onto others in a way that is calibrated to their own sexual interest, we wanted a design in which to show that perceiver sexual interest strongly predicts perceived sexual interest, when controlling for actual interest. To increase the strength of this evidence, we wanted to experimentally manipulate the perceiver's sexual interest across targets (within perceivers) and demonstrate that statistically removing the effect of the manipulation would correspondingly reduce the impact of perceiver sexual interest on their perceptions of target sexual interest. To concurrently achieve these objectives, we conducted a speed-dating study and attempted to manipulate men's sexual interest by having women wear different levels of cosmetics.

### Speed-Dating

Speed-dating is an established method of testing dyadic attraction between men and women in a fast, efficient way (Finkel et al., 2007). It has often been used to study relationship attraction and interpersonal perception (e.g., Asendorpf et al., 2011; Tidwell et al., 2013; Valentine et al., 2014). Speed-dating provides real sexual interest to be misperceived. For example, Perilloux and colleagues (2012) found in a speed-dating study that men overperceived women's sexual interest. Although not directly testing calibrated projection of romantic interest, a speed-dating study by Back and colleagues (2011) found that speed-daters expected reciprocity in dates regarding interest in meeting after the event. However, these expectations were

largely incorrect. Such correlational findings are consistent with the suggestion that individuals were projecting their interest specifically onto the others in whom they were most interested.

### Cosmetics and Attractiveness

Prior research suggests that modifying women's facial attractiveness using cosmetics might be especially effective for manipulating men's sexual interest in a speed-dating context. In one speed-dating event, men's choices were based only on women's physical attributes, and among them facial attractiveness was the strongest predictor of which women the men chose (Asendorpf et al., 2011). Facial attractiveness alone predicts history of actual mating success of men and women (Rhodes et al., 2005).

Compared to men, women have greater contrast of their eyes and lips to the rest of their face even without cosmetics, and women's individual differences in such contrast predict perceptions of femininity and attractiveness (Russell, 2009). Photo manipulation that affects this contrast increases women's attractiveness (Russell, 2003). These are precisely the same areas of the face that many women darken with cosmetics to increase facial contrast (Russell, 2009), which in turn increases their perceived femininity and attractiveness (Cox & Glick, 1986; Ectoff et al., 2011). In addition to increasing femininity, cosmetics have also been found to have differential effects on age perceptions (Russell et al., 2019). More specifically, women between 18 and 22 years old are perceived to look older with makeup whereas women 38 to 52 years old are perceived to look younger with makeup. Therefore, makeup across age ranges modifies faces towards women's fecundity peak of mid-to-late twenties (Conroy-Beam & Buss, 2019).

One reason women use makeup is to compete with other women to attract mates (Mafra et al., 2020), and women wearing cosmetics are seen as having greater femininity and sexiness (Cox & Glick, 1986). Several studies have found that faces with makeup are rated as more attractive than faces without makeup (Batres et al., 2018b; Graham & Jouhar, 1981; Mulhern et al., 2003). Especially relevant to our goal of manipulating men's sexual interest, women wearing cosmetics are perceived as more interested in short-term mating (Batres et al., 2018b). Overall, cosmetics increase attractiveness by increasing perceptions of symmetry, averageness, sexual dimorphism, and health (Batres et al., 2022).

Red lipstick in particular might be a good focal point for manipulating men's sexual interest. When ovulating, women's faces become more attractive (Oberzaucher et al., 2012) because their skin gets more homogenous and red, and their lips get fuller (although these changes may not be visible to the human visual system, Burriss et al., 2015). Red lipstick has been common across societies and throughout recorded history (Schaffer, 2006). Increased redness of lips is seen as more attractive (Stephen & McKeegan, 2010) and red lipstick is associated with femininity and sexuality (Porcheron et al., 2013). Red might be the best color given that men have been found to be more attracted to women in red clothing and contexts such as red frames around photos (Elliot & Niesta, 2008), and more drawn to such women (Kayser et al., 2010; but later research has called these findings into question, e.g., Lehmann & Calin-Jageman, 2017).

Together these findings suggest that manipulating levels of cosmetics might be an effective means of influencing men's level of sexual interest in a speed-dating study. The strongest manipulation would be to have some women wear no makeup and others wear a lot. However, women expect that they will be more confident and social when wearing as opposed to not wearing their customary cosmetics (Cash & Cash, 1982). Moreover, the same women had better body image with their customary cosmetics on compared to no cosmetics (Cash et al., 1989). Women who are especially concerned about appearances feel that wearing makeup is important for their social interactions (Miller & Cox, 1982). These findings suggest that women in a no-cosmetics condition might have reduced social confidence that could impact their sexual interest in men and impair social dynamics, impacting the results in unpredictable ways. We thought therefore that a minimal-makeup and full-makeup condition seemed appropriate.

### The Current Study

A major limitation of the prior research that has evaluated the possibility of sexual interest projection is that they have used correlational methods, undermining the ability to make causal claims. That is, correlational research has used living targets but experiments to date that tested projection of sexual interest have used photos of individuals rather than in-person interactions with individuals, where levels of actual interest could be misperceived. The current experiment was therefore designed to manipulate men's sexual interest and measure their related misperception of women's sexual interest in an ecologically valid context of speed-dating events. Our study aims to extend the literature by evaluating the effects of manipulating women's cosmetics on men's misperception of sexual interest in a speed-dating setting.

## METHOD

### Participants

Participants were students at a regional university in the southwestern United States. Exclusion criteria included (a) being either in a relationship or exclusively homosexual, (b) women saying that they wore cosmetics other than as instructed or that they received different instructions than those provided, and (c) indicating data should be excluded when asked a general question about data quality. We excluded interactions with missing data or when either dyad member indicated already knowing the other person. After excluding 22 participants, the final sample consisted of 76 men and 92 women with 459 dyadic interactions. Regarding religion, 59.3% of participants were members of the Church of Jesus Christ of Latter-day Saints, 16.8% had another religious identity, and 24% were not religious. Regarding racial and ethnic identity, 87.4% were White, 5.4% had multiple identities, 3.0% were Hispanic, 1.8% were Asian, and 2.4% indicated *Other*.

## Recruitment and Cosmetics Manipulation Emails

Recruitment materials were modified from those provided by Finkel and Eastwick (2008, personal communication). We advertised on a research pool management platform, on a student portal, and with flyers on campus. Advertisements indicated the opportunity for students to participate in a speed-dating event but did not mention cosmetics or anything about the experimental methods or goals. Once the roster for the speed-dating event was set, an email instructed participants on how to get to the event, with paths for men and women that kept them separated before the event.

These emails also provided instructions for appearance. Every man received the same email that told them to dress nicely and show up at the appropriate time. Women were randomly assigned to one of two conditions, which had different emailed instructions. Women were assigned to either wear little to no cosmetics (no cosmetics condition) or to wear full cosmetics with red lipstick (cosmetics condition; see Table 1).

**Table 1.** Start of emails sent to female participants that provided the cosmetics instructions.

<b>Cosmetics Condition Instructions</b>	<b>No Cosmetics Condition Instructions</b>
<i>Email Subject Line:</i> Your study condition: Red lipstick required!	<i>Email Subject Line:</i> Your study condition: No lipstick allowed!
<i>Email Content:</i> Research instructions: <b>Please wear red lipstick</b> (and not pink or any other color).  Read this email carefully.  Some studies suggest that men prefer women who wear relatively more make-up. Therefore, we ask you to come to the event with a full face of make-up. That is, wear make-up like you would for a special occasion or an event for which you wear relatively more make up. At minimum, please wear foundation, eye makeup, and red lipstick. Beyond the required components, please wear make-up so you feel comfortable. Before or during the study, please do not discuss the instructions provided in this email with anyone other than the researchers.	<i>Email Content:</i> Research instructions: <b>Please wear no lipstick.</b>  Read this email carefully.  Some studies suggest that men prefer women with a natural look. Therefore, we ask you to come to the event with little to no make-up. That is, <b>please do not wear any type of colored lipstick or lip gloss</b> , only wear little or no foundation, and wear only little or no eye make-up. Beyond the required components, please wear make-up so you feel comfortable. If you feel comfortable wearing no make-up at all then please do so. Before or during the study, please do not discuss the instructions provided in this email with anyone other than the researchers.
<i>[continues with logistical instructions]</i>	<i>[continues with logistical instructions]</i>

### Questionnaires

The measures of social attraction were the same as Perilloux and colleagues (2012). Like them, the measure of sexual interest was “I am sexually interested in her/him,” and the measure of perceived sexual interest was “She/He is sexually interested in me,” each rated on a 1 (*well below average*) to 7 (*well above average*) scale. For each dyadic interaction, participants were asked if they wanted their information shared with the other person after the event, and if they knew the person prior to the event. At the end of the event, participants were asked to guess the research hypothesis (none guessed it), whether they still wanted us to share their contact information after learning about the cosmetics manipulation, if we should exclude their data for any reason, and demographics questions. At the end of the study, women were asked about their makeup instructions, what makeup they wore, how comfortable they felt wearing the makeup they had on during the study (1 = *Not at all comfortable*, 2 = *A little*, 3 = *Moderately*, and 4 = *Very comfortable*), and how often they wear cosmetics like they did during the study (1 = *Never*, 2 = *Infrequently*, 3 = *Regularly*, 4 = *Usually*).

### Procedures

The speed-dating events were organized based on Finkel and colleagues' guide (2007). We attempted to recruit 10 men and 10 women per speed-dating event but had difficulties recruiting enough men (59% of students at the university were women). Events were cancelled if they had fewer than 3 men or 3 women. Individual women were rescheduled such that events had no more than one extra woman compared to the number of men. Participants were assigned to sit at a table according to their gender and an anonymous participant number. Women sat on the interior sides of 10 tables (organized into two rows of five tables) and men rotated around the outsides of the tables clockwise. Tables were separated with a partition to minimize distraction during the three-minute dates. After each date, participants were given one minute to answer the questions about that particular date. Between each date there was a one-minute transition period in which the men would move to the next table with the next woman. This procedure was repeated ten times (or less depending on the number of participants present) so each man would meet with each woman. Afterwards, women who provided consent were photographed. Later, if two participants mutually expressed interest to share information details with the other, researchers shared the contact information.

## RESULTS

If the cosmetics manipulation was successful, men should have had higher sexual interest in women wearing cosmetics. However, multilevel modeling did not show men having the anticipated greater levels of sexual interest towards women in the cosmetics condition,  $t(393.04) = 0.91$ ,  $p = .363$ ,  $\Delta R^2 < 0.01\%$  (see Table 2). Additionally, men did not have the anticipated perception of greater sexual interest for women in the cosmetics condition as compared to the no cosmetics condition,

$t(383.28) = 0.04, p = .968, \Delta R^2 < 0.01\%$  (see Table 2). These null results indicate our cosmetics manipulation did not work as intended.

**Table 2.** Descriptive statistics for men’s sexual interest in women and men’s perceptions of women’s sexual interest (ns are interactions).

DV	Women with cosmetics			Women without cosmetics		
	Mean	SD	N	Mean	SD	N
Men’s sexual interest	3.47	1.92	235	3.33	1.78	224
Men’s perception of women’s sexual interest	3.43	1.63	235	3.35	1.51	224

Exploratory analyses were used to better understand why the cosmetics manipulation failed. Women wearing cosmetics actually reported being less comfortable ( $M = 3.09, SD = 0.78, n = 47$ ) than women not wearing cosmetics ( $M = 3.68, SD = 0.64, n = 44$ ),  $t(89) = 3.99, p < .001, d = 0.84$ . Moreover, women wearing cosmetics reported doing so less often ( $M = 2.11, SD = 0.81, n = 47$ ) than did women not wearing cosmetics ( $M = 3.27, SD = 0.95, n = 44$ ),  $t(89) = 6.31, p < .001, d = 1.32$ . Frequency of wearing cosmetics correlated positively with comfort in both the cosmetics condition,  $r(n = 47) = .36, p = .012$ , and the no cosmetics condition,  $r(n = 44) = .61, p < .001$ . However, in multilevel analyses, even when controlling for comfort, men did not perceive women as having significantly greater sexual interest if they were wearing cosmetics ( $M = 3.43, SD = 1.63$ ) than if they were wearing no cosmetics ( $M = 3.35, SD = 1.51$ ),  $t(385.63) = 0.96, p = .339, \Delta R^2 < 0.01\%$ , and surprisingly women’s comfort was negatively related to men’s perception of women’s sexual interest,  $b = -0.15, SE = 0.06, t(357.98) = -2.53, p = .012, \Delta R^2 = 0.44\%$ . Most of the women ( $n = 77$ ) reported being fairly comfortable in their makeup, reporting a 3 or 4 (on the 1 - 4 scale), whereas 14 reported low levels of comfort. Looking only at women whose comfort ratings were 3 or 4, makeup still did not have a significant effect on either men’s sexual interest,  $t(327.79) = 1.05, p = .296, \Delta R^2 < 0.01\%$ , or men’s perception of women’s sexual interest,  $t(318.74) = 0.09, p = .933, \Delta R^2 < 0.01\%$ . Therefore, women’s comfort wearing makeup seems unlikely as an explanation for the null effects of cosmetics.

Another possible explanation for the failure of the manipulation is that cosmetics had a small effect size on men’s perceptions compared to individual differences in women’s attractiveness. This is consistent with Jones and Kramer’s (2015) finding that cosmetics explained 2% of variation in attractiveness whereas individual differences accounted for 69% of variation. To evaluate this possibility, we used social relations modeling (Ackerman et al., 2015) to compare effect sizes (as variance accounted for) of cosmetics with individual differences in perceivers (men) and targets (women) for social attraction variables. For each social attraction variable, variances were calculated twice for perceiver, target, and relationship plus error. First without regards to cosmetics, then again after removing the mean difference for cosmetics. The effect size attributed to cosmetics is the difference between the total variances for the two models; that is, how much variance each accounted for in the second analyses, after removing the mean difference for cosmetics. Computations were done in SPSS version 28 using restricted maximum likelihood.



As can be seen in Table 3, cosmetics accounted for less than 1% of the variance in all five social attraction variables measured in men. By contrast, which man was doing the perceiving explained one-third to two-thirds of the variance, and the woman being perceived explained between 6% and 38% of the variance. These findings suggest that individual differences in perceivers and targets overwhelmed the effect of cosmetics in this experiment in which cosmetics was manipulated between women.

**Table 3.** Social relations model (SRM) variance partitioning for social attraction variables measured in men.

Social attraction variables	Estimated relative percentage of variance in social attraction variable accounted for by SRM component				Total variance
	Cosmetics	Perceiver	Target	Relationship plus error	
Sexual interest in target	0.32%	34.25%	30.19%	35.26%	3.22
Perception that target is sexually interested in self	-0.12%	63.90%	6.44%	29.77%	2.14
Face attractiveness	0.43%	31.95%	28.58%	39.04%	2.07
Body attractiveness	0.21%	33.31%	37.75%	28.73%	2.31
Overall attractiveness	0.01%	37.19%	31.11%	31.70%	2.12

Another potential explanation is the study being underpowered. The key multilevel analyses looked at men’s perceptions only at Level 1. They had a Level 2 sample size of 76 (male participants) and a mean Level 1 sample size of 6.04 ratings (dates). Arend and Schäfer (2018, Table 5) report that for an analysis with one Level 1 predictor, a Level 2 sample size of 70, and a Level 1 sample size of 6, sensitivity analyses indicate a minimum detectable effect size is  $R^2 = 18\%$ . Based on this, the current study had 80% power to detect an effect size that is medium ( $R^2 = 9\%$ ) to large ( $R^2 = 25\%$ ). Given the relatively small effect size of cosmetics reported by Jones and Kramer (2015), our study might have been underpowered regarding the cosmetics manipulation.

### Tests of Calibrated Projection of Sexual Interest

Despite not finding a significant effect of cosmetics, the data’s structure allowed the evaluation of whether the study replicates prior findings. Indeed, the data replicated multiple findings on the misperception of sexual interest. First, men reported more sexual interest in their interaction partner ( $M = 3.40$ ,  $SD = 1.86$ ) than did women ( $M = 3.21$ ,  $SD = 1.68$ ), although this difference was nonsignificant,  $t(165.36) = 0.67$ ,  $p = .503$ ,  $\Delta R^2 = 0.16\%$ . Second, men also perceived women to have greater levels of sexual interest than women self-reported, although men’s perception of women’s interest minus women’s self-reported interest was not significantly greater than zero ( $M = 0.18$ ,  $SD = 2.31$ ),  $t(75.31) = 0.69$ ,  $p = .592$ ,  $d = 0.08$ . Third, women

perceived men to have lower levels of sexual interest than men self-reported (difference:  $M = -0.34$ ,  $SD = 2.23$ ),  $t(86.99) = -2.09$ ,  $p = .039$ ,  $d = -0.15$ . Fourth, multilevel models with random intercepts indicated that both men and women projected their own level of sexual interest onto their dating partners. This held for the total sample, and for men and women separately (see Table 4).

**Table 4.** Results from three multilevel regression models indicating that men and women projected their own sexual interests onto their interaction partners.

Subsample	Number of interactions	Own sexual interest				Other's actual interest			
		<i>b</i>	<i>SE</i>	<i>t</i>	$\Delta R^2$	<i>b</i>	<i>SE</i>	<i>t</i>	$\Delta R^2$
Total	918	.40	.02	23.92**	31.40%	.03	.02	2.10*	0.89%
Men	459	.40	.02	17.17**	30.42%	.03	.02	1.07	0.59%
Women	459	.41	.02	16.70**	32.78%	.04	.02	1.99*	1.50%

DV = perception that other person is sexually interested in oneself

\* $p < .05$ , \*\* $p < .001$

## DISCUSSION

Building on the theory that men and women calibrate their perception of other people's sexual interest based on their own level of sexual interest, this experiment attempted to use different levels of women's cosmetics to manipulate men's sexual interest in the women in order to show that the men were projecting the experimentally elevated sexual interest onto their female dating partners. The results did not show that women's cosmetics influenced men's sexual interest or men's perception of women's sexual interest. This null effect does not seem to be a consequence of women's comfort levels regarding wearing makeup. Supporting the validity of the measures and overall design, the data replicated prior findings. Specifically, women underperceived men's sexual interest (Bendixen, 2014; Koenig et al., 2007; Perilloux et al., 2012) and men and women both projected their sexual interest in the other dyad member (Koenig et al., 2007; Lemay & Wolf, 2016; Lenton et al., 2007).

Why did the cosmetics manipulation fail? One possibility is the effect size of cosmetics was small as compared to the effect size of variation among women in attractiveness. Prior research has shown that individual differences impact variation in attractiveness much more than cosmetics (Jones & Kramer, 2015; Jones & Kramer, 2016). A sensitivity analysis indicated our experiment had power to detect a medium-to-large effect size, which was sufficient for tests of projection but not for the cosmetics manipulation. In future research, having the same women switch between cosmetics conditions during the experiment might overcome this problem.

Another potentially relevant factor was our instruction's focus on red lipstick in the cosmetics condition. Despite telling the women to "wear foundation, eye makeup, and red lipstick," the secondary instructions were less salient and could have been missed by inattentive participants. This is important because facial cosmetics have been found to have larger impacts around the eyes than around the mouth (Jones et al., 2015; Mulhern et al., 2003). Relatedly, the cosmetics instructions asked all women

to wear some degree of makeup, which likely reduced the effect size of the cosmetics manipulation more than prohibiting some women from wearing any cosmetics. Increasing the constraints on women's cosmetics across the whole face could increase the effectiveness of the manipulation. One way to ensure cosmetics were applied consistently and as intended would be having professionals rather than the participants apply the cosmetics, which has also been shown to increase ratings of attractiveness and femininity (Batres et al., 2021) and would bypass potential problems resulting from women putting on less cosmetics if they are taking hormonal contraceptives (Batres et al., 2018a). Finally, we had intended to do a manipulation check by having blind raters evaluate the lipstick and cosmetics in photographs of female participants, but the photos were lost due to human error.

Future research could attempt to manipulate men's sexual interest in a speed-dating context using non-cosmetics strategies. For example, scent has been shown to affect moral judgements (Schnall et al., 2008), so perhaps it could likewise impact men's sexual interest by having a bad smell at some tables, in parts of the room, or in some events but not others. Bad smell might reduce sexual interest in men and women, which the calibrated projection hypothesis predicts should reduce men's and women's perceptions of sexual interest. One advantage of this method is that it might substantially reduce the attractiveness of some female participants, which Li and colleagues (2013) showed as critical. That is, they found that experimental manipulations wherein some targets are especially low in attractiveness can be important to successfully manipulate mating interest. Restriction of range for attraction variables in relatively homogeneous speed-dating participants can be problematic (Li et al., 2013), although for our study the homogeneity across participants should have increased the effectiveness of our cosmetics manipulation.

The failure of the cosmetics manipulation limited the causal evidence provided in support of the theoretical proposal that men and women calibrate their perception of sexual interest based on their own level of interest. Nonetheless, both our male and female participants showed a strong association of their own level of sexual interest and the interest they perceived in their dates. This is consistent with prior findings (Koenig et al., 2007; Lemay & Wolf, 2016; Lenton et al., 2007). The projection effect was particularly strong in the current study, which may be due to participants being complete strangers. That is, they did not have any information other than what they could glean in three minutes. Their perception of sexual interest was not completely uninformed by target's true interest (see Table 4), but projection swamped accuracy in the current results, consistent with the calibration explanation for misperceiving sexual interest.

## CONCLUSIONS

Using an ecologically valid speed-dating research design, we attempted to manipulate men's sexual desire to demonstrate that doing so would consequently also increase men's perception of women's sexual interest. Our manipulation failed to affect men's sexual interest or men's perception of women's sexual interest. Nevertheless, the study replicated previous research on misperception of sexual

interest, providing further correlational evidence that men and women with higher levels of sexual interest project them onto members of the opposite sex.

### Acknowledgements

We would like to thank the following people for helping with this project. Dr. Garrett Strosser helped design the experiment. Pricilla Cuara entered data, helped run events, and distributed recruitment advertisements. Hayden Plewe and Samara Rangal entered data, helped run events, and did minor edits to the manuscript. Caleb Christensen entered data and helped run events.

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