

Running Head: SEXUAL CONFLICT IN MATESHIPS

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Sexual Conflict in Mateships: From Mate-Retention to Murder

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Abstract

In response to the tragically high incidence and negative consequences of female-directed violence in intimate relationships, a large literature has investigated the predictors of men's partner-directed violence and murder. Evolutionary psychology offers a framework for investigating the design of evolved information-processing mechanisms that motivate costly behaviors such as men's partner-directed violence. We review several forms of men's partner-directed violence, including insults, sexual coercion, physical violence, and homicide, with a particular focus on the adaptive problem of paternity uncertainty. The problem of paternity uncertainty is hypothesized to have selected for the emotion of male sexual jealousy, which in turn motivates men's non-violent and violent mate retention behaviors. We review empirical evidence for the relationships between paternity uncertainty, male sexual jealousy, and men's partner-directed violence and the individual differences in men's perpetration of violence. We propose that a comprehensive understanding of men's partner-directed violence will be achieved only by careful consideration of both proximate and ultimate causes of such costly behaviors.

Key words: intimate partner violence, paternity uncertainty, male sexual jealousy, evolutionary psychology

Sexual Conflict in Mateships: From Mate-Retention to Murder

According to the U.S. Department of Justice, between 2001 and 2005 22% of reported incidents of nonfatal violence against women aged 12 or older was perpetrated by an intimate partner (Bureau of Justice Statistics, 2007). This amounts to nearly 600,000 reported incidents of nonfatal violence against women by an intimate partner in just a single year in the United States (Bureau of Justice Statistics, 2007). Partly in response to the tragically high incidence of female-directed violence in intimate relationships and the devastating negative physical and psychological consequences of these behaviors, a large literature has been dedicated to investigation of risk factors and predictors associated with men's violence against intimate partners. Previous research has identified several proximate predictors of men's partner-directed violence, such as family history of aggression (Busby, Holman, & Walker, 2008; Riggs & O'Leary, 1996) and cultural influences (e.g., Archer, 2006a; Gage & Hutchinson, 2006), as well as ultimate or evolutionary predictors of such costly behaviors, notably male sexual jealousy as a solution to the adaptive problem of paternity uncertainty (e.g., Goetz, Shackelford, Romero, Kaighobadi, & Miner 2008; Shackelford et al., 2005).

Increasingly over the past several decades, social scientists have recognized the value of an evolutionary perspective for guiding their research (Archer, 2006b; Cory, 1999; also see Dunbar, 2007). Evolutionary psychological theories have been applied successfully to the investigation of diverse human behaviors. Evolutionary psychology is concerned with identifying and describing the design and function of psychological adaptations that evolved to solve the specific problems our ancestors faced recurrently over human evolutionary history. These evolved mechanisms are information-processing devices that motivate behavior in

response to particular environmental inputs. An evolutionary psychological perspective can guide research on intimate partner violence, notably research on the evolved mechanisms that motivate these behaviors.

Our goal in this chapter is to review briefly different forms of men's partner-directed violence, including insults, sexual coercion, physical violence, and homicide, with a particular focus on the adaptive problem of *paternity uncertainty*.

Paternity Uncertainty and Male Sexual Jealousy

Over human evolutionary history, men and women have faced the adaptive problems of maintaining relationships and retaining intimate partners. Jealousy is an emotion that motivates behaviors that deter mate-poaching rivals and prevents partner infidelity or outright desertion from the relationship (Buss, Larsen, Westen, & Semmelroth, 1992; Daly, Wilson, & Weghorst, 1982; Symons, 1979). Men and women do not differ in the frequency or intensity with which they experience jealousy (Shackelford, LeBlanc, & Drass, 2000). However, men and women respond differently to two different types of partner infidelity, emotional infidelity and sexual infidelity. Men are more distressed about a partner's sexual infidelity than about her emotional infidelity, whereas the opposite pattern is found for women. This sex difference has been documented in more than a dozen empirical studies using various methods, including forced-choice self-report assessments (Buss et al., 1999), physiological assessments (Buss et al., 1992), experimental methods (Schutzwohl, 2005, 2008; Thomson, Patel, Platek, & Shackelford, 2007) and archival and cross-cultural data (e.g., Betzig, 1989).

The sex difference in the experience of jealousy may be attributable to sex-specific adaptive problems humans faced over our evolutionary history (Buss, 2000; Symons, 1979). It is hypothesized that ancestral women faced the recurrent problems of paternal investment and

acquisition and retention of resources with which to raise offspring. A partner's emotional infidelity might have predicted his current or future investment of resources in another woman and another woman's children. Ancestral men, in contrast, faced the adaptive problem of paternity uncertainty. Female sexual infidelity and subsequent cuckoldry—a male's unwitting investment in offspring to whom he is not genetically related—carried substantial reproductive costs for ancestral men. The reproductive costs of cuckoldry, including the loss of time, energy, resources, and alternative mating opportunities, are potentially so great that men have evolved to be sensitive to and to experience more distress about a partner's sexual infidelity. Men also may have evolved mechanisms that assess the risk of partner sexual infidelity and mechanisms that motivate the performance of anti-cuckoldry tactics. Goetz (2007) hypothesized that to assess the likelihood or risk of partner sexual infidelity, these information-processing mechanisms may use cues such as greater time spent apart from the partner, the presence of potential rivals, and a partner's attractiveness, or her "mate value" as a short-term partner or long-term partner (Goetz & Shackelford, 2006; Peters, Shackelford, & Buss, 2002; Schmitt & Buss, 2001; Shackelford & Buss, 1997; Shackelford, Goetz, McKibbin, & Starratt, 2007; Trivers, 1972; Wilson & Daly, 1993). The behavioral output of male sexual jealousy varies from subtle nonviolent mate retention behaviors to outright physical violence.

Male Sexual Jealousy and Mate Retention Behaviors

One class of behavioral output of sexual jealousy is men's mate retention behaviors, which functions to prevent a partner's infidelity or outright relationship defection or to thwart rivals' attempts to encroach on the relationship. Buss (1988) developed a taxonomy of mate retention behaviors organized into five categories: acts of *direct guarding* function to keep a partner under surveillance; acts of *intersexual negative inducements* include threats to punish a

partner's infidelity; acts of *positive inducements* include expressions of affection and care; acts of *public signals of possession* include acts intended to signal possession of a partner to potential rivals; and acts of *intrasexual negative inducements* include acts intended to threaten potential rivals and thereby deter them from encroaching on the relationship. As the risk of female infidelity increases, men perform more frequent mate retention behaviors. For example, Buss and Shackelford (1997) found that men mated to younger, more attractive partners (cues to reproductive value or expected future reproduction) and men who perceive greater probability of partner infidelity guard their partners more intensely. Also, men perform more frequent mate retention behaviors when they are mated to women who possess qualities that predict her infidelity, including her personality characteristics such as surgency and openness to experience (Goetz et al., 2005), and when their partner is near ovulation—a time when a female infidelity would be most costly for the in-pair male (Gangestad, Thornhill, & Garver, 2002). Because time spent physically apart from a partner increases the risk of a partner's infidelity, men who have spent a greater proportion of time apart from their partners also report engaging in more frequent mate retention behaviors (Starratt, Shackelford, Goetz, & McKibbin, 2007). In addition, McKibbin et al. (2007) identified positive relationships between men's accusations of their partner's infidelity and the frequency with which they performed several categories of mate retention.

A more physically damaging output of male sexual jealousy is partner-directed violence. Male sexual jealousy is one of the most frequently cited causes of men's partner-directed violence, both physical and sexual (e.g., Buss, 2000; Daly & Wilson, 1988; Daly et al., 1982; Dobash & Dobash, 1979; Dutton, 1998; Frieze, 1983; Gage & Hutchinson, 2006; Russell, 1982; Walker, 1979). The frequency with which men perform nonviolent mate retention behaviors

predicts the frequency with which they inflict physical violence against their partners, because both classes of behavior are hypothesized to be outputs of sexual jealousy. In three studies, Shackelford et al. (2005) investigated the relationship between men's nonviolent mate retention behaviors and men's partner-directed violence. Based on men's self-reports, women's partner-reports, and cross-spouse reports, men's use of emotional manipulation as a mate retention tactic—marked by the performance of acts such as, “I told my partner I would ‘die’ if she ever left me”—predicted female-directed violence. Men's monopolization of their partner's time and men's sexual inducements also predicted men's physical violence against their partners. Because suspicions of partner infidelity explain the variance in men's mate retention behaviors, and because men's mate retention behaviors predict men's partner-directed violence, Kaighobadi, Starratt, Popp, and Shackelford (2008) hypothesized that men's suspicions of their partner's infidelity maybe linked directly to partner-directed violence. In two studies, using men's self-reports and women's partner-reports, Kaighobadi et al. (2008) found that men's accusations of their partner's infidelity explain a small but significant variance in men's partner-directed violence. Moreover, this relationship is mediated by nonviolent mate retention behaviors. Kaighobadi et al. hypothesized that men perform nonviolent and violent mate retention behaviors in a temporal hierarchical fashion. Less severe, less costly behaviors might be deployed first, followed by more severe behaviors such that the hierarchy of events leading to female-directed violence is initiated with men's suspicions of partner infidelity followed by nonviolent mate retention behaviors and ending in acts of physical violence.

Puente and Cohen (2003) conducted a series of studies investigating third-party observer perceptions of male sexual jealousy and female-directed violence. They found that observers were more accepting of violent behavior in scenarios in which intimate partner violence followed

the male aggressor's experience of sexual jealousy. When the male aggressor was described as sexually jealous, observers were less inclined to convict him of a crime, and assumed that the female victim also would be less inclined to file charges against her partner. Puente and Cohen also found that jealous abusers were perceived by observers as more romantically in love with their partner than non-jealous abusers. It therefore appears that people readily and intuitively render judgments and reach conclusions based on an expected relationship between men's jealousy and men's partner-directed violence. A third-party observer's ready inference of a relationship between male sexual jealousy and men's partner-directed violence is consistent with the operation of an implicit mechanism underlying these judgments.

Forced In-Pair Copulation

Instances of forced in-pair copulation (FIPC) have been documented in avian species that form long-term pair-bonds (Bailey, Seymour, & Stewart, 1978; Barash, 1977; Birkhead, Hunter, & Pellatt, 1989; Cheng et al., 1983; Goodwin, 1955; McKinney et al., 1984; McKinney & Stolen, 1982). FIPC is hypothesized to be a form of post-copulatory male-male competition, i.e., a sperm competition tactic (Barash, 1977; Cheng et al., 1983; Lalumière et al., 2005; McKinney et al., 1984), because it often follows a female partner's extra-pair copulation or intrusions by rival males (e.g., Bailey et al., 1978; Barash, 1977; Birkhead et al., 1989; Cheng et al., 1983; Goodwin, 1955; McKinney, Derrickson, & Mineau, 1983; McKinney & Stolen, 1982; Seymour & Titman, 1979; Valera, Hoi, & Kristin, 2003). Sperm competition occurs when a female copulates with and is inseminated by more than one male in a sufficiently brief period of time (Parker, 1970). Thus, by forcing the female to copulate shortly after the increased risk of insemination by a rival, males place their sperm in competition with any sperm deposited into their partner by a rival male (Birkhead et al., 1989; Cheng et al., 1983).

Observations of sperm competition in non-human species offer a framework with which to consider similar adaptations in humans, who also form long-term socially (but not genetically) monogamous pair-bonds. Recent evidence suggests that sperm competition has been a recurrent feature of human evolutionary history and that men have physiological and psychological mechanisms that may have evolved to solve related adaptive problems (Baker & Bellis, 1993; Gallup et al., 2003; Goetz et al., 2005; Kilgallon & Simmons, 2005; Pound, 2002; Shackelford & Goetz, 2007; Shackelford & Pound, 2006; Shackelford, Pound, & Goetz, 2005; Shackelford et al., 2002; Smith, 1984; Wyckoff, Wang, & Wu, 2000). For example, with increased risk of a partner's infidelity, men display copulatory urgency, perform more semen-displacing behaviors at next copulation, and adjust their ejaculates to include more sperm (Baker & Bellis, 1993; Goetz et al., 2005; Shackelford et al., 2007). Men's perception of their partner's physical and sexual attractiveness—a proxy for risk of sperm competition—also predicts the frequency of in-pair copulations. Men engage in more frequent in-pair copulations when they perceive their partner to be more physically and sexually attractive (Kaighobadi & Shackelford, 2008).

Risk of Sperm Competition and Sexual Coercion

Sexual coercion or rape of an intimate partner also is a hypothesized manifestation of male sexual jealousy, which may be a response to perceived risk of sperm competition. Between 10% and 26% of women report being raped by their husband (Finkelhor & Yllo, 1985; Hadi, 2000; Painter & Farrington, 1999; Russell, 1982; Watts, Keough, Ndlovu, & Kwaramba, 1998). In a sample of young adults in a committed, sexual relationship, Goetz and Shackelford (2006) found that 7.3% of men admitted to at least one incidence of raping their current partner, and that 9.1% of women reported having experienced at least one incidence of rape by their current partner.

Many studies have investigated men's sexual coercion in an intimate relationship. A number of hypotheses have been formulated to test the proximate or immediate predictors of men's sexual coercion of an intimate partner and also the ultimate or evolutionary predictors of men's sexual coercion of an intimate partner. Several scholars have argued that men's sexual coercion of their partner is motivated by a desire to dominate and control their partners (e.g., Basile, 1999; Bergen, 1996; Frieze, 1983; Gage & Hutchinson, 2006; Gelles, 1977; Meyer, Vivian, & O'Leary, 1998; Watts et al., 1998). For example, several studies have found that men that are physically abusive of their partners also are more likely to be sexually coercive towards their partners than are men who are not physically abusive (Apt & Hurlbert, 1993; DeMaris, 1997; Donnelly, 1993; Finkelhor & Yllo, 1985; Koziol-McLain, Coates, & Lowenstein, 2001; Shackelford & Goetz, 2004). Shackelford and Goetz (2004) also found a positive relationship between men's nonviolent controlling behavior and men's sexual coercion of their partners. Gage and Hutchinson (2006) found that women's experience of sexual coercion by their partner is predicted by their partner's jealousy and nonviolent controlling behavior, but is not predicted by differences in social power between the partners. To address these apparently conflicting results regarding sexual coercion of intimate partners and men's motivation to gain or exert control over their partners, Goetz and Shackelford (2009) investigated several relevant predictors of sexual coercion, securing men's self-reports and women's partner-reports. They found that men's sexual coercion of their partners is predicted by both suspicions of female infidelity and by men's controlling behavior, suggesting that both classes of variables contribute to an explanation for men's sexual coercion in intimate relationships.

The desire to dominate and control a partner may explain some portion of the individual differences in men's sexually coercive behaviors, but the proponents of the domination and

control hypothesis argue that men *as a group* are motivated to exert “patriarchal terrorism” or “patriarchal power” over all women through sexual coercion of their own partners (e.g., Brownmiller, 1975; Johnson, 1995; Yllo & Straus, 1990). We are unaware of research that has empirically tested these hypotheses. We note, however, that hypotheses that propose coordinated male-male cooperation to dominate and control women are not consistent with substantial theoretical and empirical work that highlights the frequency and intensity of male-male competition (rather than cooperation) for attracting women as intimate partners (Bleske, & Shackelford, 2001; Buss, 1988; Schmitt & Buss, 1996; Trivers, 1972).

Sexual coercion also is hypothesized to function as an anti-cuckoldry tactic (Camilleri, 2004; Gallup & Burch, 2006; Lalumière, Harris, Quinsey, & Rice, 2005; Thornhill & Thornhill, 1992; Wilson & Daly, 1992; see also Goetz & Shackelford, 2006). It has been hypothesized that, by forcing their partners to have sex, men who are suspicious of their partner’s infidelity introduce their own sperm into their partner’s reproductive tract and thereby decrease the risk of cuckoldry. This sperm competition hypothesis for partner-rape has been applied to non-humans (notably, several avian species) to account for observations of partner-rape immediately following female extra-pair copulations (e.g., Barash, 1977; Cheng, Burns, & McKinney, 1983; McKinney, Cheng, & Bruggers, 1984). Rape of an intimate partner in humans also often follows accusations of female sexual infidelity (e.g., Finkelhor & Yllo, 1985; Russell, 1982).

Gallup and Burch (2006) proposed the “intra-pair copulation proclivity model” of female infidelity to predict and explain variance in the likelihood of men’s sexual coercion of their partner following female sexual infidelity. Gallup and Burch argued that, on one hand, men have a propensity to engage in immediate copulation with their partner when they perceive a high risk of recent female infidelity. On the other hand, women may attempt to avoid copulating with their

regular partner immediately after an extra-pair copulation. Extra-pair copulations may function to secure “good” genes from men other than their regular partner, and copulating immediately with her regular partner may cause displacement of the extra-pair sperm or otherwise interfere with the ability of the extra-pair sperm to fertilize the woman’s egg(s). Thus, Gallup and Burch argue that men’s copulatory urgency following detection of partner infidelity, and women’s concurrent copulatory reluctance, may increase the risk of men’s sexual coercion of their partner.

In two studies securing data from men’s self-reports and women’s partner-reports, Goetz and Shackelford (2006) found that men’s sexual coercion correlated positively with women’s past and future likelihood of engaging in sexual infidelity. They also found that men who perform more mate retention behaviors also are more likely to perform sexually coercive behaviors against their partners, as reported by men and by their partners. A number of studies have documented a positive relationship between men’s sexual jealousy and men’s sexual coercion of their partners. For example, Frieze (1983) and Gage and Hutchinson (2006) found that men who sexually coerced their wives are more sexually jealous than men who did not. Previous research has found a direct positive relationship between men’s suspicions and accusations of partner infidelity and men’s sexual coercion of their partners (Starratt et al., 2008).

According to Goetz and Shackelford (2009), the domination and control hypothesis and the sperm competition hypothesis reflect different levels of analysis. The domination and control hypothesis offers a proximate explanation of partner sexual coercion, including social or cultural causes of behavior. The sperm competition hypothesis offers an ultimate explanation of partner sexual coercion, and addresses how adaptations that produce such costly behaviors could have evolved. Goetz and Shackelford do not argue that all sexually coercive behaviors are produced

by evolved mechanisms that motivate anti-cuckoldry behaviors. Instead, they attempted to explain the increased likelihood of sexual coercion in the context of risk of female infidelity. It may be that some instances of sexual coercion are the result of, for example, an antisocial man's motivation to control, dominate, or humiliate his partner (see Goetz, Shackelford, Starratt, & McKibbin, 2008). Future research can investigate the interaction of individual differences in men's perpetration of sexual coercion and evolutionarily-relevant contexts such as the risk of female infidelity and sperm competition to predict men's sexual coercion and rape of their partners.

Intimate Partner Homicide

According to the U.S. Department of Justice (Bureau of Justice Statistics, 2007), between 1976 and 2005, 30% of female homicide ("femicide") victims were killed by an intimate partner, making it the largest class of victim-offender relationship. In sharp contrast, just 5% of all male homicide victims were killed by an intimate partner. In most categories of intimate partner homicide, men far outnumber women as the perpetrator and women far outnumber men as the victim (Daly & Wilson, 1988; Dobash & Dobash, 1979). Many studies have been dedicated to the investigation of the predictors and risk factors associated with female partner homicide. Campbell and colleagues (2003), for example, used a multisite case control study to investigate the risk factors associated with intimate partner femicide. The results indicated that male partner's unemployment was the most significant sociodemographic risk factor for intimate partner femicide. They also found that the risk of intimate partner femicide increased by five times when the victim left the abusive partner for another man or when sexual jealousy was triggered (Campbell et al., 2003). Additional empirical evidence suggests increased risk of intimate partner femicide in response to the victim's attempt to leave the relationship (e.g.,

McFarlane, Campbell, Wilt, Sachs, Ulrich, & Xu, 1999; Nicolaidis, et al., 2003; U.S. Department of Justice, 1998). Campbell et al. (2003) also documented that having a child from the victim's previous partner living in the home doubled the risk of intimate partner femicide. This result parallels to Burch and Gallup's (2000) report of increased frequency and severity of female-directed partner abuse when children unrelated to the man are living in the household.

Nicolaidis et al. (2003) conducted 30 in-depth interviews with women who survived an attempted homicide by their intimate partner. They found that 20 women (67%) had a history of prior violence with the partner. Twenty-five women (80%) explicitly mentioned their partner's prior stalking, sexual jealousy, accusations of infidelity, social isolation, physical limitations, or threats of violence against the woman. In 22 (73%) of the cases the male partner attempted femicide when the woman threatened to leave the relationship.

Several hypotheses have been advanced to explain the occurrence and frequency of intimate partner homicide, and we here review briefly two of the leading hypotheses. According to one hypothesis, the "killing-as-a-byproduct" hypothesis, because killing a partner carries substantial and severe costs that might not have consistently produced sufficient benefits over human evolutionary history, it is unlikely to be the product of specialized adaptations. The costs associated with killing a partner include the risk of retaliation by the victim's kin and the local community, the loss of time, energy, and resources a man invested in maintaining the relationship, reputational damage, and the loss of maternal investment in any shared offspring. Thus, partner-killing might be a byproduct of other male psychological adaptations, including adaptations specialized to motivate nonlethal punishment of a partner's suspected or actual infidelity and to control her sexual interactions (Daly & Wilson, 1988; Wilson & Daly, 1998; Wilson, Daly, & Daniele, 1995). Wilson and Daly (1998) argue that men's "sexual

proprietaryness” is a key cause of 80% of spousal homicides. Wilson and Daly (1998) define sexual proprietaryness as a combination of sexual jealousy and men’s “presumptions of entitlement” and motivation to control their partner’s sexual behavior. According to Wilson and Daly (1993), the variability in men’s sexual proprietaryness and perpetration of violence is explained by several factors, including: (1) intensity of intrasexual competition, (2) female partner attractiveness, (3) suspicions of partner infidelity, (4) degree of female choice, and (5) costs associated with perpetration of violence.

Proponents of a second hypothesis for intimate partner homicide (Buss and Duntley, 1998, 2003) argue that the byproduct hypothesis cannot explain the large incidence of apparently premeditated partner homicides. Premeditated homicides include hiring someone to kill the partner, aiming at and shooting a partner, or deliberately poisoning a partner. Buss and Duntley (1998, 2003) argue that partner-killing by men might be the function of a specialized adaptation in the context of suspected or actual female infidelity (and, as a consequence, paternity uncertainty). This “evolved homicide module” hypothesis does not imply that discovery of female sexual infidelity will always or even frequently lead to partner-killing by men, but instead that the relevant evolved mechanisms are likely to be activated with suspicions of female partner infidelity and may very occasionally result in partner-killing (see Buss, 2005). The results from previous studies may provide evidence for the evolved homicide module hypothesis, in that men most frequently kill or attempt to kill their partners when she threatens to leave the relationship (Campbell et al., 2003; McFarlane, Campbell, Wilt, Sachs, Ulrich, & Xu, 1999; Nicolaidis, et al., 2003; U.S. Department of Justice, 1998, also see Garcia, Soria, & Hurwitz, 2007 for review).

Wilson and Daly’s (1998; Wilson, Johnson, & Daly, 1995) and Buss and Duntley’s (1998, 2003) competing hypotheses have not yet been tested concurrently. Thus, we cannot

conclude that one hypothesis accounts for the data better than the other. However, given the many costs associated with intimate femicide, the most parsimonious explanation for intimate partner femicide might be Wilson and Daly's (1998; Wilson, Daly, & Daniele, 1995) byproduct hypothesis. Future research may investigate the adaptation, the byproduct, and alternative hypotheses concurrently.

Individual Differences in Intimate Partner Violence

Previous research has identified links between men's partner-directed violence and men's personality traits, including antisocial tendencies (Dutton, 1994; Dutton & Starzomski, 1993), self-centeredness (Dean & Malamuth, 1997), lack of emotional regulation (McNulty & Hellmuth, 2008), and impulsivity (Stuart, & Holtzworth-Munroe, 2005; also see White, McMullin, Swartout, Sechrist, & Gollehon, 2008, for review). Hellmuth and McNulty (2008) note that most previous research addressing individual differences in men's perpetration of intimate partner violence has investigated personality disorders as predictors of partner-directed violence and less research has addressed variation in normal personality traits such as those assessed by the Five Factor Model (FFM). Hellmuth and McNulty (2008) documented that husband's and wife's emotional stability interacts with levels of chronic stress to influence the frequency with which violence is inflicted against spouses. Busby et al. (2008) also found a relationship between partner-reports of neuroticism and violence in intimate relationships.

To address this empirical gap in the literature, Kaighobadi et al. (2009) investigated the relationships between men's personality traits as assessed by the FFM and men's partner-directed violence. They hypothesized that men's personality traits may interact with situational contexts that trigger male sexual jealousy to predict intimate partner-violence. The results

indicated that men's emotional stability, agreeableness and conscientiousness predict men's partner-directed violence. Men who score low on these personality traits are more likely to perpetrate violence against their partners. But more importantly, the results indicated that men's suspicions of their partner's infidelity moderate the relationship between men's personality traits and men's partner-directed violence. In other words, personality affects partner-directed violence differently depending on men's perceptions of their partner's risk of infidelity (Kaighobadi et al., 2009).

Other studies have identified additional sources of individual differences in partner-directed violence, including family history of aggression (Busby et al., 2008), childhood sexual and physical abuse (Prentky, Knight, and Sims-Knight, 1989), alcohol and drug use (Klostermann & Fals-Stewart, 2006; Stuart & Holtzworth-Munroe, 2005), and problem-solving skills (Riggs & O'Leary, 1989).

Conclusion

Evolutionary psychologists are interested in identifying the ultimate (or distal) explanations for a trait or behavior. Intimate partner violence and homicide are costly behaviors, for both the victim and the perpetrator. It is useful to consider an evolutionary perspective to investigate the design features and evolved function of the psychological mechanisms that motivate these behaviors. An evolutionary psychological perspective can guide identification of the contexts that trigger the relevant information-processing mechanisms and motivate the subsequent behaviors. Many instances of intimate partner violence and homicide co-occur with and may be triggered by men's suspicions or knowledge of their female partner's sexual infidelity. However, this does not mean that individual differences do not exist in men's perpetration of violence against intimate partners.

Previous research has identified several proximate correlates of female-directed violence, such as a family history of aggression (Busby, Holman, & Walker, 2008; Riggs & O'Leary, 1996) and acceptance of local cultural norms (e.g., Archer, 2006a; Gage & Hutchinson, 2006). Previous research also has investigated men's personality traits as predictors of men's partner-directed violence (see White et al., 2008, for review).

Situational factors including the characteristics of the perpetrator, the victim, and the circumstances in which the violence occurs also have been considered in research investigating intimate partner violence and homicide (see Wilkinson & Hamerschlag, 2005). For example, the perpetrator's age and the victim's age (Shackelford, Buss, & Peters, 2000), the perpetrator's mental health (Dutton & Kerry, 1999), and the availability of weapons (Paulozzi, Saltzman, Thompson, & Holmgreen, 2001) have been investigated as risk factors associated with intimate partner violence.

In conclusion, it is important to investigate both the proximate and ultimate causes of intimate partner violence. The relevant evolved psychological mechanisms interact with stable dispositions and situational factors to produce manifest behavior. Future research might benefit by taking an evolutionary perspective to build models of intimate partner violence that include both stable dispositions such as personality traits and environmental factors such as a family history of aggression. To achieve a fuller understanding of intimate partner violence and homicide, researchers must include a careful consideration of the evolved psychological mechanisms that motivate these costly behaviors.

Future Directions

Future research might investigate several interactions between proximate and evolutionary causes of men's partner-directed violence. For example:

(1) Does family history of aggression moderate the relationship between men's sexual jealousy and intimate partner violence?

Most empirical research addresses predictors or risk factors associated with intimate partner violence or homicide and not the causes of such behaviors, because most of these studies are conducted at a single point in time and have used correlational methods. Thus, future research may investigate the precedents of such costly behaviors using longitudinal methods and growth models. For example:

(2) Does frequency of partner-directed insults or non-violent mate guarding behaviors in newlywed couples predict future perpetration of violence in couples who stay together?

Wilson and Daly (1993) hypothesized that the different cues to men's sexual proprietariness predict behavioral variability between and within societies. For example, according to Wilson and Daly, partner age may predict the variance in intimate partner violence within societies, but presence of male rivals may explain the variance in men's partner-directed violence between societies. We are unaware of any studies that have differentiated between-society and within-society predictors of intimate partner violence. Future research may compare predictors of men's partner-directed violence between-society and within-society, for example:

(3) Is relative age difference between partners a better predictor of within population or between population variability in violence?

(4) Is there a higher frequency of men's partner-directed violence among societies with a higher male to female ratio?

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