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Women's Gossip as an Intrasexual Competition Strategy: An Evolutionary Approach to Sex and Discrimination

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Abstract and Keywords

In the evolutionary sciences, gossip is argued to constitute an adaptation that enabled human beings to disseminate information about and to keep track of others within a vast and expansive social network. Although gossip can effectively encourage in-group cooperation, it can also be used as a low-cost and covert aggressive tactic to compete with others for valued resources. In line with evolutionary logic, the totality of evidence to date demonstrates that women prefer to aggress indirectly against their rivals via tactics such as gossip and social exclusion, in comparison to men who use proportionally more direct forms of aggression (e.g., physical aggression). As such, it has been argued that heterosexual women may use gossip as their primary weapon of choice to derogate same-sex rivals in order to damage their reputation and render them less desirable as mates to the opposite sex. This involves attacking the physical attractiveness and sexual reputation of other women, which correspond to men's evolved mating preferences. Androcentric theorizing in the evolutionary sciences has stifled a well-rounded understanding of how women use gossip to compete, with whom, and in what situations.

Keywords: gossip, intrasexual competition, indirect aggression, sexual reputation, mate value, adaptation

Introduction

GOSSIP, as a form of social information exchange, is core to human social relationships and perhaps even society itself (Barkow, 1992; Dunbar, 1996). It provides human beings with the ability to acquire specific knowledge about people embedded within vast social networks, and enables individuals to strategically manipulate information about themselves or others to produce desired negative or positive reputation outcomes (Hess and Hagen, 2006; Power, 1998). Gossip can also be an effective low-cost aggressive tactic, particularly within the realm of mate competition, when searching for and courting a

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mate, driving off rivals, and attempting to retain valued relationship partners (Arnocky and Vaillancourt, 2017; Vaillancourt, 2005, 2013). Within this context, gossip has been argued to be the weapon of choice among women to indirectly aggress against same-sex competitors (Campbell, 2004; McAndrew, 2014a,b). This may be the case because, over evolutionary time, women and men have encountered selective pressures that have differentially influenced their survival and reproduction, resulting in divergent adaptations to overcome these obstacles. As important as gossip and reputation are in modern society, they were also likely of great relevance to our human ancestors who evolved in small and highly social nomadic hunter-gatherer groups (Dunbar, 2004). As such, taking an evolutionary approach can yield unique insights into the origins, functions, and outcomes of gossip, as well as potential sex differences in gossiping.

(p. 304) Gossip is a complex and multifaceted psychological construct that has been defined differently from various disciplinary perspectives (De Backer et al. 2007). Holistically, *gossip* has been described as the transmitting or receiving of socially relevant information about the new, deviant, and/or prosocial behavior of other people (Amo, 1980). A further distinction can be made within this general definition between two subtypes of gossip termed *strategy learning gossip* and *reputation gossip* (De Backer et al. 2007; De Backer, Van den Bulck, Fisher, Ouvrein, this volume). With *strategy learning gossip*, there is little to no importance associated with the target of the gossip (i.e., the gossipee); rather, the focus of attention centers on the content of the communicated message and its relevance to genetic fitness. *Fitness*, in this evolutionary sense, refers to any information that may influence survival and reproduction (Buss, 2012). For instance, being told that "Jessica died after being stung by a blue insect" carries the same relevance to fitness if changed to "Rebecca died after being stung by a blue insect." Through strategy learning gossip, the receivers of the information learn vicariously about the successes and miscalculations of others, saving them from having to experience the same potentially dangerous events first hand (Bandura, 1977; De Backer et al. 2007). Strategy learning gossip may also be an effective cultural learning tool because it provides insight into how to effectively participate in a society governed by a complexity of rules, morals, scripts, norms, traditions, and structures (Baumeister et al. 2004).

In contrast, the identity of the individual associated with social information exchange is critical in regard to *reputation gossip*, because the content relates to a particular person's reputation of interest, meaning the collection of beliefs and opinions generally held about them by others. Those spreading this kind of information to others may manipulate the reputation of the subject of the gossip (e.g., "Emily has sex with a lot of different men") or even themselves indirectly (e.g., "I am a virgin") to achieve strategic outcomes (Dunbar, 1996). The receivers of reputation gossip benefit by efficiently learning reputation-relevant information about specific people of interest within their social network, and with whom they may be likely to interact again in the future (De Backer et al. 2007). In relation to heterosexual women's competition with members of the same sex, it is reputation gossip that is important. To appreciate why this is the case, it is necessary to

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assume an evolutionary perspective through which gossip is argued to be an adaptation that influences the capacity of human beings to survive and reproduce.

Gossip as an Adaptation to Overcome Adaptive Problems

Gossip is conventionally understood to be a wicked, sneaky, and malicious form of information exchange between people. Within the evolutionary sciences, the proposed origins and functions of gossip extend well beyond a device whose sole purpose is to hurt the reputations of others. From an evolutionary perspective, gossip is argued to constitute an *adaptation*, defined as a heritable trait that evolved because it helped to (p. 305) solve a problem associated with survival and/or reproduction (Williams, 1966). The challenges that adaptations function to overcome are known as *adaptive problems*, which impact in some way an organism's ability to survive (e.g., learning about dangerous predators) and/or reproduce (e.g., gathering knowledge about available mates; Buss, 2012; Symons, 1979). McAndrew et al. (2007) further argued that a multilevel selection perspective, wherein traits evolve to fulfill both genetic and social group purposes, provides the best means of understanding the evolutionary origins and function of gossip.

For Dunbar (1996), the key adaptive problem gossip evolved to solve in humans was efficient information exchange in an ever expanding social network. From this perspective, gossip is understood to be a form of "social grooming" that first arose in nonhuman primates, such as one of our closest genetic relatives, the chimpanzee. According to Dunbar (1996, 2004), alliances are solidified through commitment and trust, which is achieved in nonhuman primates by physically grooming one's in-group allies. Because the amount of time spent grooming is proportional to a primate species' group size, "there is an upper limit on the size of a group that can be bonded by this mechanism" (Dunbar, 2004, p. 102). As ancestral human groups grew in size, it became impossible to devote the necessary amount of time for physical grooming and, as a consequence, language may have evolved to promote bonding in large social groups through gossip. Dunbar (2004) argued that gossip in humans provided four key adaptive benefits: (1) keeping track of other individuals in an expansive social network, (2) advertising one's own advantages as a friend, ally, or mate, (3) seeking advice on personal problems, and (4) policing deceivers and free riders (i.e., social loafers).

An implication of Dunbar's (1996, 2004) argument, is that gossip extends to several distinct, yet interrelated, domains of psychological functioning. In regard to reputation gossip, this subsequently means that information could potentially come from a number of important sources. For Barkow (1992), potential mates, kin, social exchange partners, and high-ranking people should be the most important sources of social knowledge. Barkow (1992) further asserted that we should be most drawn to the information that can significantly impact our fitness and our *status* (i.e., our relative social standing), such as details regarding the sexual activity, alliances, and trustworthiness of people within our social network, as well as news concerning the allocation of valued resources (e.g., finan-

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cial information) among group members. McAndrew et al. (2007) supported this view, arguing that gossip functions principally as a status-enhancing mechanism.

Gossip as a Social Control Mechanism

Most of the evolutionary research on gossip has focused on its social control function within groups. This interest stems from the observation that gossip can be a very effective way of enforcing conformity by reminding group members which attitudes, values, and behavior are generally deemed appropriate or inappropriate amongst the group, as (p. 306) well as what happens to those who transgress against these group norms (Barkow, 1992; Giardini and Conte, 2011). Detecting rule-breakers has probably been a major impetus driving the evolution of our social behavior to encourage within-group cooperation (McAndrew et al. 2007). For a group to cooperate as a cohesive whole, cheaters who fail to meet group expectations (e.g., refusing to reciprocate prosocial behavior) must be identified and reprimanded or dispatched. Gossip has been shown to function effectively in this respect among modern hunter-gatherer societies (Lee, 1990; McPherson, 1991), cattle farmers in California (Ellickson, 1991), fishers in Maine (Acheson, 1988), and college rowing teams (Kniffin and Wilson, 2005). Thus, it is likely that two key adaptive problems that gossip evolved to solve is the detecting of cheaters and enforcing group norms to maintain cooperative groups.

Boehm (1999) also advanced the argument that gossip could function to prevent dominant individuals from compromising the integrity of the group. From this perspective, enforced egalitarianism can diminish within-group competitiveness and promote group cohesion. Again, keeping dominant individuals in check serves a social control function, consequently discouraging within-group aggression and encouraging cooperative behavior (McAndrew et al. 2007). Thus, gossip can be an effective way to manipulate public opinion and can be used to lampoon and shun dominant group members trying to undermine the group hierarchy.

Gossip as a Form of Intrasexual Competition

Although gossip can effectively promote conformity and cooperation, it can also be used competitively to elevate one's own reputation as a mate, ally, or friend, at the expense of others (Davis et al. 2018a; Farley, this volume; Massar et al. 2012; McAndrew, 2014a, 2014b; McAndrew et al. 2007). Gossip, either honest or deceptive, can be used to vie for valued resources (e.g., popularity, attractive mates, information about others in one's social network) by using information to damage an opponent's reputation to improve one's own status (Barkow, 1992; Dunbar, 1996; Emler, 1994; Hess and Hagen, 2006). From an evolutionary perspective, the primary competitors of heterosexual individuals, especially within the realm of courtship (i.e., the process of forming a romantic or sexual relationship) and mating, are members of the same sex who are contending for the same valued resources (Hess and Hagen, this volume; Wilson and Daly, 1996). When pursuing poten-

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tial mates or attempting to retain a valued relationship partner, gossip is used strategically against same sex rivals to increase one's *reproductive success*, the ability to contribute genes to offspring that provide them with the best opportunity to carry one's genetic material onward. As an intrasexually competitive strategy, gossip is predicted to differ among the sexes (Davis et al. 2018b). This is because women and men have faced different adaptive challenges associated with selecting, attracting, and retaining a mate required for successful reproduction, as well as helping offspring survive and grow to (p. 307) sexual maturity (Buss, 2012). We define *sex* as normative differences in reproductive anatomy, physiology, and function that largely follows a bimodal distribution (i.e., female/male), but also includes a variety of expression (American Psychological Association, 2015).

The theory of sexual selection. Within the realm of courtship and mating, adaptations such as gossip arise as a consequence of successful reproduction. This is a core tenet of Darwin's (1871) theory of *sexual selection*, which involves two key components: intersexual selection and intrasexual competition. *Intersexual selection* involves an individual of one sex choosing a preferred opposite-sex partner (Buss, 2012). Those who possess desired traits will be preferentially chosen as mates and will thus pass along their heritable qualities to subsequent generations. Darwin (1871) referred to this kind of selection as "female choice" because he observed throughout the animal world that females tended to be the relatively more discerning sex in their mate selection decisions. In contrast, *intrasexual competition* refers to members of the same-sex competing with one another for access to sexually available members of the opposite-sex. When it comes to sexual selection, *differential parental investment* is a key driving force behind this mechanism of evolutionary change (Campbell, 2004; Vaillancourt, 2005, 2013; Williams, 1966). According to Trivers' (1972), the relative degree of parental investment dictates which sex has evolved to be more discriminatory in its mate selection and less likely to physically compete with intrasexual rivals. Across mammals, females in comparison to males, devote more obligatory parental investment in the form of gestation (due to the internal fertilization of the ovum and sperm), child bearing, and breastfeeding. In fact, among 95 percent of mammalian species, females provide all of the parental care, stressing the significance of maternal investment in the survival and development of offspring (Clutton-Brock, 1991). Consequently, males tend to be the larger and more physically dominant sex that engage in overt, direct competition with same-sex rivals. However, it is not "femaleness" or "maleness" that determines obligatory parental investment, as several male animals including the Mormon cricket and various species of poison arrow frog have higher initial investment and the females physically compete for access to available males (Buss, 2012; Trivers, 1985).

Sex differences in aggression. Intrasexual competition between males is well documented among humans and various other species (Archer, 2004, 2009; Daly and Wilson, 1988; Wilson and Daly, 1985). The pioneering work of Darwin (1871) focused principally on male antagonism when he first speculated about sexual selection, and he rarely considered female-female aggression. In the evolutionary sciences, women quickly became characterized as passive and submissive within the domain of courtship and mate selec-

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tion (Arnocky et al. 2012; Campbell, 2006, 2013; Hrdy, 2013; Vaillancourt, 2005, 2013; Vaillancourt et al. 2010). It was reasoned that because men have relatively higher reproductive capacity (i.e., they can produce more lifetime offspring than women), lower obligatory parental investment, and are more directly combative in comparison to women, they evolved to be fierce warriors vying for the attention of yielding and coy female recipients. As a result, women's competition and aggression has been largely underrated, discounted, and/or at times ignored in comparison to men's, as androcentric theorizing has pervaded the evolutionary sciences in regard to these concepts (Nicolas and Welling, 2015; Vaillancourt and Krems, 2018).

(p. 308) It is true that across mammalian species, and most vertebrates, that males tend to engage in more conspicuous, risky, and lethal forms of intrasexual competition in comparison to females (Archer, 2004, 2009; Vaillancourt, 2005, 2013). In research on humans, few would contest that men are more *directly aggressive* than women, which concerns behavior like physically hitting or verbally threatening another person (Archer, 2004, 2009; Campbell, 2013; Vaillancourt, 2005, 2013; Vaillancourt et al. 2010). Cross-culturally and throughout the lifespan, men engage in more criminal behavior such as battery, rape, and murder in comparison to women (Daly and Wilson, 1988; Goetz et al. 2008). Importantly, however, ancestral women, relative to men, could less afford to be as physically combative. With relatively lower reproductive potential, the greater dependence of offspring on maternal care for survival, and the relative absence of overt armament designed for physical combat (Campbell, 1999, 2004), women needed to be more cautious and covert when aggressing against others. Direct aggression involves a much higher probability of injury and death and its benefits in regard to reproductive success are much greater for men than women (Campbell, 2013).

There exist a host of inconspicuous aggressive tactics that carry a much smaller risk of retaliation and harm in comparison to direct aggression. This kind of aggression has been termed *indirect aggression*, which "involves the use of socially conniving acts such as getting others to dislike a person, using derisive body language, befriending others as a form of revenge, deliberately divulging others' secrets, making negative remarks about a person to others, purposely excluding a person, etc." (Vaillancourt, 2005, p. 18). At times in the literature, this form of aggression has been termed either social (Galen and Underwood, 1997) or relational (Crick and Grotpeter, 1995) aggression; although, several authors have argued that each supposedly different type of aggression involves more stealthy and indirect strategies (e.g., Archer and Coyne, 2005; Vaillancourt, 2005, 2013).

The totality of evidence to date indicates that women engage proportionally in more indirect forms of aggression in comparison to men (see Vaillancourt, 2005, 2013). Across a variety of diverse cultures, ranging from Indonesia (French et al. 2002) to Israel (Österman et al. 1998), girls and women have shown a bias toward more hidden and socially manipulative aggressive tactics in favor of physical aggression. Curiously, in one meta-analysis conducted by Card et al. (2008), a reliable sex difference across studies was found but the authors reported that it was relatively small and "trivial." Missing from their analysis, however, was the recognition that women, throughout their lifetime, en-

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engage in proportionally more indirect aggression than their male counterparts, who prefer to physically or verbally aggress (Vaillancourt et al. 2010). This sex difference is also evident in several of our nonhuman primate relatives with whom we share a strong genetic relationship. Numerous reports of high-ranking females provoking and harassing lower-status females indirectly have been documented in the primate literature (Campbell, 1999). Furthermore, in at least 30 species of primates, females have been observed engaging in sexual interference, through harassment (e.g., approaching, touching, or slapping the recipient) and disrupting copulations (discussed in Vercaecke et al. 2003). Collectively, these findings demonstrate that human and nonhuman female (p. 309) primates, in comparison to males, are competing to influence their reproductive outcomes principally through indirect aggression (Arnocky and Vaillancourt, 2017).

Due to their penchant for indirect aggression, it has been argued that gossip is women's primary intrasexual competition strategy of choice and should thus vary predictably among the sexes (Davis et al. 2018b). Although the research is scant, investigators have generally found that women are more prone to gossip than men (Davis et al. 2018a; Levin and Arluke, 1985; Nevo et al. 1993; Watson, 2012) and that women are more likely to use gossip in an aggressive or socially destructive way (McAndrew, 2014a, 2014b). Whereas men are more likely to share gossip with their romantic partners than with anyone else, women report that they are just as likely to gossip with their same-sex friends as with their romantic partners (McAndrew et al. 2007). Women further demonstrate a stronger desire to hear gossip about a member of their own sex and are more likely to gossip about same-sex friends and relatives in comparison to men (Levin and Arluke, 1985; McAndrew and Milenkovic, 2002). Moreover, whether they agree with gossiped information or not, women tend to respond more positively to this information as opposed to objecting to it (Eder and Enke, 1991). Thus, despite the fact that women may be more bothered and damaged by gossip (Galen and Underwood, 1997), they may strategically suppress their disapproval in order to acquire the valuable socially transmitted information. Leaper and Holliday (1995) found that the amount of negative gossip shared between two people is highest among female friends; however, gossip frequency may not strongly predict the quality of women's friendships (Watson, 2012). Women have also been found to express favorable attitudes toward the social value of gossip (i.e., perceived enjoyment and value of sharing and learning gossip), which positively predicts intentions to share malicious gossip (Litman and Pezzo, 2005).

Gossip as Women's Intrasexual Competition Strategy of Choice

Campbell (2004) argued that women primarily compete in two particular ways: (1) through advertising by enhancing their appearance (e.g., using make-up, wearing formfitting clothing, having cosmetic surgery) and (2) by gossiping about other women to tarnish their reputation. Self-promotion through enhancing one's physical appearance is a competitive form of intersexual selection, which women use to attract the attention of

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men (Buss, 2012; Fisher and Cox, 2009; Symons, 1979; Vaillancourt and Sharma, 2011). In contrast, gossip is argued to be the key intrasexual tactic that women use to socially exclude other women, as well as to call their appearance and sexual reputation into question. Within this context, women's gossip is principally a form of *competitor derogation*, which refers to any act performed to reduce a same-sex rival's mate value, relative to one's own, by focusing specifically on the traits that are desired most by the opposite sex (Buss and Dedden, 1990; Massar et al. 2012). For women, this entails attacking a competitor's youthfulness, attractiveness, and her sexual reputation (Campbell, 2013; Vaillancourt, 2013).

The Content of Women's Gossip

Youthfulness and reproductive value. Over evolutionary time, ancestral boys and men have faced the primary adaptive problem of finding, courting, and securing reproductively viable girls and women (Buss, 1994, 2012). Thus, men have evolved to be particularly sensitive to cues of youth in women, because younger women have relatively higher reproductive value (i.e., they have a higher probability of conceiving and producing a healthy child; Shackelford and Larsen, 1999). Indeed, researchers have consistently shown that younger women have higher mate value and are rated as more desirable than older women (Buss, 1989; Kenrick and Keefe, 1992). Consequently, competition for male partners is more intense during the earlier reproductive years of a woman's life, meaning that younger women are most likely to gossip and compete with each other for mates in comparison to their older counterparts (Campbell, 2004; Vaillancourt, 2005, 2013). Massar et al. (2012) demonstrated that the age of women, regardless of relationship status, was inversely associated with a greater tendency to engage in gossip. However, these researchers also discovered that this association was mediated by women's self-perceived attractiveness and desirability as a potential partner, with women of higher mate value being far more likely to gossip than their less attractive peers.

Women's heightened intrasexual competitiveness also appears to be sensitive to another important component of fertility: her menstrual cycle phase position. Women at peak fertility within the periovulatory phase (i.e., around ovulation) of the menstrual cycle, rate other women's facial attractiveness more negatively in comparison to less fertile days of the cycle (Fisher, 2004). In fact, there are a range of relevant behavioral and psychological changes that occur around ovulation related to women's intrasexual competition, such as preferring to wear sexier clothing (Durante et al. 2008), applying more cosmetic products (Guéguen, 2012), and increasing self-grooming and ornamentation (Haselton et al. 2007). Furthermore, Maner and McNulty (2013) discovered that women exposed to the scent of another woman in the periovulatory phase subsequently had higher levels of testosterone, a key hormonal mediator of competitive and aggressive behavior, in comparison to women in a low fertile phase of the menstrual cycle (e.g., the mid-luteal phase).

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Attractiveness and mate value. Along with youth, men are argued to have evolved to find a number of physical characteristics attractive in women, such as facial symmetry, a healthy complexion, large breasts, and a low waist-to-hip ratio (Buss, 2012; Shackelford and Larsen, 1999). Men place a premium on these traits because of their association with fertility, health, and genetic fitness, which can benefit prospective offspring. Consequently, (p. 311) women have probably evolved to direct their derogatory gossip toward the physical appearance of same-sex rivals in order to compete for desired opposite sex partners (Buss and Dedden, 1990). Indeed, women commonly insult the appearance of same-sex rivals by using words such as “ugly” and “fat” (see Campbell, 2004, 2013). Adolescent girls' indirect aggression, through gossip and social exclusion, has been observed to typically occur as a result of envy over the appearance of same-sex others and over preferred male partners (Owens et al. 2000). Furthermore, highly attractive teenage girls, likely due to their higher probability of spreading and being the subjects of gossip, are more often the targets of peer victimization through indirect aggression (see Vaillancourt, 2013). More attractive women, therefore, are argued to be more likely to initiate and be the targets of gossip (Campbell, 2013; Massar et al. 2012). Women with higher levels of attractiveness also appear more likely to “see” anger on neutral female faces, perhaps as an exaggerated threat detection bias (Krems et al. 2015). Women have also been found to report greater feelings of jealousy and competitiveness when exposed to images of attractive women (Arnocky et al. 2012; Fink et al. 2014). In fact, jealousy in response to the physical attractiveness of others is a commonly cited explanation for female indirect aggression (Owens et al. 2000).

In order for women's competitor derogation to have evolved, it would have had to produce a meaningful consequence in men's perceptions of women's mate value. In support of this logic, Fisher and Cox (2009) found that men rated women as significantly less attractive when derogatory remarks were made about their appearance by another woman. Interestingly, the impact of these disparaging remarks on men's judgments of attractiveness was greatest when it came from an attractive in comparison to an unattractive woman. Moreover, women appear to be more sensitive than men to the impact of indirect aggression and report being more damaged and devastated by it; frequently fearing that they are being “talked about” or excluded from a valued social group (Galen and Underwood, 1997). Fisher et al. (2010) also found that men's perception of women's attractiveness was unaffected by her tendency to gossip, which did correlate with lower ratings of her perceived friendliness, kindness, trustworthiness and overall appeal as a long-term mate. Arnocky and Vaillancourt (2012) showed in a longitudinal analysis of adolescent girls and boys, that the use of indirect aggression positively predicted being in a relationship one year later after controlling for a number of potential confounding variables (e.g., previous dating history). Similarly, Volk et al. (2015) showed that bullying for women was strongly associated with number of dating partners. These results support the argument that girls' and women's use of indirect aggression, such as malicious gossip, can be an effective mate competition strategy that influences reproductive outcomes.

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Fidelity and sexual reputation. Another salient adaptive problem for ancestral men, due to the biological reality of internal fertilization, was not being able to be completely certain of their children's genetic relationship to them (i.e., paternity uncertainty). Further, men, unlike most mammalian males, invest significantly in their offspring and establish successive pair-bonds with preferred women (i.e., social monogamy; Fernandez-Duque et al. 2009). Consequently, men have evolved to be sensitive to cues of trustworthiness, commitment, and fidelity in women (Buss, 1994, 2012). However, men also demonstrate (p. 312) a relatively stronger proclivity toward uncommitted sexual relationships than women. Women appear to be aware of men's preference for fidelity and their desire for a sexually committed long-term partner, and, as such, benefit by maintaining a higher "market price" for sex (Campbell, 2013; Vaillancourt et al. 2010). In this way, women can effectively promote monogamy and fidelity in men by making sex somewhat contingent upon commitment. Consequently, those who provide sex too liberally reduce the "bargaining power" of other women. Thus, women gain by enforcing norms of sexual conservatism, ostracizing and punishing those who make sex too readily available (Baumeister and Twenge, 2002; Vaillancourt and Sharma, 2011).

Given men's preference for fidelity, it makes sense that the most common insults that women direct toward same-sex rivals concern questioning their faithfulness and drawing attention to, or exaggerating, their promiscuity (Buss and Dedden, 1990). Pejorative terms like "slut," "whore," and "ho" are common in the gossip and rumors of women's competitor derogation (Campbell, 2013). Moreover, as rare as physical violence is among women, the most commonly reported reason for an attack (accounting for 46 percent of fights) is a retaliation in response to allegations of being promiscuous (Campbell, 1986). The rise of the internet has also greatly facilitated the dissemination of material intended to damage women's sexual reputations. For instance, in one legal case, upon seeking an injunction (i.e., a legal warning or order) against his former wife for harassment after leaving her for another woman, a man and his new wife retaliated by circulating nude photographs of his former spouse to each person on her email list (Doyel, 2014). This kind of "revenge porn" is growing in popularity. Hosting websites, such as IsAnyoneUp, allow for anonymous user submissions of sexually explicit media, typically by spurned lovers, with information that openly identifies the victim online (Stroud, 2014). These websites also have online chat boards where submitters and users post lewd comments intended to harass and damage the sexual reputation of targets, who may consequently experience significant psychological distress (Kitchen, 2015; Power and Henry, 2017).

In one of the few experimental studies on women's intrasexual competition, Vaillancourt and Sharma (2011) examined how women responded to a conservatively dressed female confederate (condition 1) and the same woman wearing more provocative clothing (condition 2). Participants were audio and video recorded in each condition to capture their reactions and rated for how "bitchy" they reacted, which included extended eye gazing, eye rolling, derisive laughter, looking the woman up and down, and gossiping. It was demonstrated that women were significantly more "bitchy" toward the provocatively dressed, as opposed to the conservatively dressed, female confederate. One woman exclaimed that the "sexy" confederate's "boobs were about to pop out" and another implied that she was

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probably having sex with her professors. In a follow-up study, Vaillancourt and Sharma (2011) randomly assigned women to one of three conditions and had them rate photographs of the same female confederate dressed conservatively provocatively, or a digitally altered image of the provocatively dressed confederate to make her appear significantly overweight. Despite the conservatively dressed confederate being rated as "cuter" than the other two women, participants were still (p. 313) significantly less likely to introduce their boyfriend and to allow him to spend time with the "sexy-thin" and "sexy-overweight" confederate. Female participants also reported being less likely to establish a friendship with either of the "sexy" confederates.

The results above show that women are competing against same-sex others and often maliciously manipulate the sexual reputation of their victims using gossip, among other tactics (Baumeister and Twenge, 2002; Leenaars et al. 2008). These results cast some doubt on the idea that women are innately highly promiscuous and that men have created a patriarchal system designed to stifle female sexuality due to insecurity, envy over women's greater sexual capacities, or to prevent social disorder (i.e., male control theory; see Baumeister and Twenge, 2002 for further discussion). Rather, women appear to be cooperating to suppress the sexuality of same-sex others in order to maintain a higher "market price" for sex due to their relatively lower sex drive in comparison to men and the larger cost associated with pregnancy for women (Baumeister and Tice, 2000). Gossip is an important means through which women may achieve this goal. In terms of competitively stifling each other's sexuality, women have also been shown to express more preventive courtship attitudes and are less likely to introduce their same-sex friends to available mates in comparison to men (i.e., lower facilitative courtship attitudes; Ackerman and Kenrick, 2009; Arnocky et al. 2014). This relation is particularly strong among women high in intrasexual competitiveness and among those with more conservative sexual attitudes and behavior (i.e., low sociosexuality). Even more telling was the finding by Arnocky et al. (2014) that altruism and reciprocity did not predict preventive courtship attitudes, implying that women were not impeding each other's sexuality to help or to be prosocial. Gossip is likely to factor into these negotiations, manifesting in women's discussions about absent third-party members as to why hindering courtship for same-sex friends is justified.

The Damage Wrought by Competitor Derogation

Gossip has been viewed by some as trivial and minor form of aggression; however, this putative intrasexual competition strategy can produce physically and psychologically damaging outcomes, particularly for adolescent girls and women (Benenson et al. 2013; Crick, 1995, Galen and Underwood, 1997; Klomek et al. 2008). For instance, peer victimization, much of which involves derogatory gossip, among adolescent girls is associated with a greater risk of suicidal ideation (Kaltiala-Heino et al. 1999). Furthermore, Klomek et al. (2008) found that for adolescent girls, indirect peer victimization, regardless of fre-

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quency, positively predicted attempts to commit suicide. Lower self-esteem has also been associated with being the victim of indirect aggression among adolescent girls (Carbone-Lopez et al. 2010). News stories of cyberbullying on social media platforms (e.g., Facebook and Instagram) resulting in the suicide of the bullied are becoming (p. 314) increasingly prevalent and typically involve girls and women aggressing against same-sex victims (McAndrew, 2014a). These instances suggest that circuitous tactics, such as gossip, can produce devastating consequences for the target. Therefore, indirect aggression can be an effective way to remove competitors from the mating arena and that this mode of aggressive behavior may be particularly damaging to the mental health of girls and women. This perspective in no way justifies such insidious behavior; it merely provides Therefore, indirect aggression can be an evolutionary perspective through which to gather insight into why such acts may occur, to whom, and with what consequences.

Within a legal context, women's competitor derogation through gossip and direct aggression can also take on several destructive and violent forms. Retired Circuit Court Judge Robert Doyel (2014, in press), recounts that women who file restraining orders typically do so against other women with whom they have a romantic rivalry. Although gossip itself cannot be used as a legal basis for this kind of injunction, it is generally part of a larger pattern of aggressive behavior. Judge Doyel (2014, in press) reports that the single most common complaint one woman leverages against another has to do with making allegedly false reports of child abuse or neglect to authorities. For instance one woman told the court that

Yesterday she called my job and told my supervisor that I was unfit and that I was stealing and writing prescriptions which has complicated my duties as a [medical professional]. ... She called Children and Families on me. (Doyel, in press)

Cyberstalking is another common means through which competitor derogation may be achieved among women. Stories of women impersonating one another online to post licentious and reputation-damaging information have been reported. One woman and her boyfriend, for example, posed as her "baby daddy's" (i.e., her ex male partner with whom she had a child out of wedlock) wife in ads soliciting clients for sex and posted them on Craig's List (a classified advertisements website; Doyel, in press). Judge Doyel (2014) also recounts a scenario wherein a "baby mama" (i.e., a woman with a child out of wedlock) created a Facebook page solely dedicated to taunting and antagonizing her ex partner's new girlfriend. Using fictitious names, the following is a description of one such post: "So u wrk @ JQWDT huh? Stupid ass bitch lets see how long u kp dat job. LMFAO @ ur dumb ass" (Doyel, in press). These aggressive acts may be intended to generate gossip about the material posted online and may cause a cascade of further reputation-damaging outcomes.

Avenues for Future Research

Although researchers have argued that women use gossip to derogate competitors when vying for mates (e.g., McAndrew, 2014a; Vaillancourt, 2013), few have assessed the relation between gossip and an intrasexually competitive orientation. Davis et al. (2018a) found that gossip frequency and favorable attitudes toward gossiping were positively associated with intrasexual competitiveness. However, more research is needed to support the argument that gossip is an intrasexual competition strategy. Furthermore, limited research (p. 315) has been devoted to directly testing sex and gender differences in the frequency of gossip, both in a general sense and for socially destructive purposes. Moreover, the findings to date have been mixed (e.g., Davis et al. 2018a; Litman and Pezzo, 2005). Because of their greater engagement in competitor derogation, adolescent girls and young adult women have reasonably been the focus of research to date regarding gossip from an evolutionary perspective (Campbell, 2004; Davis et al. 2018b). As a result, little knowledge has been garnered about the foci of older women's gossip. For instance, not much is known about "cougars," a pejorative Western term for more mature women who assertively pursue short-term sexual relationships with younger men, and how they are perceived by other women (Montemurro and Siefken, 2014). More investigation is needed as well to determine how the frequency of social comparison to romantic rivals influences women's opinion of those competitors and their tendency to engage in gossip (Massar et al. 2012). Another branch of research in need of further attention concerns the extent to which women help or deter their same-sex friends and family members from pursuing short-term or long-term mates by using gossip (i.e., courtship attitudes; Arnocky et al. 2014). Due to their general tendency to prefer cultivating long-term romantic relationships, women may be relatively less likely than men to facilitate short-term sexual encounters. Also, little empirical knowledge of how menstrual cycle phase influences women's intrasexual competitive tendencies has been acquired (Maner and McNulty, 2013; Fisher, 2004). This is an important component of the argument that fertility status guides women's competition for mates via indirect aggression, which may be associated with a greater frequency of gossip during more fertile phases of the menstrual cycle. On this note, few researchers have examined how the use of hormonal contraceptives might alter women's same-sex aggression (Cobey et al. 2013) and how gossip may be implicated in this process.

Conclusion

Language and the ability to share gossip may have enabled ancestral human beings to form large cooperative alliances and to exploit diverse and uncharted ecologies (Dunbar, 1996, 2004). Gossip also led the emergence of a new, efficient, and low-cost form of indirect aggression within the realm of courtship and mating: competitor derogation (Buss and Dedden, 1990; Hess and Hagen, this volume; Massar et al. 2012; McAndrew, 2017). An evolutionary perspective provides insight into why gossip may be the preferred weapon of choice for women when competing for desired mates and qualities tributary to

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reproductive success (e.g., popularity; Vaillancourt, 2013; Vaillancourt and Krems, 2018). Decades of androcentric theorizing in the evolutionary sciences has impeded, however, a well-rounded understanding of women's intrasexual competition and aggression (Campbell, 2013; Hrdy, 2013). This has contributed to a shortage of empirical research informed by an evolutionary perspective regarding girls' and women's aggressive behavior, such as malicious gossip, to compete against same-sex rivals. Nonetheless, it is evident that girls and women compete, at times producing insidious and damaging outcomes to the targets of their aggression (Arnocky and Vaillancourt, 2014; Campbell, 2004, 2013; (p. 316) Vaillancourt, 2005, 2013). Further exploring how girls and women compete with same-sex rivals and in what circumstances will provide a richer understanding of the sex-differentiated aspects of human aggression, which may help inform interventions designed to prevent victimization.

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