PSYCHOLOGICAL MECHANISMS OF IPV

**Chivalry vs. Patriarchy: Exploring the Psychological Mechanisms of Physical Intimate
Partner Violence (IPV)**

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Abstract

Two leading theories propose different reasons for men's and women's intimate partner violence (IPV). The gendered theory proposes that society's patriarchal norms of male dominance and female subordination cause men's IPV towards women. From this perspective, violence against 'wives' is condoned by society, and women only perpetrate IPV in self-defence against men's primary violence. Conversely, the chivalrous theory of IPV explains women's IPV perpetration in terms of society's chivalrous norms, which protect women from male violence and emboldens women to physically assault male partners. From this perspective, women's violence is not considered harmful to men. As gendered theory and chivalrous theory both reference stereotyped gender attitudes (sexism) towards women, I used the ambivalent sexism inventory (ASI) to test the competing theories efficacy in explaining IPV perpetration by heterosexual men and women. The ASI conceptualises sexist attitudes towards women as comprised of two parts: hostile sexism (reflecting the hostility towards women outlined by gendered theory), and benevolent sexism (reflecting the benevolence towards women outlined by chivalrous theory). Gendered theory states that society condones violence towards women. Thus, men's attitudes approving of male-perpetrated IPV should mediate the relationship between men's hostile sexism and IPV, if gendered theory predictions are correct. Alternatively, chivalrous theory poses that society does not approve of violence towards women. Thus, attitudes disapproving of men's IPV against women and approving of women's IPV towards men should mediate the relationship between benevolent sexism and IPV if chivalrous theory is correct. I hypothesized men's increased hostile sexism would predict men's increased IPV perpetration through increased approval of IPV against women, and men's increased benevolent sexism would predict men's decreased IPV perpetration through decreased approval of IPV against women. Further, I

hypothesised that women's increased hostile sexism would predict women's increased IPV perpetration through increased approval of IPV against men, and women's benevolent sexism would predict increased IPV perpetration through increased approval of IPV against men. North American men and women ($N = 688$) filled out an online questionnaire measuring experiences of IPV as victims and/or perpetrators, approval of male and female IPV perpetration, and hostile and benevolent sexism. Multi-group structural equation modelling tested the extent to which positive attitudes toward intimate partner violence mediated the association between sexism and IPV perpetration for men and for women. Results found that, for both men and women, increased hostile sexism predicted greater IPV perpetration through greater approval of *men's* IPV against women. Furthermore, increased benevolent sexism predicted women's increased IPV perpetration through increased approval of *men's* IPV against women. Men's increased benevolent sexism did not predict men's lower IPV perpetration or disapproval of IPV against women. However, men's and women's ambivalent sexism also predicted greater approval of women's IPV towards men. Results did not fully support patriarchal or chivalrous predictions, instead aligning well with ambivalent sexism theory which posits a more inclusive and holistic understanding of the relationship between sexism and IPV perpetration. Reducing all forms of sexism and men's and women's positive attitudes toward the use of IPV are identified as important targets for IPV treatment and prevention.

Acknowledgements

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Exploring the Psychological Mechanisms of Physical Intimate Partner Violence (IPV)

Intimate partner violence (IPV) has been broadly defined as “any form of aggression and/or controlling behaviours used against a current or past intimate partner” (Dixon & Graham-Kevan, 2011, p. 1145). It constitutes a global public health problem (Mandela & Brundtland, 2002) with worldwide prevalence rates estimating that 20–30% of people experience IPV at some point in their lifetime (Esquivel-Santoveña & Dixon, 2012). Additionally, IPV has huge societal economic costs. Recently, the Center for Disease Control (CDC) estimated the lifetime cost of IPV to be 3.6 trillion US dollars over the lifetimes of 44,000,000 victims (Peterson et al., 2018). Thus, understanding the prevalence and nature of IPV to aid its prevention has received considerable attention in research and practice literature (Black et al., 2011; Buss & Duntley, 2011; Dixon & Graham-Kevan, 2011; Finkel, 2014; Holtzworth-Munroe et al., 2000; Johnson, 2008; Nowinski & Bowen, 2012; World Health Organization, 2008).

National victimization surveys have shown that IPV is a gender inclusive problem. For example, surveys from England and Wales (Office for National Statistics, 2019), New Zealand (Ministry of Justice, 2019), and the US (Tjaden & Thoennes, 2000), found that 32–41% of those sustaining physical and psychological intimate partner aggression in the previous 12 month period were men. Other prevalence surveys have found approximately equal rates of physical aggression between men and women (e.g. Straus et al., 1980). Furthermore, Archer’s (2000) seminal meta-analytic review of 64,487 heterosexual men and women showed that women were slightly more likely to perpetrate IPV than men ($d = -0.05$). Although, men were more likely to physically injure women ($d = +0.15$) and injuries caused by men were more likely to require treatment ($d = +0.08$) than those caused by women.

However, 38% of those requiring medical attention for physical injury were men.

Furthermore, men and women suffer from IPV-correlated mental health problems and somatisation symptoms such as post-traumatic stress disorder, depression, anxiety, suicide and self-harm, chronic physical health conditions, and shorter life-expectancy (Anda et al., 2006; Campbell, 2002; Dillon et al., 2013; Douglas & Hines, 2011; Felitti et al., 1998; Hines & Douglas, 2016; Próspero, 2007; Próspero & Kim, 2009). Despite findings that suggest a gender inclusive response to IPV is warranted, policy and practice has typically been designed to address men's violence against women (see Breiding et al., 2014). This thesis aims to address this gap and contribute to the understanding of IPV perpetration from a gender inclusive perspective by investigating factors that predict men's and women's physical aggression.

Theoretical Explanations of IPV

'Gendered theory' is the prevalent theoretical account, put forward to explain why the majority of IPV is characterized by men's violence against women (Dobash & Dobash, 1979). From this perspective, men exert power and control over women to maintain their subordination in many different areas of life, such as education, politics, the workforce, and in intimate relationships. Physical, psychological, and sexual violence is understood as one extension of this power and control. Men's violence towards women is therefore considered a symptom of wider societal patriarchal values and structures and women's IPV is primarily understood as self-defensive in a context of power and control held over them (Dobash & Dobash, 2004; Yllö, 2005). Gendered theory has been influential in shaping interventions that prevent IPV (e.g. the Duluth model, Pence & Paymar, 1993). However, it has also been heavily criticized for not providing a complete explanation of IPV and ignoring prevalence

statistics that show high rates of male victimization and evidence that finds risk factors beyond measures of sexist attitudes predict IPV for men and women (Dutton, 1994; Dutton & Corvo, 2006; Straus, 2007). Indeed, meta-analytic research indicates traditional sex role ideology and attitudes condoning violence are at best only moderate correlates of IPV, $r = .29$, $r = .30$, respectively (Stith et al., 2004).

To address this problem, Dutton (2006) proposed a nested ecological model (NEM) of family violence that argued single factor models are not sufficient to explain family violence. Rather, Dutton posited that IPV is best explained by a complex interplay of factors at different levels of an individual's environment, and that individual variation will exist in this interaction. Therefore, whilst sexism may play a strong role in the aetiology of some men's IPV, it may not play a strong role for others. Attempts to test Dutton's model have found utility in his multifactorial approach (O'Leary et al., 2007; Stith et al., 2004) for shaping further research, and understanding of IPV from a gender-inclusive perspective. However, while NEM provides a framework to guide formulation of the problem behaviour, it does not explain how the variables interact or identify the processes involved in perpetration.

Psychological research in the wider aggression literature has shown the importance of favourable attitudes towards aggression as one mechanism that can contribute to explanations of aggressive behaviour. For example, social information processing (SIP) models of IPV (see Huesmann, 1998) argue that people who are habitually aggressive will hold normative beliefs condoning more aggression, and will access more aggressive scripts (i.e. a cognitive schematic structure) to guide their behaviour. Thus, if a person finds their partner has been unfaithful, their emotional response may be rage and the script they access may be retribution via the use of physical violence (Huesmann, 1998). Indeed, research has demonstrated that male and female IPV perpetrators have more positive attitudes towards the use of violence

and IPV than those who have not perpetrated IPV (Pornari et al., 2013; Pornari et al., 2018; Robertson & Murachver, 2007), and that these attitudes play a mediating role in the intergenerational transmission of IPV (Markowitz, 2001). Furthermore, female and male IPV victims have more positive attitudes to the use of violence, too (Robertson & Murachver, 2007).

Gendered theory has also been criticized for not accounting for the high prevalence rates of IPV by women against men that national surveys and other research clearly highlight (Felson, 2002). Attempting to explain the symmetry in women's and men's IPV perpetration, Felson (2000) proposed a competing sociological theory of gender and sexism. He asserted that *chivalry*, the normative protection of women from male violence, is the dominant social norm in Western egalitarian societies as opposed to patriarchy. Therefore society tolerates women's violence towards men because women are perceived as weak, and incapable of hurting men (Fiebert & Gonzalez, 1997; Glick & Fiske, 2001b). Thus, their violence towards men is seen as trivial and inconsequential (Miller & Simpson, 1991), resulting in women's low fear of retaliation, and serves to increase the likelihood of women being aggressive to a male intimate partner (Archer, 2000). In contrast, men's violence to women carries sanctions that reduce the likelihood they will enact violence towards women (Archer, 2006). Thus, it is proposed that chivalry inhibits men's violence towards women and increases women's IPV towards men (Archer, 2006). However, these predictions are yet to be rigorously tested (e.g. Feld & Felson, 2007).

Supporting this assertion, researchers have found that men inhibit physical (but not verbal) aggression towards women, and women disinhibit physical aggression towards males and male intimate partners (Cross et al., 2011; Davidovic, 2010). This asymmetry could

reflect differences in attitudes about the acceptability of violence, whereby men and women disapprove of male-to-female IPV and approve of female-to-male IPV, possibly reflecting the chivalrous norms that Felson (2002) describes. Indeed, the impact of gender-stereotypes on perceptions of harm, criminality and law-enforcement response is profound. Researchers found male-to-female violence was considered more harmful than female-to-male violence, and was nine times more likely to be classified a crime than women's violence to men (Allen & Bradley, 2018). Other research confirms that people are typically more concerned for female than male victims of IPV (Bates et al., 2019), and denigrate male-perpetrators more than female-perpetrators (Hammock et al., 2016; Rhatigan et al., 2011). Moreover, when women use IPV contextual attributions that provocation may have preceded the event are made (e.g. Scarduzio et al., 2016). One impact of these findings is that men who experience victimization from women are not recognized. Research into male IPV victims' experiences found men are less likely to report their victimization by female partners as they do not perceive that men can be victims of IPV because of the dominant gendered paradigm (Dempsey, 2013). Further, when male victims do seek help they may be turned away from services because those services do not perceive males can be victims of IPV, furthermore, male victims are often ridiculed for not leaving the relationship (Douglas & Hines, 2011). Male victims also experience mental and physical health problems (Próspero, 2007). Thus, female violence is not trivial, and understanding more about how sexism influences female-to-male IPV is important.

Measuring Patriarchy and Chivalry using Ambivalent Sexism Theory

This research attempts to test the validity of patriarchy and chivalry in the prediction of men's and women's IPV. Problematically, sociological theories are untestable at the

individual psychological level. However, both gendered theory and chivalrous theory reference gender-attitudes as the cause of IPV. Ambivalent sexism theory (Glick & Fiske, 1996, 2001b) is a social psychological theory that can account for the disparate perspectives of chivalrous theory (benevolent sexism) and gendered theory (hostile sexism), and can be tested as a proxy of these sociological theories at an individual level.

Ambivalent sexism theory (Glick & Fiske, 1996, 2001b) poses that men have a unique domain-specific dependence on women in the context of heterosexual relationships, but dominate women in all other domains: economic, political and social. From this sexist ambivalence, a unique form of out-group prejudice arises that has both hostile and benevolent components. Ambivalent sexism is driven by men's motivational conflict between access to women for sexual and psychological intimacy needs and protecting male status and power. Thus, the two dimensions of hostile and benevolent sexism are proposed to work together to enable men to manage the cognitive dissonance that arises from loving some members of a group (women) but hating others (Glick et al., 1997).

Benevolent sexism, like chivalry, perceives women in a restricted sex-role stereotype that is subjectively positive because it complements men's traditionally agentic role of protector and provider, rather than challenging men's privileged status. Benevolent sexism *idealises* women as nurturers and supporters of men and children, but views them as the weaker sex, who should be cherished, adored, and protected. This component of sexism allows men's dominance motivation to be veiled (Glick & Fiske, 2001b), even from themselves (Glick et al., 1997). Benevolent sexism may help to explain why women's IPV perpetration is trivialised, as women are perceived as too weak to hurt men. This is in accordance with the low number of male victims presenting for victim support (Douglas &

Hines, 2011; Tilbrook et al., 2010) as well as the findings that women's violence to men is less likely to be perceived as criminal (Allen & Bradley, 2018) and that male victims are often blamed for provoking abuse (Harris & Cook, 1994), or told they could easily stop women from harming them (Tilbrook et al., 2010).

Hostile sexism is characteristically different to benevolent sexism. Through the lens of hostile sexism, women are perceived in a negative, restricted sex-role stereotype as manipulative and deceitful, using men for money and status, and competing for male power. Research has linked men's hostile sexism and negatively-biased perceptions of female romantic partners with a greater number of daily aggressions toward female intimate partners and low relationship satisfaction (Hammond & Overall, 2013). Indeed, men's hostile sexism predicts greater verbal and sexual aggression towards women (Forbes et al., 2004), hostility to intimate partners (Overall et al., 2011) and attitudes that legitimise abuse in intimate relationships (Glick et al., 2002; Sakalli Ugurlu & Ulu, 2003). Thus, the current study proposes that hostile sexism also predicts physical IPV. However, a body of research in the romantic relationship literature using heterosexual dyadic-couple data has found that the relationship between men's hostile sexism and partner aggression is mediated and moderated by various factors, including biased perceptions of low relationship power, and perceptions of low partner commitment (Cross et al., 2017; Cross et al., 2019). Thus, hostile sexist men who are insecure about their power or have attachment-related anxiety are more likely to aggress against female partners.

Hostile and benevolent sexism are largely distinct constructs; thus, a person can hold both stereotypes simultaneously. However, conceptually and statistically they have some overlap, though sexist individuals are typically higher in one than the other (Berke &

Zeichner, 2016; Glick & Fiske, 2001a). Indeed, recent research has found that men who endorse hostile and benevolent sexism also endorse sexual objectification of women, sexual double-standards, social dominance orientation (patriarchal ideology) and gender-specific system justification (Bareket et al., 2018). Such men also report lower relationship satisfaction (Hammond & Overall, 2013), thus ambivalent sexist attitudes may produce problematic relationship dynamics that increase the likelihood of IPV perpetration.

What Effect Do Sexist Attitudes Held by Women Have on Their Experiences of IPV?

Little is known about how women's sexism towards women may relate to IPV; this research is unique in that it provides an investigation of this issue. Women are thought to internalise ambivalent sexist attitudes through cultural transmission, rather than through the conflicted needs-based motivation of men (Glick & Fiske, 2001b). Ambivalent sexism theory (Glick & Fiske, 1996) describes the process by which women become dependent on men in heterosexual relationships. Theoretically, women endorse benevolent sexism to gain the protection of their male partner, and wider society, from violence by other men. Indeed, research has found that women exposed to men's hostile sexism reacted with increased endorsement of benevolent sexism (Fischer, 2006). Thus, benevolent sexism appears to serve a self-protective function for women in hostile environments. Indeed, in countries with high national averages of hostile sexism, women are higher in benevolent sexism than men (Glick et al., 2000), presumably acting in accordance with prescribed gender roles confers protection against men's violence. Dyadic couple research supports theoretical assertions that heterosexual interdependence drives endorsement of benevolent sexism (Cross et al., 2019). Benevolent sexism may appeal to women as it gives them special protection and provision (Connelly & Heesacker, 2012; Hammond & Overall, 2016; Hammond et al., 2016). Indeed,

research has found benevolent sexism is related to increased life satisfaction through a diffuse form of system-justification (Connelly & Heesacker, 2012). Thus, benevolently sexist men and women maintain gender inequality by believing it is fair, and report being happier for it. However, research shows that women who endorse benevolent sexism become more hostile towards women over time (Sibley et al., 2007), and that women who live in more patriarchal countries or stay in abusive intimate relationships tend to justify or tolerate wife abuse (Correia et al., 2015; Sakalli Ugurlu & Ulu, 2003; World Health Organization, 2008). Thus, women's benevolent sexism towards women may reinforce their inferior position to men by subscribing to a system whereby women are motivated to support and defend the dominant group's interest in maintaining the status quo (Jost & Banaji, 1994). This has implications for tolerating IPV victimization, victim-blaming non-traditional women, and judicial decision-making processes.

It is unclear how women's sexism contributes to their experiences of IPV as perpetrators. Research has linked women's benevolent sexism to reacting with greater hostility towards male partners when benevolent expectations are not met (Overall et al., 2011). Further, college-age females who have perpetrated IPV reported beliefs that men are socialised not to hit women, and do not fear retaliation for this reason (Fiebert & Gonzalez, 1997). In response to women's hostility however, men may retaliate leading to bi-directional IPV. Indeed, the prejudice literature suggests that benevolent paternalistic attitudes towards women may backfire when women are openly insubordinate (Jackman, 1994). Researchers attempted to clarify how sexism impacts IPV through gender, and tested path models using ambivalent sexism, gender-symmetry, minor IPV perpetration and victimization (Allen et al., 2009). Allen et al. predicted gendered differences whereby women's IPV perpetration is primarily reactive and men's IPV perpetration is primarily proactive, and whereby men's

benevolent sexism inhibits men's IPV towards women, and men's hostile sexism predicts IPV towards women. Results indicated women's perpetration of IPV was significantly higher than men's, although victimization did not differ by gender, aligning with past family violence research (Archer, 2000). Men and women did not differ in levels of benevolent sexism and, consistent with the ASI scale validation studies (Glick & Fiske, 1996, 2001b), men were significantly higher in hostile sexism than women. Although, partial correlations found men's hostile sexism did not correlate with their perpetration of minor IPV, thus the hypothesis for men's hostile sexism leading to IPV was not supported. This result is surprising given the extent of the literature that finds a relationship between men's hostile sexism and men's perpetration of IPV and is contrary to research which finds that countries higher in gender inequality (the majority of participants were Latino) are higher in both dimensions of sexism, and IPV perpetration (Archer, 2006; Cross et al., 2017; Glick et al., 2000; Pornari et al., 2013; Pornari et al., 2018). Model fit indices were generated for gendered path models which tested relationships between benevolent sexism and reactive and proactive IPV, though no measure of who hit first (primary aggressor) was taken, and the dataset was concurrent. Path modelling requires large sample sizes; the minimum heuristic in path-modelling is 10 participants per estimated parameter (Kline, 2015). However, here fewer than 40 male participants reported perpetrating IPV, indicating the male sample was underpowered.

Furthermore, Allen et al. (2009) showed that women's benevolent sexism predicted reduced IPV victimization, and victimization predicted perpetration, supporting the authors' hypotheses, that women retaliate rather than initiate IPV. Men's perpetration strongly predicted their victimization, and benevolently sexist men were less likely to perpetrate IPV. These results supported the author's hypotheses for women retaliating (in line with gendered

theory) and men's benevolent sexism being negatively related to their IPV perpetration (lining up with chivalrous theory predictions). However, given the analyses utilized a concurrent data set and did not measure the first aggressor there was a lack of hedging language around the authors' conclusions in favour of women's violence being in retaliation to men's primary aggression. Allen et al. (2009) cautiously proposed benevolent sexism as a protective factor for women, whilst not condoning the effects of sexism on women in general.

Allen et al. (2009) do not incorporate the pathway through which the relationship between sexism and IPV may be mediated. Gendered theory posits that attitudes condoning wife-beating enable men to uphold male privilege in the family domain (Dobash & Dobash, 1979), whereas chivalrous theory suggests that men do not approve of men hitting women because men should protect women (Felson, 2000). Research suggests men and women may tolerate women hitting men because they think women's violence is trivial and not harmful to men (Archer, 2000; Miller & Simpson, 1991). Indeed, research into male and female perpetrators of spousal IPV found that such perpetrators had more aggressive cognitions compared with non-violent controls (Clements & Holtzworth-Munroe, 2008). Thus, the current study proposes that attitudes approving of IPV (normative beliefs about relationship aggression) mediate the relationship between sexism and IPV.

Study Objectives

The current study aims to explore the mediating properties of positive attitudes toward violence in the relationship between sexism and IPV perpetration for men and women in heterosexual relationships, to test gendered theory and chivalrous theory predictions. The analyses are guided by the integrated theory of ambivalent sexism (Glick & Fiske, 1996,

2001b) to predict the separate effects of hostile sexism and benevolent sexism on IPV perpetration. Gendered theory and chivalrous theory make different predictions about the relationship of sexism to IPV through approval of IPV. The gendered theory of IPV states that men use IPV against women to dominate women in the domestic domain, and that attitudes condoning IPV against women enable men to batter wives, therefore men's greater approval of IPV should mediate the relationship between men's higher hostile sexism and men's higher IPV perpetration if gendered theory is supported. In contrast, the chivalrous theory of IPV states that women are normatively protected from male violence, and that male perpetrated IPV is widely unacceptable, but suggests that female perpetrated IPV is tolerated because it is thought not to be harmful to men. Therefore, men and women higher in benevolent sexism should predict greater disapproval of male perpetrated IPV and greater tolerance of female perpetrated IPV if chivalrous theory is supported. Furthermore, if chivalrous theory is correct, women higher in benevolent sexism should perpetrate more IPV, whilst men higher in benevolent sexism should perpetrate less IPV. I expected that gendered theory would be true for hostilely sexist men, but not for benevolently sexist men or women. Little is known about women's hostile sexism, thus I hypothesised that women would not tolerate men's violence against their own gender in line with chivalrous theory, but due to holding hostile views may approve of violence towards men, and perpetrate through that path. Figure 1 indicates the conceptual design of the path model.

Figure 1

Model Concept for Men's and Women's IPV Perpetration, Testing Gendered Theory and Chivalrous Theory Predictions

Accordingly, the following *hypotheses* are tested:

Hypothesis One: Men who express higher levels of hostile sexism toward women will use physical IPV more frequently against women, mediated by higher levels of approval of physical IPV toward women.

Hypothesis Two: Men who express higher levels of benevolent sexism toward women will use physical IPV less frequently against women, mediated by lower levels of approval of physical IPV against women.

Hypothesis Three: Women who express higher levels of hostile sexism toward women will use physical IPV more frequently against men, mediated by higher levels of approval of physical IPV toward men.

Hypothesis Four: Women who express higher levels of benevolent sexism toward women will use physical IPV more frequently against men, mediated by higher levels of approval of physical IPV toward men.

Method

Participants

Participants were North American Amazon Mechanical Turk (MTurk) workers (from Canada and the United States of America [USA]), recruited on 9 April, 2019, at their own discretion (see Paolacci & Chandler, 2014). Inclusion criteria specified that participants must: be over the age of 18, have had a heterosexual dating relationship lasting 1 month or more in their adult lives, live in North America (USA or Canada). To improve data quality, workers were excluded if their approval rating on previous tasks was below 95% (Berinsky et al., 2012). A total of 855 people accessed the survey, of whom 167 were excluded because they: did not consent (6), identified as non-binary gendered (1), did not identify as heterosexual (7; the hypotheses required cisgender heterosexual participants as it was testing the relationship between sexism and both male-female and female-male intimate partner violence to test gendered and chivalrous theories), gave no data beyond consent (12), answered the comprehension check incorrectly (35; Goodman et al., 2013), or completed less than one third of the first survey measure (14). A further participant was excluded as they identified their age as 99 and had a strong response bias on the measures (1), and one participant had the same IP address, pattern of responding and the same specific explanation in the motives section as another participant (1), the first response was retained and the second removed. The final sample size was 688.

Participants were between 18 and 90 years old ($M = 36.78$, $SD = 11.77$); 322 were male (48.3%) and 356 were female (51.7%). Participants' self-identified ethnicities were: White/White American 70.4% ($n = 484$), Black/African American 10.2% ($n = 70$), Native

American or Alaskan Native 7.8% ($n = 54$), Asian 7.3% ($n = 50$), other ethnicity 3.1% ($n = 21$), and Spanish 1.3% ($n = 9$), with 16.7% of participants ($n = 115$) identifying with multiple ethnicities. Most participants, 94.8% ($n = 652$), identified as living by Western cultural values; the remaining 36 (5.2%) did not. Participants reported their relationship status as: currently single ($n = 107$, 15.5 %), dating ($n = 125$, 18.2%), cohabiting/married ($n = 393$, 57.1%), or separated/widowed ($n = 63$, 9.2%). All participants identified as heterosexual. Participants identified their employment status as: unemployed ($n = 73$, 10.6 %), employed part-time ($n = 78$, 11.3 %), or employed 16+ hours per week ($n = 537$, 78.1 %).

To have sufficient statistical power SEM requires large samples. A review of SEM reporting recommended a minimum of 10 participants per estimated parameter and a total sample size greater than 200 (Schreiber et al., 2006). The full model had 15 freely estimated parameters, for men ($n = 295$), and for women ($n = 315$), exceeding the suggested minimum requirement and aligning well with a recent heuristic recommendation of 20 participants per estimated parameter for path analysis (Barbeau et al., 2019).

Procedure

I advertised the questionnaire as taking under 60 minutes to complete, and participants were reimbursed US \$1 for their time. Participants were directed to the online survey platform (Qualtrics) to provide consent and complete the measures (below). This research was approved by the Victoria University School of Psychology Human Ethics Committee prior to data collection [project #24360]. The survey items were randomized within-measures.

Measures

Revised Conflict Tactics Scale (CTS2; Straus et al., 1996)

The CTS2 is a self-report questionnaire measuring acts and frequency of intimate partner aggression in both members of a couple to investigate reciprocal partner aggression. The CTS2 is among the most widely used motivational assessment scales for IPV and has acceptable validity and reliability scores across diverse samples (Straus, 2008). Research using the CTS2 has identified high occurrence rates of socially undesirable aggressive verbal and physical behaviours (Suris et al., 2004). This research used the 12-item physical aggression subscales (minor and severe) for perpetration and victimization (e.g., “I choked my partner”, and “My partner choked me”). We were interested in the context of the aggression, particularly the perpetration of IPV in self-defence, so we included a question to clarify which partner most frequently initiated the aggression as the primary aggressor using the scale described (Straus et al., 1996). The CTS2 scale was modified to simplify responding as follows: 1 = *rarely in the last 12 months*, 2 = *sometimes in the last 12 months*, 3 = *often in the last 12 months*, 4 = *very often in the last 12 months*, 5 = *this didn't happen in the past 12 months but it has happened before*, 6 = *never happened in the past 12 months, or ever*. This method has been used successfully in previous research (Graham-Kevan & Archer, 2003; Harris, 1991; Próspero & Kim, 2009). Both the physical assault perpetration and victimization sub-scales had very good internal consistency in this sample, Cronbach's $\alpha = .95$, $\alpha = .94$ respectively.

Beliefs about Relationship Aggression Scale (BaRAS; Dixon, in preparation)

The BaRAS is a 144 item self-report questionnaire designed to assess respondents' beliefs about physically violent episodes by both sexes in heterosexual intimate relationships. The BaRAS employs a 2×6×2 factorial design, producing 24 vignettes to provide comparison across all manipulated variables. Thus, the BaRAS measure integrates survey and experimental methods. An introduction states that all vignettes include an average size man and an average size woman involved in a monogamous intimate relationship. Each vignette differs only on three manipulated variables: (a) sex of the aggressor (male or female), (b) provocation from the victim (no provocation, infidelity, severe physical violence, minor sexual coercion, psychological aggression, and disobedience) and (c) severity of the perpetrator's physical violence (mild: a slap; severe: punched repeatedly). For example, the vignette "One evening during an argument, Carol punched John in the face. John then slapped Carol in the face" represents male, minor physical aggression (slap), in retaliation to female physical provocation. Immediately following each vignette is the question: "To what extent do you approve of (name of the last person to aggress)'s actions?" Participants respond to questions 1–5 on a 5-point Likert scale from 0 (not at all) to 4 (definitely), as previous research has demonstrated that offering binary yes/no answer options to questions induces socially desirable responding (Sorenson & Taylor, 2005).

Previous studies using the BaRAS have shown acceptable alpha values for: approval of male aggression .68–.84, and approval of female aggression .68–.86, with total approval of aggression ranging from .82–.92 (Allen, 2018; Cavanagh, 2018; Griffiths, 2013; Jones, 2018; Sabin, 2014). The current study showed very good internal consistency reliability of all

subscales: total approval of physical aggression subscale ($\alpha = .98$), approval of male aggression ($\alpha = .98$), and approval of female aggression ($\alpha = .95$).

Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996, 2001b)

The ASI is a 22-item self-report questionnaire widely used to assess sexism towards women. Hostile sexism (e.g., “Most women interpret innocent remarks as being sexist”) and benevolent sexism (e.g., “No matter how accomplished he is, a man is not truly complete as a person without the love of a woman”) were each assessed by an average of 11 items referring to heterosexual relationships. Respondents indicated their level of agreement on a 7-point Likert scale from -3 (*Strongly Disagree*) to 3 (*Strongly Agree*). The ASI validation study found good reliability for hostile sexism $\alpha = .80-.92$, and benevolent sexism $\alpha = .73-.85$ (Glick & Fiske, 1996). Good reliability for hostile sexism ($\alpha = .90$) and benevolent sexism ($\alpha = .87$) was also found in the current study.

Comprehension Check

This section comprised one forced-choice question to assess whether the participant had been attending to the questions (Hauser & Schwarz, 2016) asked in the BaRAS (Dixon, in preparation).

Results

Treatment of Data

Missing variable analysis was conducted in SPSS version 25.0, 10.60% of values, 11.31 % of cases, and 100% of the predictor and outcome variables had incomplete data. Little's MCAR test indicated that data were missing completely at random (MCAR), $X^2 = (16) 5.90, p = .989$. The greatest amount of missing data was for the variable approval of male IPV (18.5%). As the data was MCAR, I utilised list-wise deletion with maximum likelihood estimation and bootstrap standard errors in MPlus Version 8.1 (Muthén & Muthén, 1998-2018) to test the path model. I used an observed variable information matrix with 1000 iterations, and resampled 20,000 bootstrap draws using 95% confidence intervals to control for missing data (Harel et al., 2008; Hayes, 2009; Mallinckrodt et al., 2006; Preacher & Hayes, 2008). Bootstrapping is considered a powerful and valid method to test for mediating (intervening) variables. Bootstrapping is more robust against type 1 error (false positive) than causal steps methodology (Hayes, 2009; Mallinckrodt et al., 2006; Shrout & Bolger, 2002), is robust to violations of normality and asymmetry of the sampling distribution (Preacher & Hayes, 2008), and does not require a significant total effect before testing for an indirect effect.

Descriptive Statistics

Table 1 presents descriptive statistics, Cronbach's alpha scale reliabilities, and independent samples t-tests for each of the scale variables by gender. Predictions were tested using self-reported experiences of 1) IPV perpetration, and 2) IPV victimization, using concurrent data.

Table 1

Descriptive Statistics, Scale Reliabilities, and Independent Sample T-Test Results, Split by Gender

Measures	Men				Women				Gender Difference		
	<i>N</i>	<i>M</i>	(<i>SD</i>)	<i>a</i>	<i>N</i>	<i>M</i>	(<i>SD</i>)	<i>a</i>	<i>t</i>	<i>p</i>	<i>Mean difference</i>
Hostile sexism	295	-.305	1.226	.890	314	-.592	1.303	.894	2.806	.027	.288
Benevolent sexism	295	.134	1.029	.826	314	-.185	1.231	.885	3.475	.001	.319
Approval men's IPV	270	.695	0.969	.968	291	.657	1.058	.980	0.444	.378	.038
Approval women's IPV	272	.860	0.906	.940	290	.827	1.019	.962	0.410	.047	.033
Perpetration	324	.546	0.878	.942	336	.571	0.916	.950	-.363	.499	-.025
Victimization	324	.559	0.859	.934	336	.594	0.912	.947	-.494	.208	-.034

Note. Statistically significant differences in group means are shown in bold. Possible scores range from –3 to 3 for hostile sexism and benevolent sexism, from 0 to 4 for approval of men's IPV and approval of women's IPV, and 0 to 4 for perpetration and victimization. For the questionnaire measures, *a* indicates Cronbach's alpha, testing the internal reliability of the scales. Gender difference *t* represents test of difference between men and women.

Of the sample, 51.4% ($n = 171$) of men, and 54.2% ($n = 193$) of women had perpetrated physical IPV, and 53.9% ($n = 179$) of men, and 54.5% ($n = 194$) of women had been victims of IPV. Perpetration and victimization were low in both groups in a positive direction. There was no statistically significant difference between groups in either perpetration or victimization of IPV, thus men and women were equally likely to be the

perpetrators and the victims of IPV, in-line with family violence research findings of gender-symmetry. Further, 36.7% ($n = 122$) of men, and 42.1% ($n = 150$) of women had more frequently been the primary aggressor of IPV in their intimate relationship in the 12 months prior to data collection. An independent samples t -test revealed a significant difference between the groups, $\text{difference} = -.291$, $t(265.805) = -2.365$, 95% CI $[-.533, -.049]$, $p = .019$, whereby women ($M = 2.050$, $SD = 1.054$) were more frequently the first aggressor of physical violence than men ($M = 1.760$, $SD = 0.971$), consistent with family violence literature (Archer, 2000; Straus & Gelles, 1986). Hostile sexism and benevolent sexism were low overall in both groups, however, statistically significant differences between men and women were found for both hostile sexism and benevolent sexism (see Table 1). The men's group scored higher on both measures than the women's group. Taken together, this finding suggests men were higher in sexism, but that overall sexism was low in our sample. Approval of men's IPV was low overall in both groups, and there was no statistically significant difference between groups (Table 1). Approval of women's IPV was low in both groups, with a statistically significant difference between the groups (Table 1). Men generally approved of female-perpetrated IPV more than women. Altogether, these results suggest that both groups had low approval for IPV perpetrated by anyone, but relatively lower approval for male-perpetrated IPV than female-perpetrated IPV, suggesting support for chivalrous theory/benevolence towards women as the dominant social norm.

Following Field (2013), zero-order correlations (missing pairwise) were bootstrapped (1000 samples) to assess the relationships between variables. All zero-order correlations were positive and statistically significant (see Table 2). We found extreme collinearity (Kline, 2015) between IPV perpetration and IPV victimization. The perpetration and victimization variables were so highly correlated in both groups (men's, $r = .931$, $p < .001$; women's, $r =$

.926, $p < .001$), that the two variables were in effect measuring the same behavioural outcome/phenomenon (i.e., reciprocal partner violence). This suggests that relationship violence was most often bi-directional. Post-hoc frequency analyses showed that 49.4% of men ($n = 164$), and 51.7% of women ($n = 184$) reported experiencing bilateral IPV, and 6.6% of men ($n = 22$), and 5.3% of women ($n = 19$) reported experiencing unidirectional IPV, while 44% of men ($n = 146$) and 43% of women ($n = 153$) did not report experiencing IPV in the previous 12 months. For clarity, I proceeded with only IPV perpetration in the path model analyses. I also found high collinearity of approval of male IPV and approval of female IPV in both the men's and women's groups, suggesting that approval of IPV is generalised in this sample. However, I chose to proceed with gendered models of IPV given that men were more tolerant of women's IPV than men's IPV, and to test gendered and chivalrous theories of IPV and IPV victimization, though I note there may be a potential issue with multicollinearity in these models. However, I ran a supplementary version of the model that specified a single mediated pathway through total approval of IPV (pooling approval of men's IPV and approval of women's IPV), which will be compared to the full models.

Table 2*Zero-Order Correlations for Six Variables Split by Gender*

Variables	1	2	3	4	5	6
1. Hostile sexism		.389** [.252, .525]	.391** [.323, .462]	.362** [.283, .441]	.285* [.218, .315]	.278** [.205, .351]
2. Benevolent sexism	.569** [.463, .662]		.210** [.132, .293]	.260** [.186, .330]	.132* [.059, .208]	.125* [.052, .199]
3. Men's IPV approval	.469** [.386, .543]	.375** [.304, .441]		.928** [.895, .950]	.645** [.557, .728]	.637** [.546, .724]
4. Women's IPV approval	.495** [.419, .566]	.439** [.367, .500]	.934** [.898, .960]		.584** [.494, .669]	.571** [.472, .657]
5. Perpetration	.437** [.369, .507]	.338** [.273, .395]	.731** [.656, .803]	.705** [.627, .781]		.931** [.889, .957]
6. Victimization	.443** [.369, .509]	.341** [.271, .406]	.740** [.663, .808]	.715** [.642, .778]	.926** [.885, .959]	

Note. Intercorrelations for male participants ($n = 270$) are presented above the diagonal, and intercorrelations for female participants ($n = 290$) are presented below the diagonal. Bootstrapped Bias Corrected and accelerated (BCa) 95% confidence intervals (CI) reported in brackets.

** $p < .01$. * $p < .05$.

Statistical Analyses***Model Specification***

The hypotheses were tested using structural equation path modelling (SEM) in MPlus Version 8.1 (Muthén & Muthén, 1998-2018). Two gendered models of men's and women's use of physical violence were run as previous research suggests fundamental differences between men and women in the psychological mechanisms underlying IPV (Allen et al., 2009; Dobash & Dobash, 1979; Dobash & Dobash, 2004; Fitzpatrick et al., 2004; Yodanis, 2004). A recursive multigroup path model (see Figure 1 for model concept) simultaneously estimated all hypothesised parameters (Hayes, 2009; Muthén & Muthén,

1998-2018). Predictions offered by gendered theory were tested by the path from hostile sexism through increased approval of male IPV to IPV perpetration. Predictions offered by chivalrous theory were tested by: 1) the path from men's benevolent sexism through decreased approval of male IPV to men's IPV perpetration (see Figure 2: X_2 through Z_1 to Y), and 2) the path from women's benevolent sexism through increased approval of female IPV to women's IPV perpetration (see Figure 3: X_2 through Z_2 to Y). Predictor variables were covaried, sexism (hostile and benevolent), and approval of IPV (male and female) to control for shared variance in the model.

The first and second hypotheses were tested in the men's model. The third and fourth hypotheses were tested in the women's model. Model fit indices were not obtained as the observed-variable path model was just-identified with 0 degrees of freedom, and model fit indices are not necessary to answer the proposed hypotheses. Findings directly on the hypotheses are reported first, additional findings from testing all paths in the just-identified model follow.

Men's Model of IPV**Table 3**

Estimates (Unstandardized with Standard Error, Bootstrapped 95% Confidence Intervals, Standardised Estimates, Test Statistic and Associated P-Values) for the Parameters of the Men's Model of IPV, (n = 295)

Direct effects (Variables)	B	SE	95% Confidence interval (CI) [low, high]	β	t	p
Perpetration on;						
Approval male IPV	.661	.125	 [.404, .899]	.727	5.280	< .001
Approval female IPV	-.098	.115	[-.319, .134]	-.101	-0.845	.398
Hostile sexism	.027	.022	[-.014, .071]	.038	1.262	.207
Benevolent sexism	-.019	.025	[-.068, .031]	-.022	-0.747	.455
Approval male IPV on;						
Hostile sexism	.287	.041	 [.211, .372]	.364	7.012	< .001
Benevolent sexism	.053	.040	[-.023, .136]	.057	1.320	.187
Approval female IPV on;						
Hostile sexism	.226	.039	 [.153, .306]	.306	5.827	< .001
Benevolent sexism	.114	.040	 [.038, .194]	.130	2.863	.004
Approval male IPV with Approval female IPV	.682	.062	 [.566, .809]	.918	11.038	< .001
Indirect effects (Mediation paths)	B	SE	95% Confidence interval [low, high]	β	t	p
Hostile sexism through approval male IPV	.189	.042	 [.115, .282]		4.467	< .001
Benevolent sexism through approval male IPV	0.035	0.027	[-.013, .096]		1.302	.193
Hostile sexism through approval female IPV	-0.028	.034	[-.120, .039]		-0.826	.409
Benevolent sexism through approval female IPV	-0.005	.009	[-.036, .005]		-0.596	.551

Note. CIs are bias corrected and accelerated with 20,000 bootstrap draws. Significant effects are shown in bold.

Figure 2

Observed Variable Path Model Displaying Unstandardized Effects of Men's Hostile Sexism, and Men's Benevolent Sexism Predicting Physical IPV Perpetration, Mediated by Approval of IPV Toward Men, and Approval of IPV Toward Women, ($n = 295$)

Note. Solid lines indicate significant direct effects, dashed lines indicate non-significant paths.

**Indicates significant estimates at the $p < .01$ level (2-tailed). *Indicates significant estimates at the $p < .05$ level (2-tailed)

Hypothesis One: Men's Hostile Sexism. I expected that men who express higher levels of hostile sexism toward women would use physical IPV more frequently against women, mediated by higher levels of approval of male physical IPV against women. As

hypothesized, hostile sexism significantly predicted approval of male aggression in a weak, positive direction, and approval of male aggression significantly predicted perpetration of IPV in a moderate-strong positive direction (see Figure 2). Moreover, the relationship between men's hostile sexism and perpetration was significantly and positively mediated by increased approval of male-perpetrated IPV, indirect effect, $B = .189$, $SE = .042$, 95% CI $[.115, .282]$, $t = 4.467$, $p < .001$. These results support our first hypothesis based on gendered theory. Further, the direct path (X_1 to Y) from men's hostile sexism to men's IPV perpetration was non-significant in this analysis: when controlling for all other variables in the model, men's hostile sexism did not directly predict IPV perpetration. Thus, as hypothesized approval of male IPV mediated the relationship between hostile sexism and IPV perpetration, contributing illuminating detail as to how men's hostile sexism is linked to IPV perpetration.

Hypothesis Two: Men's Benevolent Sexism. I expected that men who express higher levels of benevolent sexism toward women will use physical IPV less frequently against women, mediated by lower levels of approval of male physical IPV against women. The results did not support our second hypothesis based on chivalrous theory: Men's higher benevolent sexism towards women did not significantly predict men's lower approval of male IPV as the path (X_2 to Z_1) was non-significant, an indirect effect was not possible. Thus, the model for men's benevolent sexism impacting perpetration of IPV through disapproval of male IPV did not fit the data. Further, men's higher benevolent sexism did not significantly predict men's lower perpetration of IPV (see Figure 2: X_2 to Y) in our sample. Altogether, this finding suggests that benevolently sexist males neither significantly approve nor significantly disapprove of male perpetrated IPV. Moreover, benevolently sexist men did not

perpetrate significantly less IPV, which would be indicated by a significant negative estimate, after controlling for the effects of hostile sexism.

Summary of Men's Model Results. Altogether, the results of the male model indicate that hostile sexism, rather than benevolent sexism, predicts men's relationship violence through approval of male IPV. Benevolent sexism is not a significant predictor of IPV perpetration in this model, suggesting men's benevolent sexism offers some protection from men's IPV perpetration. This finding aligns best with ambivalent sexism theory: men's hostile sexism predicts hostility towards women, and men's benevolent sexism predicts non-violence against women.

*Women's Model of IPV***Table 4**

Estimates (Unstandardized with Standard Error, 95% Confidence Intervals, Standardised Estimates, Test Statistic and Associated P-Values) for the Parameters of the Women's Model of the Psychological Mechanisms of IPV, (n = 315)

Direct effects (Variables)	B	SE	95% Confidence interval (CI) [low, high]	β	t	p
Perpetration on;						
Approval male IPV	.484	.107	 [.268, .685]	.563	4.520	< .001
Approval female IPV	.105	.096	[-.067, .313]	.118	1.087	.277
Hostile sexism	.075	.023	 [.033, 0.123]	.108	3.249	.001
Benevolent sexism	.003	.022	[-.039, .048]	.005	0.155	.877
Approval male IPV on;						
Hostile sexism	.304	.048	 [.217, .405]	.379	6.353	< .001
Benevolent sexism	.129	.042	 [.050, .218]	.151	3.042	.002
Approval female IPV on:						
Hostile sexism	.281	.046	 [.195, .375]	.363	6.082	< .001
Benevolent sexism	.185	.044	 [.104, .277]	.226	4.220	< .001
Approval male IPV with approval female IPV	.717	.062	 [.605, .849]	.913	11.601	< .001
Indirect effects (Mediation paths)	B	SE	95% Confidence interval [low, high]	β	t	p
Hostile sexism through approval male IPV	.147	.041	 [.075, .234]	---	3.624	< .001
Benevolent sexism through approval male IPV	.062	.026	 [.022, .124]	---	2.438	.015
Hostile sexism through approval female IPV	.032	.029	[-.020, .098]		1.084	.278
Benevolent sexism through approval female IPV	.014	.014	[-.006, .050]		0.993	.321

Note. CIs are 95% bias corrected and accelerated with 20,000 bootstrap draws. Significant effects are shown in bold.

Figure 3

Observed Variable Path Model Displaying Unstandardized Effects of Women's Hostile Sexism, and Women's Benevolent Sexism Predicting IPV Perpetration, Mediated by Approval of IPV Toward Men, and Approval of IPV Toward Women, (N = 315)

Note. Solid lines indicate significant direct effects, dashed lines indicate non-significant paths.

**Indicates significant estimate at the $p < .01$ level (2-tailed). *Indicates significant estimate at the $p < .05$ level (2-tailed).

Hypothesis Three: Women's Hostile Sexism. I expected that women who express higher levels of hostile sexism toward women will use physical IPV more frequently against

men, mediated by higher levels of approval of female physical IPV against men. I found partial support for hypothesis three (see Figure 3). As expected, women's higher hostile sexism predicted greater approval of female IPV (X_1 to Z_2), in a weak positive direction, partially supporting the predictions made from chivalrous theory. However, women's greater approval of female IPV did not predict women's increased IPV perpetration (X_2 to Y). Thus, an indirect effect of women's hostile sexism on women's perpetration of IPV through approval of female IPV was not possible. Further, we found that hostile sexism directly predicted women's perpetration of IPV (X_1 to Y) after accounting for the effects of benevolent sexism and approval of IPV, though this effect was relatively weak and marginally positive. Thus, for women, gender hostility was directly related to perpetration, but not through the hypothesised indirect path. Incidental findings are reported in additional findings, below.

Hypothesis Four: Women's Benevolent Sexism. I expected that women who express high levels of benevolent sexism toward women will use IPV more frequently against men, mediated by high levels of approval of female physical IPV against men. As anticipated, women's benevolent sexism predicted increased approval of female IPV in a weak positive direction (see Figure 3: X_2 to Z_2) supporting chivalrous theory. However, women's increased approval of female IPV did not predict perpetration of IPV (Z_2 to Y). Thus, we found only partial support for hypothesis four as the second path in the indirect relationship was non-significant, meaning an indirect effect was not possible. Further, the direct effect of women's benevolent sexism on perpetration of IPV (X_2 to Y) was non-significant in this model. Thus, benevolently sexist women did not perpetrate IPV directly, nor through approval of female IPV. Incidental findings are reported in additional findings, below.

Summary of Women's Model Results. Taken together, the results indicate that, for women, sexism predicts approval of female IPV supporting chivalrous theory. However, approval of female IPV does not predict women's perpetration of IPV. Thus, we did not find sufficient support for chivalry being a pathway to women's IPV perpetration through approval of female IPV.

Additional Findings

By covarying the mediating variables to include attitudes approving of IPV towards both men and women we collected additional estimates of non-hypothesised parameters. The results of these additional findings (see Figure 2) were inconsequential for the men's model and will be covered in the discussion. However, for the women's model the results (see Figure 3) indicated that women's higher hostile sexism significantly predicted women's increased approval of *male* IPV in a weak positive direction (X_1 to Z_1), and further, increased approval of male IPV predicted women's greater IPV perpetration (Z_1 to Y) in a moderate, positive direction. Moreover, an indirect effect was found whereby increased approval of male IPV significantly mediated the relationship between women's hostile sexism and women's perpetration of IPV, $B = .147$, $SE = .041$, BCa 95% CI [.075, .234], $t = 3.624$, $p < .001$ (X_1 through Z_1 to Y). Altogether, these results indicate women's hostile sexism both directly, and indirectly predicts women's perpetration of IPV through women's approval of male IPV (not female IPV as hypothesised). Thus, approval of male IPV partially mediated the relationship between women's hostile sexism and women's IPV perpetration. Further, women's higher benevolent sexism predicted increased approval of male IPV in a weak, positive direction (X_2 to Z_1), and women's increased approval of male IPV significantly and moderately predicted women's greater perpetration of IPV (Z_1 to Y) in a positive direction.

Moreover, there was a significant indirect effect through approval of male IPV on the relationship between women's benevolent sexism towards women and perpetration of IPV, $B = .062$, $SE = .026$, BCa 95% CI [.022, .124], $p = .015$ (X_2 through Z_1 to Y). Furthermore, after accounting for the other variables in the model, the direct relationship between women's benevolent sexism and perpetration (X_2 to Y) was not significant. Altogether, these results suggest that women's benevolent sexism is indirectly related to their IPV perpetration through approval of male IPV, rather than directly. Thus, women's benevolent sexism may be considered a risk factor for women's IPV perpetration, supporting chivalrous theory, though through approval of male IPV rather than approval of female IPV. This finding can be best explained by ambivalent sexism theory, and internalised gender norms that align with patriarchal goals of keeping women in their place.

Supplementary Tests

Victimization data was not included in the statistical models because correlations between perpetration and victimization were extremely high, indicating multicollinearity (Kline, 2015), due to the high levels of bi-directional IPV reported by participants. This approach differs from Allen et al. (2009) who utilised both victimization and perpetration data. However, as past literature has suggested females are often violent in self-defence, and men initiate IPV (Allen et al., 2009; Dobash & Dobash, 2004), post-hoc analyses controlled for the likelihood of participants being the partner who hit first. Of note, the sample size is reduced in these models, as only participants with data on all variables were included in the analysis. Gendered theory suggests women's violence is in retaliation to men's violence, and chivalrous theory explains men's victimization where women are violent first.

Men's Model. In the men's model (see Figure 4), the significant weak positive indirect effect of men's hostile sexism on IPV perpetration (X_1 through Z_1 to Y) persisted after we controlled for the first aggressor, $B = .151$, $SE = .058$, 95% BCa CI = [.005, .289], $t = 2.579$, $p = .010$ (Figure 4). Thus, controlling for men who hit first did not change the men's model, as the indirect relationship between men's hostile sexism and IPV perpetration mediated by men's approval of male IPV persisted in men who reported using IPV in response to their female partner's violence. Thus, this model holds when men are not physically instigating the IPV.

Figure 4

Observed Variable Path Model Displaying Unstandardized Effects of Men's Primary Aggression, Men's Hostile Sexism, and Men's Benevolent Sexism Predicting IPV Perpetration, Mediated by Approval of IPV Toward Men, and Approval of IPV Toward Women, (n = 161)

Note. Solid lines indicate significant direct effects, dashed lines indicate non-significant paths.

**Indicates significant estimate at the $p < .01$ level (2-tailed). *Indicates significant estimate at the $p < .05$ level (2-tailed).

Women's Model. For the women's model (see Figure 5), controlling for the first aggressor reduced the significance of the indirect effects of sexism on perpetration whereby they became marginally significant. *HS indirect effect*, $B = .065$, $SE = .035$, *BCa* 95% CI [.013, .150], $t = 1.858$, $p = .063$; *BS indirect effect*, $B = .065$, $SE = .035$, *BCa* 95% CI [.015, .163], $t = 1.829$, $p = .067$. However, lowered significance is likely due to a loss of power, and because the error increased due to reduced degrees of freedom and fewer participants in this model, as all direct effects are still very significant. Thus, it cannot be concluded that women are perpetrating physical IPV in response to their partner's physical violence, as the direct effect from first aggressor to perpetration (X_3 to Y) is significant in a weak, positive direction. Nor can it be concluded that women are more likely to hit first.

Taken together, men and women who hit their partner first were more tolerant of intimate partner violence when controlling for the effects of hostile sexism and benevolent sexism. Across the models, we found that for men and women increased hostile sexism predicted greater approval of all IPV, suggesting that sexist hostility is linked to an underlying hostility that may not be gendered. However, as I pulled apart the mediators by the perpetrator's gender to test competing sociological theories of IPV based on sexism I found that approval of male IPV indirectly predicted perpetration in both men and women, suggesting hostility towards women has been internalised by *both* groups in-line with ambivalent sexism theory. Benevolent sexism predicted men's approval of female IPV and women's approval of male and female IPV. This finding suggests gendered differences in approval for IPV are dependent on the genders of the perpetrator/victim dyad, in line with chivalrous theory. Benevolent sexism appears to inhibit men's IPV, but not women's IPV when controlling for the effects of hostile sexism.

Figure 5

Observed Variable Path Model Displaying Unstandardized Effects of Women's First Aggression, Women's Hostile Sexism, and Women's Benevolent Sexism Predicting IPV Perpetration, Mediated by Approval of IPV Toward Men, and Approval of IPV Toward Women, (n = 202)

Note. Solid lines indicate significant direct effects, dashed lines indicate non-significant paths.

**Indicates significant estimate at the $p < .01$ level (2-tailed). *Indicates significant estimate at the $p < .05$ level (2-tailed).

Pooled Total Approval Models

Due to the high correlations indicating multicollinearity in the approval of male IPV and approval of female IPV factors, these factors were pooled to create a single-mediator,

‘total approval of IPV’ variable. Guidelines indicate this approach is best practice (Kline, 2015). If results using the total approval variable differ from the models previously tested it would indicate that the important nuance concerning gender of the perpetrator is hidden when the approval of IPV factors are pooled.

Men’s Model. Interestingly, in the men’s model (see Figure 6) the relationship between men’s *benevolent sexism* and total approval of IPV (X_2 to Z) became significant, $B = 0.084$, $SE = 0.038$, $t = 2.197$, $\beta = 0.094$, BCa 95% CI [0.012, 0.163], $p = .028$. Further, the direct effect from hostile sexism to IPV perpetration (X_1 to Y) became significant, $B = .044$, $SE = .022$, $\beta = .062$, BCa 95% CI [.002, .090], $t = 1.973$, $p = .046$. Thus, some of the variance in perpetration related to hostile sexism was not mediated by total approval of IPV. Furthermore, 2 significant indirect effects were found, HS indirect effect, $B = .150$, $SE = .026$, BCa 95% CI [0.106, 0.204], $t = 5.845$, $p < .001$, as in previous models and additionally, BS indirect effect, $B = .045$, $SE = .022$, 95% BCa CI [.008, .094], $t = 2.239$, $p = .025$. This indicates that nuance from benevolent sexism impacting approval of women’s IPV is lost in this model. Overall, these findings contrast to earlier models where the effects of approval of female IPV were controlled for and demonstrate that controlling for the impact of approval of female IPV on approval of male IPV adds valuable detail. An alternative explanation is that the model estimated fewer paths, thus increasing the statistical power to detect an effect from benevolent sexism to IPV perpetration.

Figure 6

Observed Variable Path Model Displaying Unstandardized Effects of Men's Hostile Sexism, and Men's Benevolent Sexism Predicting IPV Perpetration, Mediated by Total Approval of IPV, ($n = 295$)

Note. Solid lines indicate significant direct effects, dashed lines indicate non-significant paths.

**Indicates significant estimate at the $p < .01$ level (2-tailed). *Indicates significant estimate at the $p < .05$ level (2-tailed).

Women's Model. In the single-mediator pooled (total) approval women's model (see Figure 7), as in previous women's models, the two significant indirect effects from hostile sexism, $B = .176$, $SE = .031$, BCa 95% CI [.121, .231], $t = 5.691$, $p < .001$, and benevolent sexism, $B = .095$, $SE = .026$, BCa 95% CI [.048, .151], $t = 3.633$, $p < .001$ to perpetration of IPV remained. The significant weak but positive direct effect of hostile sexism on women's IPV perpetration also persisted, $B = 0.75$, $SE = .023$, $t = 3.319$, $\beta = 0.112$, BCa 95% CI [.031, .124], $t = 3.202$, $p = .001$. Additionally, women's benevolent sexism weakly and positively predicted total approval of IPV, $B = .157$, $SE = .041$, $\beta = .192$, BCa 95% CI [.081, .243], $t = 3.848$, $p < .001$. Thus, had gendered approval factors not been included in the original

multiple mediator models, the link from sexism to IPV through approval of *men's* IPV that was driving the relationship between sexism and perpetration in men and women would remain unclear. This finding supports gendered theory understandings of violence by men towards their own intimate partners as being acceptable, and a pathway to women's IPV perpetration in this sample. The pattern of results in the women's pooled approval model replicated the men's pooled approval model, thus, had I approached my analysis without considering the impact of gender on sexism and approval of IPV, a comparative analysis, moderated mediation used to test a pooled approval model would not have uncovered the significance of male IPV driving the mediation for women.

Figure 7

Observed Variable Path Model Displaying Unstandardized Effects of Women's Hostile Sexism, and Women's Benevolent Sexism Predicting IPV Perpetration, Mediated by Total Approval of IPV, (n = 315)

Note. Solid lines indicate significant direct effects, dashed lines indicate non-significant paths.

**Indicates significant estimate at the $p < .01$ level (2-tailed). *Indicates significant estimate at the $p < .05$ level (2-tailed).

Effect Size Estimates

Guidelines for reporting SEM results recommend including an indication of the effect size of predictor variables (attitudes in these models) on the outcome (IPV) variable (Schreiber et al., 2006). In the original models four predictors were included (see Figures 2 & 3), however research suggests many factors contribute to IPV perpetration (O'Leary et al., 2007). To get an indication of how much of the variance in perpetration was explained by the tested models, R-square results obtained from the outputs are reported in Table 5. These results show that 35–50% of the variance in perpetration is explained by the analysed models. The original model explained the greatest proportion of variance in perpetration for men and women, 42% and 54% respectively. Controlling for the first aggressor (see Figures 4 & 5) increased the amount of variance explained in approval of male IPV and approval of female IPV in both the men's and women's models. The pooled total approval models (see Figures 6 & 7) revealed that the women's model explained more of the variance in perpetration and approval of IPV than the men's model. Across models, the proportion of variance explained was higher for the women's group than the men's group. Furthermore, all the variances were greater in the women's models than the men's models.

Table 5

R-Square Results Representing the Estimated Effect Size for Each Dependent Variable by Model

Model	R^2 Perpetration	R^2 Approval male IPV	R^2 Approval female IPV	R^2 Pooled approval IPV
Men's original model ($n = 295$)	.418	.152	.143	---
Men's control 1st aggressor ($n = 161$)	.350	.419	.420	---
Men's pooled approval ($n = 295$)	.395	---	---	.152
Women's original model ($n = 315$)	.538	.232	.277	---
Women's control 1st aggressor ($n = 202$)	.506	.420	.448	---
Women's pooled approval ($n = 315$)	.532	---	---	.262

Discussion

This research aimed to test the efficacy of gendered and chivalrous theories in explaining physical IPV perpetration by heterosexual men and women. Specifically, the relationship between hostile and benevolent sexism, beliefs supporting the approval of IPV, and perpetration of physical IPV in the previous 12 months, were explored for men and women recruited via an online questionnaire. Four hypotheses tested the competing theories analysed through multiple mediator path models. The current study found some support for both gendered theory, and aspects of chivalrous theory. However, overall the findings suggest that more nuanced explanations of the relationship between gender, sexism, and IPV are required. Thus, ambivalent sexism theory (Glick & Fiske, 1996, 2001b) is discussed as one theory that can provide a more sophisticated, gender-inclusive account of men's and women's IPV perpetration. Ambivalent sexism theory departs from the predictions made by chivalrous theory in that benevolence to women is conditional on women's conformity to a traditional female gender-role. Furthermore, the results suggest pro-violent attitudes towards the use of IPV may be more important risk factors in predicting IPV perpetration than sexism. Thus, a general aggression model (Anderson & Bushman, 2002), which explains the process through which thoughts and feelings interact at the individual and relationship levels to produce automatic and generalised aggressive behaviour, may provide relatively more insight into the phenomenon of IPV than sexism.

A summary of the findings of each model is provided below before a discussion about what the findings mean for further research and psychological practice.

Men's Hostile Sexism

Men's higher hostile sexism predicted greater IPV perpetration through increased approval of male IPV, supporting gendered theory. Indeed, as gendered theory suggests (Dobash & Dobash, 1979) attitudes approving of IPV against women were driving this relationship. The results of the men's model may be of use in explaining why previous research found men did not perpetrate IPV through endorsing patriarchal ideologies, but rather through relatively more positive attitudes toward the use of violence (Bates et al., 2013; Sugarman & Frankel, 1996). Thus, those authors recommended general aggression models (see Anderson & Bushman, 2002) may provide more adequate explanations of men's IPV perpetration. Indeed, whilst this research found a link between men's higher hostile sexism and greater IPV perpetration, it was largely indirect when including pro-violent attitudes towards the use of IPV. The exception to this was the pooled total model, which masked the effects of approval of female IPV perpetration. Thus, attitudes condoning IPV and hostility may be comparatively more important than sexism in this relationship. This finding aligns with path-analytic research which found that as men's sex-role egalitarianism decreased and approval of marital violence increased, men's perpetration of severe IPV increased (Stith & Farley, 1993). Thus, the presence of both hostile sexist attitudes and attitudes of approval predicted IPV. Controlling for the person who aggressed first in a physical manner did not remove the indirect effect of hostile sexism on IPV perpetration, it remained significant. This indicates that first aggression did not account for the link from men's hostile sexism through approval of male IPV to men's perpetration of IPV, or alternatively, was statistically independent from that link. This finding conflicts with gendered theory, which predicts men's primary violence and women's retaliation (Dobash &

Dobash, 2004), and contravenes the findings of Allen et al. (2009) where the authors concluded sexist men's violence was proactive.

Men's Benevolent Sexism

Men's higher benevolent sexism did not predict men's reduced approval of male perpetrated IPV or lower IPV perpetration, conflicting with predictions based on chivalrous theory that benevolence towards women *negatively* predicts 1) approval of physical IPV towards women and 2) men's IPV perpetration (Archer, 2000; Felson, 2000, 2002). However, men's benevolent sexism *and* hostile sexism predicted greater approval of *women's* IPV toward men for those men who perpetrated IPV, suggesting women's violence is trivialised (Archer, 2000; Miller & Simpson, 1991), and thus may be tolerated and eventually become normalised in the context of bilateral aggression (when both partners perpetrate IPV). The approval measure included provocation conditions where women used psychological, sexual and physical provocation in some scenarios which provoked a male partner's mild or severe physical retaliation. Benevolent sexist men's attributions may turn hostile under such provocation (Glick & Fiske, 2001b); when women break the traditional female gender role men may justify their use of IPV under these circumstances.

In sum, findings from the men's model support gendered theory (hostile sexism predicted IPV perpetration through attitudes approving of violence towards female intimate partners), and aspects of chivalrous theory (benevolent sexism did not significantly predict men's approval of male IPV or their IPV perpetration, and men tolerated women's IPV against men). Additionally, IPV in this sample was largely bilateral, which does not align with chivalrous theory (Felson, 2000), where men do not hit women. Neither theory can fully

describe this pattern of results. Ambivalent sexism theory (Glick & Fiske, 1996, 2001b) and general aggression models (Anderson & Huesmann, 2003) better account for these findings. However, as the context or motivation for IPV was unknown, further comment about women enacting violence in self-defence, or pre-emptive self-defence, is as untenable in these findings as it was in the Allen et al. (2009) study. Still, men approving of women's IPV is problematic because when women hit men, men may hit them back.

Women's Ambivalent Sexism (Hostile and Benevolent)

For women, *all sexism* (hostile and benevolent) towards women predicted all approval of IPV (male and female). However, women's higher hostile and benevolent sexism both indirectly predicted greater IPV perpetration through increased approval of *male* IPV, not increased approval of female IPV as hypothesised based on predictions derived from chivalrous theory (Archer, 2000; Felson, 2002). However, these findings fit with ambivalent sexism theory which, like chivalrous theory, proposes that women are considered weak (Glick & Fiske, 1996, 2001b) and their violence is trivialised (Miller & Simpson, 1991) thus, goes unrecognised due to the prevailing gender paradigm, which assumes only men can be perpetrators of IPV (Douglas & Hines, 2011). Therefore, in line with Archer (2000), women may be violent towards men because they assume that they are protected from men's violence by the dominant chivalrous/benevolent social norm. Indeed, this research showed that women were more frequently the first aggressor. Thus, benevolently sexist women who believe women should be cherished by men were more likely to hit men, as women's violence seems inconsequential to sexist women. However, results suggested IPV perpetration was predominantly bilateral, indicating that women's violence increases their chances of being hit back. It is plausible that once women hit men they have broken the

traditional feminine gender role of caring for men (Glick & Fiske, 2001b), and are no longer protected from men's violence. These findings fit with family violence research (Archer, 2000; Straus, 1990), and highlight the importance of assessing how relationship dynamics impact IPV perpetration and victimization.

In sum, ambivalent sexism theory (Glick & Fiske, 1996, 2001b) best accounts for the findings from the women's model, whereas gendered and chivalrous theories have more limited application. However, the results from the control model indicated that being the first aggressor of violence was the strongest predictor of women's attitudes approving of IPV towards both men and women. This aligns with research finding approving of the use of one's own violence predicts women's IPV (Simmons et al., 2008).

Findings Across Models

For men and women in this research, approval of *male* IPV was the strongest predictor of IPV perpetration. Sexism was a less strong predictor. Altogether, the results support ambivalent sexism theory (Glick & Fiske, 1996, 2001b), rather than gendered or chivalrous theories, in that attitudes condoning IPV towards women mediated the relationship between sexism and IPV perpetration. Our findings align with research investigating correlates of IPV that found hostility towards women and attitudes condoning violence predicted men's and women's IPV perpetration and victimization across diverse samples (Robertson & Murachver, 2007).

On the other hand, approval of men's IPV and approval of women's IPV were highly correlated, with one predicting the other in both gender groups. This suggests a *generalised tolerance of IPV* and normalisation of violence in intimate relationships better described by

the general aggression model (Anderson & Bushman, 2002). This finding aligns with research that has found men and women who hold positive attitudes toward IPV are also more likely to perpetrate and be victims of IPV (Spencer et al., 2017). Indeed, IPV was largely bilateral in the current study's sample. Moreover, domestic violence research has found that people who have experienced IPV, either as a victim or perpetrator, condone the use of relationship violence more than those who have no IPV experiences (e.g. Robertson & Murachver, 2009). IPV experiences in the current study occurred in the 12-month time period prior to administration of the questionnaire, as is typical in IPV and aggression research (e.g. Dixon & Graham-Kevan, 2011; Straus, 1979). Thus, in line with research finding highly committed people tolerate IPV more if they experience it in their current relationship (Arriaga et al., 2016), participants recent experiences may have increased their approval ratings in this research.

As higher levels of hostile sexism predicted greater approval of all IPV, and increased perpetration of IPV across men and women, it is plausible that hostile sexism is indicative of generalised hostility. In accordance with this, Fite et al. (2008) conducted longitudinal research which found that particular features of social information processing (hostile attributions, generation of aggressive responses, and positive evaluation of aggressive responses) predicted IPV across male and female genders. Further, hostile attributions, including about women, appear to facilitate physical aggression (Huesmann, 2017). Indeed, researchers have suggested that hostile sexism taps generalised hostility (Forbes et al., 2004), despite being designed to tap three sub-components of hostility towards women (Glick & Fiske, 1996). Research investigating male IPV perpetrators' offense supportive cognitions found higher levels of explicit hostility toward the opposite gender, relationship dominance, attitudes condoning towards physical IPV, and instrumental beliefs about physical aggression

in a group of male-perpetrators of IPV compared to controls (Pornari et al., 2018). This demonstrates that multiple hostile attitudes are held concurrently by perpetrators of IPV. In the same study, the authors found differences in implicit measures in the IPV group whereby automatic cognitions appeared to facilitate aggressive behaviour. Such findings support the concept that hostile sexism may be a proxy measure for more generalised hostility.

Theoretical Implications

Whilst both gendered theory and chivalrous theory have made important contributions towards gaining a greater understanding of the aetiology of IPV, the theoretical implications of this research are that neither the prevailing nor opposing theory of sexism as causing IPV perpetration adequately describes the nature of the relationship. Ambivalent sexism theory does account for the role of sexism more fully, however, the role of sexism in relation to IPV perpetration was relatively small when including attitudes approving of IPV. Thus, while ambivalent sexism theory (Glick & Fiske, 1996, 2001b) may offer some explanatory utility, for example, who is perpetrated against and under what conditions, it is possible that general models of aggression (e.g. Anderson & Bushman, 2002) may offer more utility in explaining who is more likely to engage in IPV. Moreover, these findings suggest a more fruitful approach to explaining the link between sexism and IPV perpetration is through ‘theory-knitting’, by integrating the existing theories of ambivalent sexism and general models of aggression towards a more unified theory of how sexism may predict physical IPV (Ward, 2005). Indeed, theorists consider multifactorial, multilevel explanations necessary to better shape understandings of the complexity and nuance found in IPV perpetration (see Bell & Naugle, 2008; Dutton, 2006). Thus, an integrated theory of IPV should include pro-violent attitudes that facilitate the use of aggression.

More broadly, this research suggests that sexist attitudes may be more predictive of IPV when additional factors are present. Similarly, romantic relationship researchers have found that relationship between sexism and relationship negativity and aggression is moderated and mediated by factors such as attachment security and perceptions of relationship commitment (Cross et al., 2017a; Cross et al., 2019) and that IPV is tolerated more when sexist people endorse romantic love (Lelaurain et al., 2018). Thus, theory knitting of relevant theories such as ambivalent sexism and general models of aggression among other empirically and theoretically-derived risk factors, may contribute fertility towards the generation a more comprehensive, gender-inclusive, theory of IPV.

Implications for Policy and Practice

These findings have several implications for practice and policy, centred on the prevention of family violence. Effects of men's *and women's* sexism on IPV perpetration, and mutual IPV were found. Thus, sexism and risk for IPV perpetration and victimization should be assessed in *both* members of a couple experiencing IPV. This research indicates that important treatment targets to reduce IPV include women's sexism and attitudes approving of violence towards women and men, and men's sexism and attitudes approving violence towards women and men. Partner abuse in our sample, as in other research, was most often mutual (Magdol et al., 1998; Moffitt et al., 2001). Indeed, high levels of reciprocal IPV have been found across community and clinical samples (see Langhinrichsen-Rohling et al., 2012; Moffitt et al., 2001). To avoid gender biases in assessment, family violence treatment experts recommend separate interviews with both partners where possible (e.g. Hamel, 2005), and taking a gender-inclusive family systems approach to treatment where appropriate (not in cases of severe unilateral abuse). Indeed, relationship dynamics seem

crucial to understanding the causes and maintenance of IPV in a given couple. Violent victimization precipitates violent retaliation, in this manner violence in couples escalates (Huesmann, 2012). Indeed, research into IPV in clinical samples found physical injuries were more severe in bilaterally violent couples compared with couples where violence is unilateral (Madsen et al., 2012). Furthermore, children are more likely to be physically abused when both parents perpetrate IPV (Dixon & Smith Slep, 2017; Hamel, 2005). Moreover, it is widely known that the 'cycle of violence' is transmitted across generations (Dixon et al., 2005; Dumas et al., 1994; Ehrensaft et al., 2003), becoming normalised within families and communities where violence is regularly observed (Huesmann, 2012). Thus, stopping parental violence is key in preventing IPV in future generations.

Sexism has long been linked to men's IPV perpetration, however, this research demonstrates that women's sexism is similarly problematic. In this research, women who hit men also endorsed sexism more and approved more of men's IPV. Benevolent sexism may lead women to assume protection from men's violence when they are the first to hit, but men hit back. Indeed, gendered approaches ignore women's sexism and women's tolerance of IPV victimization in spite of understanding IPV as a problem of patriarchal society (McPhail et al., 2007; Pence & Paymar, 1993). Moreover many treatment programs explicitly exclude women from treatment based on the patriarchal paradigm of IPV (Hamel, 2013) despite meta-analytic findings that endorsement of patriarchal ideology was high among battered wives, but not among battering husbands (Sugarman & Frankel, 1996). Disregarding the role of women's sexism in IPV, as perpetrators and victims, may have grave impacts for women's safety.

Whilst benevolent sexism sounds appealing, if this subjectively positive component of sexism is not targeted and treated, victim-blaming is facilitated when women break traditional gender role. We see this in research into perceptions of sexual assault (Abrams et al., 2003; Forbes et al., 2004; Forbes et al., 2005; Viki & Abrams, 2002). Moreover, men who are perceived as benevolently sexist may be less likely to be blamed for their violence towards their wives (Durán et al., 2010; Lelaurain et al., 2018). Further, benevolent sexism means that men may not be recognised as victims of IPV (Douglas & Hines, 2011; Espinoza & Warner, 2016; Follingstad et al., 2004) because women's violence is trivialised through sexist perceptions of women as the weaker sex (Allen & Bradley, 2018; Taylor & Sorenson, 2005), and men are presumed to have provoked women first (Scarduzio et al., 2016). Given global health imperatives to reduce family violence (Mikton et al., 2017; World Health Organization, 2008, 2014), psychological assessment and treatment cannot afford to be gender-biased where IPV is concerned, yet benevolence towards women encourages this blinkered thinking.

The results of this research indicate that hostile sexism is common to men and women. Arguably, hostile sexism is related to more generalised hostility (see Forbes et al., 2004), as previously outlined. Investigating the relationship between trait negative emotionality (anger, hostility and attitudes condoning violence) and IPV perpetration in partner violent couples, Moffitt et al. (2001) found that the effects of this trait on IPV were compounded when it was present in both partners. Furthermore, treating only one partner in a violent couple did not reduce the risk of IPV perpetration. Thus, hostile attitudes, both gender specific and generalised, should be targets for assessment and intervention in men and women who present for IPV treatment as part of a more encompassing approach to treat trait negative emotionality as a major risk factor for IPV (Capaldi et al., 2012).

These results also indicate that pro-violent relationship attitudes, leading to the normalisation of relationship violence, are strongly involved in IPV perpetration in men and women. Controlling for the effects of sexism, male and female first aggressors of physical IPV approved most of IPV, and more so when the IPV was against women. Thus, normative pro-violent attitudes should be therapeutic targets for change in men and women to the point that *no* violence is deemed acceptable. In our sample, approval of IPV was generalised (strong correlations between approval of male IPV and approval of female IPV) and not strongly gendered. This suggests holding normative pro-violent attitudes facilitates the selection of violent behavioural scripts in perpetrators (and victims) of IPV (Huesmann, 1998), and the justification of violent victimization (Huesmann, 2012), thus pre-empting negative evaluations of violent behaviour and facilitating automated aggressive responding (Allen et al., 2018). Rigorous studies and meta-analysis have found that men's IPV is unrelated to patriarchal ideology, but strongly linked to attitudes condoning violence (Bates et al., 2013; Sugarman & Frankel, 1996), such that authors suggest general understandings of aggression (see Anderson & Bushman, 2002) have better explanatory power. However, many other contributing factors at different levels of a nested ecological model framework, such as abuse histories, may also need to be addressed (Dutton, 2006).

In this research, IPV perpetrators were men and women, and IPV victims were men and women. Whilst inclusive definitions of IPV are becoming widely circulated (see Breiding et al., 2014), the same inclusivity has not been fully extended to policy or service provision. This gap is based on ideological concerns that women are more frequently victims and are more harmed by IPV (Sacco, 2019), and does not acknowledge that stigma contributes to males under-reporting their IPV victimization experiences (Douglas & Hines, 2011; Douglas et al., 2012). For example, in the United States current domestic violence policy and victim

services are aimed at women and children (Fernandes-Alcantara, 2019). Though recent amendments include provisions for same-sex and transgender victims of domestic violence, adequate acknowledgement of and provision for heterosexual male-victims and female-perpetrators is largely absent. Furthermore, such domestic violence policies describe IPV as gender-based. Thus, it seems important that policy and service provision is made to include the high proportion of male victims and mutually aggressive couples that this and other research finds (e.g. Langhinrichsen-Rohling et al., 2012; Park & Kim, 2017).

Strengths, Limitations, and Recommendations for Future Research

This research study provides novel findings from a gender-inclusive test of gendered theory and chivalrous theory which aimed to investigate how sexism is related to IPV perpetration in heterosexual men and women. This is a much-needed contribution to the literature, clarifying the effect of a shared mechanism, approval of IPV against women (Dobash & Dobash, 1979; Dobash & Dobash, 2004; Felson, 2002), on theories that compete to explain men's and women's IPV experiences. Unexpectedly, this mechanism acts in the same direction/way across both theories to predict perpetration in men and women. Whilst this research found some support for both gendered and chivalrous theories, neither of these adequately explained the relationship between gender, sexism and IPV perpetration. This research suggests a more nuanced explanation, such as that offered by ambivalent sexism theory (Glick & Fiske, 2001b), is required. Indeed, the current study highlighted that attitudes approving or tolerating IPV against women were driving the relationship between sexism and IPV, and were stronger predictors of IPV perpetration than sexism. This finding confirms the importance of addressing attitudes of approval held by IPV perpetrators as risk factor, practice literature, and empirical research suggests (e.g. Eckhardt et al., 2012; Lee et al.,

2013; Markowitz, 2001; Pornari et al., 2013; Robertson & Murachver, 2009; Stith et al., 2004; Temple et al., 2013), and highlights the need to assess and address these attitudes, in conjunction with sexism, in victims who stay in relationships where there is IPV.

This analysis was based on aggregated data, thus these findings may not be useful in understanding individual perpetrators motivations, or causes of their IPV behaviour, in clinical case-formulation and treatment. Risk factors for IPV perpetration are heterogeneous and multifactorial (Capaldi et al., 2012), occurring and interacting at different levels of an individuals' eco-system (Murphy et al., 2014). Indeed, whilst the link from ambivalent sexism to IPV perpetration has been unpacked for individuals who hold sexist attitudes, and approve of IPV, this is not the whole picture. These path models explained approximately half the variance in perpetration in the women's models but less than half the variance in perpetration in the men's models, highlighting the importance of understanding IPV as a complex phenomenon with multi-level, multifactorial aetiology (Dutton, 2006), which is additionally impacted by gender. However, this research did not investigate attitudes tolerant of general violence or general violence perpetration as potential pathways to IPV perpetration, as other research investigating overlaps in offense behaviours has (Moffitt et al., 2000; Thornton et al., 2012; Thornton et al., 2016). Given the potential for generalised hostility as measured by hostile sexism (Forbes et al., 2004), these factors would be interesting to include in future studies, possibly as a covariates of approval of IPV and IPV perpetration, respectively.

Further, this research utilized a selective approach to SEM analysis that concentrates on two risk factors linked to IPV perpetration at the SIP level, ambivalent sexist attitudes and attitudes approving of IPV. This is useful because it follows relevant findings in the literature

and allows us to test hypothetical relationships (Jose, 2016). Hence, the variance in IPV perpetration explained by these two factors was substantial, unlike previous studies which have included multiple factors to explain a similar amount of variance. For example, O'Leary et al. (2007) included dozens of predictors to explain approximately 50% of the variance in men's and women's IPV perpetration to test a nested ecological model of IPV (Dutton, 2006). Future research could also investigate the relationship between sexism and IPV by testing whether men and women in heterosexual couples tolerate violence by their current intimate partner (Goodfriend & Arriaga, 2018), or justify their own use of violence in their intimate relationship (Simmons et al., 2008). This could be done by replacing the approval of male IPV and approval of female IPV with approval of own IPV and approval of partners' IPV. This research explored self-reports from men and women who were not part of the same couple, future research could benefit from exploration of the aetiology of IPV in couple dyads (O'Leary & Smith Slep, 2003). The romantic relationship literature emphasises that gender and sexism influence aggression in a highly specific relationship context. In the current study we investigated IPV perpetration by heterosexual individuals, but men and women in couples are interdependent (Cross et al., 2019). For example, research has shown that women become more benevolently sexist over time when their male partner endorses benevolent sexism (Hammond et al., 2016). Thus, the addition of dyadic relationship data and factors such as attachment style, commitment level, and negative emotionality could be incorporated to test aetiological models of IPV in future research (Cross et al., 2017; Fisher & Hammond, 2018; Moffitt et al., 2001).

The online sample was large enough to test predictions of IPV across men and women in the general population. This approach is useful considering that previous research has been underpowered and has focused on male perpetrators (Allen et al., 2009; Lee et al., 2013).

However, characteristics of this sample may limit the generalizability of these findings. The study was advertised to target participants who had experiences of IPV, thus, the sample was self-selected and had high rates of perpetration and victimization. Furthermore, by focusing on individuals with experiences of IPV in a general population study, these findings are more comparable to gendered samples but additionally include both male and female perpetrators and victims.

Additionally, given the online nature of the questionnaire and the demographic region it sampled, participants had ‘WEIRD: white, educated, industrialized, rich and democratic’ characteristics (Henrich et al., 2010). Indeed, although a number of participants identified as belonging to multiple ethnic groups, few identified as holding non-western values. Nonetheless, IPV is a global phenomenon, and is not restricted to class, gender, culture or ethnicity (Dixon & Graham-Kevan, 2020), thus, the impact of sample characteristics on these findings may be limited.

This research looked at physical aggression which enabled fruitful comparison of the findings with the broader IPV literature. However, it is noted that, by definition, IPV is wider than physical violence (Dixon & Graham-Kevan, 2011), and that within physical IPV minor and severe perpetration sub-categories have been widely observed (see Esquivel-Santoveña & Dixon, 2012). Nonetheless, sexual and psychological aggression have also been linked with sexism through attitudes of hostility towards women and approval of IPV (Anderson & Anderson, 2008; Juarros-Basterretxea et al., 2019). Therefore, it is plausible the mediation presented in this research may generalise to these domains.

This research was exploratory, designed to test competing theories of IPV rather than to confirm a path model from sexism to IPV perpetration, thus a cross-sectional design was employed to test predictions (e.g. Jose, 2013). This limits the generalizability of our findings as concurrent mediations are indeterminate in temporal and causal relationships (Jose, 2016). Thus, we cannot know whether attitudes condoning IPV preceded IPV perpetration or vice versa. However, similar to the current study's findings, researchers found that normative beliefs approving of IPV moderated the relationship between traditional gender role beliefs at T1 and IPV perpetration at T2 (18 months later) in a large sample ($N = 577$) of teenage boys (Reyes et al., 2016). This supports a model whereby attitudes precede IPV behaviour. On the other hand, researchers have used longitudinal data to test whether gender-role attitudes (including chivalry) and attitudes justifying men's IPV preceded or followed IPV perpetration (Nabors & Jasinski, 2009), finding that attitudes justifying IPV followed IPV perpetration. Similarly, research suggests perpetrators resolve their cognitive dissonance when their morals do not match their IPV behaviour (Vecina & Chacón, 2019). Thus, it is possible that attitudes justifying the use of IPV develop after the fact. However, this research provides preliminary evidence of an ordered relationship (Jose, 2016) whereby attitudes predicted behaviour. Future longitudinal research could test this model specification (Schreiber et al., 2006) to assess whether the sequence of predictors fits the data.

The BaRAS measure utilised to assess attitudes approving of IPV is currently in preparation and has yet to be validated. The scale has good internal reliability and face validity, however construct validity remains to be established. Approval of IPV and indeed hostile attributions are strongly related to developmental trauma experiences (Ehrensaft & Cohen, 2012; Ehrensaft et al., 2003; Herrenkohl & Jung, 2016; Temple et al., 2013; Valdez et al., 2013) thus, there is a possibility that the BaRAS acts as a proxy measure of trauma.

Validation of the BaRAS measure in future research is recommended. The measure could then be used to investigate the impact of provocation type on attitudes approving IPV in the relationship between ambivalent sexism and IPV perpetration. The BaRAS measure (Dixon, in preparation) manipulated the context in which reciprocal IPV occurred. Several of the subscales included women breaking traditional gender role by: using physical aggression, sexual infidelity, using psychological aggression, sexual coercion, and being disobedient. Ambivalent sexism theory posits that society generally endorses benevolence towards women who maintain traditional feminine gender role expectations, but when women break gender role by challenging male power and dominance, attitudes flip towards hostility (Glick & Fiske, 2001b). The provocation conditions may have led to participants' endorsing male violence towards women more in these provocation conditions than when male violence was unprovoked.

Conclusion

This research tested the efficacy of gendered theory against chivalrous theory in explaining men's and women's IPV. The results indicated that neither theory adequately explains the link from sexism to IPV perpetration. Instead, this research highlights the need to develop more nuanced theories of IPV beyond gendered and chivalrous theories that can account for the gender inclusive and bilateral nature of IPV, among other factors. Indeed, ambivalent sexism theory (Glick & Fiske, 1996, 2001b) can provide a more sophisticated and gender inclusive account of the link between sexism and IPV perpetration that acknowledges that men's and women's aggression takes place within the context of a relationship dynamic. Additionally, attitudes approving IPV were generalised in this sample, and the strongest predictors of IPV. Thus, general models of aggression may be relatively more useful than

sexism in understanding the aetiology of IPV. However, future research must recognise that whilst sexism and beliefs play a role in the aetiology of IPV, they are not the only factors involved. Multi-factorial, dyadic, and gender inclusive frameworks stemming from gender-inclusive and dyadic theories of IPV will better guide policy and practice to prevent the social problem. Empirical tests of such models are required to test theoretical assertions and to guide practice and policy in the area of family violence.

Practice implications of this research include that treatment should aim to reduce sexism and attitudes approving IPV in both men and women who present for treatment. More inclusive approaches incorporating women's sexism and relationship dynamics are needed. Indeed, the results of this research do not align well with gendered theory predictions, and highlight the improbability of reducing future IPV perpetration through selectively targeting men's sexism as in Duluth-based models (Pence & Paymar, 1993), which have modest treatment effects (Babcock et al., 2004). Furthermore, these findings suggest that ideologically-based assumptions about the gender of the perpetrator and the victim of IPV (e.g. Dobash & Dobash, 1979) are subject to stereotyped gender-bias and error. Services that neglect to understand the complex interplay of factors, which may include women's sexism and related beliefs tolerating the use of IPV against women, women's IPV perpetration as primary aggressors (McPhail et al., 2007), and men's tolerance of women's IPV, risk deleterious effects on treatment efficacy and on both women's and men's health. In this sample, an integrated theory of sexism, ambivalent sexism theory (Glick & Fiske, 1996, 2001b), together with a general model of aggression (Allen et al., 2018; Anderson & Huesmann, 2003; DeWall et al., 2011) could best explain the nuanced findings.

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Appendix A

Information Sheet and Consent Form

Information and Consent Statement: Perceptions of Intimate Partner Violence

Application ID number: This content is unavailable.

Louise Dixon

Ara A'Court

John McDowall

Matt Hammond

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Thank you for your interest in this research project. Please read this information before deciding whether or not to take part. If you decide to participate, thank you. If you decide not to take part, thank you for considering our request.

What is the purpose of this research?

- This study will allow us to better understand intimate partner violence. Intimate partner violence is a significant worldwide problem so research in this area is very important.

Who is conducting the research?

- The research is being conducted as part of an MSc research project conducted by Ara A'Court who is studying for an MSc in psychology at Victoria University of Wellington, New Zealand. Associate Professor Louise Dixon is the primary supervisor and lead researcher, Associate Professor John McDowall and Dr. Matt Hammond are also supervising the research project. All academic staff work at Victoria University of Wellington in the School of Psychology.
- This research has been approved by the School of Psychology Human Ethics Committee under delegated authority of Victoria University of Wellington's Human Ethics Committee [project # 24360].

What is involved if you agree to participate?

- This study investigates how people's perceptions of aggression in dating or intimate relationships relates to their use of aggression in relationships. To be eligible to take part in this study, you must be 18 years old and have been in a heterosexual dating/intimate relationship that has lasted at least one month at some point in your adolescent/adult life. You will receive \$1.40 (USD = \$2 NZD) dollars for taking part in this study.
- You will be asked to complete an online questionnaire. First you will be asked for general demographic information. You will then be asked if you have ever done any of the following to a partner or if a partner has done this to you: insulted or sworn at them, threatened to hit or throw something at them, slapped, hit or kicked them. The third section asks you to

consider and comment on a series of hypothetical scenarios where aggression arises within a couple. Aggressive acts are briefly described here, for example it may say something like 'Anne hit Peter in the face'. In the fourth section, you will be asked the extent to which you personally agree with statements about men and women and heterosexual relationships in contemporary society, for example you may be asked how much you agree or disagree with the statement 'Women, as compared to men, tend to have a more refined sense of culture and good taste'. The final sections will ask a few questions about how you experienced the survey. It is important that any information received is accurate. We therefore ask you to complete the questionnaire in a private, quiet space, consider each question carefully and answer each question honestly. Please note that there will be some questions that are designed to test whether you are paying attention to what you are being asked. If you do not answer these questions correctly you will not receive any credit for your participation.

- You must complete each part of the study in one sitting, as you cannot resume where you left off at another point in time. While you are participating, your responses will be stored in a temporary holding area as you move through the sections, but they will not be permanently saved until you complete all sections. It will take you approximately 30 minutes to complete.
- You are free to withdraw from participating in the research at any time up until you submit your responses at the end of the survey. You will only receive credits if you complete the study. If you chose to withdraw from the study before submitting your responses your data will not be saved. You will only receive payment if you chose to complete the study and submit your responses.

Privacy and confidentiality

- The research team cannot identify who you are, your responses are anonymous. Please do not put your name anywhere on the survey as we want to make sure your responses are not identifiable. This means that individual feedback on your responses will not be provided.
- In accordance with the requirements of some scientific journals and organizations, de-identified data may be shared with other competent researchers. If data is shared or published will be impossible for anyone to identify you or know what your responses where.
- A copy of the data you provide will be kept in the custody of Associate Professor Louise Dixon. Because the data is anonymous Louise Dixon will store it securely for an indefinite period of time.

What happens to the information that you provide?

- The data you provide will be used as part of an MSc research project that will be submitted for assessment, and may appear in published work and other appropriate venues such as research seminars and educational lecturers.

If you are interested in the results of this study, the main findings will be posted on the Interpersonal & Family Aggression Laboratory (IFAL) website in March 2020:

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If you have any questions or problems, whom can you contact?

If you have any questions about this study, either now or in the future, please feel free to contact Louise Dixon or one of the research team using the details stated at the top of this information document.

If you have any concerns about the ethical conduct of the research you may contact the Victoria University HEC Convenor: Dr Judith Loveridge.

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If you wish to discuss issues around aggression in relationships with someone, there are many avenues of free support, such as:

USA

This content is unavailable.

CANADA

At the links below you can find a list of resources across Canada for help with:

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Thank you for considering participating in this research.

CONSENT TO PARTICIPATE

I have read and understood the information about this research project. I understand the purpose of this research, what will happen if I participate, and what will happen to the information I provide. I understand that the information I provide is anonymous and that I can withdraw my consent at any time prior to submitting the questionnaire online without providing a reason.

I agree to participate in this research, and I understand that checking (ticking) the box below indicates my consent.

[Box] Yes, I agree to participate in this research.

[Box] No, I do not agree to participate in this research

If you do not agree to participate in this research, please exit this browser window now.

Please maximise the size of your web browser window before continuing.

Appendix B

Debriefing Statement

Debrief Statement: Perceptions of Intimate Partner Violence Application ID number: 0000024360

Louise Dixon

Ara A'Court

John McDowall

Matt Hammond

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Thank you for participating in this research study, you have helped us to understand more about why people may be aggressive in their intimate and dating relationships. Intimate partner violence is a common international social problem and this study will help professionals to understand its causes. It aimed to investigate how men's and women's perceptions of gender roles and aggression in dating or intimate relationships relates to their use of aggression, or lack of aggression, in relationships. If researchers can understand what factors drive people to aggressive, or abstain from aggression, then they can work towards designing interventions that reduce these drivers and bolster protective mechanisms. The overall effect of this will be to reduce the chances of violence occurring in society.

If you have experienced or perpetrated relationship violence, or indeed if you find the contents of this questionnaire upsetting for some other reason and wish to discuss any issues about relationship aggression, there are many avenues of free support, such as:

If you are interested in the results of this study, the main findings will be posted on the Interpersonal & Family Aggression Laboratory (IFAL) website in March 2020: This content is unavailable.

If you have any questions or problems, whom can you contact?

If you have experienced or perpetrated relationship violence, or indeed if you find the contents of this questionnaire upsetting for some other reason and wish to discuss any issues about relationship aggression, there are many avenues of free support.

If you have any questions about this study, either now or in the future, please feel free to contact Louise Dixon or one of the research team using the details stated at the top of this information document. If you have any concerns about the ethical conduct of the research you may contact the Victoria University HEC Convener: Dr Judith Loveridge. This content is unavailable. This content is unavailable. If you wish to discuss issues around aggression in relationships with someone, there are many avenues of free support; links to these services are provided on the next page.

Click the link below to open a free downloadable helpline sheet with links for USA and Canada in a new window

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USA

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CANADA

At the links below you can find a list of resources across Canada for help with:

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Thank you once again for your help.

Kind regards,

Louise Dixon, Ara A'Court, John McDowell and Matt Hammond