


An Evolutionary Perspective on Mate Rejection

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Abstract

We argue that mate rejection and ex-partner relationships are important, multifaceted topics that have been underresearched in social and evolutionary psychology. Mate rejection and relationship dissolution are ubiquitous and form integral parts of the human experience. Both also carry with them potential risks and benefits to our fitness and survival. Hence, we expect that mate rejection would have given rise to evolved behavioral and psychological adaptations. Herein, we outline some of the many unanswered questions in evolutionary psychology on these topics, at each step presenting novel hypotheses about how men and women should behave when rejecting a mate or potential mate or in response to rejection. We intend these hypotheses and suggestions for future research to be used as a basis for enriching our understanding of human mating from an evolutionary perspective.

Keywords

mating, rejection, relationship dissolution, mate choice, selection, relationships, violence

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Rejection is a ubiquitous, necessary component of sexual selection, and the study of human behavior is incomplete without considering it. Even though a fair portion of our potential reproductive success (i.e., number of offspring) is likely to be contingent on selecting the most evolutionarily advantageous partner (Symons, 1980), rejecting an unsuitable mate is also vital in determining whether and/or how our genes are passed on (Darwin, 1872; see also Darwin & Wallace, 1858). Rejection, however, is not just the inverse of selection. Just as a negative emotion isn't merely the absence of a positive one (for discussion, see Pawelski, 2013), rejection is not a passive process that occurs only in the context of selecting the best partner while leaving behind less attractive suitors. People are rejected even in the absence of a more viable option, and partners who were previously selected are discarded. Human mating may even be considered along a continuum beginning at active rejection (blocking mating attempts), progressing into indifferent rejection (e.g., failing to select a mate), then mate selection (choosing and gaining a viable partner), and finally mate retention (keeping that partner).

In general, rejection hurts. While questioning those who had been romantic rejecters and romantically rejected, Perilloux and Buss (2008) reported that mate rejection could result in depression, fear, reputational damage, and loss of self-esteem (among other negative consequences). In line with other scholars, we assert that negative affect in response to rejection is adaptive (e.g., Baumeister & Leary, 1995; Perilloux & Buss, 2008). Both social and romantic rejection are potentially costly and dangerous and may manifest painfully to discourage behaviors that lead to rejection, prompt conciliatory behaviors, and minimize the chance of rejection recurring (as argued by Eisenberger & Lieberman, 2004). In the context of heterosexual romantic rejection, people who (a) reject others appropriately without provoking dangerous responses, (b) avoid rejection themselves, and (c) respond positively to rejection, are likely to be the ones who survived and passed on their genes. Those who failed in any of these three areas risked social isolation and/or missing out on reproduction entirely (Penke, Todd,

The Pain and Ubiquity of Rejection and Ex-Partners

It's easy to cry when you realize that everyone you love will reject you or die. (Palahniuk, 1996, p. 17)

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Lenton, & Fasolo, 2008), the splitting of resources and the dissolution of other social relationships, and even physical harm or death. Consequently, we argue that whom you reject is just as important as whom you select in terms of how (and whether) your genes are passed on to future generations. Accordingly, if heterosexual mate rejection has had a large impact on individuals' fitness over our evolutionary history, then rejection itself should be a pervasive occurrence both within and across cultures (as discussed by Perilloux & Buss, 2008).

The literature supports this. Rhoades, Kamp Dush, Atkins, Stanley, and Markman (2011) revealed that among unmarried 18- to 35-year-old Americans, approximately 36% had at least one breakup with a romantic partner over a 20-month period. In addition, once a relationship is established, there is no guarantee that it will last. Even marriage, which is idealized to be a lifelong commitment, is not particularly binding, and many people experience multiple divorces over their lifetime (Australian Bureau of Statistics, 2014). The United Kingdom Office for National Statistics (2013) asserts that 34% of marriages in England and Wales will end in divorce by their 20th wedding anniversary. For marriages that occurred in the United States in the 1970s, "48 percent had dissolved within 25 years" (Stevenson & Wolfers, 2007, p. 4). Although each cohort is different, and rates were lower for those who entered their first marriages in the 1980s (approximately 40% relationship dissolution by around 20 years of marriage) and 1990s (approximately 23–24% dissolution by around 10 years of marriage; Stevenson & Wolfers, 2007), relationship dissolution is still a regular occurrence for those who vowed to spend their lives together. Note that in many cases, these relationship dissolutions were probably the result of one mate rejecting the other as opposed to a mutual arrangement (for support, see the U.S. National Center for Health Statistics, 1973).

When examining rejection cross-culturally, it is clear that it is not just a recent, Western, or geographically specific phenomenon. Even in arranged marriages (both current and historical), parents have the ability to accept or reject mates on behalf of their children (Apostolou, 2007, 2010). In many traditional societies, those entering arranged marriages often have some say in the choice of partner (with varying weight given to their consent of the marriage; Apostolou, 2010). They may also have an opportunity to meet and talk in a chaperoned manner and either reject or accept one another. For most of our history as a species, humans would have lived as hunter-gatherers in small community groups (Hill et al., 2011; Dyble et al., 2015). Within these groups, mate rejection is likely to have been commonplace based on data from modern nonindustrialized analogies. As noted by Pearsall (1947), women living in East African tribes (e.g., Akikuyu, Akamba, and Wagirima) have the right to accept or reject potential suitors. According to Marlowe (2004), among the Hadza of Tanzania, both sexes are free to choose their own spouses, and before a woman's first marriage, it is not unusual for her to be courted by more than one man. In addition, for the Hazda, only about

20% of people remaining married to their first spouse their whole life, making divorce the norm rather than the exception (Marlowe, 2004).

Consistent with the argument that rejection is an evolutionary influenced and influencing factor, historically and cross-culturally, common causes of divorce seem to be related to reproductive concerns (i.e., infidelity and sterility; Betzig, 1989). To add to this, South and Lloyd (1995) found that divorce in the United States was most likely when partners perceived an abundance of mating opportunities. However, despite the clear ubiquity of romantic rejection (both immediate rejection and after long-term couplings, i.e., relationship dissolution), it has been underresearched in the field of evolutionary psychology at least in comparison to mate selection. Below and throughout, we review some of the existing research.

In a pivotal study, Perilloux and Buss (2008) tested a series of evolutionary hypotheses relating to mate rejection and investigated breakup coping strategies. They found, for example, that being the rejected party is more functionally costly than being the rejecter, that women are more likely than men to report experiencing "costly" stalking by their ex-partners, and that rejecters experienced social costs such as being perceived as mean. In addition to this research, several groups have focused on the predictors of friendship after relationship dissolution (e.g., Bullock, Hackathorn, Clark, & Mattingly, 2011; Metts, Cupach, & Bejlovec, 1989; Tan, Agnew, Vanderdrift, & Harvey, 2014). Most recently, Mogilski and Welling (in press) examined the reasons people provided for retaining friendships with ex-partners. In doing so, these researchers provide a detailed summary of the existing research on postrelationship friendship, and we discuss some of their empirical findings below. Several research groups also briefly discuss the existing mate rejection literature (e.g., Miner & Shackelford, 2010; Olderbak & Figueredo, 2010). These discussions and empirical findings complement and inform our current theoretical proposals, yet to date, there has been no synthesized theoretical review from an evolutionary perspective that discusses the precursors of mate rejection, the ways by which we go about it and how the rejection is received by both parties.

We argue that evolutionary psychology should turn more attention to mate rejection, approaching it from many different angles. Although limited by the desire for brevity, we first suggest approaches to examine the *survival threats* one is exposed to during heterosexual romantic rejection and how we might adaptively mitigate these risks. We also discuss rejection in terms of *mate value factors* (including physical attractiveness, fertility, age, resources, dominance, and infidelity), as well as *contextual factors* (mate poaching, operational sex ratio and availability of alternatives, and social influence). We suggest that these factors all play a part in shaping human methods for mate rejection and reactions to it, and throughout, we provide hypotheses and suggestions intended to further the research in these areas.

How Do We Best Reject People?

Above, we highlighted that rejection can be followed by social ostracism, stalking, and other negative outcomes. We suggested that those who have rejected mates, and survived to pass on their genes, might be those who are particularly effective at rejecting people while avoiding or reducing associated costs. This begs the question: What rejection strategies work “best”? The strategies people use to reject each other are rich grounds for potential research, however, like rejection itself, are under-researched within the human mating literature. In fact, we have not found a great deal of empirical work explicitly looking at what rejection strategies are most successful within the mating domain (see Duntley & Shackelford, 2012, for some related theoretical proposals). However, several strategies have previously been identified and associated with better outcomes when compared with other rejection methods. The work of Banks, Altendorf, Greene, and Cody (1987), as well as Baxter (1979, 1982; see also Cody, 1982), suggests that using direct (sincere justifications) or honest strategies (including expressing the desire to de-escalate the relationship) may be more effective (in terms of adjustment, social consequences, aggression, and retaining closeness) than strategies such as positive tone, avoidance, or manipulation. A direct rejection strategy might involve telling a partner the real reasons relationship termination is desired, rather than pretending to be too busy to see them (an avoidant strategy), or trying to make them feel better without honestly stating the true reasons for the rejection (a positive strategy).

However, this literature is sparse, unclear, and dated, so although throughout we suggest that using direct or honest strategies may be the most successful for self-protection, we acknowledge that this may not be the case. In fact, this area represents our first specific call for new research on how best to reject potential or established partners. For future researchers, we propose that simple reflective interview studies may be useful here. In addition, a straightforward vignette study where people respond to different rejection strategies may be of use. In order to provide testable hypotheses in the present article, however, we assume herein that direct and honest strategies are adaptive (in line with Banks, Altendorf, Greene, & Cody, 1987; Baxter, 1979, 1982; Cody, 1982). If adaptive, these strategies might have evolved because on average, those people who were honest and straightforward with their partners might have elicited less violence and aggression during rejection than those who used other strategies. By avoiding violence at this volatile time, successful strategy choosers are more likely to have lived and passed on this behavioral tendency.

Evolutionary Hypotheses Concerning Mate Rejection

In the following sections, we draw on the basic tenets of evolutionary theory to present predictions about mate rejection. We discuss these in terms of (a) survival factors, (b) mate value factors, and (c) contextual factors.

Survival Factors

Romantically rejecting someone, or being rejected, can be a hazardous experience. For both men and women, the process of romantic rejection is linked to verbal abuse (Kelly, Dubbs, & Barlow, 2015), financial abuse (Romans, Forte, Cohen, Du Mont, & Hyman, 2007), sexual abuse (Black et al., 2011), physical abuse (Rennison & Welchans, 2002), and homicide (Glass, Laughon, Rutto, Bevacqua, & Campbell, 2008; Hagelstam & Häkkinen, 2006). These threats clearly pose a risk to one's survival and ability to produce or rear successful offspring, and are crucially important to avoid and mitigate. As such, humans have likely evolved methods to reduce the survival threats associated with mate rejection (Perilloux & Buss, 2008).

It seems likely that signs of aggression, jealousy, or possessiveness in the initial or prestages of a relationship may lead to an increased likelihood of rejection, as these acts may indicate an elevated risk of abusive behavior later. However, we also suggest a caveat. It is clear from violence and stalking research that men present a greater danger to women than women do to men. Statistically, women are more likely than men to be the targets of sexual, physical, and financial abuse, as well as homicide in heterosexual relationships (Black et al., 2011; Glass et al., 2008; Hagelstam & Häkkinen, 2006; Naved, 2013; Rennison & Welchans, 2002; Romans et al., 2007; relatedly, see Wilson & Daly, 1993). Therefore, women (in comparison to men) should be more adaptively attuned to aggression and jealousy in the initial stages of dating (e.g., noticing possessiveness and anger, vengeful tendencies, and bitterness toward ex-partners). This should mean that women will be more likely than men to reject suitors who display these traits in the early stages of dating (a protective evolutionary response, similar to those suggested by Duntley & Buss, 2012; Smuts, 1992).

The hypotheses presented above are simple; however, evolution—and humans—are not. As will be seen throughout, and specifically when it comes to aggression, simple hypotheses have to be tempered. Here, we encounter competing concerns. As we discuss within “mate value factors” (below), the trait of dominance appears to be valued in men (Sadalla, Kenrick, & Vershure, 1987; perhaps bestowing advantages such as greater resource acquisition potential or physical protection, see Buss & Schmitt, 1993). Aggression, of course, is closely tied to dominance (and indeed dominance and status seeking may be precursors to aggression; Bernhardt, 1997). To a certain extent, then, dominance and possessiveness may increase the likelihood of rejection in some circumstances (as detailed above) and *decrease* the likelihood of rejection in others. We speculate that minor indicators of dominance and aggression may reduce rejection initially, but a tipping point may be reached where displays of these traits become frightening. The same applies for pursuit and stalking. Where these tipping points lie should be empirically determined through research. As a brief research example, one might manipulate the levels of aggression (and dominance) displayed by confederate males within video interviews and have women opt to either “meet” or “reject” these

men. The reverse could also be performed to see where the tipping points lie in men.

Pursuit and stalking after the termination of a relationship are common occurrences (Bjorklund, Hakkanen-Nyholm, Sheridan, & Roberts, 2010; Cupach & Spitzberg, 1998; Dutton & Winstead, 2010). As an example, 48.5% of Finnish University students in a 2010 study reported having been stalked, and 25% of those stalkers were reportedly ex-partners (Bjorklund et al., 2010). As detailed earlier, women are significantly more likely to be the targets of stalking than men (Purcell, Pathé, & Mullen, 2002; Sheridan, Davies, & Boon, 2001; Tjaden & Thoennes, 2000). Stalking can pose particular risks to fitness, including reducing the victim's chances of establishing new relationships (Buss & Duntley, 2011). It can also indirectly affect fitness through the stalker's deliberate exposures of the stalked party's personal information, or by causing reputational damage within social circles (as discussed in Kelly et al., 2015; Perilloux & Buss, 2008).

Hence, beyond displaying interest for a prospective partner or providing reasonable attention to progress a relationship, we expect that excessive pursuit or romantic interest displayed during the formation stages of a relationship will increase the likelihood of rejection. Here, excessive pursuit may entail levels of contact beyond what is reasonably culturally expected (relating to the frequency or type of contact), or violation of the established dating norms (such as attempting to progress the relationship too quickly or beyond its expected boundaries, with acts of overfamiliarity or overcommitment). Again, women should engage in rejection for these reasons (i.e., atypical, forceful, persistent, or frequent romantic pursuit) more frequently than men.

Persistence and stalking behaviors displayed *after* a rejection may affect behavior differently. As suggested by Duntley and Buss (2012), stalking or unwanted pursuit behaviors may be in part, or on balance, adaptive strategies, present within the current population because on average they were successful ways of gaining, retaining, or regaining partners over our evolutionary history. Indeed, Mogilski & Welling (in press) found that people frequently reported they had pursued friendship with ex-partners because of "continued romantic attraction," a construct which included notions such as "I wanted to prevent them from getting together with a new romantic interest" (p. 3). Extending these points to the current discussion, post-breakup relationships should be more likely if one ex-partner persistently pursues the other (compared with couples who make a clean break or engage in mild pursuit). We expect the same if one ex-partner makes it difficult for the other to find an alternate mate (e.g., due to reputational damage, stalking, threats of harm or self-harm, or sabotaging their other dates).

This is not to be confused with the rejection-increasing effects of pursuit behaviors we predicted above when relationships are just being formed (where women are expected to be repelled in order to avoid commencing a relationship with a potentially dangerous man, a hypothesis that may extend to some men too). We suggest that the history and previous intimacy make stalking strategies postrelationship more likely to

be successful than stalking strategies or persistence strategies before any relationship is formed.

In addition to affecting people's reasons and propensity for mate rejection, we similarly expect survival threats to affect people's *methods* of undertaking mate rejection. Given safety concerns, we expect women to use strategies aimed at positive postrejection reactions from their partner, more so than men. In line with the existing literature on intimate rejection, one might then expect women to use more direct, honest strategies when rejecting someone than men do, openly expressing the desire to breakup. However, it is possible that to enhance self-protection and minimize violence, women might use more offers of friendship and comfort than men as well as placating and de-escalation strategies. Indeed, when discussing potential adaptations to avoid victimization, Duntley and Shackelford (2012, p. 63) stated, "Humans . . . may possess adaptations designed to attempt to reason with an attacker, describing the possible costs of the person's violent behavior or suggesting other resolutions to the conflict." In the case of severe physical risk, it is also possible that avoidant-withdrawal strategies will be most effective, where women abandon the relationship without directly telling their partner, thereby avoiding the risk of violence altogether (as discussed by Duntley & Shackelford, 2012). Of course, similar hypotheses can be put forward for men rejecting women; however, at a mean level, safety concerns might be less salient than reputational concerns.

Understanding which strategies reduce rejection fall out best could be fruitful not only for evolutionary psychology but also intimate partner violence research. Supporting the idea that women might use avoidant-withdrawal strategies to avoid harm, abused women have reported using this strategy, likely out of fear that their partners might hurt or kill them, their children, or pets if they knew that they were leaving (Hamby & Bible, 2009; Jacobson & Gottman, 1998). However, in the small-scale societies of our ancestral past, complete avoidance may not have been possible. That is, individuals may have been forced to live around ex-partners who had threatened or abused them. Hence, we may see that women using avoidant-withdrawal rejection strategies are quicker to secure new partners than women who do not use these strategies, as gaining a new partner is likely to provide some protection from ex-partners (for discussion of the benefits of male partners, see Buss & Duntley, 2011).

Women should also be more likely than men to seek other forms of social support to reduce the risks of ending relationships (typically with family, but also with friends). By surrounding herself with kin or friends, a woman may receive physical protection (discussed in Smuts, 1992) and possibly reputational protection. In support of this notion, a review by Hamby and Bible (2009) concluded that seeking social support was the most common self-protection strategy reported by battered women across a variety of self-report studies. Furthermore, women who do not live near close kin, such as those in patrilocal societies (where women leave their home or town to live with their husband's family), are at greater risk of abuse than women who stay near their kin (Warner, Lee, & Lee,

1986; discussed in Smuts, 1992). We expect this social support to be critical if the man being rejected is physically threatening (e.g., dominant, masculine, aggressive, easily angered, possessive, or jealous). We do not expect the same to be true for men with female ex-partners who are jealous, possessive, or aggressive, or at least this pattern should be seen to a lesser degree than in women.

Dependency represents a further legitimate threat to survival. The extent to which an individual is dependent on their romantic partner to meet their physical needs (e.g., shelter, resources, and sexual intimacy) is expected to significantly affect rejection. For example, it appears obvious that rejection by an actual mate is typically more costly than rejection by a potential mate. Relationships often entail high levels of investment, and the lives of the individuals often become intertwined (e.g., sharing social circles, resources, and intimate information). We predict that individuals rejected by potential mates will cope better mentally than those rejected by actual mates. Presuming that the pain of rejection exists to prompt efforts at repair, or reconciliation (e.g., Baumeister & Leary, 1995; Perilloux & Buss, 2008), the increased pain in response to the termination of an established relationship itself should be adaptive (if unpleasant).

Continuing to examine coping, repeated rejections should negatively impact coping more than one-off rejections. Being frequently rejected by mates puts one at risk of being excluded from mating altogether (Penke et al., 2008), which is clearly costly. This, however, raises an interesting question: Is it “better to have loved and lost than never to have loved at all”? (Tennyson, 1850, p. 44). We expect that repeated rejection by potential mates would be the most costly from an evolutionary perspective (never having the ability to reproduce or “love” at all). Being subject to repeated rejection by actual partners (or one specific partner) may be costly in terms of health and psychology, but we expect it to be less threatening to reproduction and offspring survival than repeated rejection by potential mates. Further, those who had the capacity to be rejected multiple times, and persist, might have been more likely to survive and pass on their genes (compared with those who let rejection defeat them and avoided future mating attempts). This may be particularly the case for men, as women are typically the choosier gender (Trivers, 1972).

Dependency on one's partner for resources should also influence the extent to which people reject and how they react to rejection. Increased dependency should make a person less likely to reject a partner, and if they do, more likely to attempt to maintain a relationship or friendship postrejection to protect or retain access to resources. In the same manner, attachment, previous investment in the relationship, and the presence of children are all clearly variables worthy of further exploration (see Betzig, 1989). For example, ex-partners may attempt to reignite their relationship if the fitness costs of ending it were too high (e.g., parents with children might get back together due to the benefits it could bestow upon the children's survival). In support of this possibility, Mogilski and Welling (in press) reported that people listed children or pregnancies

as reasons to remain friends postdissolution, which in some cases is perhaps an intermediary step to reconciliation and reigniting the relationship.

Discussing survival factors has allowed us to propose some key theories. We have reasoned that physical threats may be more important considerations for women as opposed to men in mate rejection contexts. For men, the desire to obtain access to multiple mates may make them more resilient to repeated mate rejection than women. We also noted that stalking strategies may have differing costs and benefits based on their timing (whether before or after a romantic relationship) and that mate rejection can legitimately threaten survival if high levels of dependency are present. We now move on to considering mate rejection through the lens of mate value factors and how these may influence fitness.

Mate Value Factors

As Symons (1980) put it, “Nowhere are people equally sexually attracted to all members of the other sex . . .” (pp. 177–178). Individuals vary in the degree to which they possess traits that are desirable to members of the other sex as well as the number of desirable traits they possess. An individual who is intelligent, kind, physically attractive, and of high social status will be desired by many, and someone who does not possess these traits will appeal to relatively fewer potential mates (e.g., Buss & Barnes, 1986; Buss et al., 1990; Buunk, Dijkstra, Fetchenhauer, & Kenrick, 2002). Individuals in the first instance are said to be high in mate value, while those in the second are lower in mate value.

Physical attractiveness plays a particularly strong role in determining one's mate value (Buss, 2007; Gangestad, Garver-Apgar, Simpson, & Cousins, 2007; Gangestad & Simpson, 2000; Thornhill & Gangestad, 1994; Walster, Aronson, & Abrahams, 1966). As such, physical attractiveness can determine one's reproductive success, in part through increased marriage probability (Jokela, 2009). In terms of nonphysical traits, intelligence and kindness are consistently rated as important by both sexes and often ranked as the most important traits in a mate overall (Buss, 2007). Similarly, both sexes consider a sense of humor (Bressler, Martin, & Balshine, 2006) and creative ability to be desirable (for discussion, see Miller, 2000).

The current literature on the topic would suggest that, in general, both men and women who are high in mate value are likely to be frequently approached by potential mates and therefore less likely to be rejected and more likely to reject potential and actual mates themselves (due to an abundance of mating options). Although many predictions can be made on these topics, we will focus only on those that can provide novel insights, rather than those that provide simple and direct extensions (or corollaries) of the mate selection literature.

For example, it has been suggested that individuals form perceptions of their own mate value based on feedback from others (Buss, 2000). Accordingly, if someone has been frequently rejected (as either a potential or an actual mate), they will recalibrate their perception of their mate value (downward,

in this instance; Perilloux & Buss, 2008). Hence, we predict that they will become less likely to reject potential and actual partners in a bid to find someone willing to partner or copulate with them. Additionally, the larger the discrepancy in mate value between partners, the more unstable the relationship ought to be (compared to relationships of more equal mate value; McNulty, Neff, & Karney, 2008). The person of higher mate value should be more likely to end the relationship than the person of lower mate value, and this should be exacerbated if there are several alternative or higher quality mates available. When dealing with long-term relationships, mate rejection should also become much more likely when one partner's mate value either increases (e.g., through wealth acquisition, improving their appearance) or decreases (e.g., through resource loss in men or aging in women; Buss, 1994).

Female determinants of mate value. It is also important to consider that there are gender differences in the determinants of mate value. Physical attractiveness is an important indicator of women's mate value (Buss, 1989; Sprecher, Sullivan, & Hatfield, 1994; Townsend & Levy, 1990) and is based on external markers of youthfulness and fertility (high estrogen; e.g., Symons, 1979). As a woman gets older, her physical ability to reproduce declines with a sharp drop-off in the late 30s until ovulation ceases at around age 50 (Dunson, Colombo, & Baird, 2002). Predictably then, female age is negatively related to perceptions of physical attractiveness and desirability, with men more likely to prefer, and to marry, mates who are younger than themselves (Baize & Schroeder, 1995; Buss, 1989; Kenrick & Keefe, 1992).

Indicators of high mate value for women often include wrinkle-free even-toned skin, full lips, large eyes, and a low waist-to-hip ratio (Singh, 1993; Wheatley et al., 2014). Possessing these traits should make women more likely to engage in rejection and lacking them should make them reject less. Furthermore, since youthful women are in high demand, we predict that younger women should reject mates more frequently than older women.

Indeed, women should be more likely to be rejected, as their age increases. However, it is important to note that there is a lot of variability in how aging will affect a woman's fertility and appearance. That is, to an extent, some women may become more physically attractive or fertile as they age (e.g., due to individual differences in fertility, growing out of factors that detract from appearance such as acne or eczema, etc.), while some may experience a large decline in attractiveness or fertility. Factors that affect "apparent" age and youthful looks are likely to affect rejection indirectly. However, it should be noted that this focus on appearance is not limited to women. A recent meta-analysis of speed-dating studies revealed that attractiveness and wealth predicted the romantic evaluations of *both* men and women (although wealth to a lesser extent for both sexes; Eastwick, Luchies, Finkel, & Hunt, 2014). These findings also suggest that in addition to physical attractiveness, high levels of wealth may positively affect mate value for women and by extension, women's mate rejection, at least when selecting a mate.

Relatedly, women should be the most fearful of rejection during pregnancy and when they have young children, when losing a partner and the resources they provide would be the most consequential. Furthermore, we expect pregnant women and women with young children to be less likely to reject established partners compared with nonpregnant women of similar age, as well as childless women, and those with older children. We can imagine these women falling at the far right of the "human mating continuum" (proposed at the beginning of this article, which ranges from active rejection to mate retention), doing their best to retain partners and avoid rejection. Of course, this prediction suggests that pregnant women and women with young children will engage in more mate retention behaviors than younger or childless women, or women with older children.

Male determinants of mate value. While attractiveness is also important for men, traits such as dominance, ambition, high status, wealth, and physical size—all either directly or indirectly related to his ability to acquire resources—are also important determinants of mate value (Buss, 1989, 2007; Feingold, 1992; Sadalla et al., 1987; Sprecher, Sullivan, & Hatfield, 1994). Exemplifying this, women across 37 cultures consistently reported liking ambitious and industrious men as well as those who had "good financial prospects" (Buss, 1989; Buss et al., 1990). Possessing these traits should make men more likely to engage in rejection and lacking them should make them reject less (as they will have an abundance of options).

As mentioned, however, human mate rejection is fueled by a complex, dynamic set of considerations. High levels of dominance coupled with low levels of kindness in men are not typically seen as attractive by women, yet the combination of high dominance and high kindness might be (e.g., Miller & Todd, 1998; or high dominance directed toward same-sex others but not toward the romantic partner, see Lukaszewski & Roney, 2010). However, in line with our point that rejection is not just the inverse of mate selection, we expect that in established relationships, a man's dominance will decrease his likelihood of rejection regardless of kindness (or where he directs his dominance) due to his partner's potential concerns about physical aggression in response to her choice to reject.

The relationship between age and rejection is less clear for men than for women. Like women, men's externally rated physical attractiveness declines with age, although not as steeply as women's (Deutsch, Zalski, & Clark, 1986). On the one hand, since it often takes time for men to accumulate resources, rise in social rank, or establish dominance, older men can sometimes be of higher mate value than younger men (Baize & Schroeder, 1995), whereas on the other hand, younger men have a physical advantage (more youthful looks, higher muscle mass, etc.). For some men then, age may be associated with the increased rejection of women, negating the expected negative association between age and propensity for rejection due to their own declining physical appearance and abilities (e.g., sagging skin and decreased strength). That is, contrary to expectations that older (presumably less physically attractive)

men will reject less, a man may be more likely to reject both current and potential partners as he increases in age compared to when he was younger, if he possesses wealth or resources (i.e., wealth moderates the relationship between age and rejection for men).

However, hypotheses relating to women's physical attractiveness should also somewhat extend to men, just to a lesser degree than women (and involve male-relevant attractiveness markers, including broad shoulders and muscularity). That is, physically attractive men should be more likely to reject women than unattractive men, but especially so when these men have wealth and resources. Additionally, we expect a man to be more likely to reject a woman as she increases in age (for established relationships), if she is older than him (for potential partners; Buss & Schmitt, 1993; Deutsch et al., 1986), or if she cannot produce children. On the other hand, we expect a man to be more likely to be rejected if his career or earning prospects dwindle (e.g., his ability to obtain resources is compromised, if he declines in status, or perhaps even if he has failed to increase in status). Additionally, both women and men who lose significant resources upon relationship dissolution are also expected to have worse outcomes than those who support themselves independently, although this is expected to be less exaggerated for men than for women.

Rejection strategies and postrejection relations. As mentioned, rejection can be followed by anger and aggression, or attempts to maintain a friendship. We argue that desiring the option to reestablish the relationship will be more likely when rejecting someone of high mate value, and therefore friendship should be pursued in order to "leave the door open" to returning to the relationship, to minimize pain, or avoid the chance of an irreparable relationship breakdown. This should be exaggerated if the rejecter is of relatively lower mate value than the rejected, or if the rejected has increased in mate value. Of course, this specifies a rare case where someone rejects a high mate value partner—by and large, high mate value partners are not likely to face rejection. Specifically (based also on the "halo" effect of physical attractiveness, e.g., Timmerman & Hewitt, 1980, and the proposed moderating effect of honesty and directness, see Banks et al., 1987; Baxter, 1982), if they are rejected, we expect that people of high mate value will experience more direct or honest rejection strategies as well as offers of friendship and placating strategies (similar to Banks et al., 1987). As these are proposed as less destructive breakup strategies than other options, they may allow the rejecter to retain some of the benefits of the relationship (e.g., friendship, social support, access to resources, and physical protection).

If maintaining a friendship is not possible, then those of low mate value who have been rejected may be more likely than their high mate value counterparts to stalk their former partner. Furthermore, when considering reentering the mating market postrejection, individuals should be more likely to take action to improve their chances of attracting a different, high-quality mate—by increasing their respective mate values (Perilloux & Buss, 2008).

Infidelity. When looking at people's reasons for undertaking rejection, the concept of infidelity may be used to extend our previous hypotheses regarding mate value. A primary reason for rejection within a relationship is infidelity (Betzig, 1989), yet we expect that several factors may qualify the extent to which infidelity results in rejection. For example, although mate rejection should be more likely to occur when infidelity occurs compared to when it does not (Betzig, 1989), we predict that this effect should be moderated by the cheater's mate value, such that a high mate value cheater is less likely to be rejected than a low mate value cheater.

In addition, some forms of infidelity pose a risk to one gender more than the other (Shackelford, Buss, & Bennett, 2002). If a woman engages in sexual infidelity, men are at risk of being cuckolded and investing in another man's offspring (Buss, 1994; Trivers, 1972). If a man engages in emotional infidelity, women are at risk of losing resources to another woman. Here, both sexes are fearful of losing their partner's resources to another (slightly differentiated by the attributes each gender finds relatively attractive in the other), and this should clearly affect their respective reasons for rejection (for discussion, see Miner & Shackelford, 2010). Additionally, the likelihood of rejection resulting from infidelity should be reduced if the couple had offspring, if either party is highly dependent on the other for survival, or if the options for alternative, high-quality mates are limited.

Contextual Factors

In the final section of this theoretical article, we discuss the factors surrounding rejection that are likely to influence whether it takes place, how it is done, and what it results in. We first turn our attention to the case of rejection in the context of mate poaching, before moving onto broader factors, such as the operational sex ratio.

Mate poaching. Mate poaching refers to the act of pursuing a person who is already involved with someone else (Schmitt & Buss, 2001). It is worth noting that mate poaching is inherently risky (e.g., mate poachers risk backlash from their target's partner), time-consuming, and less likely to yield results than pursuing an unattached person. We suggest that partners who are successfully mate poached, or who have engaged in infidelity, may be fearful of physical, emotional, or social retaliation directed at both themselves and their new partner. They may therefore strive to placate their partner during the rejection, for example, by using kindness and offers of friendship. This should be exaggerated for women in comparison to men, given the safety factors outlined earlier.

Finally, those who have been mate poached (regardless of whether the new postpoaching relationship lasted long-term or resulted in children) should be less likely to engage in stalking, persistence, or pursuit behaviors postrelationship and more likely to terminate contact with their ex-partner. We expect this because they are likely to have recalibrated their mate value upward, perceiving an abundance of mating options (as

during the poaching process, there was competition for them between at least two parties).

Operational sex ratio and availability of alternatives. The operational sex ratio is defined as the ratio of reproductively viable women to men (e.g., Clutton-Brock, 2007; Emlen, 1976; Emlen & Oring, 1977; Kvarnemo & Ahnesjö, 1996). In countries where the sex ratio is low (fewer men relative to women), there are increased numbers of young women reproducing outside of marriage (Barber, 2000) and women are more likely to pursue short-term relationships and engage in casual sex (Schmitt, 2005). Conversely, where the sex ratio is high (more men relative to women), men are more likely to pursue long-term mating strategies. The hypotheses presented in this section apply both across times when the sex ratio is skewed (historically and into the future) and between areas where sex ratios differ.

In terms of general reasons for mate rejection, the availability and quality of alternative mates should be highly predictive of whether an individual will choose to break up an existing relationship or reject a potential mate. Some past research supports this assertion. For example, White and Booth (1991) and Udry (1981) report that people who believe they will be able to find another spouse easily are more likely to terminate their current marriage. In a study by South and Lloyd (1995), perceived abundance of potential spousal alternatives posed a significant risk for the dissolution of marriages among White Americans. Similarly, in an experimental study, men who were shown photos of physically attractive women (*Playboy* and *Penthouse* centerfolds) were less satisfied with their current relationship and reported that their partner was less sexually attractive compared to men shown images of abstract art (Kenrick & Gutierrez, 1989).

In conditions where the sex ratio is not in one's favor (i.e., low for women or high for men), competition among the overrepresented gender will intensify. This will increase the risk of a person of that gender missing the opportunity to reproduce (Kvarnemo & Ahnesjö, 1996). Those in this situation ought to be more flexible about whom they accept as mates, that is, less likely to reject potential mates and less likely to abandon existing partners or dates. Conversely, the underrepresented (and thus sought after) gender's standards for an acceptable mate should increase, resulting in a greater likelihood that they will reject potential mates and existing mates that fall short of their current wants or needs (Stockley & Campbell, 2013).

Where the sex ratio is favorable to one's gender, we predict that ex-partners will be less likely to attempt to reignite relationships that have dissolved or pursue friendships with ex-partners. People in these conditions should also be less likely to report retaining their ex-partner as a "backup" partner, relative to those in unfavorable conditions. Where the sex ratio is not favorable to one's gender, we expect those of that gender to attempt to use accommodative rejection strategies in the rare case that they do reject a partner or potential partner (e.g., use more direct or honest rejection strategies and provide offers of friendship during rejection; see Metts et al., 1989). This is because their mating options are fewer, and completely losing

access to any one partner (whether desirable or not) could result in reduced reproductive success. People should also be more persistent and more likely to try to reestablish a relationship or friendship with an ex-partner when they perceive fewer mating alternatives. The operational sex ratio might also influence people's reactions to being rejected. If friendship with an ex-partner is not possible, the overrepresented gender should be more likely to display jealousy and perpetrate stalking, aggression, and violence toward ex-partners.

The effect of the operational sex ratio on mating behavior highlights that differences between populations of humans may signify adaptations to the local environment, and that adaptive behaviors need not be exhibited universally. As an example, differences in pathogen prevalence may lead to differential preferences for mates with sexually dimorphic facial features between cultures (DeBruine, Jones, Crawford, Welling, & Little, 2010). Evolutionary theory can also be applied to explain differing behaviors in environments that are harsh versus stable (Lee & Zietsch, 2011). Factors such as disease, pathogen prevalence, and environmental threat should be considered for further extensions of mate rejection theory.

Pathogen load, noncommunicable diseases, or local mortality rates may influence mate rejection. We may see, for instance, that a partner acquiring new pathogens leads to an increased likelihood that they will be rejected (due to contagion risk). In other circumstances, potential mates may be wary of partnering with an ill person (whether contagious or not). Furthermore, current mates may not want to remain partnered to someone who has acquired a greater number of pathogens or health issues, even if these don't affect their apparent mate value (such as appearance, strength, or earnings).

We might also expect high mortality rates to increase the likelihood of rejection in the context of existing relationships (as seen in Schmitt, 2005). High rates of mortality may cue organisms to invest in current rather than future reproduction (e.g., Kaplan & Gangestad, 2005). That is, they might choose to pursue multiple mating partners as opposed to one stable, monogamous relationship. For males, especially, this may lead to increased mate rejection, rejecting partners more frequently in order to quickly obtain multiple reproductive opportunities. However, since the benefits of mate rejection should depend on the operational sex ratio (Kokko & Jennions, 2008), if disease, war, or environmental factors are claiming more lives from one gender than the other, we might expect relationships to be more stable due to the scarcity of other potential mating options (but within the bounds of our predictions for operational sex ratios, see above).

Social influence and information. Culture undoubtedly shapes human sexuality and will influence mate rejection. In Western societies today, people generally begin and end romantic relationships autonomously. Westerners typically date several individuals before settling into marriage or an equally long-term relationship. With reduced social stigma surrounding divorce or serial monogamy compared with other cultures, mate rejection is common and may occur openly with relatively few social repercussions. Conversely, in collectivistic or religious

monogamous societies, mating decisions are not typically made autonomously and divorce is likely to be shunned (Buunk, Park, & Duncan, 2010). Therefore, an individual's ability to reject a mate may be restricted. Specifically, culture influences whether individuals can reject a mate (for discussion, see Buss, 1994), and mate rejection may be easier in Westernized societies and more difficult in more traditional societies.

In terms of parents rejecting suitors on behalf of their offspring, many of the hypotheses discussed throughout this article are still likely to apply. However, physical attractiveness may be less important to parents than children (as seen in Perilloux, Fleischman, & Buss, 2011), thus low physical attractiveness may be less likely to elicit rejection by parents than their children. Peers and kin are likely to encourage rejection if they see a relative or friend is not being choosy enough, or to discourage rejection when they see the suitor as advantageous or there are few alternatives. Both women and men are influenced by social information, but this is likely to be in regard to different traits, and this particular effect should be more pronounced for women than men due to the different physical costs of reproduction for each sex (Trivers, 1972). Considering that mate choice is more consequential for women than men, parents should have a disproportionate effect on their daughters' mate rejection as compared to their sons' mate rejection. Supporting this, research does show that parents are more controlling of—and emotionally invested in—daughters' mating behavior than their sons' mating behavior (Perilloux, Fleischman, & Buss, 2008; see also Perilloux et al., 2011). This should also arise because men are not typically discouraged from partnering with many different women (Buss, 1994). Adding further support, women have been shown to be more sensitive to their parents' opinions of their mate choices compared to men. That is, women have reported that if their parents did not like their romantic partner, they would consider ending the relationship (Dubbs, Buunk, & Li, 2011).

In comparison to men, women also appear to be more likely than men to seek their friends' opinions of a potential mate (Morr Serewicz & Gale, 2008). They also seem to be more sensitive to other social cues regarding mating and rejection (see Feingold, 1992). For example, research has found that women are more likely to judge a man to be a desirable mate, and therefore be less likely to reject him, if other women are with him, particularly if these women are physically attractive (Uller & Johansson, 2003; Waynforth, 2007). This may be because certain traits (including ambition, status, wealth, and dominance) can be difficult to assess accurately using visual cues. Similarly, men may attempt to fake or exaggerate these traits. Because of this, we expect that negative information about a potential mate from social sources should impact on both sexes' rejection decisions, but impact on women's mate rejection decisions more so than men's. For example, if a woman's friends or family said a man was untrustworthy, a womanizer, unkind, or stingy, she may be more likely to incorporate such social information into her mating decision. In turn, this could make rejection more likely.

In contrast, although in general we expect women to be more sensitive to social input than men, we expect men to be more sensitive to information about a woman's sexual history and fidelity. This is because women's concealed ovulation means paternity is not ensured for men, and they are therefore more concerned with controlling a partner's sexuality than women (Buss, 1994; Trivers, 1972; see also Smuts, 1992). Information about chastity and sexual loyalty, therefore, would be of more interest to men than to women and serve to inform their mating decisions more so than women's (Buss, 1994), and hence should also inform their rejection decisions more so than women's.

In terms of the methods people use to reject others in order to avoid social sanction, as mentioned, we tentatively expect people to report using honest or direct strategies, and offering friendship during and after rejection in order to preserve their reputations or "save face." Attempts to reject appropriately should be exaggerated if the ex-couple has overlapping social networks (implied by the work of Perilloux & Buss, 2008). This is because both partners are likely to be privy to a wide range of intimate details about each other that are potentially embarrassing or damaging to their partner's reputation (Duntley & Buss, 2012). Ending a relationship badly (perhaps by terminating it in a hurtful or demeaning way) may inspire the rejected partner to seek revenge by leaking intimate details, which could have fitness repercussions for the affected partner (in addition to any potentially violent outcomes). For example, this may result in a lack of interested mate alternatives or social rejection from a group that provides resources or protection.

Additionally, perpetrators of violence, stalking, and aggression during and after relationships should have reduced mating opportunities within a particular social group in contexts where members of the group are aware of their propensity for these behaviors or reactions. That is, they should be more likely to be physically restricted from mating (e.g., imprisoned or threatened) as a coevolved kin response to these behaviors (Duntley & Buss, 2012; Smuts, 1992; see also Duntley & Shackelford, 2012).

Conclusions

Mate rejection is an important, multifaceted topic that has been underresearched in the fields of evolutionary and social psychology. It is a crucial part of sexual selection and examining it through an evolutionary lens provides a myriad of novel hypotheses yet to be explored. Throughout this article, we have suggested that humans have developed particularly strong reactions to mate rejection because it has serious evolutionary consequences with the ability to substantially affect our fitness. We examined how people may adaptively rely on evolutionarily relevant factors to determine whether to reject someone. We also proposed methods people might use to try and reject someone while mitigating the risks rejection poses, both during and after it occurs. We discussed this topic in terms of survival factors, mate value factors, and contextual factors (including social constraints). It is our hope that the hypotheses developed

may be utilized and expanded upon to enrich our understanding of human mating from an evolutionary perspective.

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