



Mate Copying Is Moderated by Relationship Recency and Potentially by Breakup Responsibility

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Abstract

This study examined the phenomenon of mate copying and whether it may be affected by the recency of potential mate's last relationship and their breakup responsibility. Mate-seekers may make inferences about the suitability of potential mates based upon such factors. Participants included 119 female and 42 male undergraduate students and members of the wider public who responded to an online questionnaire asking them to make judgments about hypothetical romantic partners. Consistent with the mate copying phenomenon and previous findings, results indicated that women considered men formerly in relationships (ending 6 months or 2 years ago) more desirable than men without relation experience or those currently partnered. However, those ending relationships more recently (within the last month) were considered less desirable. Being in a former relationship, but not too recently, may have increased mate copying (as measured by relative desirability), because of the inferences invoked about a man's level of commitment. However, no such trend emerged for men evaluating women. Furthermore, previous relationship breakup responsibility was found to be critically important for both men and women. Individuals were rated as more desirable if their last relationship breakup was mutual compared to the conditions where either they or their former partner was responsible. It was concluded that mate-seekers are closely attentive to particular aspects of a prospective partner's relationship history.

Keywords Mate copying · Relationship history · Romantic experience · Promiscuity · Recency

No human population ever studied has been characterized by a pattern of mating which is entirely random (Buss and Barnes 1986). Desirable individuals are consistently chosen as prospective mates over their less desirable counterparts. Because the environment in which we live is highly social, it is understandable that we attend to and incorporate into our decision-making a considerable amount of social information. One such type is the behavior, attitudes, and preferences of others.

Mate copying or mate choice copying refers to the heightened preference for individuals who have already been chosen

as mates. The essential element of mate copying in humans is that the perceived mate value of an individual is modified by knowledge of their romantic status or history. Specifically, onlookers assess whether target individuals have ever been involved in a romantic relationship and modify their evaluation of him/her. Individuals prefer partners who had or have an opposite-sex partner, over those who do not currently or have previously not had one (Eva and Wood 2006; O'Hagen et al. 2003; Platek et al. 2001; Waynforth 2007). The adaptive value of mate copying lies in the fact that it helps to alleviate some of the costs such as time and energy, associated with sampling a range of potential partners (Gibson and Höglund 1992; Pruett-Jones 1992; Wade and Pruett-Jones 1990). A copying individual gains many of the information benefits of an actively choosing individual at a significantly reduced cost (Anderson and Surbey 2014).

Among nonhumans, mate copying refers to preferring a potential mate who has already been chosen by another, and this is generally indicated by concrete visual cues. The phenomenon has previously been observed in a range of zoological taxa (for reviews, see Brown and Fawcett 2005; Galef and Laland 2005; Vakirtzis 2011) but has only been systematically studied among

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nonhumans in the last 25 or so years and only in the last 10 or so among humans. Seminal studies examining mate copying in nonhumans by Dugatkin (1992) and Pruett-Jones (1992) greatly increased our understanding of the phenomenon and helped to pave the way for exploration of mate copying among humans. A typical paradigm examining mate copying among nonhumans involves an individual (generally a female) observing a conspecific in a mating sequence or in proximity to an opposite-sex other. Mate copying is indicated by a heightened preference for, or increased time spent by, a conspecific that has been previously viewed in a mating sequence or otherwise has been chosen as a mate.

In pair bonding species, such as our own, having relationship experience and having been chosen as a mate almost always co-occur. Thus, the former can reasonably be assumed to be a proxy for the latter, but the two may not always be commensurate (e.g., it is possible for an individual to be “chosen” without reciprocating). A growing body of evidence suggests that mate copying occurs in humans, but a number of questions regarding how it proceeds in humans and what factors may affect its frequency remain. Research examining exclusively human populations began to emerge in the last 10 years (Anderson and Surbey 2014; Bowers et al. 2011; Chu 2012; Deng and Zheng 2015; Eva and Wood 2006; Kavaliers et al. 2017; Little et al. 2011; Milonoff et al. 2007; Place et al. 2010; Rodeheffer et al. 2016; Vakirtzis and Roberts 2010a, 2012; Waynforth 2007; Yorzinski and Platt 2010; Zhuang et al. 2016). Its later emergence compared to nonhuman studies is at least partially due to the fact that mate copying was expected to occur more readily among species that employ a polygynous system of mating (Vakirtzis and Roberts 2010b), whereas humans are serial monogamists/pair bonders (De La Croix and Mariani 2015; Fisher 1989). Difficulties posed in establishing appropriate research methodologies to study human mate copying and the likelihood that human mate copying employs a number of modalities, other than visual association with a previous partner, have also delayed research investigations.

Mate Copying, Poaching, or Avoidance

As noted above, research concerning mate copying among humans is relatively sparse compared to that among nonhumans. While there have been a number of demonstrations of mate copying (or demonstrations of mate copying propensity) among humans (Anderson and Surbey 2014; Hill and Buss 2008; Eva and Wood 2006; Place et al. 2010; Vakirtzis and Roberts 2010a; Waynforth 2007; Yorzinski and Platt 2010), research in the field is characterized by methodological variety. Of particular note is variance in the type of information available regarding the specific relationship between an evaluated target and their opposite-sex associate. For

example, whereas individuals with prior relationship experience generally have a desirability advantage over those without it, it is not clear if the recency of this “relationship experience” affects propensity to mate copy (e.g., a target with a fairly recent, very recent, or current partner).

Mate poaching is a related but distinct phenomenon to mate copying. It has been defined by Schmitt and Buss (2001) as “behavior intended to attract someone who is already in a relationship” (p. 894) or steal them from their current partner. Thus, it may be considered a somewhat dishonorable or anti-social behavior, separate from mate copying. However, studies of mate copying may raise or be affected by similar social and moral issues by presenting research participants with potential mates who are currently partnered and having them assess their desirability. These issues may also play a role in mate copying studies where single individuals who have been *formerly* partnered have only exited relationships very recent recently. Findings in the literature are somewhat inconsistent, with a number of studies indicating a romantic desirability advantage for currently single over currently partnered men (Anderson and Surbey 2014; Deng and Zheng 2015; O’Hagen et al. 2003; Uller and Johansson 2003) and others reporting similar advantages for currently partnered men (Bressan and Stranieri 2008; Parker and Burkley 2009; Platek et al. 2001). In addition to the above studies, a number of authors have presented male–female pictures and either explicitly described them as being in a relationship or left the nature of their relationship ambiguous (Chu 2012; Dunn and Doria 2010; Hill and Buss 2008; Jones et al. 2007; Vakirtzis and Roberts 2010a).

For example, using generic female silhouettes representing former partners, Anderson and Surbey (2014) found that photographed single men were more desirable (overall) than partnered men, if they had either one or two partners formerly. Thus, having been previously been chosen and having previous romantic experience was found to be desirable. Currently partnered men and single men who had not been formerly partnered were equally less desirable than previously partnered men. Interestingly, men who had too many previous partners (five in this case) were considered less desirable than men who had none. Anderson and Surbey (2014) suggested that a high level of previous romantic experience may be an indication of promiscuity. Furthermore, high number of partners has been found to be related to aggression/sexual coercion (DeGue and DiLillo 2004), is generally regarded as undesirable in a prospective mate by women (Bleske and Shackelford 2001; Buss 1994; Buss and Schmitt 1993), and may well lead to a type of mate avoidance whereby women find a man with too much romantic experience undesirable. As such, mate-seekers can be expected to be sensitive to possible indications of promiscuity. In addition to having a high number of previous partners, if a potential mate has broken up very recently, this may serve as an indication that they may be unwilling or unable to commit (an undesirable quality; Manna 2009). For example, they may

still have an attachment to their recent partner, or they may tend to engage in a string of short-term relationships, with all breakups thus being relatively recent.

While there is considerable evidence suggesting that the relationship experience of the individual being assessed is important in the determination of their mate value, it is also worth noting that experience of the rater has been identified as a variable that can influence one's propensity to mate copy or attend to social cues. Research by Anderson and Surbey (2014) and Bowers et al. (2011) has found that mate copying is more prominent among younger, less experienced women. The traditional explanation given is that younger women are less practiced at the discrimination task and less confident in the mating decisions they make than older women. They would do well to pay attention to mating decisions made by older women, who are presumably more practiced (by virtue of them simply having had more opportunities) and proficient. Thus, younger women should be more motivated to seek out additional information. However, some findings have suggested that age is not a significant predictor of mate copying (e.g., Waynforth 2007).

Nonhuman species appear to largely use visual cues in mate copying and these also seem to be potent in humans. However, a propensity to mate copy in humans is likely mediated by a range of additional variables and has been demonstrated without employing photographic stimuli (Platek et al. 2001; Stanik 2009; Vakirtzis and Roberts 2012). Therefore, it may be interesting and informative to compare the potency of visual versus nonvisual cues in eliciting mate copying.

Responsibility for Relationship Breakup

Lifetime marital monogamy does not appear to be characteristic of most human cultures (Buss and Schmitt 1993). Additionally, individual sexual permissiveness is more common among men than women (for a discussion, see Oliver and Hyde 1993). Symons (1979) has argued that over the course of evolutionary history, men have evolved a powerful desire for sexual access to a large number of women. Despite the fact that each new sex partner for a man is also a new sex partner for a woman (putting aside homosexual unions; for a discussion, see Brown and Sinclair 1999), studies in human sexuality have consistently found considerable differences between the sexes in how many lifetime sex partners they report (Oliver and Hyde 1993; Ostovich and Sabini 2004; Smith 1992; Wiederman 1997) and how many they want (Buss and Schmitt 1993; Pedersen et al. 2002), with men typically wanting and being willing to admit to having had more partners. However, the types of inferences made about potential partners in light of their past relationship experience have yet to be systematically examined and elucidated. Past relationship experience could both enhance and reduce a partner's desirability and the propensity to mate copy.

Stanik (2009) conducted a study in which both male and female participants were presented with written vignettes of opposite-sex others and asked to evaluate their romantic desirability. It was found that both male and female participant's assessments of target individuals dropped considerably upon learning that they had been rejected/abandoned by their previous relationship partner. Although not strictly mate copying, the pattern of results suggests that mate-seekers are sensitive to this type of social information about prospective partners—specifically, how potential partners are regarded by the people with whom they have previously partnered. If mate copying can be thought of as taking into account implicit information provided by previous partners of a prospective mate, then adjusting one's evaluation of an other's desirability based on an awareness of how their last relationship ended may fall within a similar category. How responsibility for relationship breakup may affect a prospective mate's desirability seems relevant to the mate copying phenomenon.

Goals and Hypotheses

A questionnaire study was undertaken to extend our previous work demonstrating mate copying employing visual stimuli (Anderson and Surbey 2014). This research indicated that the number of previous relationships a man has been in is important, with a moderate number (~ 2) being more desirable than either too many or too few. The current study employed a questionnaire-type methodology to examine how the recency with which one has been in a romantic relationship and who was responsible for the breakup may affect the propensity to mate copy or an individual's desirability. It was expected that individuals described as having former partners or relationship experience would be considered more romantically desirable by the opposite-sex than those not having any (a measure of propensity to mate copy). Therefore, individuals were generally expected to copy the mate choice preferences of same-sex others. To rule out mate poaching (Anderson and Surbey 2014), individuals being evaluated were described as being currently single. The relationship between a man's number of former partners and their desirability has been shown to be nonmonotonic (Anderson and Surbey 2014). If, like number of former partners, recency of last relationship indicates something about a target's level of promiscuity or commitment, then it might be expected that mate copying would vary as a function of the recency of the last relationship. For example, someone whose relationship has just ended may not be able to commit again or may be interested in only short-term uncommitted relationships. Further, it was predicted that women would indicate a greater propensity to mate copy than men. Although we primarily used written descriptions and nonvisual stimuli to test the predictions, we also included two vignettes with photographs in this section (one with a

single man pictured alone and with a man pictured alongside his female partner, as in Anderson and Surbey 2014). This was to determine if someone pictured with a current partner, but described as becoming single or romantically available, is deemed more or less desirable than someone who is currently pictured and single. This would allow a preliminary determination as to the relative saliency or influence of visual versus written information about potential mates and their former partners on mate copying propensity. Anderson and Surbey (2014) found men pictured with their former partners of the last 4 years elicited more mate copying than those pictured alone and described as not having had partners during this time or pictured with their current partner. The latter condition was a control for propensity to mate poach or a measure of mate avoidance. For the present study, we wondered if presenting participants with a photograph of a prospective mate and their current partner but asking them to assume the targets were now single would provoke more or less mate copying than single targets pictured alone. For example, if seeing a man pictured alongside his current partner is particularly potent in reducing mate copying or provoking mate avoidance (even when told he is now single), then we may expect reduced mate copying. However, if the written description of his current single status is more salient or influential than the visual cues then we would expect greater mate copying. The inclusion of these two conditions thus provided an initial means to compare the potency of visual versus written information in the elicitation of mate copying or avoidance.

Additionally, we also conducted a preliminary investigation of the prediction that an individual's perceived romantic desirability may vary depending on which partner was responsible for their most recent relationship breakup. There are a number of reasons why who is responsible for a relationship breakup may affect mate copying, although we were not to test all possibilities at this time. For example, in couples where the relationship breakup was not a mutual decision, those individuals responsible for the breakup may be inferred to possess negative mate-relevant characteristics and considered less desirable than those less responsible. It is also possible that people may be more likely to breakup with partners possessing negative qualities. Adding these possibilities together, it people may be expected to mate copy more when a potential partner's last relationship breakup was mutual, rather than when either partner was primarily responsible.

Method

Participants

Participants were 119 women and 42 men from James Cook University (JCU; $M = 22.56$ years of age, $SD = 5.84$ years) and the wider public ($M = 31.11$ years, $SD = 5.64$ years).

The sample was restricted to heterosexual or bisexual individuals, as homosexual individuals may employ different criteria when judging the desirability of opposite-sex others and consequently respond differently to either heterosexual or bisexual individuals. Participants were limited to 40 years of age or younger, as the target individuals were described in ways more consistent with early adulthood, and too large an age discrepancy may not be desirable. Additionally, individuals who are 40 years of age or younger are likely to be in the peak of their reproductive careers and likely have maximal mating interest. A total of 62.1% of participants were 25 years of age or younger, while only 8.7% were 35 years of age or older.

Participants were recruited from the JCU psychology research pool and the wider public through social media. Of the participants, 81.3% indicated that they were JCU students studying in Australia, 1.3% indicated that they were JCU students studying in Singapore, and a further 17.4% indicated that they were not currently studying at a university. Participants studying an undergraduate psychology course in either Australia or Singapore were awarded course credit for their participation. Nonuniversity students received no compensation.

The sample was ethnically heterogeneous, with participants of European heritage comprising the largest portion of the sample (72.0%). Those reporting Asian heritage represented a further 8.1% of the sample. The remainder was Aboriginal/Torres Strait Islander (4.3%), from the Pacific Islands (2.5%), North America (1.9%), Africa (0.6%), or a place not listed (10.6%). Additionally, 96.9% nominated English as their primary language. While 37.3% of the sample indicated that they were currently single, 89.4% had been in at least one romantic relationship in the past. To help control for any potential effects of relationship status, participants were explicitly asked to respond to all items as if they and the person they were evaluating were currently single and free to engage in a romantic relationship.

Materials/Measures and Procedure

The questionnaire consisted of an initial demographics section (e.g., age, gender, ethnic heritage, and relationship status) and participants were asked to respond to items such as "How many romantic relationships have you been in up until now (excluding pre-teen years)?" This was followed by the main section of the questionnaire, which asked participants to evaluate the romantic desirability of variously described opposite-sex others using a 9-point Likert scale ranging from 0 (not very) to 9 (very). Desirability as a long-term mate was used as the single dependent outcome measure of romantic desirability, as this is the relationship duration for which mate copying is thought to more readily occur (Little et al. 2008; Stanik 2009; Waynforth 2007). For the purposes of brevity, this will henceforth be referred to as "desirability." All

participants were explicitly instructed to respond as if they were single and free to engage in a new romantic relationship.

In the first part of the main section of the questionnaire, five text-based list items on which predictions regarding mate copying were tested were given. These consisted of descriptions of opposite-sex individuals who varied in terms of how long they had been single or if they were currently attached. Participants were asked, “How desirable as a long-term relationship prospect you consider”: (1) a romantically attached man; (2) a man who had been single for 1 month; (3) a man who had been single for 6 months; (4) a man who had been single for 2 years; (5) a man who had never been in a relationship.

In order to examine mate copying propensity when photographic stimuli accompanied text-based descriptions, two additional items were included for separate analysis. One of these included a photograph of an individual described as currently single and the other included a photograph of a currently partnered individual (similar to Anderson and Surbey 2014) alongside a separate photograph of his current partner. In the latter condition, participants were told to imagine that the attached person was now single before rating their desirability. Photographic stimuli were sourced from the Karolinska Directed Emotional Faces set (Lundqvist et al. 1998) and included photographs of individuals of average attractiveness (as pre-rated in a pilot study by men and women). Although the set of photographs within a given sex were comparably attractive, additional counterbalancing of the targets was implemented.

The next section measured the desirability of a pictured individual according to who was responsible for the breakup of their last relationship. It included three “breakup responsibility” items where a potential male or female mate photo was given and their desirability as a long-term partner assessed in terms of who was at fault for their most recent breakup. For example, the items included a photograph of an opposite-sex individual followed by the statements, “How desirable as a long-term partner would you consider Andrew (photograph given) to be if”: (1) Andrew was responsible for ending his last relationship; (2) Andrew’s partner was responsible for ending their last relationship; and (3) Andrew’s last relationship breakup was mutual.

For all items, nouns were reversed for male participants (e.g., “man” = “woman”) so that participants were only ever evaluating individuals of the opposite gender. The female participants were asked to only rate the desirability of target males (and vice versa). Male participants were presented with identical items but including a female target. As the survey was administered online (by the JCU Sona system for research and the popular survey tool SurveyMonkey [www.surveymonkey.com]), potential participants were free to complete the questionnaire at a location of their own choice. The questionnaire took a total of 5–15 min to complete, at

which time participants were asked to offer any comments they may have and were instructed to submit the questionnaire for processing.

Results

Preliminary Analyses and Primary Descriptive Statistics

Preliminary analyses indicated responses given by individuals currently attending JCU did not differ statistically from members of the wider public ($ps > .05$) on any of the dependent measures, so the groups were combined for analysis. In addition, results indicated that whether the respondent was in a relationship or not did not make a difference for any of the dependent measures ($ps > .05$) to how individuals responded (for either men or women), and thus groups were combined for analysis.

Mate copying propensity was measured in terms of the difference in desirability between those individuals described as never having been in a relationship and those (1) currently in a relationship; (2) those who had been single for 1 month; (3) those who had been single for 6 months; and (4) those who had been single for 2 years. Table 1 summarizes the desirability ratings given by men and women according to how recently the opposite-sex others had been in a relationship. Associated difference scores are also given whereby the mean desirability of an individual who has never been in a relationship is subtracted from the mean desirability of individuals in each of the relationship recency conditions. The difference scores are a measure of mate copying whereby larger positive differences indicate a greater propensity to mate copy.

As can be seen in Table 1, although both men and women find opposite-sex individuals who have been in a relationship recently (1 month since their breakup) to be generally undesirable, the specific pattern of results seen for men (rating women) and women (rating men) is different.

Table 2 summarizes the desirability ratings (on a scale from 0 to 9) given to opposite-sex individuals by men and women according to which partner was responsible for their most recent relationship (the opposite-sex person to the participant/the same-sex person to the participant/a mutual breakup). Men and women have a similar pattern of results and both consider prospective partners to be more desirable if their last breakup was a mutual decision, rather than the primary discretion of either the same or opposite-sex partner.

Tests of Predictions

Assumptions of equality of error variances were met for all analyses (all $ps > .05$). In repeated measures analyses of variance (ANOVAs) where a violation of the assumption of

Table 1 Mean (SD) desirability ratings given to opposite-sex others based on relationship recency and associated mean (SD) difference scores as a measure of propensity to mate copy

Condition	Mean (SD) desirability (0–9)		Mean (SD) difference score ^a (propensity to mate copy)	
	Men rating women	Women rating men	Men rating women	Women rating men
Currently in a relationship	3.83 (1.96)	3.33 (1.89)	-.33 (2.20)	.34 (2.59)
1 month since last relationship	3.10 (1.28)	2.75 (1.37)	-1.05 (2.14)	-.24 (2.03)
6 months since last relationship	4.58 (1.26)	3.88 (1.20)	.43 (2.12)	.88 (1.94)
2 years since last relationship	4.43 (1.47)	4.04 (1.32)	.28 (1.91)	1.05 (1.49)
Never been in a relationship	4.15 (1.78)	2.99 (1.64)		

^a Difference score = “condition desirability” – “desirability of men never having been in a relationship,” where higher positive scores indicate a greater propensity to mate copy

sphericity was found, the Greenhouse-Geisser correction was used and adjusted degrees of freedom are reported.

Mate Copying

A 4 (single for 1 month—never been in a relationship vs. single for 6 months—never been in a relationship vs. single for 2 years—never been in a relationship vs. currently in a relationship—never been in a relationship) \times 2 (male vs. female) mixed ANOVA was conducted to assess the impact of partner recency and gender (of participant) on the desirability of opposite-sex targets.

There was a main effect of partner recency ($F(2.24, 336.33) = 24.21, p < .001, \eta_p^2 = .14$). Bonferroni post hoc tests indicated that compared with individuals who had never been in a relationship ($M = 3.30, SD = 1.75$), mate copying propensity was greatest when the target had been single for either 2 years ($M = 4.14, SD = 1.36$) or 6 months ($M = 4.06, SD = 1.25; ps = 1$). In both cases, propensity was greater than if the target was currently attached ($M = 3.46, SD = 1.92$; both $ps < .05$). Targets that had been single for 1 month ($M = 2.84, SD = 1.35$) were less desirable than individuals that were attached ($MD = -.65; p < .01$) and, hence, elicited no mate copying. There was also a main effect of gender ($F(1, 150) = 4.78, p = .03, \eta_p^2 = .03$), with women ($M = .51, SD = 1.68$) but not men ($M = -.17, SD = 1.68$) indicating an overall propensity to

mate copy. There was not a significant interaction between partner recency and gender ($F(2.24, 336.33) = .39, p = .70, \eta_p^2 < .01$).

A propensity to mate copy in women when target men had been single for either 1 month ($r = .24, n = 112, p = .01$) or 2 years ($r = .20, n = 112, p = .03$) was positively correlated with women’s age, suggesting that as they get older, women’s propensity to mate copy increases. The number of previous romantic relationships women had been in was also positively correlated with women’s propensity to mate copy when target men had been single for either 1 month ($r = .28, n = 112, p < .01$), 6 months ($r = .24, n = 112, p = .01$), or 2 years ($r = .28, n = 112, p < .01$). However, a strong positive correlation was also observed between a participant’s number of previous romantic relationships and their age ($r = .42, n = 119, p < .01$), suggesting that a woman’s relationship experience increases as she ages. When participant age and the number of romantic relationships they had been in previously were entered as covariates in the one-way ANCOVA for partner recency among women, the previously described mate copy-like effect remained ($F(2.27, 247.66) = 6.31, p < .01, \eta^2 = .06$) but was reduced in magnitude.

A further measure of a participant’s propensity to mate copy was calculated using photographic stimuli accompanying text descriptions, like those in Anderson and Surbey (2014). Paired-samples *t* tests indicated that women found

Table 2 Mean (SD) desirability ratings given to opposite-sex others based on who was responsible for their last breakup

Breakup responsibility	Mean (SD) desirability (0–9)	
	Men rating women	Women rating men
The opposite-sex person (to the participant) was responsible for the breakup	3.00 (1.24)	2.84 (1.19)
The same-sex person (to the participant) was responsible for the breakup	3.15 (1.39)	2.91 (1.67)
Their last breakup was mutual	3.55 (1.36)	3.40 (1.46)

pictured opposite-sex targets to be *more* desirable if they were pictured alone ($M = 2.65$, $SD = 1.33$) than if they were pictured alongside a partner ($M = 2.28$, $SD = 1.38$; $t(112) = 2.84$, $p = .01$, $\eta^2 = .07$) but described as becoming romantically available (“if they broke up”). For men, there was no difference between opposite-sex targets pictured alone ($M = 2.97$, $SD = 1.35$) and those pictured alongside their partner ($M = 2.79$, $SD = 1.30$; $t(38) = .73$, $p = .47$, $\eta^2 = .01$).

Breakup Responsibility

A 3 (opposite-sex person responsible vs. same-sex person responsible vs. mutual responsibility) \times 2 (male participant vs. female participant) mixed ANOVA was conducted to assess the impact of responsibility for a recent breakup and participant gender on the desirability of opposite-sex targets.

There was a main effect of breakup responsibility ($F(2, 298) = 15.95$, $p < .001$, $\eta_p^2 = .10$), with Bonferroni post hoc tests indicating that, overall, target individuals whose last relationship breakup was a mutual decision ($M = 3.44$, $SD = 1.43$) were considered more desirable than individuals whose last relationship breakup was the responsibility of either the individual of the opposite-sex to the participant ($M = 2.97$, $SD = 1.23$) or the individual the same-sex as the participant ($M = 2.88$, $SD = 1.21$) solely (both $ps < .001$). When the breakup was nonmutual, whether the opposite-sex or same-sex partner was solely responsible for the breakup did not make a difference ($p = .80$). Additionally, there was no significant effect of gender of participant ($F(1, 149) = .81$, $p = .37$, $\eta_p^2 = .01$) or any significant interaction between breakup responsibility and gender ($F(2, 298) = .11$, $p = .90$, $\eta_p^2 < .01$).

Discussion

Participants in the current study evaluated the long-term romantic desirability of opposite-sex others in varying conditions as an indication of their propensity to mate copy. The hypothesis that target individuals with relationship experience would be considered more romantically desirable than those without any (a measure of mate copying) was supported. However, the duration of time since one had last been in a relationship was considerably important. Compared with currently single individuals, targets who had recently been in a relationship but had been single for either 6 months or 2 years were more desirable than targets who were currently romantically attached or whose relationship breakup was very recent (1 month ago). There are a few reasons why this may be so. Individuals who have only recently become romantically available may be promiscuous and serially enter into new (possibly short-term) relationships frequently. It is also possible that, if a breakup is fresh, individuals may still have some kind of attachment to their previous partner or relationship baggage that may reduce their ability to commit to a new

partner. Additionally, depending on the recency of the relationship, a woman may be unknowingly carrying a child from a previous relationship. In general when individuals are deprived of information and asked to make an evaluation (as is the case for participants responding to a survey), it is reasonable to assume they will rely largely on information given to them explicitly or inferences they can reasonably draw from such. Thus, in evaluating potential partners, people, especially women, may make inferences about previously partnered targets that affect their propensity to mate copy. What inferences drove the above findings could be explored in further studies.

Rather than being an aspect of mate copying (or lack thereof) per se, another possible explanation for the finding that women tend to disfavor prospective partners who have only recently exited a relationship is that they are averse to indications of promiscuity. There are a number of adaptive reasons why a woman should choose to disfavor romantic alliances with promiscuous men. Firstly, sexual interactions with promiscuous men carry nontrivial fitness consequences by exposing a woman to potentially harmful pathogens (Aarøe et al. 2016; Epstein et al. 2007; Inbar and Pizarro 2016). Additionally, choosing to partner with men indicating a propensity for promiscuity is a “risky” prospect, as women are forced to consider the possibility of romantic desertion and the possibility of rearing a child (or children) by themselves. Finally, both promiscuous men and those who have only recently exited a relationship may have one or a slew of previous partners to whom they are still partially committed *or* who are committed to them/willing to interfere in their current relationship. Given these considerable costs, it is reasonable for women to be sensitive and averse to indications of promiscuity (Bateman 1948; Kaplan and Gangestad 2005).

Although a propensity for mate copying was evident, there was a clear gender difference, with women indicating a greater propensity. This finding is generally consistent with much of the previous research on human mate copying, with many authors finding mate copying to be either nonexistent or far weaker among men (Hill and Buss 2008; O’Hagen et al. 2003; Vakirtzis and Roberts 2010a, 2012; Yorzinski and Platt 2010). However, the first section of the current study departs slightly from typical methodologies demonstrating mate copying by explicitly indicating men were currently single and using simple text-based descriptions (when no pictorial information given; mate copying was not indicated when pictorial stimuli were provided) and indicating that individuals were currently single. As yet, no studies have documented mate copying among males *unless* it is accompanied by evidence for it among females, and many have indicated that men do not mate copy (at least not in the same way as women). It is possible that the increase in discrimination ability gained by men in employing mate copying as a selection strategy is minimal.

Reproduction is generally more costly for women than it is for men (Bateman 1948; Regan 1998) and women are typically more selective in their mate choices than men (Manning 1985). Thus, they seek access to as many sources of information available to them as possible (including information about a potential mate's previous relationships) in order to assess the mate value of a romantic prospect. Mate selection among men focuses more on a woman's physical appearance as this is a reliable source of information about a partner's fecundity and fertility. Such visual mate-relevant information is readily available and men are less inclined to seek out additional sources. Mate copying is a more useful source of information for women than it is for men.

While the current study found evidence of mate copying, a propensity to mate poach was not indicated. Anderson and Surbey (2014) suggested that there is a nontrivial difference in whether targets are presented as currently single (romantically available) or partnered (unavailable). In the text-based items of the present study, currently partnered individuals were not considered more desirable than any other category of individual (consistent with social proscriptions against desiring that which is "off limits"), with the exception of individuals who had only been single for 1 month. This finding is consistent with Anderson and Surbey (2014) who found that while a moderate amount of relationship experience is generally desirable in a prospective partner, men with too much experience (five previous partners) were considered undesirable as mates.

Previous findings that married men tend to be less desirable than single men (O'Hagen et al. 2003; Uller and Johansson 2003) seem to be consistent with the current study (as well as the suggestion that the current romantic availability of a man influences his desirability), a number of studies have found mate copying-like effects when target men are explicitly presented as currently single and compared with those that are dating (Deng and Zheng 2015; Little et al. 2008; Little et al. 2011; Parker and Burkley 2009; Waynforth 2007) or even married (Eva and Wood 2006).

In the current study, by indicating that they found currently partnered men to be less desirable than currently single men, participants were indicating a propensity for mate *avoidance* in contrast to *mate poaching or copying*. This was also demonstrated in the comparison between scenarios involving photographic stimuli with partners pictured alongside. While some studies examining mate copying have either found or suggested some kind of romantic advantage to being in a relationship compared with being single (in terms of perceived desirability), the current study found evidence to the contrary. Both the text-based questionnaire items and the comparison of men pictured alone versus alongside a partner (but described as currently single) provided evidence for the avoidance of men with current partners. The latter two conditions were intended as a preliminary test to contrast the potency of visual

versus written information. The findings suggest that picturing people with a current partner may be a potent stimulus and invoke moral prohibitions against mate poaching, even though participants were instructed to assume that the pictured individual had become available. However, this may have also led to the inference that the couples' breakup may have only been recent and thus reduced levels of mate copying. Thus, this finding may be consistent with results that suggest promiscuity/lack of willingness to commit (or inferences thereabouts) is considerably undesirable in a potential mate.

Among women, age was correlated with mate copying propensity but only when target men had been single for either 1 month or 2 years and not in the predicted direction. It is possible that this particular finding may be due to older women's greater preference for a stable, long-term partner rather than a greater propensity to mate copy, per se. Additionally, mate copying propensity was found to be positively correlated with the number of relationships a woman had been in previously. While correlated, neither of these factors eliminated the mate copying effect. These findings were inconsistent with previous tests of mate copying, including those indicating that mate copying is moderated by age, with younger women being more likely to copy the preferences of older women than vice versa (Anderson and Surbey 2014; Bowers et al. 2011). The traditional explanation given for this is that whereas older women are more confident in the decisions they make and practiced at the mate selection discrimination task, younger women are more likely to seek additional sources of information (Anderson and Surbey 2014). The reverse was found in the current study. Note that the age distribution of the sample was considerably positively skewed (Kolmogorov-Smirnov = .18, $p < .01$). This is typical of studies conducted on a (primarily) university student demographic. In addition, the age range of the sample was restricted (18–40). As such, the correlation between age and mate copying may have been spurious or affected by these factors and a more age-inclusive sample may yield different results. This finding will require further investigation and follow-up.

It was also found that an individual's perceived romantic desirability varied depending on who was responsible for their most recent relationship breakup, suggesting that how one's romantic relationship ends is important in determining how desirable one is to future partners. Specifically, regardless of gender, an individual is considered more desirable if their most recent relationship breakup was a mutual decision than rather than if it was at the discretion of either partner individually. As discussed earlier, when a breakup is not mutually achieved, this may indicate negative qualities in either the instigator or the person left behind. It is worth noting that although the current study describes a general theme, this specific phenomenon is likely far more nuanced. It is entirely plausible that details about the breakup are important determinants of an individual's desirability. Future studies may wish to more closely investigate factors contributing to the breakup

(e.g., physical/emotional abuse, infidelity) in order to specifically determine how different types of breakups differentially affect an individual's attractiveness.

These results are partially consistent with Stanik (2009), who found that men who had been abandoned by their last partner were far less desirable than "others" (men who had not been). In the current study, men (and women) who mutually agree to end their relationships would fall into the category of "others." However, Stanik (2009) found evidence of a gender interaction, whereby men were only slightly put-off by the fact that women had been previously abandoned by a male partner, whereas women were greatly affected. The authors accounted for this difference by suggesting that men are more enthusiastic about relationships and less deterred by negative information about a prospective partner. In the current study, participants may have inferred that being either the victim or perpetrator of a romantic dissolution was undesirable, relative to an individual involved in a mutual decision. This finding may serve as a useful stepping stone to further studies of mate copying where the reasons for relationship dissolutions and the personality and attitudinal characteristics of those involved may be examined in greater detail.

It should be noted that the current study suffered from a number of limitations. Firstly, as with many studies of this kind, *attitudes* but not actual *behavior* was being gauged. There is certainly evidence that attitudes are predictive of behavior but whether or not participants would exhibit mate copying behavior in a similar in vivo research study awaits enquiry. Additionally, the sample size employed in the current study (142) was restricted by the possession of desirable demographic criteria (age, sexual orientation). Although some analyses were underpowered, this is a systematic and typical problem of research conducted at a small university. Consistent with Anderson and Surbey (2014), analyses indicated that being in a relationship or not did not affect responses. Participants in the current study were asked to "imagine being single" when they may not have been. Those already in a relationship may be marginally less inclined to (hypothetically) enter into a new one. Future investigations of this kind may wish to examine a larger sample, analyzing single and partnered individuals separately and possibly gauging the duration for which one has been single, as factors differentiating the above groups may become less relevant the longer one has been single.

Taken together, results of the current study appear to further support the idea that people, regardless of gender, are sensitive to how prospective mates are regarded by others on the dating market. In particular, the current study found evidence for mate copying, whereby individuals previously chosen and with relationship experience were considered more desirable than others. No evidence of any preference for or intention to mate poach was found. Rather, currently partnered individuals were considered less desirable than those currently single. However, there was a strong effect of partner recency on mate copying whereby those whom had had a partner previously

were considered to be more romantically desirable than those who had not but only if their most recent relationship was not too recent. Results also indicated that breakup responsibility was strongly related to a potential partner's desirability. Both men and women are considered more desirable if their most recent relationship breakup was mutual, rather than if either party was singularly responsible. To get at what raters are inferring about potential partners in these two conditions requires further follow-up research. For example, if potential partners were responsible for the breakup, this may reduce desirability ratings because it may suggest aggression or instability. On the other hand, if the former partners of potential mates were responsible for the breakup, raters may infer that the individual in question was difficult to get along with. Future research may extend the current investigation by asking participants about the personality characteristics they impute to victims/aggressors of a breakup.

The current results demonstrating the importance of being previously chosen as a mate and of relationship experience and are consistent with the idea that mate-seekers are sensitive to how their prospective mates are regarded by former partners. How mate-relevant information provided by former partners affects an individual's desirability appears to be of considerable importance. Prospective partners seem to be attentive to social information and appear to make inferences about others that affect their own levels of mate copying. For example, breakup recency and responsibility act as a kind of third-party information in helping determine various mate-relevant characteristics about a person. Following up the types of inferences made about individuals who have previously been partnered and their effects on levels of mate copying offer new avenues for research into the phenomenon. While nonhumans focus on visual cues in the process of mate copying, humans employ a number of informational modalities, including the ability to form inferences, or employ hypothetico-deductive reasoning.

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Compliance with Ethical Standards

Conflict of Interest

On behalf of all authors, the corresponding author states that there is no conflict of interest. None of the authors have any industry affiliations.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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