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A social and evolutionary psychological approach to understanding human mate rejection and aggression

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Abstract

The human mating literature focuses on largely on mate selection, while predominantly ignoring mate rejection. Mate rejection refers to either romantic or sexual rejection prior to relationship formation, as well as break-ups following established relationships. This thesis takes an evolutionary approach to propose that heterosexual mate rejection carries potential risks and benefits to our fitness, and is fuelled by a complex, dynamic set of considerations. Given that it was a problem faced regularly by our ancestors, mate rejection should have given rise to evolved behavioral and psychological adaptations, particularly those aimed at avoiding physical threats such as aggression and violence. In this thesis, I first discuss mate rejection in terms of its social correlates (Chapter 1). Then, I explore mate rejection from an evolutionary perspective, presenting a series of novel hypotheses particularly with regard to aggression and dominance (Chapter 2). Chapter 3 then introduces Social Dominance Orientation (SDO). This generalized world-view relates to social hierarchies, with those who display high levels of SDO showing strong support for inequality. Over two studies I demonstrate that SDO is a key predictor of men's adverse reactions to mate rejection, and that it might act as a precursor of the relationship between hostile sexism and negative behaviors and attitudes towards women rejecters (Chapter 4). I extend these findings over three subsequent studies, showing that both men's *and* women's SDO is related to aggressive responses to mate rejection (Chapter 5). I also find evidence that perceived SDO is linked with reports of abuse in mate rejection contexts, and that perceived SDO predicts the strategy people choose to reject a mate. Further, I show that neither aggressive nor friendly/positive rejection strategies are helpful when rejecting people who are high in SDO, and may even increase the risk of abusive reactions. Finally, I discuss the overall findings presented within the thesis (Chapter 6). In this chapter I also speculate about possible protective rejection strategies, and address my findings of a lack of gender differences in aggression surrounding mate rejection. Limitations and suggestions for future research are proposed. The overarching goal of this thesis is to contribute to the under-researched domain of human mate rejection, and link generalized world-views to evolutionarily relevant dangers during rejection.

<u>Declaration by Author</u>

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly-authored works that I have included in my thesis.

I have clearly stated the contribution of others to my thesis as a whole, including statistical assistance, survey design, data analysis, significant technical procedures, professional editorial advice, and any other original research work used or reported in my thesis. The content of my thesis is the result of work I have carried out since the commencement of my research higher degree candidature and does not include a substantial part of work that has been submitted to qualify for the award of any other degree or diploma in any university or other tertiary institution. I have clearly stated which parts of my thesis, if any, have been submitted to qualify for another award.

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Publications During Candidature

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Publications Included in this Thesis

This thesis contains three theoretical chapters (Chapters 1, 2, and 3) and two empirical chapters (Chapters 4 and 5). Chapters 2 and 4 have been published in peer-reviewed outlets. These chapters are contextualized with a General Discussion (Chapter 6). Below are the citations of the publications included in this thesis.

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Contributor	Statement of Contribution
Kelly, A. J. (Candidate)	Conception & theoretical proposal (70%)
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Contributions by Others to the Thesis

In addition to the work credited above, my primary advisor—Dr. Fiona Kate Barlow—helped to design, edit, and revise all sections of this thesis, and contributed to the interpretation of data and statistical analysis in all studies. Furthermore, Dr. Shelli L. Dubbs contributed to conception and theoretical proposals of Chapters 2 and 5. Dr. Dubbs also helped to write Chapter 2, and contributed to the experimental design of Chapter 5. My secondary advisors, Dr. Brendan P. Zietsch and Prof. William (Bill) von Hippel, undertook minor reviews of all manuscripts. They also provided guidance on theoretical proposals and study designs, and reviewed drafts of this thesis. In addition, Helena R. M. Radke provided comments on the manuscript used in Chapter 4, and Carol Ha provided minor assistance with project design for that chapter.

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A Social and Evolutionary Psychological Approach to Understanding Human Mate Rejection and Aggression

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List of Abbreviations Used

HS: Hostile Sexism

PES: Psychological Entitlement Scale

SEM: Structural Equation Modelling

SES: Socio-economic Status

SDO: Social Dominance Orientation

TIPI: The Ten Item Personality Inventory

U.K.:   United Kingdom

U.S.:   United States of America

Chapter 1: A Brief Social Introduction to Mate Rejection

Throughout this thesis, I argue that mate rejection and ex-partner relationships are important, multi-faceted topics that have been under-researched in social and evolutionary psychology. Mate rejection refers to romantic and sexual rejection prior to a relationship, and after a short- or long-term pairing (i.e. a breakup). Mate rejection forms an integral part of the human experience, but also carries potential risks and benefits to our fitness and survival. Hence, I expect that mate rejection will have given rise to evolved behavioral and psychological adaptations, especially in response to aggression (see also Leary, 2001).

However, the context of human evolution has always been social. Even nomadic hunter-gatherers live in bands of kin and unrelated others (Dyble et al., 2015), and we can expect that the same has been true in our evolutionary past. In this thesis I take an evolutionary perspective while examining mate rejection. However, given its social nature it is important to first acknowledge the established social psychological (and descriptive, as well as clinical and demographic) literature on mate rejection. Within this short chapter I build a brief framework of this literature, which will be used to contextualize and work in concert with the evolutionary perspectives presented throughout. I then theorize about mate rejection using an evolutionary perspective (Chapter 2), before beginning to investigate mate rejection and aggression in Chapters 4 and 5 after introducing a key variable implicated in these contexts (Chapter 3). Finally, these chapters are reviewed and synthesized within a general discussion (Chapter 6).

For simplicity, within this thesis romantic and sexual rejection (prior to a relationship) and break-ups (after established relationships) will often be considered together under the label 'mate rejection' or 'romantic rejection', as the concepts discussed frequently refer to both stages of relationships. It will be made clear when this does not apply. Throughout the social psychological literature, many different terms are used to describe mate rejection, although the majority of the focus has been on 'divorce', 'relationship dissolution', and 'breakups' (i.e. typically describing mate rejection in established relationships). Although I will use this terminology within this chapter, I classify all of these terms as forms of mate rejection (rejecting a marriage partner, rejecting a long-term partner, etc.) and I expect that many of the social explanations for long-term mate rejection may be applicable to short-term or initial dating rejection as well (as argued by Downey, Bonica, & Rincon, 1999).

The Social Correlates of Mate Rejection

Much social psychological research acknowledges that the genders typically report different reasons for their divorces (as discussed by Rodrigues, Hall, & Fincham, 2006). For example, men are more likely to report that their own alcohol abuse initiated their divorce, and provide fewer

reasons for the divorce, than are women (Cleek & Pearson, 1985). Women, on the other hand, are more likely than men to report incompatibility, unhappiness, their partner's infidelity or alcohol abuse, and physical abuse as causes of their divorce (Cleek & Pearson, 1985). Men are also more likely to report sexual incompatibility or trouble with in-laws as reasons for their marriages ending, yet wives are more likely to cite an absence of love (Levinger, 1966). In a meta-analysis involving 37,761 participants from 137 studies over 33 years, some of the strongest predictors of non-marital breakups were low levels of love and commitment, as well as low levels of trust, closeness, investment, dependence, and satisfaction (Le, Dove, Agnew, Korn, & Mutso, 2010). Le and colleagues (2010) also concluded that relationship factors are able to predict breakups more so than individual factors (such as personality characteristics), and importantly that a lack of social support outside the relationship is strongly related to relationship dissolution.

The social psychological literature has also given much attention to socio-economic status (SES) as a correlate of divorce (as indicated by income and education; Amato & Previti, 2003). High SES is associated with a lower likelihood of divorce (White, 1991), and some have argued that this suggests that high levels of income and education might assist in creating more cohesive marriages in comparison to lower income and less education (see Amato & Previti, 2003; Voydanoff, 1991). However, when controlling for education and race, some studies find that income in and of itself is a relatively poor predictor of divorce (Orbuch, Veroff, Hassan, & Horrocks, 2002). Race (in the West, typically non-Whiteness), is often a strong predictor of facing systematic life challenges including low status and low education, which can negatively affect long-term relationships (Orbuch et al., 2002), hence increasing mate rejection. Additionally, divorce is more likely when both partners are unemployed in the early marital stages (as opposed to having employment), or if the husband is unemployed (Bumpass, Martin, & Sweet, 1991).

As argued by Rodrigues, Hall, and Fincham (2006), regional differences in adherence to social norms may also affect relationship dissolution, in that couples may be less likely to separate if they live in areas where they face social disapproval for it. Indeed, as noted in Chapter 2, mate rejection should be less likely when social pressures exist that push couples to stay together (e.g. in locales where divorce is frowned upon). Divorce is more likely in urban regions then in rural regions (Woodrow, Hastings, & Tu, 1978), and some researchers take this as further support that adherence to social norms affects relationship dissolution (e.g. Rodrigues et al., 2006). Religiosity is also likely to play a role in the social pressure to stay together, and those who are more religious are indeed less likely to divorce than those who are less so (Bumpass et al., 1991; Heaton, 2002). Individualism as opposed to collectivism may also make divorce more likely (as discussed and demonstrated by Dion & Dion, 1993). That is, in regions where dependency on others is valued, a sense of community is supported, and the group is given priority over the individual, mate rejection

following in established relationships (e.g., marriages) may be less likely due to the many social factors at play in such contexts. On the other hand, where the individual's needs are placed above the group's needs, levels of trust, dependency, and caring towards one's partner are reduced (Dion & Dion, 1993), and mate rejection may be more likely.

Further predictors of divorce include life course variables such as the presence of children (who are often a source of stress, as well as joy), the length of the marriage, and the age at which the couple wed (as discussed in Amato & Previti, 2003). Divorce appears to be more likely if children are present prior to marriage than if none are present (Heaton, 2002), and if the couple conceives prior to marriage (although less so than if the birth had already occured; Teachman, 2002). Divorce also appears more likely if the couple married at a younger age as opposed to those who married older (Bumpass et al., 1991), and couples who have been married to one another longer are at less risk of divorce than couples who have been wed for a short period of time (White, 1991; although many factors can affect this, for discussion see Amato & Previti, 2003). Furthermore, living together prior to marriage has been linked with higher rates of divorce (Amato, 1996; Bumpass et al., 1991), although there is some speculation that this effect may occur less in more recent generations, or may only be present for those who have routinely cohabited with different partners prior to their eventual marriage (see Rodrigues et al., 2006 for discussion). Furthermore, mate rejection is more likely in marriages subsequent to a first marriage, as opposed to first marriage. For example, Amato (1996) found that second marriages were considerably more likely to end in divorce than were first marriages. Finally, parental divorce is associated with offspring divorce, such that those who have divorced parents are more likely to experience a divorce than those whose parents remained together (e.g. Amato, 1996; Bumpass et al., 1991).

Coping and Aggression After Mate Rejection

Social psychological research has also shed light on coping after mate rejection. Research has shown, for example, that adjustment to divorce is better when one ascribes the dissolution to relationship factors instead of external issues or personal (internal) factors (Amato & Previti, 2003). Additionally, stress may be reduced and recovery increased post-rejection if people feel they were able to control the breakup, and coping may be better when social support is perceived (Frazier & Cook, 1993). Clinical depression, however, is very common following mate rejection. For example, Mearns (1991) recruited participants who had experienced a breakup within the prior year, and found that over 40% were experiencing clinically measureable depression. Experiencing a breakup has also been linked to suicide attempts and alcohol use (Barber, 2006), as well as completed suicides and homicides (United Nations Development Programme, 1995). Kressel (1980, p. 235) stated that, "There is… clear epidemiological data that indicate that in terms of psychological hospitalizations, death due to automobile and other accidents, suicide and death from homicide, as

well as overall mortality, the rates for the divorced of both sexes are higher than for any other martial status (Bloom, Asher, & White, 1978; Ladbrook, 1976)." Mate rejection is also associated with psychological pain, sadness, and distress (Fisher, Brown, Aron, Strong, & Mashek, 2010). Even imagining a partner's romantic rejection (in this case, in the form of infidelity) was shown to reduce self-esteem and pride (Besser & Priel, 2009). Feelings of exclusion often go hand-in-hand with rejection, and social exclusion has been shown to increase pain tolerance and reduce emotional sensitivity as well as empathy, having a somewhat numbing effect (DeWall & Baumeister, 2006), and potentially causing a shift towards negative emotional states (Blackhart, Nelson, Knowles, & Baumeister, 2009).

There has also been a lot of focus on rejection sensitivity in social psychology. Rejection sensitivity is an anxiety or hyper vigilance about avoiding rejection within relationships (while simultaneously expecting it to occur). Ironically, rejection sensitivity appears to typically lead to destructive behaviors that increase, rather than reduce, rejection (Downey & Feldman, 1996). In terms of coping post-rejection, women who are high in rejection sensitivity have been shown to become more depressed when rejected by a partner (in comparison to women lower in rejection sensitivity; Ayduk, Downey, & Kim, 2001). Rejection sensitivity in men, on the other hand, has been linked to potential interpersonal violence (Downey, Feldman, & Ayduk, 2000). Similarly, an aspect of social anxiety (fear of negative evaluation) has been related to dating aggression in young men (Hanby, Fales, Nangle, Serwik, & Hedrich, 2012). Importantly, rejection sensitivity is related to hostile reactions within relationships (including inciting conflict) during or after circumstances where rejection insecurities are triggered (Ayduk, Downey, Testa, Yen, & Shoda, 1999; Ayduk, Gyurak, & Luerssen, 2008; Bondu & Richter, 2016). These circumstances are likely to be anything that poses a threat to the relationship, including conflict, inattentiveness, or interest in alternate mates (as discussed in Downey et al., 1999). Actual mate rejection (the focus of this thesis) should be an intense trigger for such people.

Some researchers have suggested that behavior following romantic rejection may come in two phases, 'protest' and 'despair' (Bowlby, 1969; Lewis, Amini, & Lannon, 2000). Part of protesting a partner's rejection may involve attempts at forcing them to go back to the relationship through coercion (aggression, threats, manipulation, etc.; Downey et al., 1999), or denying that the relationship is really over. Considering that even imaginary mate rejection scenarios can induce hostility and anger (Besser & Priel, 2009), aggressive reactions to mate rejection are vital to research and understand. I discuss aggressive reactions to mate rejection in detail within Chapter 2, along with other potential survival threats during rejection. I also introduce some evolutionarily relevant contextual and social influences on mate rejection, and propose a series of research hypotheses throughout. Chapters 4 and 5 go on to test a subset of these theories, and I discuss the findings from both a social and evolutionary perspective in Chapter 6.

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Chapter 2: An Evolutionary Perspective on Mate Rejection

In this chapter, I first discuss the evolutionary theories that help guide this thesis, followed by the ubiquity of mate rejection, and then delve into mate rejection from an evolutionary perspective. This chapter is intended as a stand-alone theoretical article (and has been published as such: Kelly, A. J., Dubbs, S. L., & Barlow, F. K. [2016]. An evolutionary perspective on mate rejection. *Evolutionary Psychology*, *14*(4), 1-13), but also serves to expand upon the topics of mate rejection and aggression introduced in Chapter 1. Firstly however, this chapter is contextualized with an introduction to 'Evolutionary Principles', which does not appear in the original manuscript, but introduces important concepts and terms for readers who work outside of an evolutionary framework. From the section break onwards, the chapter is presented in its original manuscript form (excluding small references to other chapters and minor edits); hence the use of the term 'we' (rather than 'I'), referring to my collaborators and myself. From thereon we outline some of the many unanswered questions in evolutionary psychology on mate rejection, 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, and we investigate a subset of them in Chapters 4 and 5. To begin, I review the fundamental tenets of evolutionary theory and what it has already taught us in terms of mate rejection, before delving into what we can gain by applying those theories to the under-explored aspects of rejection.

Evolutionary Principles

Evolutionary psychologists make use of a series of fundamental principles based on Darwin and Wallace's (1858) *Theories of Evolution and Natural Selection* to provide specific and testable predictions about human behavior (theories later expanded in Darwin, 1859). These principles are briefly outlined below, and will serve as the theoretical framework from which we draw our arguments about mate rejection.

Natural and sexual selection

Natural selection refers to variance in survival or reproduction based on differing attributes between organisms. Traits that are *adaptive*, providing the organism with some advantage in their environment, allow the individual to outlast others and create the greatest number of mature offspring (maximising fitness; Darwin, 1872). Unlike natural selection, sexual selection is readily apparent within our everyday interactions, and it refers to differential reproduction (for discussion see Trivers, 1972). Rather than adapting organisms for their environment, sexual selection instead

typically works to shape organisms into those that are increasingly reproductively successful (Darwin, 1871).

Throughout our history, men and women have likely faced different adaptive challenges, and evolution would have arguably equipped each gender with different cognitive and behavioral adaptations that tended to maximize their reproductive fitness (as discussed in Buss, 1995). Apart from sexual dimorphism (i.e. distinct differences in physical attributes, including size, between members of the sexes), one of the core differences between men and women is how they behave in mating contexts. Importantly, sexual selection is driven by three major principles: differential parental investment, intersexual selection (mate choice), and intrasexual selection (competition between members of the same sex). Note that while these are the three we address here, additional sexual selection mechanisms have been identified in the past half-century (see Andersson, 1994; Murphy, 1998; Smuts & Smuts, 1993).

Differential parental investment

Differential parental investment (Trivers, 1972) results from gender differences in reproductive potential, and helps explain why females are typically choosy about their mating decisions relative to males. The theory posits that the gender that is required to provide a higher minimal investment in reproduction (e.g. energy, resources, time) will be the choosier sex. In order to produce viable offspring, female mammals must minimally invest months of internal gestation, lactation, and the extended care of dependent offspring (Trivers, 1972; see also Buss, 1996). In conjunction with menopause, these restrictions limit the number of biological children a female can produce in her lifetime. While male investment varies across species, it typically only requires a small contribution of time and sperm. This means the number of offspring a male can potentially produce is greater than females, and mainly limited by his access to mates.

Intersexual selection: Female mate choice

As a consequence of being limited in the number of offspring she can produce, mating with a poor quality partner will be more costly for a female than for a male. Therefore, it pays for females to be choosy when selecting mates, attempting to maximize their inclusive fitness (number of offspring versus their relative quality) more so than men (see Trivers, 1972 for discussion). On average such a strategy will lead to healthier and more viable offspring (i.e. those with phenotypes that are suited to the environment; Darwin, 1871). In human females, this is evident when examining mating habits. As an illustration, in a speed-dating study where participants responded either 'yes' or 'no' to seeing a potential partner a second time, on average women received a 'yes' from 49% of men, whereas men only received a 'yes' from 34% of women (Kurzban, & Weeden, 2005).

For various fitness-enhancing reasons, women preferentially value certain traits in men over others. Sustained sexual preferences can influence our evolution (see Darwin, 1871), and impact how both women and men behave in mating contexts (for discussion see Miller, 2000; Zahavi, 1975). As they do not face the prospect of pregnancy and the overall burden of child rearing (breast-feeding, etc.), men's standards for partners can be more lax than women's (for support see Schmitt et al., 2001). Yet, men's sexual preferences are no less influential for our evolution and mating behaviors (largely due to their pair-bonding, hence women cannot all share the best man). Men's preference for physical attractiveness for example, may influence how women compete with one another, as discussed below in terms of intrasexual selection.

Intrasexual selection

Another form of sexual selection is intrasexual selection, where members of the same sex compete with one another for access to partners. This typically entails competition between members of the less-choosey sex over access to members of the more-choosey sex. Commonly, this is discussed in terms of male-male competition, where males compete for territory, or access to one or many females.

In humans, because women value resources in a mate and male investment in their offspring (Trivers, 1972), men typically compete to gain and display the most wealth and power (which reflects an ability to gain and control resources, Buss, 1988). Because women's physical attractiveness is an indicator of youth and health, and therefore the ability to produce children, men place great value on this trait when choosing a mate (Buss, 1987, 1988). A growing body of research suggests that women compete fiercely with one another in domains such as physical attractiveness (Fisher, 2015). Possessing traits that are valued by men, such as beauty, can lead to pairings with high quality men.

In this sense, men's sexual preferences greatly influence women's evolution and mating behaviors. Men preferentially select women who are physically attractive (e.g. Geary, Vigil, & Byrd-Craven, 2004; Sefcek, Brumbach, Vásquez, & Miller, 2007; Shackelford, Schmitt, & Buss, 2005; Sprecher, Sullivan, & Hatfield, 1994; Swami & Tovée, 2005; Wheatley et al., 2014; Wiederman, 1993). Therefore, women aim to appear attractive to men (intersexual competition, in order to be chosen), but also actively compete with one another to appear the *most* beautiful, in order to secure a desirable mate (sometimes even at the expense of their physical wellbeing, see Dubbs, Kelly, & Barlow, 2015). Some of our subsequent predictions will be based on these notions.

Paternal uncertainty and sexual conflict

As alluded previously, men can potentially increase their fitness by pursuing multiple mates, essentially trading parental effort for mating effort. This trade-off is perhaps pronounced by the fact

that men cannot be 100% certain of their genetic relatedness to their offspring, even in the context of long-term relationships, due to women's internal fertilization, concealed ovulation, and potential infidelity (e.g. Buss, 1995; for discussion see Shackelford, Buss, & Bennett, 2002). Therefore, by investing in parental effort, a male risks expending energy and resources raising offspring that are not genetically related to him (Buss, 1995, 1996; Trivers, 1972).

Conversely, women do not have to question their relatedness to offspring, but, as mentioned, they also bear the brunt of parental investment. Thus for women finding a mate who is committed and willing to invest in parental effort is important (for discussion see Buss, 1995; Perilloux & Buss, 2008). The traits that seemingly indicate whether a man will become a dependable father are sometimes referred to as 'good dad' traits (e.g. commitment, patience, access to resources, or good financial prospects). Females who strategically choose males with both 'good genes' (e.g. health, masculinity, physical attractiveness) and 'good dad' traits will, theoretically, increase their chances of producing high-quality offspring. This combination may also help keep offspring alive long enough to produce a subsequent, healthy generation (for full discussion see Buss & Shackelford, 2008).

Yet, as detailed above, males of many species are adaptively motivated (relative to women) to seek short-term pairings in order to maximize their genetic representation in subsequent generations (see Schmitt et al., 2001, for support). Consequently the reproductive strategies that maximize the fitness of males and females are frequently at odds with each other, a phenomenon termed *sexual conflict*. Typically, when males and females enter into a monogamous relationship, both may have to engage in some form of compromise. Males will be limited to one partner and females may sacrifice some 'good gene' traits for 'good dad' traits in male partners.

Intersexual selection: Male mate choice

At some point in our evolutionary history, the mating strategy of our human ancestors began to shift from polygamy (either multi-male, multi-female; or polygynous, one male per group of females), towards pair bonding (although many societies practice polygyny, see Pebley, Mbugua, & Goldman, 1988). Compared to our closest living relatives (the great apes), humans are unique in this regard. Considering that human neonates are highly altricial (requiring a lot of care), alloparenting (in which individuals other than the child's mother contribute to the care of a child) is perhaps necessary in order to successfully raise a child (see Benenson, 2013 for discussion of alloparenting). Thus, fathers who decided to invest in the parental care of their offspring could potentially increase their own fitness by ensuring their offspring's survival. Other theories regarding the evolution of pair bonding posit that paternal investment for men actually forms part of their mating effort (Hawkes, Rogers, & Charnov, 1995; van Schaik & Paul, 1996; see also Quinlan, & Quinlan, 2007).

Whatever the evolutionary origins of paternal investment, it is clear that a high percentage of men form long-term bonds with women and contribute to raising children (Geary, 2000). Therefore, human males are also quite choosy about their long-term partners (Buss & Schmitt, 1993), and have many opportunities to exert their choosiness. For example, men typically initiate sexual and romantic contact (Bartoli & Clark, 2006; Bradshaw, Kahn, & Saville, 2010; ; see also Goode, 1996; Laner & Ventrone, 2000; Morr Serewicz & Gale, 2008; Rose & Frieze, 1993). Because of this, they are afforded the opportunity to selectively approach women who fit their mate preferences, and by default, reject other women who do not. Also, despite presumably being attracted to the women they approach, men may reject a woman after initial contact. They may, for instance, discover that she lacks other traits that are difficult to immediately assess (such as kindness, intelligence, and fidelity). Further, men (like women) also evaluate alternate mates, and decide whether or not to reject their current mate.

It has also been hypothesized that males evolved to be choosy in their mate choices if female quality is highly variable and/or if men have a limited capacity to mate with all females (Edward & Chapman, 2011). Women certainly vary in their fertility. Further, even the most virile men typically court or engage in sexual intercourse with only one woman at a time (as courting a woman can be time consuming, and restricted by social pressures and norms, female mate choice, etc.; discussed in Buss, 1988). Therefore, despite presumably rejecting fewer potential partners than women (as women *are* assumed to be more choosy), mate rejection is still likely to have been (and to be) a vital factor in male mating behavior. Within the manuscript below, which comprises the remainder of this chapter, my colleagues and I explore mate rejection in detail. Importantly, we suggest that mate rejection is not simply the inverse of mate selection, despite that assumption having presumably led to a lack of research on the topic within human mating literature.

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Mate Rejection

Mate 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).

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,"
—Chuck Palahniuk, *Fight Club*, 1996, p. 17.

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. Perilloux & Buss, 2008; Baumeister & Leary, 1995). 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 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, Lenton, & Fasolo, 2008), the splitting of resources and the dissolution of other social relationships, and even physical harm or death. Consequently, we argue that who you reject is just as important as who 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 assertion. Rhoades, Atkins, Dush, & 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; see Chapter 1). The U.K. 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 (approx. 40% relationship dissolution by around 20 years of marriage) and 1990s (approx. 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 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 also 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., 2105). Within these groups, mate rejection is likely to have been commonplace, based on data from modern non-industrialized analogies. As noted by Pearsall (1947), women living in East African tribes (e.g., Akikuyu, Akamba, Wagiriama) have the right to accept or reject potential suitors. According to Marlowe (2004), amongst 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 remain married to their first spouse their whole life, making divorce the rule rather than the exception (Marlowe, 2004).

Consistent with the argument that rejection is an evolutionarily 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 under-researched 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 within romantic relationships 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 be stalked 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. Metts,

Cupach, & Bejlovec, 1989; Bullock, Hackathorn, Clark, & Mattingly, 2011; Tan, Agnew, Vanderdrift, & Harvey, 2014). Most recently, Mogilski and Welling (2016, 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 post-relationship 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. 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 highlight 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 and 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 using a positive tone, avoidance, or manipulation.

However, this literature is sparse, unclear, and dated, so although throughout this chapter 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, and we begin investigating this in Chapter 5. 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 chapter however, we assume herein that direct and honest strategies are more adaptive (in line with Banks, Altendorf, Greene, & Cody, 1987; Baxter, 1979, 1982; Cody, 1982).

Evolutionary Hypotheses Concerning Mate Rejection

In the following sections within this chapter, 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; c) contextual factors.

Survival factors

Romantically rejecting someone, or being rejected, can be hazardous. For both men and women, the process of romantic rejection is linked to 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 & Häkkänen, 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 pre-stages 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, Laughon, Rutto, Bevacqua, & Campbell, 2008; Hagelstam & Häkkänen, 2006; Naved, 2013; Rennison & Welchans, 2002; Romans, Forte, Cohen, Du Mont, & Hyman, 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, bitterness towards ex-partners). This should mean that women would 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; and Smuts, 1992).

The hypotheses presented above are simple, but evolution—and humans—are not. As will be seen throughout this chapter, and here 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, Hakkanen-Nyholm, Sheridan, & Roberts, 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, Dubbs, & Barlow, 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 over-

familiarity or over-commitment, for example). 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 and Welling (2016, in press) found that people frequently reported they had pursued friendship with ex-partners because of 'continued romantic attraction', a construct which included agreeing with statements 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 that make a clean break or where there is 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 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 which may extend to some men too). We suggest that the history and previous intimacy makes stalking strategies post-relationship 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 post-rejection 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 break up. 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 victimisation, 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 and 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 fallout best could be fruitful not only for evolutionary psychology, but also intimate partner violence research, and we begin to investigate some of these strategies in Chapter 5 of this thesis (Study 5). 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 then 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, 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 (as per

Perilloux & Buss, 2008; Baumeister & Leary, 1995), 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, Todd, Lenton, & Fasolo, 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, 1849, 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 and survival 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 post-rejection 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 (2016, in press) reported that people listed children or preganacies as reasons to remain friends post-dissolution, 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 low 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 non-physical 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 (downwards, in this instance; as suggested by Perilloux & Buss, 2008). Hence, we predict 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, 1994; Townsend & Levy, 1990; Sprecher, Sullivan, & Hatfield, 1994), 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-thirties 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; see also Perilloux, Cloud, & Buss, 2013; Cloud & Perilloux, 2015). 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.), and 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 non-pregnant 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 chapter, 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 (Sadalla, Kenrick, & Vershure, 1987; Buss, 1989, 2007; Feingold, 1992; 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 is 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 towards same-sex others but not towards 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 the woman'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, Zalenski, & 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, Zalenski, & Clark, 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 post-rejection relations. As mentioned, rejection can be followed by anger and aggression, or attempts to maintain a friendship. We argue that desiring the option to re-establish 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 benefits 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, 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 re-entering the mating market post-rejection, 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 (Trivers, 1972; Buss, 1994). 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 chapter we discuss the contextual 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 old 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 post-poaching relationship lasted long-term or resulted in children), should be less likely to engage in stalking, persistence, or pursuit behaviors post-relationship and more likely to terminate contact with their ex-partner. We expect this because they are likely to have recalibrated their mate value upwards, 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 & Ahnesjo, 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) both 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 & Gutierres, 1989).

In conditions where the sex ratio is not in one's favor (that is, 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 & Ahnesjo, 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, Cupach, & Bejlovec, 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 towards 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, non-communicable 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 (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 paper 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 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'. Supporting this, research does show that parents are more controlling of—and emotionally invested in— daughters' mating behavior than their sons' (Perilloux, Fleischman, & Buss, 2008; see also Perilloux, Fleischman, & Buss, 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 than 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 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 than a man 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. As discussed above, 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 chasity 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; Buss & Schmitt, 1993), 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 co-evolved kin response to these behaviors (Duntley & Buss, 2012; Smuts, 1992; see also Duntley, & Shackelford, 2012). Finally, societal contexts influence many important and rejection-related variables, including prejudices that have been linked with gender inequality such as Social Dominance Orientation (SDO; Pratto, Sidanius, Stallworth, & Malle, 1994). Exemplifying this, a meta-analysis of 27 western and non-western societies revealed that SDO—a trait which we predict might be a driving factor in aggression during mate rejection (see Chapters 3, 4 and 5)—does vary across cultures and mean nation-wide levels are related to a society's encouragement or discouragement of egalitarianism (concern for the welfare of others, community cooperation, etc.; Fischer, Hanke, & Sibley, 2012). This demonstrates that cultural contexts are important in shaping how mate rejections might unfold, even if underlying evolutionary processes may be influencing their outcomes. Societal changes are likely to work in the same way. That is, in most cultures there has been social change that will have affected gender differences, women's autonomy, the ability to reject others, and the availability of alternate mates, for example. It is clear that these social factors

will affect mate rejection, providing significant contextual constraints to the evolutionary predictions we make.

Conclusions

Mate rejection is an important, multi-faceted topic that has been under-researched 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 chapter, my colleagues and I 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 to reject someone while mitigating the risks rejection poses, both during and after it occurs. We discussed this topic in terms of survival threats, 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.

My colleagues and I also highlighted the impact that dominance might have on rejection, especially in terms of aggression during mate rejection. This is a key point, since it is vitally important to avoid survival threats during romantic rejection. Since we are laying the groundwork for new investigations into this important facet of human mating, we felt that it was important to begin investigating the cues that one might look for within romantic partners (or potential romantic partners) to predict whether a rejection context could be potentially dangerous with them. Therefore, our empirical investigations on mate rejection investigate dominance and predictors of aggression during rejection (Chapters 4 and 5). Firstly, I introduce an important social attitudinal factor (SDO) that might potentially increase or lead to aggression during mate rejection (Chapter 3). Following this, I present my empirical investigations into mate rejection and aggression, beginning with two studies in Chapter 4, and finishing with three studies in Chapter 5. My final study (Study 5 in Chapter 5), delves into the strategies that people may use to reject others (as discussed above), and whether there are any particular approaches to mate rejection one may implement to avoid aggression from the rejected party. I finish by tying all chapters together in a general discussion (Chapter 6), and examine the work presented and its contribution to science and our collective knowledge.

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Chapter 3: Social Dominance Orientation

Within an evolutionary framework, Chapter 2 delved deeply into mate rejection, where my colleagues and I proposed that humans have evolved behavioral and psychological adaptations aimed at dealing with it from various perspectives (see also Leary, 2001; Perilloux & Buss, 2008). Novel hypotheses were presented, particularly referring to the actions that may help or protect an individual from survival threats during a potentially violent rejection experience. Since very little work has examined mate rejection from an evolutionary perspective, I thought it most crucial to investigate the factors that could potentially increase one's chances of survival during such rejections. Hence, the empirical work in the following chapters investigates the physical threats including aggression, violence, and abuse that can surround mate rejection, testing a subset of the hypotheses from Chapter 2. Additionally, I question whether there are social factors that might contribute to negative and aggressive reactions to mate rejection. Here, I implicate a key variable: *social dominance orientation* (Pratto, Sidanius, Stallworth, & Malle, 1994).

Social Dominance Orientation (SDO)

The term *social dominance orientation* was coined over two decades ago to describe an individual-difference variable that reflects one's support for, or rejection of, group equality (Pratto et al., 1994). Drawing on social dominance theory, Sidanius (1993; see also Sidanius & Pratto, 1999) proposed that people differ in the extent to which they endorse social hierarchies, and view certain groups as being justifiably dominant over other groups. Social dominance theory suggests that societies normalize beliefs and myths that promote the dominance of one group over others in order to legitimize oppression and to reduce dissent and conflict (as argued by Pratto et al., 1994). Put simply, an individual high in SDO could be thought of as supporting inequality. Thus far, SDO has not been investigated in interpersonal rejection contexts. In line with my proposals regarding dominance and aggression during mate rejection in Chapter 2, I suggest that this world-view may be a crucial indicator of later rejection-triggered aggression.

SDO within an evolutionary context

Beyond the personal, interpersonal, or demographic characteristics related to rejection discussed in Chapters 1 and 2, SDO represents an overarching schema for how societies should function and be structured. SDO itself is likely an adaptive and evolved factor that in the past would have helped those in power propagate their genes (albeit somewhat through mostly unadvisable acts). That is, SDO might be a mating strategy, optionally used to avoid both initial and long-term mate rejection. Specifically, those high in SDO, who believe that some groups of people are simply better than others (for example; see Chapter 4), may be inclined to disregard the choices and autonomy of current and potential mates, feeling that they are somehow 'entitled' to what they want

from others regardless of those people's rights or desires. Possessing high levels of SDO, then, might allow a person to rationalize the forcing of a partner into a relationship, as well as coercing them to stay or even engage in sexual acts, effectively bypassing that person's option to reject. By no means do I imply that coercion or aggressive behaviors are healthy or recommended within relationships. Instead, similar to Duntley & Buss' (2012) explanation of the evolution of stalking, I suggest that SDO (and the behaviors that I predict may stem from it) likely did have some success at solving mating problems in the past (especially at times when equality and human rights were less valued). This may have allowed the socially dominant worldview to persist within some cultures and sub-cultures.

SDO, then, might now be present in the current population because it helped some of our ancestors obtain and maintain partnerships (by forcing another person to submit to them, even if they would prefer to reject them). We know from Chapter 2 though, that women are more at risk from men during rejection than men are from women. Furthermore, SDO helps lead to (and justify) gendered hierarchies (Pratto et al., 1994). SDO has even been linked to sexism towards women (e.g. Christopher & Wojda, 2008) and men's support of sexist language (Douglas & Sutton, 2014). It can be considered to be a tool of the advantaged to maintain power, and assertions of male dominance over women resulting from high levels of SDO are likely to be evident within mate rejection. Men high in SDO are likely to believe that they are rightfully at the top of the gender hierarchy, and that women rank beneath them. If a woman rejects a high SDO male, it may seem as though she is subverting this assumed hierarchy, which may be shocking and unacceptable to a man who believes he has a right to oppress her. This, in turn, may lead to expressions of aggression or violence during mate rejection, expressing their outrage or frustration towards the perceived injustice of their hierarchy subversion. In this way, aggression and abuse may have been used as a strategy for avoiding mate rejection, essentially intimidating a partner into submitting to a relationship and to avoid leaving once they are in one. Producing offspring from such relationships would mean that although aggression and coercion within romantic relationships is completely unadvisable, it could be considered a 'successful' mating strategy and therefore such behaviors would have persisted and even perpetuated within human groups.

Taking a broader perspective, adhering to large-scale social hierarchies arguably provided an evolutionary advantage over more egalitarian societies through more specialized job-roles and therefore a more organized collection of resources (Fischer, Hanke, & Sibley, 2012; Sidanius & Pratto, 2001). This would have led to a general increase in survival and fitness across the hierarchy-adhering population, post-agriculture (Fischer, Hanke, & Sibley, 2012). In support, levels of SDO appear to be normally distributed across individuals (Pratto, Sidanius, & Levin, 2006), and social dominance theory (Sidanius & Pratto, 2001) has been argued to be key to providing "an explanation

for why prejudice and discrimination seem ubiquitous across different societies and nations and also extremely resistant to change" (Fischer, Hanke, & Sibley, 2012, p. 439). They state:

> *There is variation across our species in SDO, and people that are advantaged by the existing social hierarchy do tend to be higher in SDO than those for whom the system is less beneficial. ...SDO can be viewed as a general preference for group-based hierarchy that predicts prejudice, and this trend should occur for both advantaged and disadvantaged group members, although it may be stronger for advantaged group members. - Fischer, Hanke, & Sibley, 2012 (p. 439).*

High SDO helps justify the maintenance of power, status, and the status quo; keeping communities stable, although inequitable (see Fischer, Hanke, & Sibley, 2012 for discussion). Our ancestors who held socially dominant beliefs might have also used them to justify the oppression of out-groups and individuals in other ways, including for example, to endorse and benefit from the invasion of occupied land, and slavery. It is also possible that acquiring resources, status, and power over others led to the justifications that we see today in the form of SDO (i.e. societies may have structured themselves in certain ways, and *then* the system-justifications began, weaving into a socially dominant world-view). Most importantly though, SDO probably helped people achieve mating success indirectly through the increased ability to acquire and maintain access to resources (thereby increasing their genetic representation in the next generation). An alternate possibility is that SDO could be due to reactive heritability. Reactive heritability refers to how conditions within ancestral societies can shape or 'calibrate' certain personality traits to specific levels (e.g. high or low) that may be useful for the group overall (or are in reaction to other heritable phenotypic features), through a sequence of cost-benefit tradeoff situations (see Lukaszewski & Roney, 2011; von Rueden, Lukaszewski, & Gurven, 2015). Hence, although the 'cost' of SDO may be high within some situations (e.g. being more inclined to use aggression against a partner), possessing it may have afforded a higher benefit to the group (e.g. helping the group to oppress competitors or threats from local tribes) or the individual, and therefore it propagated.

As above, I suggest that a potential side effect of this generalized, pervasive world-view is that it also impacts how people function within romantic relationships. Within interpersonal contexts, SDO might have also served people by reducing the romantic rejections they experience. This world-view could help some people justify certain attitudes within relationships that serve to intimidate their partner into remaining together when they might otherwise prefer to abandon a relationship. I suggest that SDO is related to aggression during mate rejection, particularly for men. Displaying aggression in response to rejection, for example, might aid in the 'protest' of a rejection (as per Downey et al., 1999), at least in certain contexts. As stated by Fischer and colleagues (2012, p. 438), "this is not a happy or optimistic portrayal"; however aggression does occur post-mate

rejection (as previously discussed) and therefore its historical role and development should be considered.

Investigating such a broad societal perspective may help provide more information about why aggression during and after mate rejection may occur, and how it develops or is rationalized. Furthermore, such scientific investigations may be able to identify traits in potential, current, or previous partners that could place people in danger. Recognizing these cues could assist in selecting a suitable mate, or engaging in rejection prior to establishing a volatile relationship (as argued in Chapter 2). In, Chapter 4 we provide the first evidence that this generalized world-view can link to negative behavior and physical threats in interpersonal relationships, posing risks to the rejecter's survival (and potentially, to the survival of their offspring).

Mate rejection, aggression, and SDO

My colleagues and I explore SDO and aggression further in Chapter 4, as well as in Study 3 of Chapter 5. Since negative, aggressive, and abusive behaviors before, during, or after a relationship will inflict a cost on the victim, there may also be an evolved anti-abuse defense present within human populations (such that people use particular strategies to avoid potential abuse in rejection contexts; as similarly proposed for stalking in Duntley & Buss, 2012). Chapter 2 discussed some possible 'protective' evolutionary strategies that people may use to reject someone who is potentially dangerous, and we explore these further in Chapter 5.

Since women are more at risk from men during rejection than men are from women, Chapter 4 will specifically target men's reactions to romantic rejection by women. Importantly, Chapter 4 will provide the first evidence that men who score higher in SDO are more likely to blame women for romantic rejection, and report having responded to women's past rejection with persistence and manipulation (e.g., convincing her to 'give him another chance'), as well as with aggression and threats of violence (Study 1). In Study 2 my colleagues and I replicate those findings, and further demonstrate that men higher in SDO are more likely to endorse rape myths (e.g., believing that sometimes a woman's barriers need to be "broken down" in order to attain sex), and to want to lower the legal age of sexual consent in women. Two mediators will be shown to explain this relationship, hostile sexism (HS; Glick & Fiske, 1996) and the belief that insubordinate women need to be disciplined (and, potentially, psychological entitlement; see Page 88). Practical and theoretical implications are discussed, leading into Chapter 5, which extends the research to women.

In Chapter 5, we delve deeper into the negativity, violence, and abuse surrounding romantic rejection by investigating how women have reacted to mate rejection in their past. Over three studies, my colleagues and I provide the first evidence that women's SDO (that is, their preference for hierarchical and unequal societies) predicts their past aggressive and violent behavior in

response to mate rejection (like men high in SDO: Chapters 4 and 5). As mentioned, the ability to identify traits associated with violence in another person can be vitally important to one's fitness and survival. So, using both male and female participants we investigated whether people felt that they could perceive SDO in others, and whether the extent to which they saw an ex-partner as being high in SDO predicted how they dealt with mate rejection. Study 4 of Chapter 5 demonstrates that this is indeed possible, and further provides novel evidence that perceived SDO in a partner is linked to increased reports of abuse during romantic rejection.

Next, Study 5 in Chapter 5 investigates the rejection strategies proposed in Chapter 2, to see if using a particular strategy to reject someone might reduce the danger during rejection. Potentially, a strategy that does reduce one's risk of abuse during rejection could be an evolved anti-abuse defense. Although we are not able to pinpoint a rejection strategy that minimized negative or abusive behaviors post-rejection, we do demonstrate that regardless of gender or who performs the rejection: those high in SDO pose a threat during relationship dissolution, and it is important to avoid aggressive or overly positive strategies when rejecting them. Finally, my colleagues and I demonstrate that perceived SDO in an ex-partner can predict the strategy people reported using to terminate the relationship, as well as negative and abusive behaviors post-rejection (Study 5).

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Chapter 4: Social Dominance Orientation Predicts Heterosexual Men's Adverse Reactions to Mate Rejection

The present chapter details my initial empirical investigations into mate rejection. My theorizing in the previous chapters detailed potential male aggression toward women during mate rejection, so I began this work by using both a social and evolutionary approach to understand when male aggression might occur within rejection contexts. As I suggested in Chapter 3, aggression may be most likely when the rejecter is high in SDO. This chapter was published in *Archives of Sexual Behavior* (Kelly, Dubbs, & Barlow, 2015) is provided mostly in its original form (barring small references to other chapters and minor additions), thus using 'we' instead of 'I' throughout.

·   ·   ◆   ◆   ◆   ◆   ·   ·   ·

As outlined in Chapter 2, romantic relationships offer the potential for happiness and mutual support, but they also carry risks, particularly for women. Women in heterosexual relationships are more likely than men to be physically assaulted (Black et al., 2011; Rennison & Welchans, 2002), sexually abused (Black et al., 2011; Naved, 2013), and exploited financially, both during and after the relationship (Romans, Forte, Cohen, Du Mont, & Hyman, 2007). Women are also more likely to be stalked by potential, current, or former male partners (Tjaden & Thoennes, 2000), and murdered by their spouse, partner, or ex-partner (Glass, Laughon, Rutto, Bevacqua, & Campbell, 2008). These forms of victimization occur all too frequently (for stalking statistics, see Black et al., 2011). Thus, it is critical to understand what factors contribute to men's engagement in these behaviors.

In this chapter, we argue that SDO (Pratto et al., 1994)—a preference for inequitable, hierarchical social relations—is a critical predictor of men's pursuit and manipulation of women, and aggression towards them in the context of mate rejection. Specifically, we propose that high SDO men are more likely to refuse to accept blame when rejected; to persistently pursue women; to react with aggression and threats of violence when rejected; to endorse rape myths; and lastly, to advocate for lowering the legal age of sexual consent in women. We posit that all these effects are explained by increased HS (as in Glick & Fiske, 1996) and perhaps more importantly, by a belief that insubordinate women need to be disciplined.

SDO in context

As mentioned in Chapter 3, a person is referred to as high in SDO if they support social hierarchies, believing that some groups of people are better than others (Pratto et al., 1994). People high in SDO have an aversion to equality and rationalize the oppression of other groups (Pratto et

al., 1994). SDO has been shown to predict many forms of prejudice including racism (Akrami, Ekehammar, & Araya, 2000; Kteily, Sidanius, & Levin, 2011; Pratto et al., 1994), homophobia (Altemeyer, 1998; Whitley Jr. & Lee, 2000; Whitley Jr., 1999), negative attitudes towards the mentally ill (Bizer, Hart, & Jekogian, 2012), and sexism (Christopher & Wojda, 2008; Ekehammar, Akrami, & Araya, 2000; Pratto et al., 1994; Sibley, Wilson, & Duckitt, 2007).

Consistent with its link to sexism, SDO has been demonstrated to be positively correlated with various indices of hostility towards women (as reviewed by Sibley et al., 2007), including supporting sexist language (Douglas & Sutton, 2014). High SDO men are less supportive of women's rights (Heaven, 1999), and instead, tend to prefer more traditional gender roles (Christopher & Wojda, 2008). This preference even extends to the bedroom, where those higher in SDO believe that men ought to dictate what happens during sex (Rosenthal, Levy, & Earnshaw, 2012). Furthermore, those high in social dominance believe that women should tolerate sexual harassment, being more likely to think that attractive women should expect sexual advances, and deal with them without protest (Russell & Trigg, 2004). Thus, in line with Pratto and colleagues (1994), SDO appears to be associated with gender, and attitudes surrounding women's sexuality.

SDO and gender relations. Fundamental to SDO is the support for hierarchies. In most societies, men are on the top of the social ladder while women rank further down. Individuals higher in SDO tend to support this order (even viewing it as natural—the way things *should* be), and men typically score higher in SDO than women (Pratto et al., 1994). Hierarchical gender relations have even been shown to be apparent in comparatively egalitarian societies, such as the United States, where men occupy more leadership roles (Bertrand & Hallock, 2000) and earn more money than women (US Department of Labor, 2011), while women engage in nearly twice as much housework (Bianchi, Milkie, Sayer, & Robinson, 2000). Generally, where power differentials exist between the sexes, men are privileged. A notable exception however, occurs in the domain of romantic relationships.

Within heterosexual dating contexts, the gender hierarchy is flipped; Buss (2007) and Trivers (1972) have argued that women typically have greater power than men in terms of being able to accept or reject mates. Women are often described as the 'gatekeepers' of relationships, deciding when and how relationships should progress (Miller, Exner, Williams, & Ehrhardt, 2000; O'Sullivan, Harrison, Morrell, Monroe-Wise, & Kubeka, 2006). Women have also been shown to terminate romantic pairings more frequently than men (for divorce initiation statistics see Brinig & Allen, 2000). We suggest that this presents a conundrum for high SDO men. Such men believe that they are on the top of the hierarchy, and yet when it comes to accepting, progressing, and ending romantic relationships, women often wield the power. As Glick and Fiske (1996) stated when explaining sexism, a heterosexual man's "dyadic dependency on women [for sex and intimacy]

creates an unusual situation in which members of a more powerful group are dependent on members of a subordinate group," (p. 493). We proposed, therefore, that men's SDO would manifest in clear and predictable behaviors within a dating context. We suggested that men high in SDO believe that women are necessarily subordinate. Therefore, romantic rejection—violating such expectations—must be dealt with, rather than accepted. In this chapter we refer to rejection both upon initial approach, and when terminating a romantic relationship.

In particular, we expected that men higher in SDO would tend to externalize the blame when faced with rejection by a woman. Trivers (1972) has suggested that men are more likely to romantically approach women than vice versa, leaving the task of deciding whether or not to accept a relationship to the woman. By exercising her right to choose her own partner, a woman can essentially convey (intentionally or otherwise) that the man is not 'good enough' for her, or that she is 'better than him' (as suggested by Perilloux & Buss, 2008). While rejection is never pleasant, we proposed that the implied power imbalance would be intolerable for a high SDO man, and thus he would respond defensively by rationalizing romantic rejection in a way that refocused the blame on the woman (i.e., "she is rejecting me because there is something wrong with her"), or on some external factor (i.e., "she would accept my advances were there not a situational factor preventing her from doing so"). We refer to this refusal to internalize the rejection, and instead blame the woman, as *externalization of blame*.

Similarly, we expected that men higher in SDO would be relatively dismissive of a woman's rejection, and not take her disinterest at face value. In a hierarchical society, not only may women be prohibited from decision-making, but also—given their subordinate status—decisions made by women may be taken less seriously or discounted. Accordingly, men higher in SDO should persist in pursuing women that have indicated disinterest, compared to men lower in SDO. Specifically, in the face of rejection, we predicted that men higher in SDO would be more likely to engage in stalking and pursuit behaviors, such as following the woman and repeatedly contacting her. From hereon we refer to these tendencies as *persistent manipulation*.

As stated previously, the link between men's aggression and negative relationship outcomes for women is clear. For example, the term 'sexual proprietariness' has been used to describe men's fears around their spouse's (actual or potential) infidelity or attempts to leave the marriage, and has a strong positive association with violence towards women (specifically, wife-killing; Wilson, & Daly, 1993, 1996). Additional literature has shown that hostile masculinity (a construct comprising hostility towards women, negative masculinity, and attitudes supporting aggression) can likewise influence men's sexual aggression (Malamuth, Sockloskie, Koss, & Tanaka, 1991) and domineering behavior towards women (Malamuth, & Thornhill, 1994). Drawing on these past findings, in Study 1 we aimed to similarly examine aggressive, violent, and domineering behaviors, but in the broader

attitudinal context of SDO; extending both the hostile masculinity, sexual proprietariness literatures. Each explains violence towards women through specifically female-oriented prejudices and behaviors, as well as adherence to restrictive and privileged conceptions of masculinity. SDO on the other hand is a more general worldview, relating to social structure and organization. It is not inherently tied to gender, but rather a fundamental belief that some people are better than others, and that societal benefits and rewards should be distributed according to the structured, hierarchical social order. Like hostile masculinity and sexual proprietariness, as well as the social rejection concepts discussed in Chapter 1, we proposed that SDO would predict materially harmful responses to rejection.

Thus, this chapter will elucidate how worldviews (rather than specific views relating to gender) might help to explain how men treat women in romantic contexts. Specifically, we proposed that high SDO men would invoke manipulative and perhaps even aggressive tactics to negate (or retaliate against) a woman's rejection. We argued that men high in SDO might use manipulation (e.g. undermining her self-esteem; similar to that seen in Romans et al., 2007) in an effort to coerce a rejecting woman into acceptance. In a similar vein, more high SDO men may attempt to undermine a woman's choice by using verbal abuse and threats of physical violence against her. Additionally, these men may use threats of self-harm as an aggressive strategy to retain their partner (as argued by Downey, Bonica, and Rincon, 1999). Buss (2000) asserts that this tactic may evoke commitment and love by inducing guilt in the person who would have otherwise engaged in rejection. On the surface, this strategy may seem like a submissive gesture, but suicide threats in intimate relationships have been linked with impulsive aggression (Kerr & Capaldi, 2011) as well as more severe acts of intimate partner violence (Conner, Cerulli, & Caine, 2002). Thus, threats of self-harm may actually represent a hostile retaliatory response to rejection that can be used to manipulate women into submission. From hereon we refer to this cluster of behaviors as *aggressive manipulation*.

Study 1

In Study 1 we tested the hypotheses that SDO would predict the extent that men externalized blame for rejection, and engaged in persistent and aggressive manipulative behaviors in the face of rejection. When developing Study 1 we noted that attitudes often do *not* directly translate into behaviors (for a classic example see LaPiere, 1934). In light of this we chose to not only measure men's attitudes (externalization of blame), but also their self-reported past engagement in persistent and aggressive behaviors after rejection.

We further wished to test whether SDO was a unique predictor of men's attitudes and behaviors above other relevant individual differences. Therefore, in Study 1 we included the Ten-Item Personality Inventory as a covariate (TIPI; Gosling, Rentfrow, & Swann, 2003). We also measured relationship status as an additional control variable, to rule out the possibility that relationship success (or lack thereof) might account for any association observed between SDO and the outcome variables (i.e., externalization of blame, persistent manipulation, and aggressive manipulation).

Method

Participants

Data were collected from 163 male North American participants using the online platform SocialSci (www.socialsci.com). SocialSci was chosen for this study because it uses a crosschecking system to ensure the honesty and reliability of their participant pool, excluding participants who provide inconsistent answers across studies. Those who participated in Study 1 were existing members of this participant pool (that is, volunteers earning voucher credits in exchange for points collected from completing surveys). Eligible participants were notified of the study through the site's webpage or via targeted emails. The study was advertised as an investigation into "Women, Dating and Rejection", and participants were explicitly warned that the survey would ask about their previous experience with romantic rejection. It was a requirement of the survey that participants had experienced romantic rejection at least once in their lifetime. Upon finishing the survey, each participant received an allocation of points to compensate for his time. Data from five men were deleted prior to analysis as they either identified as bisexual or answered too few questions. This left us with a final sample of 158 heterosexual males aged between 18 and 39 ($M = 24.9$, $SD = 4.9$). The majority of the men were white (80.9%), while the rest identified as East Asian (12.1%), Latino (2.5%), Black (1.9%), South Asian (1.3%), or mixed-heritage (1.3%); 41.3% were in a relationship, and 39.0% were single, while a separate 15.8% reported 'married' as their relationship status, and 3.9% were dating but not exclusive.

Measures

Demographic information. We collected information about gender, age, ethnicity, sexual orientation, relationship status, propensity for rejection, and number of long-term relationships, prior to presenting the body of the questionnaire. Relationship status was coded into four distinct categories (as above): 1 = 'Single' (including divorced, separated, and widowed), 2 = 'Dating but not exclusive', 3 = 'In a relationship' (including cohabiting and engaged), and 4 = 'married'. The number of long-term or 'serious' relationships (over the lifetime) was simply entered by the participant in numerals, and propensity for rejection was measured using the question, 'Out of all the long-term relationships you have had, to what degree were YOU responsible for ending the relationship (e.g., you told your partner that you wanted to end it, or you abandoned the relationship)?' with response options ranging from 1 = 'Partner Always Ended It', to 7 = 'I Always Ended It'.

The ten-item personality inventory. The TIPI (Gosling et al., 2003) was included to assess the personality traits of extraversion, conscientiousness, neuroticism, openness to experience, and agreeableness. Participants were asked to rate whether a series of items applied to them, such as 'extraverted, enthusiastic' and 'disorganized, careless'. These were rated on a scale from 1 = 'Disagree Strongly', to 7 = 'Agree Strongly'. Each trait was measured using two items (one reverse scored) that were then averaged so that high scores indicated a high trait measure (as per procedure in Gosling et al., 2003). The TIPI is a commonly used, well-validated measure, with high test-retest reliability (Gosling et al., 2003), convergent validity (Ehrhart, et al., 2009) and discriminant validity (Gosling et al., 2003).

Social dominance orientation. SDO was assessed using the SDO Scale (Pratto et al., 1994; see Appendix A). This 14-item scale asks participants to rate their opinion of a series of statements such as, 'Some people are just inferior to others', and 'To get ahead in life, it is sometimes necessary to step on others', with anchor points of 1='Very Negative', through to 7='Very Positive'. Seven items were reverse scored and all items were averaged so that a high score indicated high SDO. In the present study, as in past research, this scale was reliable (α=.87). Repeated investigation into SDO has shown that it is a valid measure. Specifically, it has shown high test-retest reliability (Sibley & Liu, 2010), and criterion validity (Ho et al., 2012; Sibley & Liu, 2010; Pratto et al. 1994). Further, it has repeatedly shown discriminant validity (Sibley & Liu, 2010), predicting prejudice over and above related concepts including Right-Wing Authoritarianism (Asbrock, Sibley, & Duckitt, 2010), as well as being distinguishable from interpersonal dominance and conservatism (Pratto et al. 1994).

Externalization of blame. Externalizing the blame for rejection was measured using an original 4-item *externalization of blame* scale, where participants rated their agreement with a series

of statements (refer to Appendix A). The items were, 'I feel that when a girl doesn't reciprocate my advances, it's because she's playing hard to get,' 'I feel that when a girl doesn't reciprocate my advances, it's because she doesn't want to seem desperate or clingy', 'When a girl rejects me at a club or bar, it's because she doesn't want to leave her friends', 'When a girl rejects me, it's because she's a bitch [/she must be frigid]'. This scale was scored from 1='Strongly Disagree' to 7='Strongly Agree', and all items were averaged so that a high score indicated greater externalization of blame for rejection (α=.76).

Persistent manipulation. Persistent manipulation was measured using a 7-item scale that drew on work conducted by Langhinrichsen-Rohling, Palarea, Cohen, and Rohling (2000). In their paper they listed a battery of inapproporiate aggressive and pursuit behaviors that men may engage in after relationship dissolution, from which we drew both our persistent and aggressive manipulation items (see below). Our *persistent manipulation* scale asked participants to identify how many times (over the course of their life) they had used persistent strategies after a woman had rejected them (refer to Appendix A). These items were, 'Try to show her that I've changed, so she'll take me back', 'persist in calling/texting/emailing in the hopes that she'll change her mind', 'Talk to her and try to convince her to take me back', 'Buy her presents', 'Try to impress her by exaggerating/lying about details of my life', 'Try to make her jealous by pursuing other girls or her friends', and 'Follow her around in the hopes that she'll change her mind'. The response options were 1='0' times, 2='2-4' times, 3='5-10' times and 4='10+' times. All items were averaged so that a high score indicated greater past use of persistent manipulation (α=.87).

Aggressive manipulation. Aggressive manipulation was measured using a 4-item scale (also adapted from Langhinrichsen-Rohling et al., 2000), with the same response options as the persistent manipulation scale. Participants were asked to identify how many times (over their lifetime) they had used aggressive strategies after a woman had rejected them (see Appendix A). The items were, 'Threaten to physically hurt her if she doesn't take me back', 'Threaten to physically hurt myself if she doesn't take me back', 'Try to sabotage her other dates', and 'Try to alienate her from her friends so all she has is me'. Items were averaged so that a high score indicated greater past use of aggressive manipulation (α=.93).

Procedure

After a series of demographic questions, participants completed the measures assessing SDO and their personality. Following this, they were asked questions about their feelings towards rejection (the *externalization of blame* scale), as well as their previous reactions to being rejected (the *persistent manipulation* and *aggressive manipulation* scales). The order of the questionnaire remained constant between participants; however questions within each of the main test scales (i.e.

externalization of blame, *persistent manipulation* and *aggressive manipulation*) were randomized. All analyses were performed using participants' calculated average score for each respective scale.

Ethical Considerations

We were aware that being involved in our research program could be distressing for some participants, especially those who have been involved in a violent reaction to rejection. Because of this, at all points prior to our studies (within all advertising materials, information screens and consent forms) we explicitly warned participants that they would be asked about their experiences of rejecting someone, and being rejected themselves. Additionally, we offered multiple avenues of withdrawal, educating participants about how to skip questions they did not want to engage with, as well as how to exit the study for full withdrawal.

A further concern was that the research could prime or even normalize manipulative, antisocial, and even dangerous reactions to rejection. Throughout most of our research program (Studies 3, 4, and 5), questions about violence, abuse, manipulative, and antisocial behaviour were widely interspersed between statements about positive actions and behaviors during rejection and romantic relationships. Further, in all debriefing materials we discussed intimate partner violence and the predicted link between SDO and certain negative behaviors in romantic relationships. We discussed the need to reduce violence against women and that empathy, tolerance, and altruism are valued within Western dating culture.

Results

Descriptive statistics

Means, standard deviations and intercorrelations for all measures (*N*=154) are displayed in Table 1. Fewer than 5% of participants had missing data; hence listwise deletion was used.

Preliminary analyses

First, we were aware that there might have been a fundamental difference between men high and low in SDO in terms of mating strategies or experiences with rejection. For example, we recognized that it was possible that men high in SDO might simply approach more women, and thus be rejected more frequently. Alternatively, it was possible that men high in SDO might be disproportionately 'dumped' in romantic relationships (compared to men low in SDO), and hence it might be their anger about relationships and women (rather than SDO) driving any observed relationships. As such, we included measures of the number of relationships men had, and their past experiences with rejection (detailed above in Demographic Information). Importantly, SDO was not related to the number of relationships men reported having had in their lifetime (*r*=-.03, *p*=.772), or the proportion of relationships that they had ended (*r*=.06, *p*=.501). All regression analyses reported below held and were substantially unchanged with the introduction of these two variables as

additional controls. Given that they were unrelated to SDO, we did not include them in the final analyses.

Main analyses

Three separate hierarchical multiple regression analyses were used to examine SDO as a predictor of externalization of blame, persistent manipulation, and aggressive manipulation (respectively; Step 1); with control variables (age, relationship status, and personality scores for extraversion, conscientiousness, neuroticism, openness to experience, and agreeableness) entered in Step 2 to ensure that effects held when controlling for relevant variables. Table 2 displays the beta values and change statistics from all three regressions.

Table 1

Study 1: Uncentered Means, Standard Deviations, Ranges, and Intercorrelations

Variable	M	SD	Range	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Age (18–39)	24.9	4.9	21.0										
2. Relationship status (1–4)	2.4	1.5	3.0	.31**									
3. Social dominance (1–7)	2.8	1.0	4.9	−.03	−.11								
4. Extraversion (1–7)	3.5	1.5	6.0	−.04	.02	.11							
5. Agreeableness (1–7)	4.7	1.7	5.0	−.05	−.01	−.13	.00						
6. Conscientiousness (1–7)	5.0	1.2	6.0	−.03	.10	−.10	−.06	.22**					
7. Neuroticism (1–7)	2.8	1.3	5.5	.08	−.08	.13	−.08	−.13	−.19*				
8. Openness to experience (1–7)	5.3	1.1	4.5	.06	.08	−.16*	.30**	.01	−.03	−.26**			
9. Externalization of blame (1–7)	2.4	1.0	5.3	−.01	−.07	.42**	.20*	−.04	−.05	.06	−.02		
10. Persistent manipulation (0–4)	0.5	0.6	2.9	.23**	−.11	.24**	.16	−.15	−.13	.17*	.01	.28**	
11. Aggressive manipulation (0–4)	0.1	0.5	2.3	−.03	−.04	.28**	.27**	−.17	−.14	.15	−.15	.32**	.50**

$* p \leq .05, ** p \leq .01, *** p \leq .001$

Table 2

Study 1: Predicting externalization of blame, persistent manipulation, and aggressive manipulation as a function of social dominance orientation (Block 1) and the control variables (Block 2)

	Externalization of blame		Persistent manipulation		Aggressive manipulation	
	Block 1	Block 2	Block 1	Block 2	Block 1	Block 2
Social dominance (SDO)	.43***	.41***	.32***	.25**	.36***	.28***
Age		.02		.15*		−.05
Relationship status		−.02		−.07		.04
Extraversion		.16*		.19*		.20*
Conscientiousness		.00		−.08		−.07
Openness to experience		.00		−.08		−.21*
Agreeableness		.01		−.03		−.08
Neuroticism		.01		.15		.05
R^2	.18***	.21***	.10***	.20***	.13***	.21***
$R^2_{ch.}$		.03		.10**		.08*

$*p \leq .05, **p \leq .01, ***p \leq .001$

Predicting externalization of blame. At Step 1, a significant amount of the variance in externalization of blame was accounted for by SDO, $F(1,152)=34.28$, $R^2=.18$, $p<.001$. That is, participants higher in SDO were more likely to externalize blame for romantic rejection onto women, or the situation (see Table 2). At Step 2, age, relationship status, and personality variables combined did not account for a significant amount of the variance in externalization of blame scores, $R^2_{ch.}=.03$, $F_{ch.}(7,145)=.67$, $p=.699$.

Predicting persistent manipulation. A significant amount of the variance in persistent manipulation was accounted for by SDO at Step 1, $F(1,152)=16.74$, $R^2=.10$, $p<.001$. Participants who were higher in SDO stated that they had reacted to relationship rejection in the past by using persistent tactics more frequently than those lower in SDO. With the entry of the control variables (age, relationship status, and personality scores) at Step 2, additional variance was accounted for, $R^2_{ch.}=.10$, $F_{ch.}(7,145)=2.45$, $p=.021$. Older participants reported greater use of persistent manipulation, as well as those higher in extroversion. Importantly, SDO remained a significant predictor of persistent manipulation. Relationship status, conscientiousness, neuroticism, openness to experience, and agreeableness were not unique predictors of persistent manipulation.

Predicting aggressive manipulation. A significant amount of the variance in aggressive manipulation was accounted for by SDO at Step 1, $F(1,152)=22.52$, $R^2=.13$, $p<.001$. Specifically, participants who were higher in social dominance orientation stated that they had reacted to relationship rejection by using aggressive manipulative tactics more frequently than those lower in SDO. At Step 2, the control variables (age, relationship status, and personality scores) significantly contributed to predicting aggressive manipulation, $R^2_{ch.}=.08$, $F_{ch}(7,145)=2.15$, $p=.042$. Those higher in extroversion reported greater use of aggressive manipulation, while participants who were more open to experiences reported less. Critically, SDO remained a strong and significant predictor of aggressive manipulation. Age, relationship status, conscientiousness, neuroticism, and agreeableness were not unique predictors of aggressive manipulation.

Discussion

In Study 1 we tested the association between men's SDO and their attitudes and self-reported past behavior towards romantic rejection. We hypothesized that men higher in SDO would be more likely to externalize the blame for rejection, opting instead to blame the woman or the situation. We also proposed that SDO would predict men's past engagement in persistent (e.g., following women) and aggressive (e.g., threatening to hurt women) manipulative strategies in response to rejection. The results strongly supported our hypotheses. For example, men higher in SDO were more likely to score higher on a scale that examined the extent to which they thought rejecting women were not indicating genuine disinterest, but rather playing 'hard to get', being 'frigid' or a 'bitch', or that an external factor was to blame for the rejection. Likewise, men higher in SDO were more likely to

report having persistently pursued women who had rejected them in the past (e.g., following them, repeatedly calling them), and were also comparatively likely to report that they had responded agressively to rejection in the past, threatening to physically harm rejecting women and working to sabotage their other dates. It was *not* the case that men high in SDO differed in terms of the extent to which they were rejected, or their number of past relationships. In fact, preliminary analyses revealed that SDO was unrelated to either the number of relationships men had reported having in their lifetime, or the extent to which they (versus their partner) had ended previous relationships. Finally, all effects held with the introduction of relevant control variables, including age, relationship status, and the TIPI. In short, it seems unlikely that a third variable, such as lack of dating success, explains the observed relationship between SDO and negative reactions to romantic rejection.

This study provides the first evidence that SDO may be critically implicated in men's rationalization of blame for romantic rejection, and the pursuit and aggressive behaviors that are often exhibited by men who have been rejected. We hypothesize that such attitudes and behaviors may serve to perpetuate and normalize men's societal dominance over women (as argued by Sidanius, 1993; see also Sidanius & Pratto, 1993), and thus, solidify the gender hierarchy that those high in SDO support. Our findings broadly reflect past research that has shown a positive association between SDO and tolerance for sexual harassment (Russell & Trigg, 2004), preferences for traditional gender roles (Christopher & Wojda, 2008), and a belief that men should dictate what happens during sex (Rosenthal et al., 2012).

While our results illustrate that SDO predicts hostile behaviors towards women (i.e., persistent and aggressive manipulation), we cannot speak to the mechanism through which SDO works to influence such behaviors. That is, in Study 1 we do not explain *why* men higher in SDO externalize the blame for rejection, or have engaged in persistent or aggressive behaviors towards women who rejected them in the past. Given that a clear link has been demonstrated between SDO and hostile sexism (Sibley et al., 2007), it is possible that high SDO men simply have less respect for women and as a result, engage in more of the negative behaviors seen in Study 1. In Study 2, however, we propose that the pattern is more complex, and that SDO works both through increased hostile sexism *and* a desire to discipline insubordinate or unacquiescent women.

Study 2

In Study 1 we examined the relationship between SDO and externalization of blame, persistent manipulation, and aggressive manipulation. In Study 2 we wanted to replicate these findings, and secondly investigate SDO as a predictor of other relevant dependent variables in order to test the robustness of our effect. Further to this, in Study 2 we wanted to examine the

mechanisms underlying the observed relationship between SDO and attitudes towards, as well as manipulation of, female rejecters.

What explains the relationship between SDO and negativity towards women in romantic contexts?

While SDO is a preference for social hierarchies in general, it is associated with gender and a belief that men ought to have precedence over women. Indeed, research has indicated that SDO is positively related to hostile sexism, with SDO having predicted increases in hostile sexism over time (Sibley et al., 2007). Hostile sexism is a prejudice directed at women, particularly those who seek equality and power (e.g., feminists), who are often further stereotyped as having an agenda aimed at undermining and superseding male authority. We argued that SDO should thus work through hostile sexism to influence externalization of blame, persistent manipulation, and aggressive manipulation (see Figure A). That is, even though women are traditionally thought of as the 'gate keepers' in romantic relationships, men higher in SDO (and consequently higher in hostile sexism) likely desire to circumvent female authority over romantic decisions, and attempt to do so by using the aforementioned tactics.
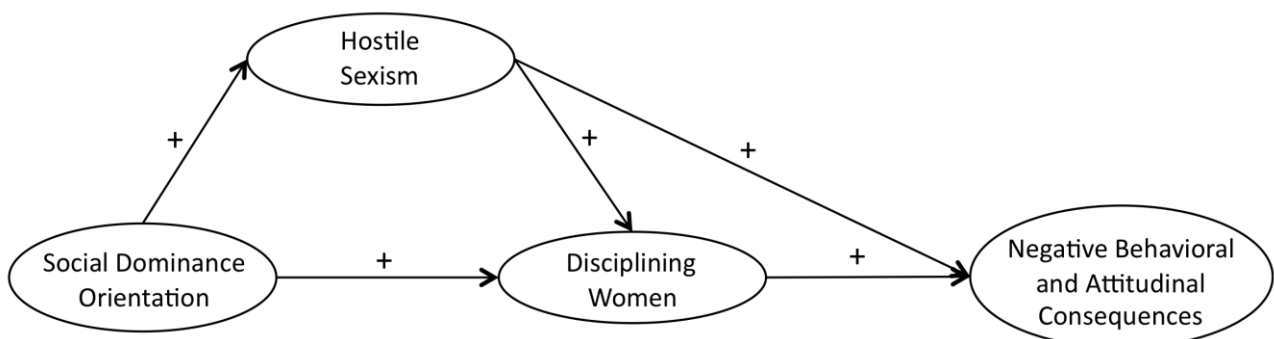
Figure A

Proposed mediation model between SDO, hostile sexism and discipline, as well as discipline's and hostile sexism's subsequent expected correlational effects on all dependent variables.

If, as proposed, hostile sexism *is* driving the relationship between SDO and the negative behaviors found in Study 1, we expected that an additional variable might help to explain the observed associations. We proposed that for men higher in SDO, romantic rejection represents an undesired subversion of the gender hierarchy, where women are seen as *inappropriately* exerting power over men. We expected that men who endorsed this gender hierarchy (and tended to derogate non-traditional women, i.e. those high in hostile sexism) would act to ensure the hierarchy is protected. We suggested that one way to protect the hierarchy, that is, keep those lower on the ladder 'in their place', might be to correct or discipline them. Specifically, we suggested that men

higher in SDO would be driven to ensure that female rejecters were put back in their place within the hierarchy (as suggested by Douglas, & Sutton, 2014, for SDO in general), an act that might require the use of verbal or physical discipline. A desire to discipline women, we suggested, might then manifest as the types of violent and persistent behaviors we saw in Study 1. Therefore, in addition to hostile sexism, in Study 2 we introduced a novel mediator to predict our dependent variables, the desire to discipline women (from hereon in also referred to as *discipline*). This measure examined the extent to which men believe that women require—and respond well to—discipline to improve their behavior. Theoretical work on sexual proprietariness by Wilson and Daly (1993, 1996) lends support to this assertion, implying that men may beat their wives in attempt to discourage infidelity. The threat of violence (and even death) is likely to be used as a deliberate tool to discourage infidelity in women, therefore 'teaching' them how men expect them to behave. Thus, to extend this to the broader attitudinal domain of SDO, we reasoned that men high in SDO would be more hostile towards women. Subsequently, we expected that those who were more hostilely sexist would hold greater desires to discipline women, thus attempting to correct their behavior. Specifically, as illustrated in Figure A, we suggested that SDO would directly predict hostile sexism (as in past research), and in turn, that hostile sexism would be related to the extent to which men reported that women require discipline. In addition, we expected SDO to exert a unique influence on discipline. Since SDO is inherently associated with hierarchy maintenance, we expected men high in SDO to endorse disciplining those lower in the hierarchy (in this case, women) irrespective of how they felt about women in power. As mentioned, we also expected the desire to discipline women to have specific consequences for how men treated women during rejection. Thus, in addition to the direct pathway from SDO to discipline, the proposed model in Figure A depicts pathways from discipline to each of the dependent variables. In summary, we expected that SDO would predict the dependent variables from Study 1 through both hostile sexism and a desire to discipline women.

Additional dependent variables. As in Study 1, in Study 2 we hypothesized that SDO would predict externalization of blame, persistent manipulation, and aggressive manipulation. We further proposed that men's SDO would predict two additional dependent variables: rape myth endorsement and a desire to lower the age of sexual consent for women.

When externalizing blame, our findings from Study 1 suggested that men higher in SDO were less likely to attribute rejection to a woman's genuine sexual or romantic disinterest. Beyond mere attitudes, these men also reported having engaged in manipulative, coercive, and aggressive behaviors towards female rejecters (at least in comparison to those lower in SDO). Based on these results, it seemed likely that higher SDO men would tend to believe that their own desires within a romantic context should be considered over and above the woman's, and further, that rejection may

be countered or negotiated through manipulative means. Furthermore, we expected SDO to be positively related to men's perception that they have the right to sexually access a woman regardless of her wishes, especially if her behavior is deemed unscrupulous (i.e. women should expect that a man will want sex if she is flirtatious or dressed provocatively). Thus, we included a measure of *rape myth endorsement* as an additional variable dependent on SDO.

Relatedly, previous literature has suggested that SDO is linked to a desire to control women's sexuality. Men higher in SDO have been shown to be more likely to hold preferences for traditional gender roles (Christopher & Wojda, 2008), and to believe that men should dictate what happens during sex (Rosenthal et al., 2012). In light of this, we proposed that men higher in SDO would endorse lowering the age of sexual consent for women (hereon in simply refered to as *age of consent*), because (in terms of power, status, and sexual experience) an adolescent woman is typically at a disadvantage compared to an older man (as suggested by the work of Glass et al., 2008). Specifically, past research has suggested that young women are more likely than older women to misinterpret inter-partner violence or controlling, emotionally abusive behaviors as indicative of immense commitment or love (as argued by Seimer, 2004). We suggested that for men high in SDO, a desire to lower the age of sexual consent may well be strategic, giving them access to women who may forgive, or even value, the type of persistent or aggressive behaviors men high in SDO reported engaging in (as seen in Study 1). Indeed, Santos-Iglesias, Sierra, and Vallejo-Medina (2013) have argued that women who are less sexually assertive may be at greater risk of sexual coercion, aggression and abuse; and they demonstrated that sexual assertiveness was more prevalent in older women. Thus, we believed that for men high in SDO, their desires to dominate and discipline those lower in the hierarchy (namely, women) would manifest as desires to control women's sexuality and gain legal access to less assertive and less sexually experienced women (i.e. young women).

Summary of hypotheses. In Study 1 we hypothesized that SDO would directly predict hostile sexism (as per Sibley et al., 2007) and support for disciplining women, and further that SDO would predict support for disciplining women in part though increased hostile sexism. In turn, we posited that both hostile sexism and discipline would predict men's externalization of blame for rejection, rape myth endorsement, persistent manipulation, aggressive manipulation and support for lowering the age of consent in women. As such, we expected SDO to have an indirect link with outcome measures, fully explained by both hostile sexism and discipline. As our effects in Study 1 held with the inclusion of personality variables and other relevant controls, these measures were excluded in Study 2.

Method

Participants

Data were collected from 416 participants in an online survey. Of these, most ($n = 392$) were recruited from the online survey platform SocialSci (as per Study 1, except where noted; refer to Study 1 Method for details of SocialSci). The remainder of our participants were unpaid volunteers from an online 'Male Rights' forum ($n = 24$). These men were recruited via a survey link that was posted on the 'Male Rights' section of a large social networking and information sharing website (www.reddit.com). Results were effectively identical whether or not participants from the Male Rights forum were excluded. As such, we retained all available data. Individuals who participated in Study 1 on SocialSci were ineligible to participate in Study 2, thus there was no overlap in participants between the studies. After excluding participants who provided too few responses ($n = 7$), and those who identified as female ($n = 3$), bisexual ($n = 6$), or homosexual ($n = 2$); we were left with a sample of 398 heterosexual males aged between 18 and 81 ($M = 28.9$, $SD = 10.1$). The majority of the men identified as White (80.2%), while the rest identified their descent as East Asian (7.5%), South Asian (3.5%), Latino (2.5%), Black (2.5%), or Other (3.8%); 30.7% were in a relationship and 38.5% were single; while an additional 27.0% were married and 3.8% were dating but not exclusive.

Measures

Demographic information. We collected information about gender, age, ethnicity, sexual orientation, and relationship status as per Study 1. Relationship status was again coded into four distinct categories.

Independent Variable.

Social dominance orientation. Participants completed the SDO scale as per Study 1 (α = .90).

Proposed Mediators.

Hostile sexism. Hostile sexism was measured using 11 items from Glick and Fiske's (1996) Ambivalent Sexism Inventory. Example items include: 'Women seek to gain power by getting control over men' and 'Women are too easily offended'. Response options ranged from 1 = 'Strongly Disagree' to 7 = 'Strongly Agree'. Three items were reverse scored (as per instructions; Glick & Fiske, 1996) and then all items were averaged so that a high score indicated high levels of hostile sexism (α = .91). Past research has shown that this scale has high test-retest reliability (Glick et al., 2000), criterion validity (Glick & Fiske, 1996; Glick et al., 2000), and discriminant validity (Glick & Fiske, 1996).

Discipline. An original 5-item scale measured men's endorsement of disciplining women. The items were, 'Women respond well to punishment', 'When a woman does something wrong, she should be corrected', 'I think that sometimes women, like children, need a spanking when they've done something wrong', 'Women sometimes need a firm hand', and 'A good spanking can teach a woman to behave.' Response options ranged from 1 = 'Strongly Disagree' to 7 = 'Strongly Agree'. Items were averaged so that high scores indicated stronger agreement that women should be disciplined (α = .81).

Dependent Variables.

Externalization of blame. In addition to the 4 items used in Study 1, we added two extra items to cover additional facets of externalization of blame. These were: 'If a woman rejects me at a club or bar, I don't usually take her seriously,' and, 'Women enjoy rejecting men.' The new 6-item scale was reliable (α = .76), and items were averaged with high scores reflecting greater externalization of blame for the rejection.

Rape myth endorsement. A 9-item *rape myth endorsement* scale was created for Study 2, adapted from the Sexual Harrassment Attitude Scale (Mazer & Percival, 1989) and the Illinois Rape Myth Acceptance Scale (Payne, Lonsway, & Fitzgerald, 1999). In our scale we avoided overt mention of rape to encourage variablity in responses and reduce social desirability concerns. Items included: 'Women play hard to get, therefore they sometimes say no to sex when they actually want it', 'Sometimes you have to try to break down a woman's barriers in order to get her to have sex', and 'When girls say no, they really mean yes,'. The scale was also scored from 1 = 'Strongly Disagree' to 7 = 'Strongly Agree', and items were averaged so that a high score indicated stronger rape myth endorsement (α = .88).

Persistent manipulation. Persistent manipulation was measured using the seven items from Study 1, with the addition of one item to include an additional persistent manipulative strategy ('Shown up at places where she was likely to be'). This new 8-item scale was reliable (α = .87), with high scores indicating greater past use of persistent manipulation.

Aggressive manipulation. Aggressive manipulation was measured using the four original items from Study 1, plus three additional items to reflect more overt aggressive and manipulative behaviors. The added items were, 'Got physically aggressive', 'Posted negative messages on the internet, e.g. via social networking sites', and 'Threatened suicide', creating a new 7-item scale (α = .94), with high scores indicating greater past use of aggressive manipulation.

Age of consent. A 1-item *age of consent* measure was also created for Study 2. It was: 'I believe that the age of consent should be lowered in women'. This was scored from 1 = 'Strongly Disagree' to 7 = 'Strongly Agree', with high scores indicating that the participant supported reducing the legal age of sexual consent for women.

Procedure

The procedure was the same as in Study 1, except where noted. Participants completed the demographic questions, then the SDO scale and then answered a series of questions (all of the remaining measures) that were randomized within grids to avoid order effects.

Results

Descriptive statistics

Means, standard deviations and intercorrelations for all measures (n = 398 heterosexual participants) are displayed in Table 3. Fewer than 5% of participants indicated missing data, and again listwise deletion was used.

Table 3

Study 2: Uncentered Means, Standard Deviations, Ranges, and Intercorrelations

Variable	M	SD	Range	1.	2.	3.	4.	5.	6.	7.	8.
1. Age (18–81)	28.9	10.1	63.0								
2. Social dominance (1–7)	2.8	1.1	5.1	.02							
3. Hostile sexism (1–7)	3.4	1.2	6.0	−.04	.51**						
4. Disciplining women (1–7)	2.4	1.1	6.0	−.03	.46**	.60**					
5. Externalization of blame (1–7)	2.7	0.9	5.3	−.03	.39**	.61**	.66**				
6. Rape myth endorsement (1–7)	2.7	1.1	5.4	−.06	.42**	.66**	.70**	.73**			
7. Persistent manipulation (0–4)	0.5	0.6	2.7	.12*	.08	.15**	.23**	.31**	.28**		
8. Aggressive manipulation (0–4)	0.2	0.5	3.0	.03	.20**	.14**	.35**	.39**	.31**	.68**	
9. Lowering age of consent (1–7)	3.2	1.7	6.0	−.06	.22**	.26**	.35**	.33**	.34**	.08	.12*

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Structural equation modelling

Structural equation modeling (SEM) with latent variables was undertaken using AMOS 20. As support for lowering the age of consent was measured using a single item it was treated as an observed variable. The remaining measures were treated as latent variables in order to model measurement error. Multiple indicators were created for each latent variable using partial disaggregation approach (see Little, Cunningham, Shahar, & Widaman, 2002 for justification). Small groupings of random items (minimum 2 items per group, maximum 4) from each respective variable were created and then averaged. Specifically, we created four indicators for SDO, two indicators for discipline, and three indicators each for hostile sexism, externalization of blame, rape myth endorsement, persistent manipulation and aggressive manipulation. Dependent variables were allowed to correlate (for a similar example, see Sibley & Duckitt, 2009).

The model was assessed for goodness-of-fit using the chi-squared test, chi-squared/degree of freedom ratio, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR). According to Hu and Bentler (1995), indications of a model with a satisfactory fit include a non-significant chi-squared, or a chi-squared/*df* ratio ≤ 3, a CFI $\geq .95$, and values of RMSEA less than .06 and SRMR less than .08.

We initially tested the full, predicted model, which provided a satisfactory fit to the data, $\chi^2(187, N = 398) = 420.41$, $p < .001$, $\chi^2/df = 2.25$; CFI = .96; RMSEA = .06; SRMR = .04; two of the proposed paths were not significant. Specifically, the pathways between hostile sexism and persistent manipulation (DE = -.05, $p = .402$), and hostile sexism and a desire to lower the age of consent were effectively zero (DE = .01, $p = .888$). That is, they explained no further variance over and above other paths included in the model. Consequently these links were excluded in the final analyses reported below. Excluding these pathways resulted in similar model fit statistics, and better represented the structure of the data. Thus, Figure B presents the SEM with the removal of the two non-significant paths.
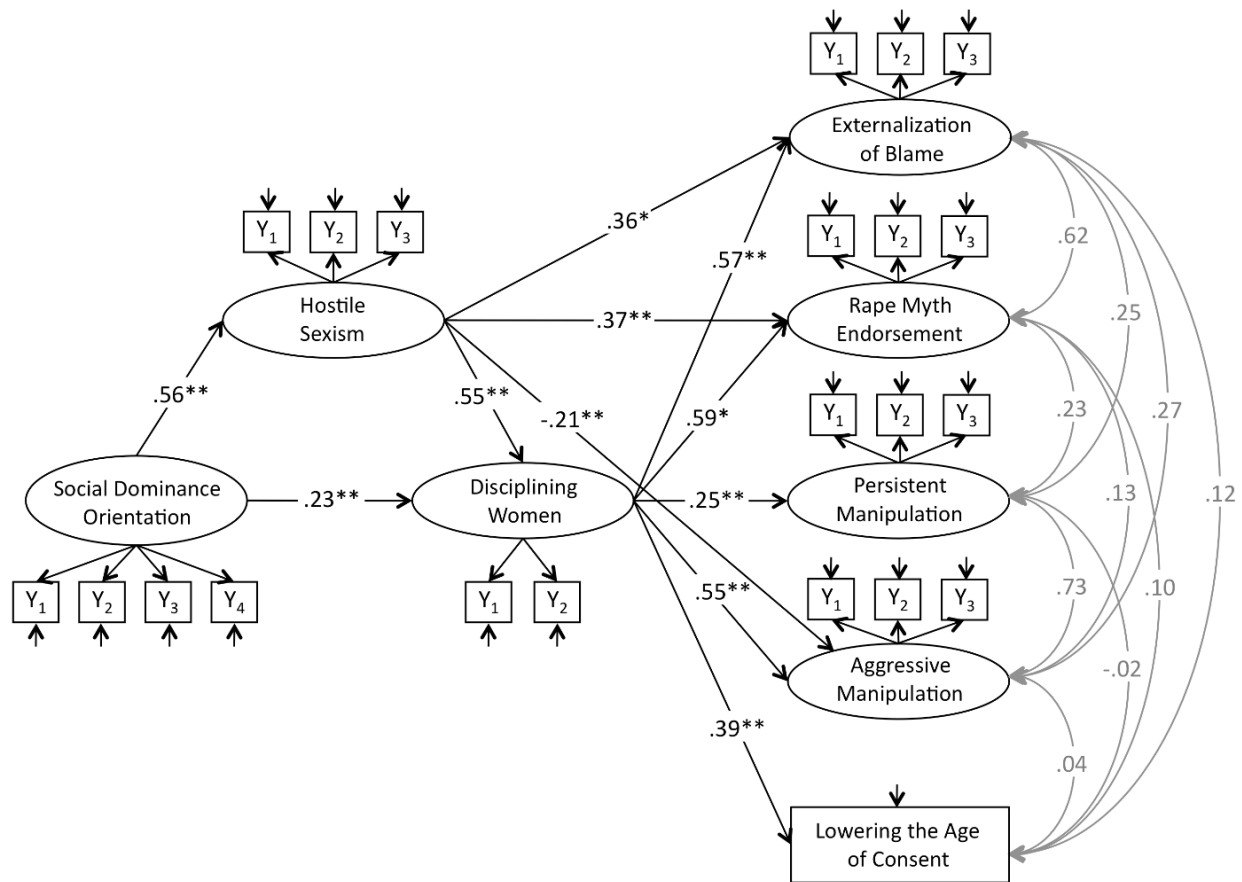
Figure B

Structural equation model of the effects of SDO on externalization of blame, rape myth endorsement, persistent manipulation, aggressive manipulation, and lowering the age of consent; with hostile sexism and support for disciplining women as mediating variables. *Note: Correlations between the latent variables are shown and are significant at p≤.001. *p≤.05, **p≤.01, ***p≤.001; N=399.*

Indicators revealed that the final model was also a good fit to the data, $\chi^2(189, N = 398) = 420.81$, $p < .001$, $\chi^2/df = 2.23$; CFI = .96; RMSEA = .06; SRMR = .04. The results of the SEM can be seen in Figure B. As expected, as SDO increased, so too did hostile sexism and the belief that women require—and respond well to—discipline. Likewise, men higher in hostile sexism were also more likely to believe that women require discipline, to externalize the blame for the rejection, and to endorse rape myths. As predicted, holding attitudes that women need to be disciplined also directly predicted externalizing the blame for rejection, endorsing rape myths, previous persistent and aggressive reactions to rejection, and support for lowering the age of consent in women.

An unexpected residual relationship between hostile sexism and aggressive manipulation also emerged. After accounting for the association between discipline and aggressive manipulation, as

well as hostile sexism's positive indirect effects on aggressive manipulation through discipline, hostile sexism directly and negatively predicted aggressive manipulation. In Table 3 it can be seen that at the zero-order level, hostile sexism is positively and significantly related to aggressive manipulation. Thus, it appears that discipline acted as a suppressor variable, revealing that residual variance in hostile sexism (unrelated to the desire to discipline women) is negatively related to aggressive manipulation.

The final model accounted for a substantial percentage of the variance in both of the mediators—hostile sexism (31.0%), disciplining women (50.0%); and in all five dependent variables—externalization of blame (73.4%), rape myth endorsement (77.6%), persistent manipulation (6.4%), aggressive manipulation (19.3%), and age of consent (15.4%).

A summary of the effects decomposition analysis is shown in Table 4. Critically, as per our predictions, SDO had a significant direct effect on hostile sexism and on discipline. Specifically, men higher in SDO were also higher in hostile sexism, and were also more likely to believe that women should be disciplined. SDO also indirectly predicted the belief that women should be disciplined through the proposed mediator of hostile sexism. Also in line with our hypotheses, men higher in SDO were more likely to externalize the blame for rejection, to endorse rape myths, and admit to engaging in persistent manipulation and aggressive manipulation in response to past rejections, and finally to endorse lowering the age of consent. SDO worked indirectly through hostile sexism, and support for disciplining women.[1]

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[1]Secondary analyses of additional measures included in the dataset from which Study 2 was taken, test the potential role of psychological entitlement in our model. These analyses were performed after the publication of this chapter, and show that psychological entitlement also mediates the relationships between SDO and our outcome variables from Study 2. The Psychological Entitlement Scale (PES; Campbell, Bonacci, Shelton, Exline, & Bushman, 2004) was included in the data collection for Study 2, yet was previously unanalyzed. The 9-item scale included items such as, 'I feel entitled to more of everything', 'I honestly feel I'm just more deserving than others', and 'If I were on the Titanic, I would deserve to be on the first lifeboat.' Response options ranged from 1 = 'Strongly Disagree' to 7 = 'Strongly Agree', and items were averaged so that high scores indicated higher levels of psychological entitlement (α = .88). When examining the PES, we found that people who are higher in SDO are also more likely to feel psychologically entitled, and through this, they are more likely to externalize the blame for rejection, endorse rape myths, have used persistent and aggressive manipulation, and desire to lower the age of sexual consent for women. We discuss this further in the Discussion (Page 91 and 92) and General Discussion (refer to Pages 133-140).

Table 4

Study 2: Effects decomposition

Predictor	Criterion	Effects		
		Direct	Indirect	Total
SDO	Hostile sexism	.56**	–	.56**
	Discipline	.23**	.31**	.54**
	Externalization of blame	–	.51*	.51**
	Rape myth endorsement	–	.52*	.52**
	Persistent manipulation	–	.14**	.14**
	Aggressive manipulation	–	.18**	.18**
	Lowering the age of consent	–	.21*	.21**
Hostile sexism	Discipline	.55**	–	.55**
	Externalization of blame	.36*	.31**	.67**
	Rape myth endorsement	.37**	.32**	.69**
	Persistent manipulation	–	.14**	.14**
	Aggressive manipulation	−.21**	.31**	.10**
	Lowering the age of consent	–	.22**	.22**
Discipline	Externalization of blame	.57**	–	.57**
	Rape myth endorsement	.59*	–	.59**
	Persistent manipulation	.25**	–	.25**
	Aggressive manipulation	.55**	–	.55**
	Lowering the age of consent	.39**	–	.39**

*$p < .05$; ** $p < .01$; *** $p < .001$

The total effects of hostile sexism on all dependent variables were also significant. Hostile sexism had a significant direct effect on support for disciplining women, externalizing the blame for rejection, and endorsing rape myths. Unexpectedly though, hostile sexism did not directly predict men's persistent manipulation or support for lowering the age of consent in women. Instead, hostile sexism only had significant indirect effects on these variables through its association with support for disciplining women. Interestingly, while hostile sexism directly predicted *lower* levels of aggressive behavior, it predicted *increased* levels of aggressive manipulation through the proposed mediator of discipline. The latter relationship was larger, and consequently, the total effect of hostile sexism on aggressive manipulation was positive, as proposed. Finally, support for disciplining women significantly directly predicted all dependent variables.

Discussion

Study 2 aimed to replicate and extend Study 1. First, we reproduced our pattern, demonstrating that men higher in SDO were more likely to externalize the blame for rejection, and to have reacted to past rejection with persistent and aggressive manipulation towards rejecting women. We further aimed to test the robustness of SDO as a predictor of men's desire to control female sexuality, adding two additional dependent variables: rape myth endorsement and attitudes towards the age of sexual consent in women. Finally, we aimed to explain the link between SDO and the outcome variables, proposing two key mediators: hostile sexism and a belief that women require and respond well to discipline.

In line with our predictions, and the work of Sibley and colleagues (2007), men higher in SDO were also more likely to be hostilely sexist. Additionally, as SDO increased, so too did support for disciplining women. The relationship between SDO and discipline was seen both directly and indirectly (through hostile sexism). Hostile sexism, in turn, directly predicted men's overt attitudes about rejection (i.e., externalization of blame and rape myth endorsement). It also directly and negatively predicted aggressive manipulation, but did *not* directly predict persistent manipulation or support for lowering the age of sexual consent in women. Instead, discipline emerged as a unique direct and positive predictor not only of men's negative attitudes (i.e. externalizing the blame for rejection, rape myth endorsement, and desires to lower the age of consent in women), but also of their past engagement in persistent and aggressive manipulation after rejection. Importantly, as predicted, SDO had strong indirect effects through hostile sexism and discipline on all dependent variables (externalization of blame, rape myth endorsement, persistent manipulation, aggressive manipulation, and lowering the age of consent).

Chapter 4 Discussion

We examined men's adverse reactions towards romantic rejection, women's sexuality, and sexual autonomy. We proposed and tested a novel model in which men's general orientation towards hierarchies and away from egalitarianism intimately affected their attitudes—and past persistent and aggressive responses—to romantic rejection. In line with predictions—over two studies and multiple outcome measures—we found and explained a relationship wherein men's SDO emerged as a stable predictor of the extent to which they externalized blame for rejection, responded to past rejections with persistence and aggression, endorsed rape myths, and advocated for lowering the age of sexual consent in women.

Drawing on theory from the literature on social dominance (Sidanius, 1993; Sidanius & Pratto, 1993) and ambivalent sexism (Glick & Fiske, 1996), we argued that from a high SDO man's perspective, the power women wield over romantic decisions represents a violation of the supported

gender hierarchy. Thus, in attempt to regain the upper hand, men higher in SDO respond to romantic rejection with detrimental attitudes and behaviors, as a product of hostile sexism and a belief that women ought to be disciplined for insubordination, as well as psychological entitlement (see footnote on Page 88). Specifically, we argued that men higher in SDO would externalize the blame for rejection, endorse ideologies or beliefs that subvert female sexual autonomy (i.e., endorse rape myths and advocate for lowering the age of sexual consent in women), and lash out at female rejecters (i.e., have engaged in persistent and aggressive manipulation of rejecting women).

We tested our effects stringently, controlling for personality variables in Study 1, and in both studies complemented attitudinal measures with self-report measures of past behaviors. Overall, our predictions were strongly supported. SDO emerged as a reliable predictor of men's responses to romantic rejection and attitudes towards women's sexuality. Our findings complement previous work that has suggested that SDO may be useful in understanding beliefs about gender-based dominance in sexual relationships (Rosenthal & Levy, 2010); and work that has found that men high in SDO are less supportive of women's rights (Heaven, 1999), prefer more traditional gender roles (Christopher & Wojda, 2008), and believe that women should tolerate sexual harassment (Russell & Trigg, 2004). We extend these findings by demonstrating a link not just with attitudes, but also with self-reports of past behaviors. In addition, we attempted to identify and test mechanisms underlying the effect.

Accordingly, in Study 1 we established our proposed pattern and in Study 2 we endeavored to explain it, arguing that men high in SDO would report higher levels of hostile sexism *and* a desire to discipline women. This second variable was designed specifically for the purposes of the study. It effectively assessed the degree to which men felt that women require—and respond well to—punishment. Both hostile sexism and a desire to discipline women fully explained the relationship between SDO and the outcome variables. Surprisingly, however, and in contrast to our predictions, hostile sexism only positively and directly predicted discipline, externalization of blame and rape myth endorsement. While we expected hostile sexism to positively predict and explain unique variance in both past persistent and aggressive responses to rejection as well as support for lowering the age of consent, it did not. Instead, there was a residual negative association between hostile sexism and aggressive manipulation (after taking discipline into account), and the direct relationships between hostile sexism and both persistent manipulation and a desire to lower the age of consent were not significant. Importantly, in line with our predictions, hostile sexism had a net positive association with both persistent and aggressive manipulation, as well as support for lowering the age of consent, through a desire to discipline women. That is, the positive association between hostile sexism and these three outcomes were fully explained *through* a belief that women both require and respond well to discipline. This suggests that the particular aspect of hostile sexism

that explains past adverse behaviors and support for lowering the age of consent in women may well be *discipline*. It is not simply a dislike, or disapproval, of women in power that affects these constructs. Rather, our findings indicate, it is an active desire to punish, change, or alter unacquiescent women through disciplinary measures.

Our finding that there was a negative residual association between hostile sexism and aggressive manipulation was unexpected, and indeed, contrary to hypotheses. As noted earlier, inspection of the zero-order correlations demonstrates a small positive association between hostile sexism and aggressive manipulation. Our results suggest that there is an aspect of hostile sexism—when we take out the desire to discipline women—that negatively predicts aggressive reactions to rejection. It is possible that the observed association is an artifact of the association between hostile and benevolent sexism (which we discuss in more detail below). Put simply, much of sexism is ambivalent, comprising both negativity (as per hostile sexism), and limited positivity (benevolent sexism; see Glick & Fiske, 1996). The removal of the aspect of hostile sexism that is associated with a desire to discipline and control insubordinate women may have revealed the aspect of sexism associated with 'protecting' women. Consequently, this residual aspect of hostile sexism may have translated into lower levels of aggressive manipulation. This is, of course, speculative. Our data cannot speak to this issue, and thus future research may benefit from investigating this.

In terms of our main findings, the strong link between SDO, hostile sexism, a desire to discipline women, and our outcome variables may help to shed light on past research. As outlined above, SDO has been related to preferences for traditional gender roles (Christopher & Wojda, 2008), as well as beliefs that women should tolerate sexual harassment (Russell & Trigg, 2004) and that men should dictate what happens during sex (Rosenthal et al., 2012). In addition, Swami and Tovée (2013) found a relationship between men's sexism (hostile and benevolent) and their preferences for larger female breasts. They argued that these men may be seeking highly feminine, submissive women who are less threatening to male dominance, while reinforcing oppressive gender stereotypes. The results of Study 2 may help to explain *why* such patterns were found. Moreover, they may help explain *how* SDO works to affect men's attitudes towards women. For example, it may be through a desire to correct women's behavior that SDO is working to affect expectations that women should tolerate sexual harassment and that men should hold authority over sexual decisions. Recent examination of previously unanalyzed data (see Page 88) suggests that psychological entitlement may also play a role; that a sense of personal entitlement over others and entitlement to special treatment may be the facet of SDO that leads to negative and aggressive attitudes towards women and rejection.

Strengths, limitations, and future directions

In the present study we introduced a novel variable that is strongly and independently related to SDO: discipline. We suggest that future research should be aimed at investigating this construct more thoroughly to test its application and utility across different contexts. We argued that a man high in SDO might use discipline in attempt to restore or protect the hierarchy that he endorses. If this is the case, then two avenues of future research are immediately apparent. First, studies should be conducted to establish whether—in line with our theorizing—those high in SDO see discipline as a viable and effective way to ensure stable, stratified, social relationships. If so, researchers also may wish to test whether our discipline construct has explanatory power outside the gender domain. Past research has shown that SDO is a strong and consistent predictor of prejudice towards Black and Gay individuals, for example (Altemeyer, 1998; Kteily et al., 2011). We believe that a desire to discipline or correct the behavior of other groups may help explain these patterns, and allow for a more thorough, nuanced understanding of the link between SDO and prejudice.

While we have proposed and tested a pattern where SDO predicts both hostile sexism and a desire to discipline women (and consequently indices of negativity towards female rejecters and women's sexual autonomy), the data we present is not experimental. As such, causality cannot be established. Despite this, the replication of effects across both studies does imply a robust relationship between SDO and externalization of blame, pursuit behaviors, and aggression towards women following rejection. Likewise, indirect support for our directional path can be found in past theoretical and empirical work. SDO has been conceptualized as a worldview that is relatively stable over time and argued to be more likely a cause of prejudice than a result (Kteily et al., 2011).

Nevertheless, some research has suggested that SDO may be malleable when the dominance of one's group is made salient (Guimond, Dambrun, Michinov, & Duarte, 2003). Thus it may be possible to experimentally shift men's SDO: we could, for example, prime male dominance and then test for increases in SDO, hostile sexism, a desire to discipline women, and the associated outcomes. In doing so, better support for causality might be established. In addition, we suggest that it is worthwhile to experimentally manipulate romantic rejection and examine whether men's levels of SDO predicts their responses. Finally, using longitudinal data to follow the development of SDO in men—and scrutinizing its relationship with negative actions or beliefs towards women over time—may provide additional insight into the link between SDO and the outcome measures.

In the present chapter we saw hostile sexism emerge as a strong predictor (both directly and indirectly) of the outcome variables. It is worth noting here that sexism may manifest as either hostile (i.e. negativity towards women who violate traditional gender roles; Glick & Fiske, 1996) or, as hinted at above, benevolent (i.e. an ostensibly positive attitude towards women that is paternalistic and protective, but is linked to punishment of women who fail to adhere to restrictive

and specific gender roles; Glick & Fiske, 1996; see Becker, Glick, Ilic, & Bohner, 2011 for evidence of repercussions). Although benevolent sexism is related to hostile sexism, benevolent sexism focuses on protecting women and is founded upon the belief that women are in need of such help from men. As benevolent sexism has been shown to manifest in many ostensibly 'positive' behaviors in dating contexts (Becker & Swim, 2012), this form of sexism was seen as less relevant to the current study. Additionally, changes in SDO have been shown to be unrelated to changes in benevolent sexism over time (Sibley et al., 2007). Thus, it appears unlikely that SDO either increases or decreases benevolent sexism over time, which suggests that benevolent sexism may be an unsuitable candidate as a mediator of the relationship between SDO and our outcome measures. On the other hand, hostile sexism—as detailed in the introduction—is theoretically linked to opposition to female power *and* has been shown to respond to changes in SDO over time. Nevertheless, future research that includes benevolent sexism as a correlate of hostile sexism and discipline may be worthwhile, especially given the residual negative relationship between hostile sexism and aggressive manipulation revealed in our data.

Finally, desires to discipline women and to lower the age of sexual consent are fantasies clearly discouraged by most cultures. As such, the men in our sample may be endorsing beliefs that they are unlikely to ever act on. Likewise, it must be acknowledged that all the participants in our studies are North American. It is possible that our observed patterns are specific to WEIRD participants (Western, Educated, Industrialized, Rich and Democratic; as conceptualized by Henrich, Heine, & Norenzayan, 2010). The conclusions that we have drawn, then, cannot be assumed to be universal. Further investigation across different cultures will be necessary to establish whether or not SDO is a construct inherently tied to negativity towards women and women's autonomy outside the West. Investigations of this kind should also include some form of behavioral measure so that we can begin to establish whether or not our data is speaking mainly to drives and desires, or men's actual violence towards women.

Another possibility, one partially addressed in Study 1, is that a third factor explains the association between SDO and the outcome variables. We ruled out two variables: number of relationships, and the extent to which men (compared to their female ex-partners) ended past relationships. Both of these, we suggested, would speak to men's mating success and experiences with rejection. Of course, it remains possible that men higher in SDO are less attractive, and hence, more driven towards coercing women into romantic and sexual relationships. This does not, however, seem likely. In their review, Lalumière, Harris, Quinsey, and Rice (2005) concluded that sexually coercive men (and those more likely to rape) are not generally deprived in terms of access to sexual partners. Instead past research overwhelmingly supports the conclusion that sexually coercive men are *more* sexually active and promiscuous than non-sexually coercive men. Thus it is

not necessarily sexually deprived men who rape, sexually coerce women, or otherwise enact violence against women. Given this, and the lack of association between SDO and relevant variables in Study 1, we suggest that it is unlikely that a third variable such as unattractiveness or lack of mating success explains the association between SDO and our outcome variables. Instead, we expect that men high in SDO and sexually coercive men alike would actively seek to lower the age of sexual consent in women, as a result of their desire to dominate women in general (rather than compensate for low levels of sexual activity). That men high in SDO report the same relationship success as men low in SDO supports this point. Clearly though, empirical research demonstrating both the link between desires to discipline, lower the age of consent, physical discipline, and petitioning legal access to young women—would be necessary to settle this point.

Implications and applications

As stated in the introduction, women are more likely than men to be at risk of many types of abusive behaviors, both during and after relationships. Further, Brownridge and colleagues (2008) have recently demonstrated that the period of rejection or breakup can increase the risk of women experiencing non-lethal violence at the hands of men (as in past literature, e.g., Daly & Wilson, 1998). Our results suggest that not just rejected men, but a particular type of rejected man, may be more likely to pose a substantial risk to women. That is, one high in SDO. In addition, Seimer (2004) has argued that young women are more likely than older women to misinterpret inter-partner violence or emotionally abusive behaviors, thus we suggested that for men high in SDO, the desire to lower the age of sexual consent may be strategic, giving them access to women who may forgive or value the aggressive or persistent behaviors these men have reported engaging in (in our studies). Apart from issues surrounding consent and power, there are material dangers to adolescent women who partner with much older men. For example, Glass and colleagues (2008) found that heterosexual adolescent females were more likely to have been murdered by their current or ex-partner if he was older, and subsequently the age gap was larger. Indeed, our results seem to suggest that men high in SDO, who agree with disciplining women, may be more likely than other men to seek access to younger, more easily coerced women (although further research would be necessary to clarify whether they actively seek out these younger women, or would simply like to see the age of consent lowered).

Separately, our findings may also help to explain patterns of stalking and abuse, and provide a more rounded understanding of why men engage in aggressive or violent behaviors towards those they ostensibly love. Men who engage in these behaviors may believe, for example, that they are enforcing a natural hierarchy, or even that they are *helping* women. In the present work, men high in SDO not only thought that women needed discipline; they thought that women responded well to it (i.e., they learned from it). There is currently a large cohort of researchers investigating stalking

behaviors, sexual harassment, and abuse towards women, but *none* of these have previously looked at discipline as an important construct, and few routinely measure levels of SDO. Extensions of our investigations could be used not only to explain, but also to help reduce or prevent violence against women (especially young women) by assisting them to identify potential 'red flags' associated with aggressive reactions to rejection.

Conclusions

Broadly the results of this chapter suggest that social dominance orientation may be more than a group-based preference detached from intimate relationships, emerging instead as a driving force behind men's threatening behaviors and attitudes in the context of romantic relationships. Throughout this chapter we have reiterated that in hierarchical societies, women are typically seen as the weaker sex, and are awarded less social value than men. In addition, they are often seen as the sexual 'gate-keepers', and thus researchers have suggested that they can elicit resentment and hostility by using their "sexual allure to gain dominance over men" (Glick & Fiske, 1996, p. 494). Glick and Fiske stated, "for some men sexual attraction toward women may be inseparable from a desire to dominate them..." (p. 494). We agree, but add a qualifier—those "some men" are likely to be oriented towards group-based dominance and away from egalitarianism.

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Chapter 5: Understanding the Role of Social Dominance Orientation in Women and Men's Aggressive Responses to Mate Rejection

In Chapter 1, I looked largely at demographic and social predictors of mate rejection, and in Chapter 2 I looked into some of the evolutionary perspectives on aggression surrounding rejection. From both of these perspectives, it is clear that understanding the predictors of men's aggression during rejection is important. However, it is not apparent whether: a) Men are more likely than women to have engaged in persistent or aggressive manipulation (as per Chapter 4); b) Men and women are differentially sensitive to dominance in a mate when deciding how to reject them; or c) If any strategies work to reduce aggression and abuse during or after mate rejection. Chapter 5 provides the first empirical insights into these questions. Like Chapters 2 and 4, this chapter is provided mostly in its original form (barring references to past chapters and deletion of repetition), as it is in the final stages of preparation for submission to *Sex Roles*. Therefore, it uses 'we' instead of 'I' throughout.

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In Chapter 3 we highlighted the fact that to date there have only been a few papers examining how a socially dominant orientation might impact interpersonal relationships. Rosenthal, Levy, and Earnshaw (2012) found that in men and women, SDO was associated with beliefs that men should dominate women sexually. Consistent with this, high SDO men supported more traditional gender roles (Christopher & Wojda, 2008) and were less supportive of women's rights than men low in SDO (Heaven, 1999). Chapter 4 expanded this research to test whether SDO might be linked to men's aggressive responses to romantic rejection. In Study 1 my colleagues and I found that high SDO in men predicted externalization of blame for rejection (e.g., "when a girl rejects me, it's because she's a bitch"), and reacting to women's rejection with persistence, manipulation, aggression, and threats of violence. We replicated and extended this pattern in Study 2, finding that high SDO men were more likely to buy into rape myths, and to want to lower the age of sexual consent for women. These patterns of prediction were mediated by two variables: men high in SDO also reported more hostile sexism and also reported a general belief that women needed to be disciplined for insubordination. General dislike of women, and a desire to discipline them, went on to predict adverse responses to romantic rejection, rape myths, and support for lowering the age of consent. Thus, it appeared that SDO, a generalized orientation towards inequality and hierarchy, might be an important predictor of poor responses to mate rejection for men.

Women and SDO

There is an obvious gap in this research however: women are rejected too, and like men, they can respond negatively. For example, when women commit murder, they overwhelmingly target males (Mouzos, 2000), typically their intimate partners (Carcach & James, 1998). For women, as in men, approximately one-third of partner killings overall result from conflict over jealousy or a break-up (Carcach & James, 1998). In addition, women perpetrate domestic violence (Hines, Brown, & Dunning, 2007), and emotional and financial abuse within relationships (Dutton, Nicholls, & Spidel, 2005; Hines et al., 2007). Like men, women also stalk the opposite sex, including their ex-partners (Black et al., 2011). Therefore, the question remained as to whether the factors that predict violent and aggressive responses to rejection by men, also predicted the same for women.

Study 3

In this study my colleagues and I examined SDO as a predictor of heterosexual men's and women's self-reported responses to romantic rejection. Here we identified two competing hypotheses. First, it was possible that like men, women high in SDO would respond negatively to romantic rejection. That is, it is possible that women themselves can be personally high SDO, placing their own desires over men's and behaving much like men who are high in SDO. From this perspective women *and* men high in SDO would display dominance during relationship and rejection experiences. On the other hand, not only is SDO characterized by a belief in inequality, it also incorporates the belief that the existing stratified social system is justifiable and desirable. As mentioned in Chapter 4, within the stratified social system that most women reside, they have lower status than men (even in 'modernized' Western cultures). Thus, a contrasting possibility was that women high in SDO would respond passively during rejection, accepting the wishes of the (comparatively high-status) male. We tested these competing hypotheses in Study 3.

In this study (Study 3) we asked both heterosexual women and men about their beliefs surrounding romantic rejection, as well as past reactions to it. As per Chapter 4, we expected that men high in SDO would be more likely to report refusing to accept personal responsibility for the rejection, instead blaming circumstances, or the woman (*externalization of blame*; Chapter 4). This would represent a general dismissal of another's disinterest, a sense of entitlement, or minimization of personal flaws. We also investigated whether participants actually engaged in any negative behaviors post-rejection, using a measure of *aggressive manipulation* (adapted from Chapter 4). We expected men high in SDO to report engaging in aggressive manipulation, which entails stalking, threatening to hurt the woman who rejected him, and being physically aggressive towards her. For women, as argued above, we tested competing hypotheses.

Method

Participants

Participants located in the United States were recruited using Amazon's Mechanical Turk online recruitment system (MTurk; www.mturk.com). MTurk provides fast and reliable access to a pool of online 'workers' willing to undertake online 'jobs', in return for voucher credits. In addition, MTurk samples are more demographically representative of the current US population than typical university convenience samples (Berinsky, Huber, and Lenz, 2012). Participants were required to have experienced at least one romantic rejection in their lifetime. Data were collected from 435 North Americans, and of these 384 (191 male, 193 female) identified as heterosexual and completed all measures. The final sample was aged between 19 and 70 (*M*=33.93, *SD*=10.34). The majority of participants were White (73.5%), while the rest were Asian or South Asian (10.0%), Black (7.1%), Latino/a (5.0%), or Other (4.4%); 41.1% were single, while 58.9% were in a relationship.

Measures

Demographics including gender (-1='Male', 1='Female'), age, sexual orientation, ethnicity, and relationship status were measured. Relationship status was coded into two distinct categories (as above): 0='Single' (including 'widowed', 'divorced', 'separated' and 'dating but not exclusive'), 1='In a relationship' (including 'girlfriend/boyfriend', 'cohabiting', 'engaged', and 'married').

Social dominance orientation was measured using the 14-item scale developed by Pratto and colleagues (1994; see Appendix A). Participants rated their feelings (1='Very Negative' to 7='Very Positive') about concepts or statements including 'Equality' and 'Some people are just inferior to others'. Seven items were reverse scored and all were averaged so that a high score indicated high SDO (α=.94).

Externalization of blame for rejection was measured from 7 items adapted from Chapter 4, with items such as 'When a woman rejects me, it's because she's frigid', and 'If a woman rejects me at a club or bar, I don't usually take her seriously'. This scale was adapted in order to separate a double-barreled item, and to add the item 'Women enjoy rejecting men' (refer to Appendix A). For women, items were gender-reversed (e.g., 'When a man rejects me, it's because he's frigid'). Participants rated their agreement with these statements (1='Strongly Disagree' to 7='Strongly Agree'), and items were averaged so a high score reflected greater externalization of blame for rejection. Items answered by men factored together, and the scale was reliable (α=.85); the same was true for women (α=.80).

Aggressive manipulation was measured using the 4 items from Chapter 4 (modified slightly), along with 3 extra items to target more severe behaviors (e.g. 'Got physically aggressive' and 'Threatened suicide'; refer to Appendix A). The scale assessed the amount of times in their life people engaged in negative or aggressive behaviors after being rejected by a partner. A gender-flipped version was used for females to answer. The scale was reliable for male participants (α=.82), and female participants (α=.82). Example items include 'Tried to sabotage her [his] other dates' and 'Tried to alienate her [him] from her [his] friends so all she [he] had was you'. Response options were 1='0' times, 2='2-4' times, 3='5-10' times and 4='10+' times. Items were averaged, so that a high score indicated greater past use of aggressive manipulation.

Procedure

The study was advertised to eligible North American participants on Mturk, enlisting them to follow a link to our measures, with exclusion criteria stating they must have had at least one relationship that had ended. There, they completed a survey including demographic questions, the SDO scale, and the externalization of blame and aggressive manipulation scales. Data from non-heterosexual participants were excluded prior to analysis.

For all studies in Chapter 5, key measures are provided in Appendix A. Approval was obtained for all procedures through The University of Queensland Behavioural and Social Sciences Ethical Review Committee.

Results

Descriptive statistics

Means, standard deviations, ranges, and intercorrelations for all measures (*n*=384) are displayed in Table 5. Fewer than 5% of participants had missing data; hence listwise deletion was used.

Table 5

Study 3: Uncentered Means, Standard Deviations, Ranges, and Intercorrelations

Variable	Mean	SD	Range	1.	2.	3.	4.	5.
1. Age (19 to 70)	33.9	10.3	51.0					
2. Gender (-1 to 1)	-.01	1.0	2.0	-.30***				
3. Relationship Status (0 to 1)	.59	.49	1.0	.06	-.19***			
4. SDO (1 to 7)	2.4	1.2	5.6	-.13*	.20***	-.07		
5. Externalization of Blame (1 to 7)	2.4	.96	4.1	-.09	.09	-.05	.22***	
6. Aggressive Manipulation (0 to 4)	1.2	.47	3.5	-.01	.01	-.01	.10*	.31***

*Note. *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$.

Main analyses

Two hierarchical regression analyses were conducted to test the model predicting the effects of gender and SDO on the dependent variables: externalization of blame and aggressive manipulation respectively. Gender and SDO were mean-centered, and the predictors were entered at Step 1, with the two-way interaction (between Gender and SDO) entered at Step 2 for both analyses. Table 6 displays the beta values and change statistics from these regressions.

SDO, gender, and externalization of blame. Participants who were higher in SDO were more likely to externalize the blame for rejection ($p<.001$, 95% CI[.09, .26]). The gender of the participant was not a significant predictor in the model either by itself, or in interaction with SDO. That is, men and women were equally likely to report externalization of blame ($p=.404$ in Step 2).

SDO, gender, and aggressive manipulation. Participants who were higher in SDO engaged in more aggressive manipulation incidents following rejection, over their lifetime ($p=.031$, 95% CI[.003, .08]). The gender of the participant was not a significant predictor in the model, either by itself, or in conjunction with SDO. Instead, we found that men and women were equally likely to report aggressive manipulation following rejection ($p=.223$ at Step 2). Note that while the overall model was not significant ($p=.142$, Step 2), SDO predicted aggressive manipulation independently in the expected direction, over and above gender and the interaction term ($p=.018$, 95% CI[.01, .08]).

Table 6

Study 3: Predicting Externalization of Blame and Aggressive Manipulation as a Function of Gender and Social Dominance Orientation (Block 1) and their Interaction (Block 2)

	Externalization of Blame		**Aggressive Manipulation**	
	Block 1	Block 2	Block 1	Block 2
Gender	.04	.04	-.06	-.07
Social Dominance (SDO)	.22***	.21***	.12*	.13*
Gender x SDO		.01		-.08
R^2	.05***	.05	.01	.02
$R^2_{ch.}$		.00		.01

Note. $*p \leq .05$, $**p \leq .01$, $***p \leq .001$.

Discussion

Study 3 suggests that SDO is a worldview that is associated with destructive relationship behavior, regardless of gender. In line with our findings in Chapter 4, Study 3 saw men who were high SDO externalizing blame when rejected. These men were also more likely to report engaging in adverse behaviors post-rejection, including physical and verbal aggression, stalking, and threatening to hurt the rejecting woman. Importantly, SDO appeared to be a robust predictor of outcome variables for women as well as men. That is, women who were high in SDO were also more likely to report externalization of blame for rejection (instead blaming the male rejecter, or circumstance), along with aggressive manipulation towards rejecting men. Rather than reacting submissively to rejection (potentially as a result of a pervasive world-view that mirrors society's placement of men above women), it seems that women who advocate inequality may *not* placidly accept rejection by men. This suggests that an orientation towards personal social dominance may be a key driver in women's SDO. Instead of rigidly supporting a hierarchy where males are accepted as more worthy of power and dominance than women, women high in SDO may be subverting the typical dominance hierarchy during rejection and instead placing themselves at the top (like men did in Chapter 4).

Study 3, combined with previous literature, supports the notion that SDO can manifest within interpersonal relationships and is linked to aggressive and threatening behaviors. We now know that this is likely the case for both men and women who are high in SDO. Also, it is important to note here that the absence of a gender difference in this context goes against some of our theorizing in Chapter 2. Specifically, we had proposed that men would be more likely than women to perpetrate

negative and abusive reactions post-rejection, yet gender was unrelated to either externalization of blame or aggressive responses to rejection (see Table 6). This finding is tested again in Studies 4 and 5, and engaged with fully in the General Discussion (Chapter 6).

In Study 4 we aimed to extend on this work by investigating whether the extent to which people see their ex-partner as being high in SDO was related to their retrospective reports of post-breakup negativity and aggression.

Study 4

Combined with the previous chapter, Study 3 demonstrates that SDO is a robust predictor of adverse reactions to rejection for both women and men. If this is the case, we expect people who previously rejected partners high in SDO to have been exposed to negative and potentially damaging reactions by the person they were rejecting. One way to investigate this would be to do a full dyadic study, measuring both partners' SDO and their experiences of relationship dissolution. However, this is a difficult option, which relies on both parties participating, including a potentially disgruntled rejected ex-partner. Hence, we needed to find a simpler way to investigate these rejection situations.

Therefore, in Study 4, we had participants either report on their own SDO, and their own responses to being rejected; *or* report on the extent to which they saw an ex-partner as being high in SDO, and how that ex-partner responded to their rejection. A large body of work shows that people routinely try to infer one another's mental states (e.g. Gallese, Eagle, & Migone, 2007), in many different contexts (e.g. Hooker, Verosky, Germine, Knight, & D'Esposito, 2008). As argued in a review by Mitchell (2009), people do this throughout their social interactions with others, and are surprisingly good at it (see Canty, Neumann, Fleming, & Shum, 2015; R. L. Mitchell & Phillips, 2015). We spend a great deal of time with our intimate partners, and thus is might be assumed that we also make detailed inferences about who they are and what they value, including their orientation towards equality versus hierarchy.

In line with the results of Study 4, we expect that the inferred SDO of one's ex-partner will predict whether negative responses to romantic rejection occurred during the breakup. For those reporting on their own SDO and personal experience of being rejected, we similarly expect their SDO to predict adverse behavior (as per Study 3). However, due to social desirability effects (i.e., participants' reluctance to detail their own negative responses to rejection), we expect the relationship between SDO and adverse reactions to rejection to be stronger for the participants that report about their ex-partner's SDO and behavior, as opposed to those discussing their own SDO and behavior.

For this study, we wanted to create measures that could differentiate between mild negative reactions to rejection, and severe ones. In addition, they needed to be able to adapt to people

reporting on their ex-partner's behavior, or themselves. Our new *negative reactions* to rejection scale has three items, including 'They [I] got angry', and encompasses both negative and angry reactions, and the other party thinking they were 'mean' after the rejection experience. As a simpler but broader-spectrum measure of abuse (adapted from Study 3), our *abusive reactions* to rejection scale encompasses aggression, stalking, fear, and abuse after rejection. As a further extension, Study 4 specifically investigated people's most recent breakups, rather than their general reactions to rejection over a lifetime. This made it easier for participants to both remember, and report specifically on what happened, rather than discuss behaviors in general across their lives.

Method

Participants

Australian participants were recruited to undertake the online study both in-person and through social media (*Facebook*), in return for entry into a competition to win a $100 voucher. As in Study 3, they were required to have experienced at least one romantic rejection in their lifetime. From those who clicked on the survey, data were collected from 307 Australians, of which 241 (80 male, 161 female) identified as heterosexual and completed most measures. The final sample was aged between 18 and 68 (*M*=28.65, *SD*=8.93). The majority of participants were in a relationship (66.5%).

Measures

Demographics including gender, age, sexual orientation, and relationship status were measured (all coded as per Study 3).

Social dominance orientation was measured using the SDO scale as per Study 3, except participants reported on the SDO of a different person depending on the condition they were in. That is, participants who discussed being rejected themselves (*rejected me* condition) listed their own SDO, as per Study 3 (α=.91). However, participants who discussed rejecting their ex-partner (*rejected them* condition) inferred their ex-partner's SDO (α=.94). That is, they were asked to indicate how positively or negatively they thought their ex-partner (whom they had been discussing throughout the study) would view the statements and concepts from the 14-item SDO scale, including 'equality' and 'some people are just inferior to others'. In each case, items were averaged together to create one SDO score per participant, with high scores reflecting higher SDO of the rejected party (i.e. the participant, if they were discussing being rejected; or the ex-partner, if they were discussing rejecting someone).

Negative reactions to rejection were measured with 3 questions, interspersed among other items (α=.86). Participants in the *rejected me* condition were asked what happened after they had last been rejected or broken up with, followed by a statement, for example 'I got angry' or 'I

reacted badly' (see Appendix A). They recorded their response from 1 to 7 (1='I didn't do this at all', 4='I kind of did this', and 7='I absolutely did this'). Participants in the *rejected them* condition were asked what happened after they had last rejected or broken up with someone. Items and anchor points were modified to suit (e.g. 'They got angry' and 1='They didn't do this at all'). Items were averaged so high scores reflected more negative reactions to rejection.

Abusive reactions to rejection were measured using 5 items, interspersed among other items (α=.74). All instructions and response scales were exactly as with the *negative reactions* scale, yet the items differed. Items included 'I got physically aggressive' (*rejected me* condition) or 'They got physically aggressive' (*rejected them* condition), and 'I stalked them' (*rejected me* condition) or 'They stalked me' (*rejected them* condition; refer to Appendix A). Items were averaged so high scores reflected more abusive reactions to rejection.

Note that factor analysis confirmed these constructs as two separate factors, and the two scales were only moderately correlated (r=.56).[2]

Procedure

The study was advertised widely across social media, and by recruiting people in-person with instructions to find the online link to our measures. When the link was followed, participants first saw the demographic items, and then were filtered into one of two conditions. Participants in the *rejected me* condition were asked to describe what happened the last time they had been rejected or 'dumped', followed by further questions about the experience. Those in the *rejected them* condition were asked to describe what happened the last time they rejected or 'dumped' someone, and answered questions about that experience (slightly modified items from the *rejected me* condition). The *negative reactions* and *abusive reactions* scales were randomly interspersed in each condition, amongst both neutral and positive filler items (e.g., 'I was [They were] neutral towards them [me]', 'I [They] comforted them [me]'). Participants were then asked to complete the SDO scale, with those from the *rejected me* condition asked to rate their own support for inequality, and those from the *rejected them* condition asked to rate the SDO of their ex-partner.

Results

Descriptive statistics

Means, standard deviations and intercorrelations for all measures (*n*=241) are displayed in Table 7. Listwise deletion was used to deal with missing data.

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[2] The SDO of both the participant, and the ex-partner was measured in this study, but we had insufficient power to reliably test the differential effects (as only half our participants had answered questions about rejecting someone), therefore we target it specifically in Study 5.

Main analyses

Hierarchical regression analyses were conducted to test two models looking at the association between SDO and the extent to which people experienced negative reactions and abusive reactions (respectively) following rejection; and to check whether patterns of prediction changed depending on whether people were discussing being rejected themselves or rejecting someone else (condition), and whether they were men or women (gender). Gender, condition, and SDO were mean centered for each model. The predictors were entered at Step 1, with the two-way interactions entered at Step 2, and the three-way interaction entered at Step 3. Table 8 displays the beta values and change statistics from both regressions.

Predicting negative reactions. The higher a rejected party's SDO, the more negative reactions people experienced post-rejection (*p*=.021, 95% CI[.05, .58]). Note that it did not matter whether participants were women or men, or whether they were discussing their own rejection or rejecting someone else. That is, regardless of whether participants were reporting on their own, or ex-partner's SDO, social dominance orientation was positively associated with anger and negative reactions post-rejection. The introduction of the interactions did not explain any additional variance in steps 2 or 3, demonstrating again that SDO is associated with anger and negative reactions independent of gender or condition.

Table 7

Study 4: Uncentered Means, Standard Deviations, Ranges, and Intercorrelations

Variable	Mean	SD	Range	1.	2.	3.	4.	5.	6.
1. Age (18 to 68)	28.7	8.9	50.0						
2. Gender (-1 to 1)	.34	.94	2.0	.03					
3. Relationship Status (-1 to 1)	.33	.95	2.0	.04	.08				
4. Condition (-1 to 1)	.04	1.0	2.0	-.13	.03	.04			
5. SDO (1 to 7)	2.9	1.4	5.9	-.09	-.05	-.01	.30***		
6. Negative Reactions (1 to 7)	3.4	2.1	6.0	-.04	.06	.07	.13	.22**	
7. Abusive Reactions (1 to 7)	1.7	1.1	5.4	-.12	.12	-.06	.26**	.31***	.56***

Note. *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$; SDO in Study 2 refers to the SDO of the Rejected Person.

Table 8

Study 4: Predicting Negative Reactions and Abusive Reactions as a Function of Gender, Condition, and Social Dominance Orientation (Block 1) and their 2-Way Interactions (Block 2), and the 3-Way Interactions (Block 3)

	Negative Reactions			Abusive Reactions		
	Block 1	Block 2	Block 3	Block 1	Block 2	Block 3
Gender	.06	.04	.02	.13	.07	.06
Condition	.06	.07	.08	.19*	.21*	.21*
SDO	.21*	.19	.17	.26**	.24**	.24**
Gender x Condition		-.01	-.01		.08	.08
Gender x SDO		.01	.00		-.13	-.13
Condition x SDO		.10	.07		.26**	.25**
Gender x Condition x SDO			.10			.01
R^2	.06*	.07	.07	.15***	.21*	.21
$R^2_{ch.}$		.01	.01		.06***	.00

*Note. *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$; SDO in Study 2 refers to the SDO of the Rejected Person.

Predicting abusive reactions. The higher a rejected person's SDO, the more abuse rejecters experienced post-rejection ($p=.002$, 95% CI[.08, .34]). Note that it did not matter whether participants were men or women, but the condition a participant was placed in did have an effect (i.e. *rejected me* vs. *rejected them*, $p=.026$, 95% CI[.02, .38] in Step 1). Specifically, rejecters reported more bad reactions when they were reporting on someone else's poor behavior relative to their own. Furthermore, there was a significant two-way interaction, such that the combination of SDO and condition predicted reports of abusive reactions ($p=.003$, 95% CI[.07, .35]). However, there was no 3-way interaction in Step 3. To examine the two-way interaction, a simple slopes analysis was performed. Table 9 shows the beta values and change statistics from both regressions. These revealed that for participants discussing *being* rejected (*rejected me* condition), their own SDO was unrelated to levels of abuse ($p=.794$); however for those discussing rejecting someone (*rejected them* condition), the extent to which they saw their partner as high in SDO did predict abusive reactions ($p=.003$, 95% CI[.14, .66]).

Table 9

Study 4: Examining the Relationship Between Condition, SDO of the Rejected Person, and Abusive Reactions to Rejection

	Abusive Reactions – Rejected Them Condition		Abusive Reactions – Rejected Me Condition	
	Block 1	Block 2	Block 1	Block 2
Gender	.10	.11	.03	-.02
SDO	.37**	.42**	-.04	-.03
Gender x SDO		-.10		-.21
R^2	.16**	.17	.05	.21
$R^2_{ch.}$		.01		.04

Note. $*p \leq .05$, $**p \leq .01$, $***p \leq .001$; SDO in Study 2 refers to the SDO of the Rejected Person. Rejected Them Condition = Discussing Rejecting Someone; Rejected Me Condition = Discussing Being Rejected.

Discussion

Study 4 saw both women and men report on either an experience of being rejected or an experience of rejecting an ex-partner. As predicted, high SDO was related to more negative and abusive reactions to rejection, regardless of whether the participant was a man or a woman. That is, for both regressions, the association between SDO and adverse reactions to rejection was not dependent on gender, thereby replicating the findings of Study 3. This suggests that SDO is indeed a robust predictor of aggression in romantic rejection contexts for women and men, despite its previous links to many specific anti-female prejudices (e.g. Christopher & Wojda, 2008; Sibley, Wilson, & Duckitt, 2007).

While participants in both conditions reported more negative reactions to rejection, participants reported increased abusive reactions to rejection when they were reporting on someone else, as opposed to when they were reporting on their own behavior. We had hypothesized that the relationship between SDO and negative and abusive reactions to rejection would be stronger when discussing an ex-partner's reactions to a rejection, as opposed to one's own reactions (i.e. that condition would be predictive). Yet this prediction received only partial support. People high in SDO reported more negative behavior following rejection relative to those low in SDO, when the bad behavior in question was mild (i.e. negative reactions, reporting whether 'I reacted badly' or 'They reacted badly', for example). In fact, the association between SDO and negative behavior was the same for those reporting on being rejected, or a partner's SDO and responses to rejection. Condition moderated the association between SDO and negative reactions, however, when discussing the abusive and more serious behaviors encapsulated in the *abusive reactions to*

rejection measure. Here, SDO was only predictive of negative responses to rejection when people were reporting on their partner's SDO and actions. Their own SDO was unrelated to whether or not they reported engaging in abusive reactions. It is possible that social desirability only came into play when discussing these more serious abuses (such as violence and stalking) – note that this finding may have been due to a floor effect. People were comparatively reluctant to report engaging in abusive reactions to rejection relative to how much abuse they reported from rejected partners. Across both measures, however, it is clear that to the extent that one perceives an ex-partner as high in SDO, they also remember the breakup involving abuse. As in the previous study, and in contrast to theorizing and past literature, we saw an absence of a gender difference between women and men perpetrating negative and abusive reactions post-rejection.

Additional questions can be identified about mate rejection with partners who are high in SDO. As we theorized in Chapter 2, particular strategies might be used in order to reject people who pose a greater survival threat, which we now have established might be (among other things) people high in SDO. Specifically, in Study 5 we questioned: 1) Do people use particular strategies to break up with people high in SDO; and 2) What romantic rejection strategies are linked to increased or decreased negative reactions from the rejected party?

Study 5

Study 5 investigates recent breakups solely from the rejecter's perspective, asking them to report on their ex-partner's behavior post-rejection. However, we wanted to establish that the results of Study 4 (and of Study 5) were not an artifact of rejecters' own SDO. That is, we recognized that it was possible that participants high in SDO simply experienced and/or remembered negative break-ups and assumed that their partner was similarly high in SDO. Thus in Study 5 we controlled for rejecters' own SDO when testing the association between inferred partner SDO and adverse reactions to rejection.

Furthermore, we wanted to see whether having a partner high in SDO was associated with particular relationship termination strategies that might contribute to (or ameliorate) negative responses to rejection. In our prior studies (Study 1, Study 2, Study 3, and Study 4), SDO predicted threatening and dangerous consequences for those initiating mate rejection. As people live and interact with those high in SDO (and experience negative and aggressive reactions to 'insubordination'), they might develop effective methods of dealing with them. While victims of stalking and violent behavior are never to blame, it is possible that there are some strategies for relationship dissolution that are associated with increased or decreased aggression, violence, and stalking post rejection. It is possible, for example, that when rejecting someone high in SDO, we might use particular strategies in an attempt to mitigate the physical and emotional risks, and protect ourselves from harm.

In particular, people may use direct, honest strategies when rejecting those high in SDO (e.g., openly expressing the desire to breakup), as these strategies have previously been associated with better outcomes post relationship dissolution (Banks, Altendorf, Greene, & Cody, 1987; Baxter, 1982). They may also use more offers of friendship, comfort, placating and de-escalation strategies, in attempt to mitigate the risks of rejecting a partner. We discuss these tactics in terms of *positive* and *honest rejection strategies* (see Figure C). Alternatively, there may be strategies used to reject someone (that are also responsive to the rejected person's SDO) that are associated with aggression, negativity, and violence. For example, when aggressive breakup strategies are used to reject someone high in SDO, we expect aggression and abusive reactions to be more likely from them, as opposed to when non-aggressive strategies are used. In addition, avoidant breakup strategies may also predict an increased risk of negative and abusive reactions to the rejection. We discuss these tactics as *aggressive* and *avoidant rejection strategies* (refer to Figure C).
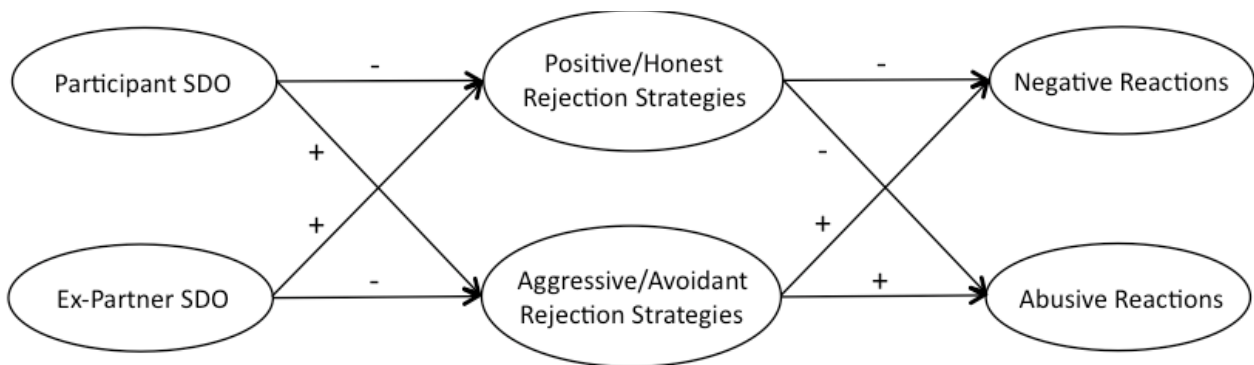
Figure C

Proposed mediation model between Participant SDO, Ex-Partner SDO, Positive and Honest Rejection Strategies, Aggressive and Avoidant Rejection Strategies, and the dependent variables.

Specifically, if one's ex-partner is perceived to be high in SDO, we expect the participant to report having used more positive/honest rejection strategies, and less aggressive/avoidant rejection strategies (presumably in attempt to reduce negative and aggressive reactions to rejection). We expect that if the participant themselves is high in SDO, they will be less likely to use positive and honest rejection strategies, and more likely to reject their partner aggressively or in an avoidant manner. This should lead to more negative and abusive reactions from the ex-partner, in comparison to the participants who are lower in SDO and those who used positive or honest rejection strategies. Figure C depicts the meditational model we propose.

Note that if SDO predicts more positive and less negative strategies, and that more positive and less negative strategies predict less negative responses to rejection, we would expect to see a suppression pattern. Specifically, we would expect to see the relationship between partner SDO and negative reactions to rejection *increase* with introduction of the mediating strategies. Such a finding would indicate that people are using somewhat effective methods of rejecting people high in SDO (partially offsetting negative responses), and further might give insight into strategies that could be used somewhat effectively when rejecting someone perceived to be high in SDO.

When creating rejection strategy measures, we compiled a number of potential items and had participants complete them. We then subjected them to a factor analysis. As predicted, they grouped into four factors: positive, honest, aggressive, and avoidant strategies (refer to Appendix A). However, note that there are a different number of items per factor due to this development process, along with the reality that some of the constructs are simpler than others (e.g. there are many ways to be aggressive during rejection, but fewer ways to be honest).

Method

Participants

Participants were recruited using MTurk as per Study 3. Again, they were required to have experienced at least one romantic rejection in their lifetime. Data were collected from 379 North Americans, and of these 331 (210 male, 121 female) identified as heterosexual and completed most measures. The final sample was aged between 18 and 70 (M=33.78, SD=10.97). The majority of participants were in a relationship (56.8%), while 43.2% were single.

Measures

 Demographics including gender, age, sexual orientation, and relationship status were measured (all coded as per Study 3).

 Participant SDO was measured using the SDO scale as per Study 3 (α=.95; refer to Appendix A).

 Ex-Partner SDO was rated as per Study 4, with participants being shown the original 14 SDO items and asked to indicate how positively or negatively they thought their *ex-partner* viewed the statements (α=.95; refer to Appendix A). Participants were specifically asked to rate this for the same ex-partner they had been discussing during the rest of this study. These items were averaged so high scores reflected higher SDO perceived in their ex-partner.

 Positive strategies for rejection were measured using 9 questions, interspersed among other items (α=.91). Participants were asked what strategy they used the last time they rejected or broke up with someone, followed by a statement, for example 'I was understanding towards them' or 'I tried to make them feel better' (see Appendix A). They recorded their response from 1 to 7 (1='I didn't do this at all', 4='I kind of did this', and 7='I absolutely did this', as per Study 4). Items were averaged so high scores reflected more use of positive strategies for rejection.

 Honest strategies for rejection were measured using 2 items ('I was direct and told them the true reasons', and 'I was honest with them'), interspersed among other items (r=.82), measured exactly as with positive strategies. Items were averaged so high scores reflected more use of honest strategies for rejection.

 Aggressive strategies for rejection were measured using 8 items (e.g. 'I was violent or threatening towards them', 'I made them fearful of me'; see Appendix A), interspersed among the other strategy measures (α=.76), and measured exactly as were positive strategies. Items were averaged so high scores reflected more use of aggressive strategies for rejection.

 Avoidant strategies for rejection were measured using 3 items (e.g. 'I pretended I was too busy to see them', 'I avoided them'; see Appendix A), interspersed among the other strategy measures (α=.51), and measured exactly as were positive strategies. Items were averaged so high scores reflected more use of avoidant strategies for rejection.

Negative reactions to rejection were measured exactly as per the *rejected them* condition in Study 4, interspersed among other items (α=.86). That is, participants were asked what happened after they had last *rejected* or broken up with someone, followed by a statement, for example 'They got angry' or 'They reacted badly' (refer to Appendix A).

Abusive reactions to rejection were measured using the five items from the *rejected them* condition in Study 4, interspersed among other items (α=.83). Instructions and response scales were exactly as with the negative reactions scale, and items included statements such as 'They got physically aggressive' and 'They made me fear for my safety' (see Appendix A).

Procedure

The study was advertised to eligible participants on Mturk, enlisting them to follow a link to our measures. There, they completed a survey including demographic questions, the four rejection strategy scales, followed by the negative reactions and abusive reactions scales, then the participant and ex-partner SDO scales. Items were randomized within grids to avoid order effects. All measures used in this chapter appear in Appendix A.

Results

Descriptive statistics

Means, standard deviations, and intercorrelations for all measures (*n*=331 heterosexual participants) are displayed in Table 10. Mean substitution was used to deal with missing data in the structural equation modelling reported below (as the program we were using does not allow for missing data).

Table 10

Study 5: Uncentered Means, Standard Deviations, Ranges and Intercorrelations

Variable	Mean	SD	Range	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Age (18 to 70)	33.8	11.0	52.0										
2. Gender (-1 to 1)	-.27	.96	2.0	.04									
3. Relationship Status (-1 to 1)	.14	.99	2.0	.16*	.16**								
4. Participant SDO (1 to 7)	2.7	1.3	6.0	-.09	-.20***	-.14*							
5. Ex-Partner SDO (1 to 7)	3.3	1.4	6.0	.06	.16**	.02	.36***						
6. Positive Strategies (1 to 7)	3.2	1.4	5.6	-.06	-.15*	-.02	-.03	-.15**					
7. Honest Strategies (1 to 7)	5.3	1.7	6.0	-.002	.10	.10	-.17**	-.10	.04				
8. Aggressive Strategies (1 to 7)	2.2	1.1	5.1	-.01	.09	.02	.26***	.28***	-.35***	-.02			
9. Avoidant Strategies (1 to 7)	3.1	1.4	6.0	.02	.09	-.01	.10	.16**	-.16**	-.42***	.36***		
10. Negative Reactions (1 to 7)	3.3	1.9	6.0	.02	.02	.06	.08	.16**	-.16**	.08	.34***	.07	
11. Abusive Reactions (1 to 7)	2.1	1.3	5.6	-.04	.08	.01	.17**	.26***	.00	-.01	.48***	.17**	.65***

Note. *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$.

Structural equation modelling

Structural Equation Modelling (SEM) with latent variables was undertaken using AMOS 22. Age, gender, and relationship status were treated as observed variables. The remaining measures were treated as latent variables in order to model measurement error. As justified by Little, Cunningham, Shahar and Widaman (2002), we created multiple indicators for each latent variable using partial disaggregation approach. Two to three small groupings of random items (minimum 1 item, maximum 5 per group) from each respective variable were created and then averaged. Specifically, we created three indicators each for all variables excluding *honest strategies*, which consisted only of two items, hence had two 1-item indicators. Dependent variables were allowed to correlate (for precedent see Sibley & Duckitt, 2009).

According to Hu and Bentler (1995), indications of a model with a satisfactory fit include a non-significant chi squared test (χ^2) or a χ^2/df ratio ≤ 3, a comparative fit index (CFI) $\geq .95$, and values of the root mean square error of approximation (RMSEA) $<.06$ and the standardized root-mean-square residual (SRMR) $<.08$, hence we judged our model according to these criteria.

The predicted model provided a good fit for the data, χ^2(251, *N*=331)=525.24, p<.001, χ^2/df=2.09; CFI=.94; RMSEA=.058; SRMR= .054. A summary of the effects decomposition analysis is shown in Table 11. Participants who were high in SDO themselves reported using more aggressive rejection strategies to break up with their last partner, as opposed to participants lower in SDO. These participants also recalled more negative and abusive reactions from their last partner upon rejecting them. In addition, and in contrast to expectations, participants who rated their *ex-partner* as high in SDO reported using less positive and more aggressive strategies to reject them, and reported more negativity and abuse during that rejection (as opposed to participants who rated their ex-partner lower in SDO). The participant's own SDO, as well as the SDO ratings of their ex-partner, indirectly predicted negative and abusive reactions to rejection, through the positive and aggressive rejection strategies. Neither participant SDO or ex-partner SDO significantly predicted honest or avoidant rejection strategies, and these strategies did not independently predict negative or abusive reactions.

Figure D depicts the final model, which accounted for a reasonable percentage of the variance in the mediators—positive rejection strategies (4.9%) and aggressive rejection strategies (14.5%); and a substantial percentage in both dependent variables—abusive reactions to rejection (35.0%), and negative reactions to rejection (17.7%).

Table 11

Study 5: Standardized Effects Decomposition

		Effects		
Predictor	**Criterion**	Direct	Indirect	Total
Participant SDO	Positive Rejection Strategies	-.01	–	-.01
	Honest Rejection Strategies	-.15	–	-.15
	Aggressive Rejection Strategies	.20**	–	.20**
	Avoidant Rejection Strategies	.15	–	.15
	Negative Reactions to Rejection	–	.06*	.06*
	Abusive Reactions to Rejection	–	.13**	.13**
Ex-Partner SDO	Positive Rejection Strategies	-.14**	–	-.14**
	Honest Rejection Strategies	-.08	–	-.08
	Aggressive Rejection Strategies	.24**	–	.24**
	Avoidant Rejection Strategies	.15	–	.15
	Negative Reactions to Rejection	–	.09**	.09**
	Abusive Reactions to Rejection	–	.13**	.13**
Positive Rejection Strategies	Negative Reactions to Rejection	-.06	–	-.06
	Abusive Reactions to Rejection	.19*	–	.19*
Honest Rejection Strategies	Negative Reactions to Rejection	.14	–	.14
	Abusive Reactions to Rejection	-.14	–	-.14
Aggressive Rejection Strategies	Negative Reactions to Rejection	.35**	–	.35**
	Abusive Reactions to Rejection	.74**	–	.74**
Avoidant Rejection Strategies	Negative Reactions to Rejection	.05	–	.05
	Abusive Reactions to Rejection	-.21	–	-.21

Note. *p<.05; **p<.01; ***p<.001.
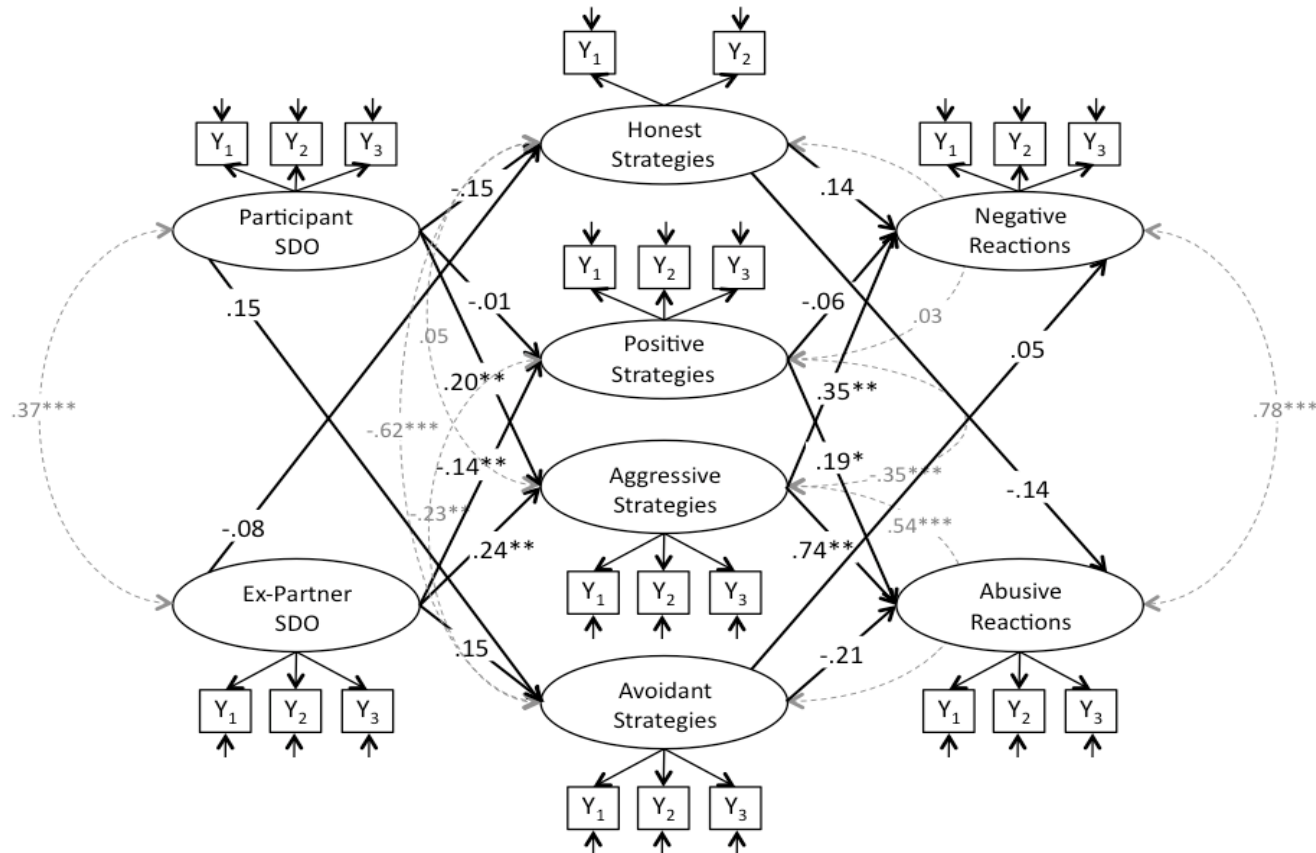
Figure D

Structural equation model showing the standardized direct effects of Participant and Ex-Partner SDO on Negative and Abusive Reactions to Rejection, with Honest, Positive, Aggressive, and Avoidant Rejection Strategies as mediating variables. *Note: Relationships between the latent variables are shown and are significant at *p ≤ .01; **p ≤ .05, ***p ≤ .001; N = 398.*

Discussion

Study 5 saw that as participant and ex-partner SDO increased, so too did the participant's use of aggressive rejection strategies. In turn, as they used more aggressive rejection strategies, their ex-partner reacted with more negative and abusive behaviors. Positive rejection strategies were not associated with participant SDO (participants higher in SDO were not more or less likely to use positive strategies to reject their last partner than those lower in SDO). Furthermore, as ex-partner SDO ratings increased, the reported use of positive rejection strategies significantly *decreased.* When used however, positive rejection strategies were positively associated with increased reported incidence of abusive reactions to rejection, but had no significant effect on negative reactions to rejection. Contrary to hypotheses, avoidant breakup strategies were not associated with SDO (participant or ex-partner), and were not related to reports of negative or abusive reactions to rejection. It should be noted that the modification indices did not indicate the necessity of a direct link modelled between either indicator of SDO and final dependent variables. That is, the proposed suppression model was not found. This is already evident, however, as partner SDO was linked to the use of a strategy that was associated with more negative consequences (contrary to hypotheses). Honest breakup strategies were also not associated with SDO (participant or ex-partner), and were also not related to reports of negative or abusive reactions to rejection

In short, Study 5 found that to the extent that we perceive an ex-partner as high in SDO, we report having used more aggressive and less positive rejection strategies. Using more aggressive strategies in turn predicted harmful consequences. Unexpectedly, positive strategies were also linked to more abusive reactions. These results are considered in the Chapter 5 Discussion below, and in Chapter 6.

Chapter 5 Discussion

SDO and dangerous outcomes

Across three studies we found evidence that like men, women who were high in SDO were more likely to react negatively to romantic rejection than women lower in SDO. In Study 4, we provided the first evidence that perceived SDO in a partner might be predictive of increased abuse during romantic rejection. We also examined whether one's role in the rejection played a part (either being the rejecting, or rejected party). We found that the higher a rejected party's SDO, the more negative reactions people experienced post-rejection. With this effect, it did not matter whether participants were men or women, or whether they were discussing their own rejection or rejecting someone else: SDO still predicted bad outcomes after rejection (but see findings for abusive reactions to rejection in Table 9). In Study 5 we simplified the perspectives examined, with participants reporting only on the last time they rejected someone else. Their own SDO, and the

SDO they perceived in the partner they rejected, was associated with the use of particular breakup strategies (importantly, aggressive strategies), and negative and abusive reactions to rejection. Overall, we were unable to find evidence for a strategy that reduced or minimized one's risk when rejecting a party high in SDO. However, our results suggest that it is important to avoid using aggressive strategies when rejecting those high in SDO, and also to minimize the use of overly positive strategies.

SDO and rejection strategies

Study 3 and Study 4, in conjunction with the research presented in Chapter 4, demonstrated that the SDO of a rejected party is associated with negative consequences for those initiating rejection. In Study 5 we proposed that these effects would cause measurable responses in one's behavior when attempting to reject someone who posed a risk to physical safety. Taken together, the results of this investigation lead us to suggest there may be cycles of negativity in relationships with a partner who is high in SDO. Chapter 4 suggests that SDO is a global orientation to hierarchy that is linked to negativity and abuse in relationships, particularly surrounding responses to mate rejection. Although victims of abuse are not responsible for the abuser's actions, we have uncovered pathways that potentially lead to more violence when confronted with rejecting someone high in SDO, which is important to examine in order to help those at risk of such detrimental behaviors. That is, SDO itself is related to negative beliefs and behaviors, and people's responses to inferred or perceived SDO appear to be largely negative (with negative strategies being deployed when rejecting a partner who is high in SDO). Unfortunately, the use of aggressive strategies, in turn, robustly predicts subsequent negative and abusive reactions from the rejected party.

From an evolutionary perspective, rejection strategies should be used and maintained because they work, at least on average (see Chapter 2). We did not find the 'protective' strategies we predicted. Instead, we demonstrated that people are likely aware of a high SDO partner's increased propensity for negative reactions. Theoretically, we recognized that it was possible that some people may plan to compensate for this by using overly affectionate or caring strategies to reject high SDO partners, but we saw the reverse in our data. Positive strategies, however, did not provide a significant protective effect, both in terms of negative reactions to rejection, and abusive reactions. Overall then, it appears that people may become prone to using knee-jerk aggressive strategies to deal with a partner high in SDO, resulting in a heated rejection situation and a volatile reaction from their partner. Alternatively it may be that those high in SDO may themselves be *so* dominant, psychologically entitled and aggressive that when ending a relationship with them, partners feel the need to powerfully or aggressively eject them from their lives. Regardless, using aggression when rejecting a person high in SDO is ill advised. We discuss whether there are indeed *any* useful or 'protective' rejection strategies in Chapter 6.

SDO and women's aggression

Study 3 also raised an interesting question. Replicated in Studies 4 and 5, we found that women high in SDO were not supporting the typical social hierarchy to the extent that they allowed men a privileged position within relationships breakdowns. Instead, they appeared to be reacting just as poorly and violently to rejection as men who were high in SDO. That is, there were no gender differences in negative and abusive reactions to rejection, and no meaningful differences in the sizes of these associations between SDO and these variables. Chapter 4 demonstrated that men's SDO was a robust predictor of their negative behaviors during rejection from romantic relationships, in particular because they derogated women. The same is not likely to be true of women. Women high in SDO do seem to support a patriarchal hierarchy in many senses (e.g. supporting gender stratifications, see Sibley & Liu, 2010), yet other investigations have shown that SDO "predisposes people to be prejudiced against all out-groups," (Whitley, 1999, p. 131). SDO does commonly serve the self-interest of privileged groups, providing justification for the dominance of some groups over others (Sidanius & Pratto, 1993).

Therefore, women high in SDO might react negatively to rejection by men because they derogate or devalue men, or perhaps because they support socially dominant worldviews when it suits them and gains them privilege (among other possibilities). It is also possible that these women are using SDO as justification to privilege themselves and their group when it serves them (if they identify as White, for example), without conceding privilege in other contexts. Instead they may extend a sense of entitlement to other situations, including within romantic relationships. Potentially, SDO may not be such a strict adherence to group hierarchies to advance group agendas, as it is the advocating of support for group dominance motivated by expected personal gain. Specifically, this may be explained by an inflated sense of psychological entitlement (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004), a factor that has shown to be related to SDO (within a recent reanalysis of Study 2's data). Those high in psychological entitlement believe that they are more worthy or deserving of special treatment than others, and therefore they may feel that they are entitled to have access to the lives and bodies of other people. This may be the facet of SDO that leads to aggression during rejection, especially for women. Since psychological entitlement data was not collected within this chapter, at this point we can only speculate. As argued by Pratto and colleagues (1994), both men and women high in SDO are likely prone to developing myths to legitimize oppression. Potentially, men and women may develop separate myths to justify an advantage for themselves in whatever situation they encounter.

Alternatively, SDO may be representing a generalized externally focused prejudice, which leads to the derogation of men as well as women. SDO has been strongly and robustly linked to prejudice in other contexts, and predicts prejudice over and above related constructs such as Right-

Wing Authoritarianism (Asbrock, Sibley, & Duckitt, 2010). It is not inconceivable to propose that SDO in women is associated with overt derogation of both women *and* men. Perhaps the generally prejudiced facet of SDO is particularly salient in situations of confrontation, and driving this effect for women. There are other possibilities, however. Importantly, although SDO is distinguishable from interpersonal dominance (Pratto et al., 1994), we cannot rule out that the effects we see are simply be attributed to a potential correlation with the combination of influence, conversational control, focus and poise, panache, and self-assurance (as clarified by Burgoon, Johnson, & Koch, 1998). It may also be the anti-egalitarianism aspect of SDO that drives individuals to attempt domination and intimidation during romantic rejection, using aggression in this manner.

Then again, it is possible that like men, women who are high SDO also adopt gender-specific beliefs. That is, they may feel that women are superior to men in certain spheres – something which may be tapped into by benevolent sexism (much like high SDO men's dangerous reactions to rejection are driven by hostile sexism; Chapter 4). Women, for example, may believe that they possess more 'purity', purpose, or morality than men: thus men who reject them or treat them in a cavalier manner violate their expectations for how they should be treated, to which they react poorly. We suggest that future research delve deeply into SDO and interpersonal violence and aggression, particularly for women, in order to uncover the true drivers of these effects.

Self- versus other-rated SDO

Study 3 replicated Study 4, demonstrating that women high in SDO are reliably prone to negative behaviors and aggression during rejection. To our knowledge, Study 4 is also the first of its kind to ask participants to infer the SDO of another party; and it drew results consistent with theorizing. That is, Study 4 extended our previous findings by showing that those high in SDO are not only dangerous when they are rejected, but also when they are rejecters. As expected, the SDO of the rejecter also predicted abusive reactions to rejection, but only when the participant was discussing rejecting someone else. This interaction could have occurred for several reasons. Participants may be subject to self-serving biases, reluctant to recognize or discuss their own past antisocial or damaging behavior, despite being willing to report someone else's. As these are the first studies on the topic, we are unable to discern the causal pathway of such results. Potentially, participants may have exaggerated their ex-partner's adverse behavior because their ex-partner was high in SDO, or because they themselves were high in SDO. Alternatively, they may have exaggerated their ratings of their ex-partner's perceived SDO because of adverse behavior their ex-partner displayed during the rejection. It has been demonstrated that negative implicit views towards an ex-partner contributes to better outcomes post-breakup (Imhoff & Banse, 2011), hence variations from the truth may aid with coping post-rejection. It is also entirely possible that we are seeing a bi-directional relationship, such that people do infer one another's SDO, and this does

predict how they act; but they also get information about someone's SDO from their responses to a breakup.

To understand these effects, future research is suggested. Experimental research on these topics is not entirely feasible; however a vignette study may be possible where subjects imagine the rejection of a person who has previously displayed high SDO traits. Participants could then be asked how they expect the person to react. Alternatively, subjects could see vignettes depicting terrible reactions to rejection perpetrated by the rejected party (and the rejecter in other conditions), and be asked to rate the perpetrators' SDO. However, we expect the results of such a study to mirror our own. To clarify, perhaps research could track a couple's SDO over time, and examine whether their mutual SDO ratings changed after a bad break-up, or alternatively whether it is possible to predict future abuse during breakups from earlier SDO ratings. In general, there are other methods that could be used to understand the overall patterns we have found, and we suggest that researchers may benefit from beginning to investigate mate rejection while considering SDO.

Additionally, future research containing social desirability measures as controls is recommended; along with alternatives that disguise the true nature of the study and SDO scale in different ways. If these investigations were to provide the same outcomes, we could be more confident in the condition effects found in Study 4 and their interactions with SDO and adverse reactions to rejection. Finally, if perceived SDO can affect relationship dissolution, what other interpersonal situations might it affect? SDO itself has only recently been extended to make predictions within interpersonal relationships, hence a great deal could be gleaned from exploring the opportunities presented by these new applications for the SDO Scale created by Pratto and colleagues (1994).

Conclusions

In Chapter 5, over three studies, we provide the first evidence that women's Social Dominance Orientation (SDO) predicts dangerous and aggressive reactions to romantic rejection, as it does with men. We also provide the first evidence that perceived SDO in others is linked to increased reports of abuse during romantic rejection, and are the first to use a measure of inferred SDO. We also examined whether being the rejecting, or rejected party affected the relationship between high SDO and increased negative and abusive reactions to rejection: finding that regardless of the reporter, the higher a rejected party's SDO, the more adverse reactions people experienced post-rejection. Thus, it did not matter whether participants were women or men, SDO still predicted bad outcomes after rejection. In Study 5 we examined whether the participant's own SDO, or perceived SDO in an ex-partner, predicted what rejection strategy was used to terminate the relationship. We also examined whether these breakup strategies reduced or increased incidences of negative and abusive reactions to rejection. People rejecting a high SDO partner were more likely to

use aggressive strategies, the use of which in turn predicted negative reactions and abuse after the breakup. Overall, we did not find any strategy that reduced or minimized risk when rejecting someone high in SDO; however we did find that is important not to use aggressive strategies when rejecting them, and to minimize the use of overly positive strategies as well.

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Chapter 6: General Discussion

Summary of Findings

At the beginning of this thesis, my colleagues and I argued that mate rejection and ex-partner relationships are important, multi-faceted topics that have been under-researched in evolutionary (and social) psychology (at least in comparison to mate selection). Chapter 2 presented a series of hypotheses aimed at exploring the potential behavioral and psychological adaptations that may have evolved to deal with the costs of mate rejection. While Chapter 2 was intended as a stand-alone article, it served to introduce the mate rejection literature and informed the hypotheses tested in Chapters 4 and 5, which were a subset of those presented in the theoretical overview. Our empirical investigations in Chapters 4 and 5 then targeted questions relating to physical threats like abuse during mate rejection, because mate rejection is fraught with risks to both survival and fitness (both for the rejecter, and for the rejected party). In Chapter 3 I introduced SDO, a generalized world-view, and suggested that it might be a force behind threatening behaviors and attitudes in the context of mate rejection. Investigating SDO in Chapters 4 and 5 helped us begin to understand what broad, ideological factors might contribute to negative and dangerous responses to mate rejection.

My colleagues and I began our empirical work on mate rejection in Chapter 4 by investigating men's reactions to romantic rejection by women, because of work illustrating that men pose a greater risk to women during rejection, than women do to men (as discussed in Chapter 2). Social dominance theory suggests that people may normalize beliefs and myths that promote the dominance of one group over others in order to legitimize oppression and to reduce dissent and conflict (as argued by Pratto et al., 1994). In hierarchical, inequitable societies, which people high in SDO adhere to, women are more likely than men to be oppressed and abused within relationships. As predicted, Chapter 4 found that men who scored higher in SDO were more likely to blame women for romantic rejection, and report having responded to women's past rejection with persistence and manipulation (e.g., convincing her to 'give him another chance'), as well as with aggression and threats of violence (Study 1). Study 2 replicated these findings, and further demonstrated that men higher in SDO were more likely to endorse rape myths (e.g., believing that sometimes a woman's barriers need to be "broken down" in order to attain sex), and to want to lower the legal age of sexual consent in women. Two mediators appeared to be driving these relationships. That is, hostility towards women (hostile sexism) and a desire to discipline 'insubordinate' women, which both seemed to be motivating men's negative beliefs and behaviors surrounding rejection. Further analyses suggest that a sense of psychological entitlement might also drive these relationships. Importantly, Chapter 4 provided the first evidence that a generalized

world-view (SDO) might link to dangerous behaviors in interpersonal relationships, posing risks to the rejecter's survival (and potentially, to the survival of their offspring).

Over three subsequent studies, Chapter 5 demonstrated that women's SDO also predicted dangerous and aggressive reactions to romantic rejection, as it did with men in the previous chapter. This finding is discussed in more detail below. Study 4 of Chapter 5 went on to extend our view on mate rejection and aggression by investigating whether someone's perception of an ex-partner's SDO might be linked to their retrospective reports of post-breakup negativity and aggression. We had participants either report on their own SDO, and their own responses to being rejected, or the extent to which they saw an ex-partner as being high in SDO, and how that ex-partner responded to their rejection. We saw that for both men and women, SDO was related to increased negative and abusive reactions to rejection, but that SDO was only associated with increased abusive reactions to rejection when they were reporting on someone else, as opposed to when they were reporting on their own behavior.

The final study (Study 5) was solely from the perspective of the rejecter, asking participants to describe an experience of rejecting someone, and to infer that ex-partner's SDO. Additionally, we controlled for the participant's SDO (i.e. the rejecter's SDO). Here, we also probed further into mate rejection and aggression by examining mate rejection strategies people reported having used, and whether these were related to SDO (either the SDO of the participant [the rejecter], or the ex-partner [the rejected party]). Importantly, Chapter 5 showed that the extent to which people remembered their partner as high in SDO predicted meaningful variance in the strategies they remembered using to reject that partner, along with how they remembered their partner responding. At an absolute level, honest strategies were used most frequently (refer to Table 10). Following this were positive strategies, then avoidant strategies, and then aggressive strategies. In terms of SDO, we found that to the extent that people perceived an ex-partner as high in SDO, they reported having used more aggressive and less positive mate rejection strategies. Using more aggressive rejection strategies in turn predicted harmful consequences (i.e. negative and abusive reactions from the ex-partner). Unexpectedly, positive rejection strategies were also linked to more abusive reactions. Therefore, in Chapter 5 my colleagues and I suggested that to deal with a high SDO partner, people might be inclined to act aggressively, attempting to forcibly eject them from their lives, for example. It is possible that people used fewer positive rejection strategies with high SDO partners because they recognized the risks (i.e. that this strategy could lead to abuse), however that does not adequately explain the significant positive relationship between inferred ex-partner SDO and aggressive rejection strategies. Instead, as my colleagues and I suggested in Chapter 5, these findings might simply demonstrate that those with high SDO partners prefer to aim aggression at their partner during rejection as opposed to positivity (potentially due to a general negativity within

the relationship; although this remains to be demonstrated through further research). Alternatively, as high SDO is related to higher levels of psychological entitlement (see Chapter 4), those high in SDO may be less likely to accept a rejection or believe it is possible, hence a rejecter may have to escalate their strategy to aggression in order for the high SDO partner to accept it as legitimate.

Overall, by pinpointing measureable variables that are implicated in aggression during mate rejection, we have contributed to research that may help people identify general traits in potential, current, or previous partners that might lead to danger. As argued in Chapters 2 and 3, recognizing these cues could assist in selecting a suitable mate, or engaging in rejection prior to establishing a volatile relationship. Herein, my colleagues and I were the first to use a measure of inferred SDO, and provided the first evidence that perceived SDO in others may be linked to increased risks during mate rejection (e.g. abuse; Chapter 5). Specifically, the work suggests that people can tell when someone else is *potentially* dangerous (e.g. high in SDO), and our results imply that rejecters might in some ways attempt to compensate for these potential risks (although perhaps not successfully). These findings have consequences for many fields, but most notably, for intimate partner violence research.

Intimate Partner Violence, Predicting Aggression, and Protective Rejection Strategies

Research on intimate partner violence has historically focused on femicide and violence against women, and often identifies risk factors by victim traits (e.g. demographics like race, employment, martial status, and age; see Zorrilla et al., 2009; Powers & Kaukinen, 2012; Romans et al., 2007). While some studies examine risk based on offender traits (e.g. Weizmann-Henelius, Grönroos, Putkonen, Eronen, Lindberg, & Häkkänen-Nyholm, 2011) including some perpetrator behaviors or personality traits (e.g. controlling behaviors and jealousy; Glass et al., 2008), to my knowledge there are no studies linking generalized world-views to intimate partner violence (or risk of violence). Affording people who are in danger of intimate partner violence advanced clues about someone's propensity for abuse could be invaluable. Information about who might be dangerous to mate with or partner with – and about which 'red-flags' are important to attend to – could potentially save lives in the battle against domestic abuse (although seeking professional help is recommended if abuse is already present, see Limitations section below). This thesis sheds new light on certain tendencies that might be important in predicting abuse by a partner, or at least whether someone might become abusive if they are rejected. Since SDO is closely linked with sexism (Christopher & Wojda, 2008; Ekehammar, Akrami, & Araya, 2000; Pratto et al., 1994; Sibley, Wilson, & Duckitt, 2007), racism (Akrami, Ekehammar, & Araya, 2000; Kteily, Sidanius, & Levin, 2011; Pratto et al., 1994), negative attitudes towards the mentally ill (Bizer, Hart, & Jekogian, 2012), and homophobia (Altemeyer, 1998; Whitley Jr. & Lee, 2000; Whitley Jr., 1999), this research might be able to help people by advising people to look out for these traits in potential

partners. This is <u>not</u> to say, however, that all those who are high in SDO *are* or *will be* abusive. It is important to note that although my colleagues and I found associations between SDO and abusive behaviors surrounding rejection, these are only correlations. However, this thesis, in conjunction with the previous literature, does suggest that inquiring about a potential mate's support for equality could be indicative of *potential* danger down the line. Perhaps the development of a simple psychological scale combining aspects of all these related prejudices would be helpful in this context. Such a scale could be widely deployed on internet dating websites to help screen and profile dating candidates, and similar scales could be recommended as important questions to ask on first dates, for example.

However, it must be acknowledged that these are small effects, and a large proportion of the population does not report being high in SDO. Furthermore, SDO might often present in conjunction with many other related individual difference traits (including political conservatism and cultural elitism; Pratto et al., 1994; or psychological entitlement, see discussion below). It could be that someone's SDO goes hand in hand with views that make him or her quite compatible with other people from certain groups (e.g. others who are of the same political persuasion). Hence, it might be hard for certain mate-seekers to identify potential partners who *both* hold compatible viewpoints, but do *not* indicate high levels of SDO. This is not to say that all political conservatives, for example, are high in SDO. Instead, I suggest that many of the traits associated with SDO might be hard for the untrained mate-seeker to disentangle from the traits they might be seeking in a mate (political compatibility, etc). This poses many challenges for future researchers, but I recommend in-lab trials that attempt to hone a short and easily memorable checklist for potential mates, one that quickly separates SDO from other related constructs, and importantly, indicates any past abusive behaviors. Additionally, it is possible that other generalized world-views related to SDO could be driving the relationships found in this thesis. For example, right-wing authoritarianism, political conservatism, or morality could be driving SDO and in turn causing SDO to predict abusive interpersonal behaviors. Clarifying whether SDO is the best distal predictor of abusive actions within interpersonal relationships would be advisable for those continuing this line of research. Importantly, as recent data checks within Chapter 4 indicate, SDO could be a proxy for a personal sense of psychological entitlement over others, or tendencies toward aggression, and these factors might be the primary predictors of aggressive responses to rejection. Considering these possibilities would be useful in discovering whether SDO alone is a key predictor of interpersonal aggression during rejection, or if other factors contribute (and how much so).

As argued in Chapter 5, an individual's choice of rejection strategy could be important to help protect them from aggression during rejection. As mentioned, victims of violence are never to blame for the actions of the abuser. However, for those already at risk from a potentially dangerous

partner, investigating relationship termination strategies that could minimize risk is vital. Unfortunately, in this thesis, my colleagues and I were unable to find evidence for a strategy that reduced or minimized one's risk when rejecting a person high in SDO. However, our results suggested that it is important to avoid using aggressive strategies when rejecting those high in SDO (e.g., becoming violent or threatening, yelling, acting cruel), and also to minimize the use of overly positive strategies. This information alone may serve to protect someone who is already partnered to a person who is potentially dangerous. By continuing where my colleagues and I left off, future researchers might find a rejection strategy that is effective in mitigating or minimizing the rejected party's adverse reactions to mate rejection. If psychological entitlement is the facet of SDO that is driving aggression during rejection, then perhaps dishonest rejection strategies may be helpful in reducing dangers during rejection. In order to ensure that they protect the rejected party's feelings (and inflated sense of entitlement), the rejecter might cite external, potentially false reasons for the rejection (e.g. 'I don't think I'm good enough for you' or 'My parents won't let me see you'). These strategies may help to convey respect towards the rejected person, but still propose a 'valid' reason for ending the relationship. Future research into these strategies would be valuable. My colleagues and I also found that those who reported rejecting a partner high in SDO were more likely to report using aggressive strategies to do so. Unfortunately, as mentioned, this went on to predict more negative and abusive outcomes from the rejected party. Recommendations can be made from this finding. Specifically, it might be useful for some people to recognize that they could experience a drive or desire to reject a high SDO partner aggressively, but that they ought to resist that inclination and try an alternate approach (importantly, seeking assistance and protection at the outset).

Our findings raise concerns about whether there *is* any good way to break up with someone who is high in SDO. Honest and avoidant strategies did not have any significant effect (positive or negative) on negative or abusive reactions post-rejection. Perhaps people cannot end a relationship involving someone high in SDO without negative or dangerous consequences. It is also possible that those rejecting high SDO partners might begin by using gentler rejection strategies but end up resorting to aggression when they feel the rejection isn't being tolerated or accepted. Future research should continue to search for options that may minimize harm, and delve into the specific timing of rejection strategies and how they are used, discovering whether strategies might be used sequentially for different purposes. It may be that the use of a neutral tone strategy is effective (a strategy that is neither positive nor aggressive), or perhaps even deceptive strategies, or neutral and then deceptive strategies. Importantly though, this thesis presents evidence for the rejection strategies one should avoid, which is a key contribution to the rejection and interpersonal violence literature.

SDO and Aggression Surrounding Mate Rejection: A Lack of Gender Differences

Replicating the findings of Study 3, in Study 4 the association between SDO and adverse reactions to rejection were not dependent on gender. Despite the literature suggesting that men *typically* pose greater risks to women than women do to men (refer to Chapter 2), in Chapter 4 gender did not predict abuse, and SDO did not differentially predict abuse for women and for men. That is, just like men, women who were high in SDO were also more likely to report externalization of blame for rejection (instead blaming the male rejecter, or circumstance), along with aggressive manipulation towards men who were rejecting them (refer to Table 6). Chapter 5 also revealed no gender differences in the reported levels of negative and abusive reactions to rejection (refer to Table 8). This is in contrast to the predictions my colleagues and I made in Chapter 2. Indeed, although my colleagues and I acknowledged that women can pose a risk to men within intimate relationships and during mate rejection, we suggested in Chapter 2 that the risk women pose to men might be reduced compared to vice-versa. Furthermore, men typically score higher in SDO than women (Pratto et al., 1994), suggesting that there *should* be a gender difference at a baseline level. There are a number of potential reasons for why we did *not* find any of the gender differences predicted.

Firstly, social desirability may be affecting participant's responses. It is possible that women may be more comfortable reporting on their own past negative behavior, and men in comparison may be less inclined to do so (or both), hence equalizing the results for men and women. Alternatively, women may have exaggerated their past actions in comparison to men (who may have reported their actions accurately). Another possibility is that abuse perpetrated by women is underreported in the violence and stalking literatures. This underreporting in the literature could be due to women not admitting abusive behaviors, men not reporting women's abusive behaviors, or both. It may even be that when women commit abusive acts, they are interpreted as 'less severe' or less worthy of report (to police, for example) than when the same acts are committed by men (or even less worthy of formal punishment). This notion would be easily testable in a laboratory setting, and could involve having participants rate images, videos, or vignettes of real or hypothetical abuse committed separately by a man or a woman (matched on other key variables which may affect 'liking' of the actor, including attractiveness). Indeed, this would help to resolve whether a systematic underreporting of abuse committed by women is responsible for the results in this thesis that are contrary to predictions.

A further alternative is that women and men indeed commit the same levels of abuse post-rejection, but when men commit these acts they are more severe and damaging (due to their increased strength, for example). This could mean that although incidence levels are similar for men and women at the outset, more women present at hospitals, police stations, etc. with reports of

violence perpetrated by men, in contrast to men who may not require or seek treatment (or other interventions) after abuse from women. Another possibility is that the results could have even been due to issues in the measurement of the gender differences in negative abusive reactions to rejection, including failing to incorporate items that might have captured such variance. The following is a brief explanation of the findings, presuming that they are correct and are accurately representing real-world effects.

What if the findings are correct?

If correct, the findings in Chapter 5 suggest that rather than reacting submissively to rejection (potentially as a result of a pervasive world-view that mirrors society's placement of men above women), women who advocate inequality do *not* placidly accept rejection by men. During mate rejection, high SDO women appear to be placing their own desires over men's and behaving much like men who are high in SDO. As discussed in the Chapter 5 Discussion, my colleagues and I speculated that this indicates that an orientation towards personal social dominance or psychological entitlement may be key in women's SDO, as opposed to rigid support for a hierarchy where males are accepted as more worthy of power and dominance than women (this is also probably the case for men's SDO too, although they would likely support the patriarchy more intensely than women). These women do seem to support a patriarchal hierarchy in many senses (e.g. supporting gender stratifications, see Sibley & Liu, 2010), yet we discussed other investigations that showed SDO to bias people towards prejudice against *all* other groups (Whitley, 1999). As SDO commonly serves the self-interest of privileged groups, we might be seeing that SDO is the advocating of support for group dominance motivated by expected personal gains. Alternatively, both men and women may develop separate group-based myths to justify an advantage for themselves in whatever situation they encounter. Conversely, SDO may manifest similarly for men and women in interpersonal relationships, but for different reasons. Men high in SDO might be trying to adhere to a broader social structure (the patriarchy), whereas women high in SDO may be attempting to enforce their within-relationship power (as women typically wield the power within romantic relationships, as discussed in Chapter 4). An important alternative highlighted by re-analyzing the data from Study 2 suggests that psychological entitlement—an inflated sense of 'worthiness' and expectations for special treatment—may be a key facet of SDO that drives negative behaviors during rejection. Therefore, in both women and men, high psychological entitlement may lead people to feel that they are entitled to have access to the lives and bodies of other people, and become aggressive when this expectation is violated, or loathe to accept it.

SDO and aggression as a solution to mate rejection? Despite most of our participants exhibiting low levels of SDO, evolutionarily, SDO might still be present in the current population

within certain people because they may have helped some of our ancestors obtain and maintain partnerships (by increased access to resources through the suppression of others, outcompeting rivals, etc.; as discussed in Chapters 2 and 3). Those high in SDO tend to hold an array of anti-egalitarian beliefs that disempower women (see Chapter 4), yet some women still hold and support socially dominant world-views. Potentially, since SDO could have helped *some* men achieve mating success (thereby increasing their genetic representation in the next generation), it may now be present within women as an evolutionary byproduct. Alternatively, SDO may be passed from male to female by social transmission, such that men possessing the world-view might influence their female kin and comrades to take on the same beliefs. Alternatively, SDO and the related aggression seen in Chapter 5 may serve both men and women equally by allowing them to avoid the costs of an imminent mate rejection through an intense 'protest' of a rejection (presumably resulting in a successful outcome some of the time). In this situation, SDO might have co-evolved within women and men as a response to the ever-present threat of a reduction in fitness (or survival threat, as discussed in Chapter 2; see Duntley & Shackelford, 2012 for discussion of co-evolution). Another possibility is that SDO may be present at varying levels within humans as a result of reactive heritability (e.g. Lukaszewski & Roney, 2011; von Rueden, Lukaszewski, & Gurven, 2015), wherein the circumstances within ancestral societies 'calibrated' certain personality traits to particular levels (low or high) that were useful for the group overall (or were in reaction to other heritable phenotypic features), in a series of cost-benefit tradeoff situations. That is, although the 'cost' of SDO may be high in some circumstances (e.g. being inclined to use violence against a partner), possessing it may have afforded a higher benefit to the ancestral group (e.g. helping their group to oppress competing local tribes), or to the individual and hence it propagated. Alternatively, SDO could be present in women *simply* as a system-justification (see Sidanius & Pratto, 2001, Pratto et al., 1994; Fischer, Hanke, & Sibley, 2012); or due to women holding such strong evolved preferences for dominance in men (for discussion see Buss & Duntley, 1999). Another possibility is that psychological entitlement accounts for the results seen within this thesis, and it is this sense of personal entitlement that has improved our ancestor's historical mating success.

Clearly, it is difficult to foresee what the correct narrative may be (or whether there is an evolutionary explanation for men's and women's SDO at all). However, although it is not a social or recommended mating strategy, this thesis has shown that SDO does have important consequences during mate rejection. Additionally, those high in SDO report no fewer relationships than those lower in SDO (Chapter 4), although it might be intuitive to think that anti-egalitarian tendencies would result in less dating success; hence this world-view may indeed be consequential in obtaining, maintaining, or regaining mates (at least for some people). Indeed, it may be that people are afraid to reject those who are high in SDO due to the anticipated negative consequences

of such rejections, so they don't. SDO, instead, might be attractive when paired with resources, wealth, or high status. Assortative mating may also play a role, wherein individuals similar to one another are more likely than chance to mate, perpetuating certain phenotypes within groups. Future research to untangle the development and evolution of SDO relating to aggression during mate rejection is necessary in order to rule out some of these possibilities. Longitudinal research may be most useful in this regard.

Limitations and Improvements

A limitation of the theoretical work presented in Chapter 2 is that it relies on several assumptions. The first is that people will engage in mate rejection when they have the most mating options, and avoid mate rejection when they have the least. Furthermore, the hypotheses also rely on the assumption that people avoid mate rejection when the possibility of loss is highest (that is, when the costs are high). Although these assumptions are rooted in evolutionary and mate selection theory, I have not specifically tested them. Hence, I cannot make claims as to their exact utility in mate rejection research.

Another primary limitation of the thesis is that all data collected was cross-sectional, hence any causal assumptions are only speculative. Longitudinal research would be necessary to trace which behaviors or beliefs precede (and potentially cause) the others. Chapters 4 and 5 also involve recalled incidents of past rejection, and memory can be imperfect (see Ross & Wilson, 2001; or Loftus, & Palmer, 1974 for a classic example). Since people might be reluctant to fill out surveys while in the midst of a relationship dissolution, or hesitant to report a recent incidence of rejection that is still painful, we may be seeing the results of a collection of old and potentially contrived memories. These might have been manipulated in the reporter's mind, perhaps painting themselves in a better light, or their ex-partners in worse (or even inventing events altogether). To add to this, participants on online survey platforms may be reliant on the income or credits they receive from such sites (Ross, Zaldivar, Irani, Tomlison, & Silberman, 2010). Consequently, it is possible that subjects who had never experienced mate rejection could have contrived such an event to qualify for the studies. With this type of research, however, there is not a simple way to collect more (potentially) accurate results. Full dyadic longitudinal studies that follow both partners before, during, and after relationships might serve to increase the likelihood of accuracy, but these would be very time and resource intensive. Mobile technology could also be used to follow people through breakups as they happen, potentially sending a notification to the participant's Smartphone on a regular basis requesting information about their relationship, and prompting further questions should the participant report a breakup. This could serve to make this research more 'live', and potentially increase the accuracy of reporting.

In terms of the rejection strategies presented in Chapter 2 and tested in Chapter 5, although I suggested that people might reduce the costs of mate rejection by avoiding particular strategies, I have not empirically tested whether any particular strategy increases an individual's long-term risk of being the target of abuse by someone high in SDO. Therefore, my recommendations are tentative and do not replace the advice of professionals or the protection of agencies and law enforcement. I only suggest that the findings might help to inform these professionals, as well as future research and interested parties, about what might aid in reducing the intensity of mate rejection for those at risk of abuse or intimate partner violence in the future (once the results have been re-tested, established, clarified, and trialed). I do not imply that someone who is in danger or at risk of abuse should attempt to use any particular rejection strategy as a deterrent for aggression, I intend instead to simply discuss what appeared to affect negativity and abuse in these specific samples.

Concluding Remarks

Throughout this thesis, I have argued that heterosexual mate rejection is fuelled by a complex, dynamic set of considerations, and that it is not simply the inverse of mate selection. Currently, the fields of social and evolutionary psychology have left mate rejection largely under-researched. Mate rejection carries potential risks and benefits to both fitness and survival, and therefore is just as important as mate selection to human mating. This thesis aimed to reinvigorate the research into mate rejection, both from a social and evolutionary perspective. In Chapter 1, I illuminated the social correlates of mate rejection, and in Chapter 2 I explored it from an evolutionary perspective. This chapter proposed novel hypotheses relating to the survival factors, mate value factors, and contextual factors that might influence mate rejection. Importantly, it also presented hypotheses relating to aggression and dominance in mate rejection contexts. Then, I began my empirical investigations in Chapters 4 and 5, targeting questions relating to physical threats like abuse and survival during mate rejection. In Chapter 3 I introduced SDO, a generalized world-view, and suggested that it might be a force behind threatening behaviors and attitudes in the context of mate rejection. Over two studies, Chapter 4 demonstrated that SDO is an important predictor of men's adverse reactions to mate rejection. Indeed, I showed that SDO might even drive some of the relationships between hostile sexism and negative behaviors and attitudes towards women (including desires to lower the age of sexual consent in women). Chapter 5 extended these findings, showing that both women's *and* men's SDO was related to aggressive responses to mate rejection. In this chapter, participants also inferred the SDO of their ex-partners, and provided evidence that perceived SDO is linked with reports of abuse in mate rejection contexts. Indeed, I illustrated that perceived SDO might also predict the strategies people choose to reject mates. I also presented data suggesting aggressive and overly positive rejection strategies may not be helpful when rejecting people who are high in SDO, and may even increase the risk of abusive reactions to mate rejection.

In the final chapter, I discussed the findings along with limitations and suggestions for future research. Particularly, Chapter 6 discussed protective rejection strategies, and a lack of gender differences in aggression surrounding mate rejection. As a whole, this thesis contributes positively to the research on human mate rejection, and is the first to link generalized world-views to evolutionarily relevant dangers during rejection. I encourage future researchers to continue theorizing within the domain of mate rejection, and contributing data to explain some of the many remaining unanswered questions.

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Appendices

Appendix A

Stimulus Materials: Items and Response Details for Scales from Chapters 4 and 5

Social dominance orientation scale (Pratto et al., 1994)

(Studies 2 to 6)

1) Some groups of people are simply not the equals of others.
2) Some people are just more worthy than others.
3) This country would be better off if we cared less about how equal all people were.
4) Some people are just more deserving than others.
5) It is not a problem if some people have more of a chance in life than others.
6) Some people are just inferior to others.
7) To get ahead in life, it is sometimes necessary to step on others.
8) Increased economic equality.*
9) Increased social equality.*
10) Equality.*
11) If people were treated more equally we would have fewer problems in this country.*
12) In an ideal world, all nations would be equal.*
13) All humans should be treated equally.*
14) It is important that we treat other countries as equals.*

Note. All response scales from 1=very negative to 7=very positive. *Reverse Coded.

Study 4: For the Inferred SDO Scale (Study 4, Rejected Them Condition), participants were asked, 'Please indicate how positively or negatively you think *this ex-partner* viewed the following statements and concepts.'

Externalization of blame scale

(Study 1)

1) I feel that when a girl doesn't reciprocate my advances, it's because she doesn't want to seem desperate or clingy.
2) I feel that when a girl doesn't reciprocate my advances, it's because she's playing hard to get.
3) When a girl rejects me at a club or bar, it's because she doesn't want to leave her friends.
4) When a girl rejects me, it's because she's a bitch [/she must be frigid].

Note. All response scales from 1=strongly disagree to 7=strongly agree.

Externalization of blame scale (revised)

(Studies 2 and 3)

1) I feel that when a girl doesn't reciprocate my advances, it's because she doesn't want to seem desperate or clingy.
2) I feel that when a girl doesn't reciprocate my advances, it's because she's playing hard to get.
3) If a woman rejects me at a club or bar, I don't usually take her seriously.
4) When a girl rejects me at a club or bar, it's because she doesn't want to leave her friends.
5) When a girl rejects me, it's because she's frigid.[+]
6) When a girl rejects me, it's because she's a bitch.[+]
7) Women enjoy rejecting men.

Note. All response scales from 1=strongly disagree to 7=strongly agree. [+]Items 5 and 6 were created in Chapter 5 from *one* double-barreled item originally used in Chapter 4; Item 5 did not appear in Study 2, hence Study 2 used a 6-item scale. For women, these items were gender-reversed, for example: 'Men enjoy rejecting women', 'When a man rejects me, it's because he's frigid', and 'When a man rejects me, it's because he's a jerk'.

Persistent manipulation scale

(Studies 1 and 2)

1) Try to show her that I've changed, so she'll take me back.

2) Persist in calling/texting/emailing in the hopes that she'll change her mind.

3) Talk to her and try to convince her to take me back.

4) Buy her presents.

5) Try to impress her by exaggerating/lying about details of my life.

6) Try to make her jealous by pursuing other girls or her friends.

7) Follow her around in the hopes that she'll change her mind.

8) Shown up at places where she was likely to be.[+]

Note. Participants were asked to record their lifetime use of these strategies following past rejection, from 1='0' times, 2='2-4' times, 3='5-10' times and 4='10+' times. [+]Item 8 appeared only in Study 2, Study 1 used items 1 through 7 only.

Aggressive manipulation scale

(Studies 1)

1) Threaten to physically hurt her if she doesn't take me back.

2) Threaten to physically hurt myself if she doesn't take me back.

3) Try to sabotage her other dates.

4) Try to alienate her from her friends so all she has is me.

Note. Participants were asked to record their lifetime use of these strategies following past rejection, from 1='0' times, 2='2-4' times, 3='5-10' times and 4='10+' times.

Aggressive manipulation scale (revised)

(Studies 2 and 3)

1) Threatened to physically hurt her if she didn't take you back.

2) Threatened to physically hurt yourself if she didn't take you back.

3) Tried to sabotage her other dates.

4) Tried to alienate her from her friends so all she had was you.

5) Got physically aggressive.

6) Threatened suicide.

7) Posted negative messages on the internet, e.g. via social networking sites.

Note. Participants were asked to record their lifetime use of these strategies following past rejection, from 1='0' times, 2='2-4' times, 3='5-10' times and 4='10+' times. For Study 2, this scale was presented and coded as it was used when we created it (in Chapter 4, see Study 1 version above), and for Study 3 we made some minor tense changes, added some items, and created an additional gender-flipped version created for women to answer. This version is the final, tense-changed version used in Study 3.

Discipline scale

(Study 2)

1) Women respond well to punishment.
2) When a woman does something wrong, she should be corrected.
3) I think that sometimes women, like children, need a spanking when they've done something wrong.
4) Women sometimes need a firm hand.
5) A good spanking can teach a woman to behave.

Note. Response options ranged from 1='Strongly Disagree' to 7='Strongly Agree'.

Rape myth endorsement scale

(Study 2)

1) Women who dress provocatively are looking for sex.
2) A woman who is flirting with me wants to have sex with me.
3) A woman who asks a man out on a date clearly wants to have sex with him.
4) If a woman kisses me, then she definitely wants to have sex with me.
5) Women play hard to get, therefore they sometimes say no to sex when they actually want it.
6) Sometimes you have to try to break down a woman's barriers in order to get her to have sex.
7) If a girl accepts a drink from me, then I'm entitled to get something in return (e.g. a kiss, phone number, etc.).
8) If a girl dances with me in a club, it means that she wants something more from me.
9) When girls say no, they really mean yes.

Note. Response options ranged from 1='Strongly Disagree' to 7='Strongly Agree'. This scale was adapted from the Sexual Harrassment Attitude Scale (Mazer & Percival, 1989) and the Illinois Rape Myth Acceptance Scale (Payne, Lonsway, & Fitzgerald, 1999), see Chapter 4 for full references.

Negative reactions to rejection scale

(Studies 4 and 5)

1) They got angry [I got angry].
2) They thought I was mean [I thought they were mean].
3) They reacted badly [I reacted badly].

Note. Participants in the Rejected Them Condition were asked what happened after they had last *rejected* or broken up with someone, followed by the items without brackets above (interspersed with other items in a grid, including positive items). These participants recorded their response from 1 to 7, with anchor points of 1='They didn't do this at all', 4='They kind of did this', and 7='They absolutely did this'.

Participants in the Rejected Me Condition were asked what happened after they had last *been rejected* or broken up with, and then presented with the items shown in brackets, randomized among a grid of other items. These participants recorded also their response from 1 to 7, with anchor points of 1='I didn't do this at all', 4='I kind of did this', and 7='I absolutely did this'.

Abusive reactions to rejection scale

(Studies 4 and 5)

1) They got physically aggressive [I got physically aggressive].
2) They made me fear for my safety [I made them fear for my safety].
3) They stalked me [I stalked them].
4) They yelled or swore at me [I yelled or swore at them].
5) They toyed with my emotions [I toyed with their emotions].

Note: Refer to note for Negative Reactions to Rejection Scale.

Positive strategies for rejection scale

(Study 5)

1) I tried to make them feel better.
2) I was positive towards them.
3) I was understanding towards them.
4) I tried to help them see the positives.
5) I offered them friendship.
6) I was nice to them.
7) I comforted them.
8) I made them want the best for me.
9) I gave them gifts.

Note. Participants were asked what strategy they used last time *they* rejected or 'broke up' with someone, followed by the items above (interspersed with other items in a grid, including negative items). They recorded their response from 1 to 7, with anchor points of 1='I didn't do this at all', 4='I kind of did this', and 7='I absolutely did this'.

Honest strategies for rejection scale

(Study 5)

1) I was honest with them.
2) I was diret and told them the true reasons.

Note: Refer to note for Positive Strategies for Rejection Scale.

Aggressive strategies for rejection scale

(Study 5)

1) I acted aggressively towards them.
2) I made them fearful of me.
3) I was violent or threating towards them.
4) I yelled at them.
5) I was cruel to them.
6) I made them believe it was their fault.
7) I did not give them comfort.
8) I cried.

Note: Refer to note for Positive Strategies for Rejection Scale.

Avoidant strategies for rejection scale

(Study 5)

1) I pretended I was too busy to see them.
2) I was neutral towards them.
3) I avoided them.

Note: Refer to note for Positive Strategies for Rejection Scale.

Note. The order of all items differed from above, between participants, and across samples.