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# The Role of Self-Control in Predicting Intimate Partner Violence Specialization in an Australian Community Sample

Heather Wolbers<sup>1</sup> · Jeffrey Ackerman<sup>1</sup> · Justin Ready<sup>1</sup>

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## Abstract

**Purpose** This study builds on knowledge of intimate partner violence (IPV) perpetration by examining theoretically important aspects of this crime within an Australian community sample. More specifically, the current study examines the relationship between IPV offenders' levels of self-control and offense specialization and determines whether this relationship differs by gender.

**Method** An online survey advertised on social media yielded an analysis sample of 155 females and 170 males. Self-control was measured using the Brief Self-Control scale and specialization was measured with the Offense Specialization Coefficient (OSC) and a multilevel item response theory measurement approach.

**Results** Findings indicate that IPV offenders with low levels of self-control are more versatile in their offending and that this relationship was more evident and pronounced for females.

**Conclusions** Findings are mostly supportive of Gottfredson and Hirschi's General Theory of Crime and highlight important differences within IPV offender populations that should be considered when designing targeted prevention and intervention methods.

**Keywords** Intimate Partner Violence · Domestic Violence · Self-Control · Specialization · Offense Versatility · General Theory of Crime

## Introduction

This study builds our current knowledge of intimate partner violence (IPV) perpetration by examining several theoretically important aspects of this crime within an Australian community sample. Although there is growing realization that IPV takes many forms and that there is no single agreed upon definition of IPV, in this project we investigate physical forms of IPV as well as some aspects of psychological abuse (e.g., threats and destruction of property). While we recognize that some scholars prefer the longer phrase "intimate partner violence/abuse" because non-physical forms of IPV can be as harmful and sometimes more harmful than the physical forms, in this paper we use

the more common terminology "IPV" as a matter of brevity. We build on prior work by focusing upon IPV perpetrators' degree of IPV specialization, which we define as the extent to which an IPV offender reports IPV offenses exclusively, as opposed to reporting a broader range of offense types (i.e., versatility or generalization). The current project determines the applicability of self-control theories of crime to the explanation of the degree to which IPV offenders are specialists in IPV rather than generalists who commit a variety of offenses. In addition, we examine whether relationships between self-control and IPV specialization are similar in males and females or whether these relationships exhibit a gendered pattern. This study is important for several practical as well as theoretical reasons. For example, because IPV offenders have differing levels of specialization (Bouffard & Zedaker, 2016; Bouffard et al., 2008; Wolbers & Ackerman, 2020); understanding the degree to which self-control predicts IPV specialization and how this differs by gender can assist in tailoring appropriate treatment and intervention strategies for different offender types.

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## Background

Gottfredson and Hirschi's (1990) General Theory of Crime is among the most relevant theoretical statements about the relationship between self-control and offense perpetration. It suggests that the single most important factor behind all crime is a low level of self-control. The logic underlying this perspective is a realization that criminal acts are predominantly opportunistic, impulsive, and short-sighted. Individuals with low self-control have high criminogenic propensities because they find it difficult to defer immediate gratification to obtain more rewarding long-term goals even when their behavior increases inevitable punishments. For these reasons, crime is committed when individuals with low self-control come into contact with illegal but exciting opportunities that provide immediate gratification (Goode, 2008; Gottfredson & Hirschi, 1990).

While IPV is not directly addressed by Gottfredson and Hirschi in their General Theory of Crime, they do discuss certain aspects of interpersonal violence. They state that "people with low self-control tend to have minimal tolerance for frustration and little ability to respond to conflict through verbal rather than physical means" (pg. 90). To the extent that some IPV arises from escalating conflict, individuals may be responding to conflict with their partner using violence due to frustration and a lack of self-control.

Although Gottfredson and Hirschi's theory has been criticized for overstating the importance of a single cause as an explanation of all crime types (Cohen & Vila, 1996), evidence of self-control being one of several factors in the explanation for criminal activity has been well established. Although IPV has been generally understood to be the result of multiple factors such as substance use/abuse, witnessing violence within the family of origin, and the adherence to patriarchal values (see Capaldi et al., 2012), it is certainly possible that patriarchal men or those who abuse substances as well as those who have witnessed violence within their family of origin who also have low self-control would be more violent towards their partners than men of these types with high self-control, who more carefully consider the longer-term implications of their actions.

One of the most fundamental propositions of the General Theory of Crime is that individuals with low self-control should commit a wide variety of offenses and analogous behaviors. If, as suggested, low self-control drives all forms of deviance, absent the unlikely scenario where an individual with low self-control consistently had a very limited variety of criminal opportunities, the individual would engage in a variety of deviant acts. Therefore, IPV offenders with low self-control would be expected to be versatile offenders.

Although the literature about the relationship between self-control and crime is extensive, there is little scholarly

work that deals more specifically with specialization in IPV. Within this small body of work are inconsistent findings about the levels of IPV specialization. Some studies find support for the notion that most IPV offenders are not specialists (e.g., Bouffard & Zedaker, 2016; Dowling et al., 2021; Piquero et al., 2006), and others find specialization to be the more common offending pattern for IPV perpetrators (e.g., Coghlan & Millsted, 2017; Moffitt et al., 2000; Wolbers & Ackerman, 2020).

Although the IPV specialization literature discusses Gottfredson and Hirschi's General Theory of Crime, it has not directly investigated the predictive ability of self-control on IPV specialization. This neglect is likely due to the nature of the data necessary to investigate such matters (i.e., offending history and self-control measures). Most IPV specialization studies have used official data sources such as court and arrest data from law enforcement agencies and these would not contain self-control measures (e.g., Bouffard & Zedaker, 2016; Coghlan & Millsted, 2017).

There are, of course, additional limitations to the official data used in many studies of IPV specialization: (a) it is known to underreport the volume and range of crimes occurring because not all crime is detected by law enforcement (Kirk, 2006); (b) only a small proportion of police encounters result in an arrest (e.g., Black, 1980; Klinger, 1994; Smith & Klein, 1983); and (c) offenses committed by family members are typically reported to the police at a far lower rate than offenses committed by strangers. For these reasons, reliance solely upon the official records of individuals' offense histories may misrepresent the degree to which specialization occurs because some offense types are differentially excluded from official records (e.g., those that are more difficult to detect or that occur within the family).

For these reasons, to determine the relationship between self-control and IPV specialization and empirically investigate the applicability of the General Theory of Crime to IPV specialization, self-report data from offenders is required for information on offenders' levels of self-control as well as a more comprehensive offending history. Along with the previously mentioned studies that used official data, we were able to identify two studies that relied upon offender self-reports to investigate matters related to both self-control and IPV specialization.

A study by Payne et al. (2010) included a measure of self-control, IPV (both victimization and perpetration), and criminal histories. While the authors did not directly measure IPV specialization, their analyses suggested that there are complex pathways between self-control, criminal histories, and partner violence. Specifically, the authors suggested that criminal history mediates the relationship between self-control and partner violence. Unfortunately, because this research did not specifically

examine the relationship between self-control and IPV specialization, we could not determine the exact nature of this relationship from this study. A second study by Moffitt et al. (2000) investigated how self-control (referred to as constraint) was associated with IPV as well as general violent criminal offending. The authors found that versatile violent offenders had lower self-control and were more frequent offenders than the IPV specialists.

Importantly, however, these authors used a relatively simple dichotomous operationalization for specialization, where IPV offenders who had exclusively engaged in IPV were compared to those who engaged in at least one violent offense against a person other than their partner. While this suited their study's aims, this operationalization likely concealed the range of specialization that can best be understood with a continuous measure that includes violent and non-violent offenses, such as the measures used in other IPV specialization research (e.g., Bouffard & Zedaker, 2016; Wolbers & Ackerman, 2020) as well as the broader literature regarding specialization not specific to IPV (see Sullivan et al., 2009).

When examining the relationship between self-control and IPV specialization, it is important to recognize that male and female offenders may differ in ways relevant for theory and practice. A primary reason for this relevance is that treatment programs (particularly those based upon the Duluth model) intended for male IPV offenders typically assume that patriarchal values, attitudes, or beliefs underlie the motives of male offenders (Pence et al., 1993), while the motives of female offenders differ (e.g., they may be acting in self-defense). Prevention programs, however, may have varying levels of effectiveness for male versus female offenders as well as those who exhibit different levels of self-control and IPV specialization. If both male and female individuals with low self-control are versatile offenders, then this would suggest that addressing self-control issues would be a viable prevention and intervention method for these individuals while perhaps another approach would be better suited for specialized male or female offenders.

In fact, within the IPV specialization literature, females are fairly consistently identified as being more specialized than males (e.g., Bouffard & Zedaker, 2016; Bouffard et al., 2008; Coghlan & Millstead, 2017). In addition, females typically exhibit higher levels of self-control than males (e.g., Blackwell & Piquero, 2005; Boyraz et al., 2019; Gibson et al., 2010; Hope & Chapple, 2004). These differences, coupled with the gender disparity typically identified in the rate and severity of IPV offending, highlight the importance of considering how the relationship between self-control and IPV specialization differs by gender.

## Methods

### Data Collection and Sample

We recruited our sample using targeted advertising on Facebook and Reddit, two of the most popular social media platforms. This method of recruitment has increasingly been proving its value in providing an efficient and inexpensive way of recruiting large and diverse samples (Forgasz et al., 2018; Ramo & Prochaska, 2012). We directed individuals responding to our ads to an online survey platform and offered potential participants a chance to win a \$50 Visa gift card in a random draw as a participation incentive. This incentive was approved by the overseeing ethics committee as it was deemed to be an appropriate incentive given what was required of participants. We initially targeted Australian males and females equally with our ads, however, as commonly found with this form of recruitment, females were responding at higher rates than males (see Guo et al., 2016; Marconi et al., 2019; Smith, 2008). For this reason and the fact that we were interested in cross-gender comparisons, as the data collection progressed, we targeted males more heavily with our ads so we might obtain a gender ratio that more closely reflected general population proportions.

In total, 3,092 individuals initiated the survey (67% males). We reduced this number in our analytic sample in the following ways. Respondents who indicated that they had no intimate relationship in the prior year were excluded because they did not have the opportunity to engage in IPV and therefore did not meet selection criteria for the study ( $n = 142$ ). Following this, we removed 826 respondents due to substantially incomplete survey responses and 33 individuals who reported non-binary forms of sex/gender. This brought the sample to 2,091 (1,373 males and 718 females).

As the current study aimed to understand predictors for the levels of IPV offenders' specialization, the sample was further restricted to those who self-reported at least one IPV offense ( $n = 328$ ). Because three individuals had quick survey completion times or otherwise had response patterns that indicated they had not read each question carefully or taken the survey seriously, we removed these responses to reduce measurement error. These procedures resulted in a final analysis sample of 325 respondents: 155 females and 170 males.

Descriptive statistics for the sample's demographics are presented in Table 1. Of note is that the sexuality was diverse in the sample with 14.7% of males and 38.7% of females identifying as not solely heterosexual. Eleven males (6.5%) identified as bisexual, 8 (4.7%) as gay, 6 (3.2%) as questioning or unsure, 3 (1.8%) as pansexual, 3 (1.8%) as demisexual and 1 (0.6%) as queer. Forty-four females (27.7%) identified as bisexual, 13 (8.4%) as pansexual, 5 (3.2%) as queer, 5

**Table 1** Sample demographics and descriptive statistics

	Males ( <i>n</i> = 170)		Females ( <i>n</i> = 155)	
	<i>n</i>	%	<i>n</i>	%
Education				
Did not complete high school	21	12.4	9	5.8
High school certificate	19	11.2	26	16.8
Tafe or vocational certificate	56	32.9	26	16.8
Undergraduate diploma	10	5.9	9	5.8
Undergraduate degree	36	21.2	48	31.0
Honours	4	2.4	5	3.2
Post-graduate diploma or similar	9	5.3	16	10.3
Post-graduate degree	15	8.8	16	10.3
Australian Born	135	79.4	127	81.9
Racial Minority	26	15.3	34	21.9
Heterosexual	145	85.3	95	61.3
Opposite Sex Partner	153	90.0	143	92.3
Relationship Status				
Married	108	63.5	80	51.6
Current Serious Relationship	11	6.5	43	27.7
Past Serious Relationship	31	18.2	16	10.3
Dating Relationship/s	6	3.5	5	3.2
Intimate or sexual partner/s	3	1.8	3	1.9
Multiple Relationship types	11	6.5	8	5.2
	Mean ( <i>SD</i> )	Range	Mean ( <i>SD</i> )	Range
Age	45.50 (14.83)	17 – 77	30.62 (12.59)	18 – 68

(3.2%) as questioning or unsure, 3 (1.9%) as a lesbian and 2 (1.3%) as asexual.

While the diversity of sexuality could be considered high for the females in the sample, this is not an uncommon finding in contemporary survey research. For example, in an Australian longitudinal study of women's health, between 35 to 40% of women aged 22 to 28 did not identify as exclusively heterosexual (Women's Health Australia, 2019). It is also worth noting that the majority of respondents in the current study reported on opposite-sex relationships (90.0% males and 92.3% females).

## Measures

**Self-Control** We used the 13-item Brief Self-Control Scale (Tangney et al., 2004) to measure respondents' levels of self-control. We selected the brief rather than the full 34-item version of the scale because it has been reported to have similar reliability (Reisig & Pratt, 2011).

This scale is an attitudinal measure of self-control and includes items such as, "I say inappropriate things" and "sometimes I can't stop myself from doing something, even if I know it is wrong" as well as reverse coded items like "I refuse things that are bad for me". Respondents were asked

how much the 13 statements reflect how they typically are as a person. Response options were ranked from 1 = "not at all" to 5 = "very much".

We should mention that the Brief Self-Control Scale is typically applied as a unidimensional measure for self-control as suggested by the authors of the scale (Tangney et al., 2004); however, some have applied multidimensional operationalizations. A study looking at the dimensionality of the Brief Self-Control Scale found that two-dimensional measures did not substantially enhance predictive power, and the total score is a viable option for assessing self-control and for studying its relationship with outcome variables (Lindner et al., 2015). For this reason, we followed the prior precedent within the literature and summed all 13 values after accounting for the reverse-coded items. This resulted in a single variable where higher scores indicate greater self-control.

Nine respondents skipped one or two questions on the scale. The mean value of their other responses on this scale was used to replace these values. The resulting scale had a fairly high level of internal consistency for both males ( $\alpha=0.838$ ) and females ( $\alpha=0.798$ ).

**Intimate Partner Violence** We measured IPV perpetration using the revised Conflict Tactics Scale (CTS2). The scale by Straus et al. (1996) includes items measuring psychological

aggression, negotiation, physical assault, sexual coercion, and injuries. Within each subscale, items are categorized by the original authors as minor (e.g., “I stomped out of the room or house or yard during a disagreement”) and severe (e.g., “I threatened to hit or throw something at my partner”).

For our measure of intimate partner violence perpetration, we included all of the items from the physical assault subscale. Due to the growing understanding that intimate partner violence frequently includes non-physical forms of abuse, we also included items from the psychological aggression and sexual coercion subscales that were considered severe by Straus et al. (1996). In total, sixteen items were used to measure the frequency of IPV perpetration.

Respondents were asked about behaviors that occurred during the past year on a 7-point frequency scale ranging from “not at all” to “more than 20 times”. Response categories that included an interval (e.g., 3–5 times) were recoded as the interval’s mean. Respondents who selected “more than 20 times” were coded conservatively as 20. As the questions were framed around a time frame (i.e., 12 months) rather than a specific relationship, respondents may have been reporting on a past partner, a current partner, or both. Overall, the IPV measure had reasonably high scale reliability for both males ( $\alpha=0.748$ ) and females ( $\alpha=0.951$ ).

**Non-IPV Criminality** We measured non-IPV criminality using a scale developed for the current study that was embedded within 35 total questions about engagement or contemplation with a variety of offenses including property, drug, traffic, and violent offenses as well as behaviors that would normally be considered innocuous and non-criminal. The measure was developed to include items that are framed using approachable and non-threatening language. It was assumed that this would minimize non-response that could

result from the use of legalistic or stigmatizing language. The items were ordered progressively so that minor, innocuous acts were discussed early using non-judgmental wording. This primes the respondent to think about related acts in later questions that are more serious in nature. For example, one item is framed as follows, “[Have you] Taken small stuff from work or school that you probably shouldn’t take, but that everyone seems to take” to encourage honesty by building tolerance to answering the minor deviance items. This, in turn, should encourage a willingness to respond to the more serious delinquency items later in the scale.

We used twenty items in the non-IPV criminality measure; seven property offense items, five violent offense items, six drug offense items, and two traffic offense items. Fifteen items were not used because they included innocuous acts that would not generally be considered criminal or were about “considering” committing an offense but not actually doing so (e.g., “Considered leaving a restaurant without paying”). As mentioned earlier, these 15 excluded items were never intended for use in a final scale, but were placed into the survey for alternative reasons.

The 20-item scale had acceptable internal consistency ( $\alpha=0.821$  for males and  $\alpha=0.841$  for females). A full list of IPV and non-IPV criminality survey items are included in the Appendix Table 6. Descriptive statistics for the key variables are presented in Table 2.

**Control Variables** We included five demographic control variables in the analyses because these are well-established correlates of both self-control and IPV: age, level of education, place of birth, cultural background, and sexuality. Participants were asked to give their current age. They were asked which of the following best describes their highest level of education: 1 = “did not complete high school”,

**Table 2** Descriptive statistics of the independent and dependent variables

		Median	Mode	<i>M</i>	<i>SD</i>	Range
Self-Control	Males	41	36	41.18	9.45	17 – 65
	Females	39	47	39.06	8.53	14 – 58
IPV	Males	2	1	6.42	12.47	1 – 79
	Females	3	1	13.72	38.62	1 – 284
Non-IPV Criminality	Males	4	0	13.06	23.02	0 – 128
	Females	2	0	11.21	25.56	0 – 163
Violence	Males	0	0	3.28	7.25	0 – 40
	Females	0	0	1.49	6.46	0 – 60
Property	Males	0	0	1.86	4.64	0 – 33
	Females	0	0	2.81	9.34	0 – 77
Drugs	Males	0	0	4.89	13.09	0 – 75
	Females	0	0	5.84	13.73	0 – 75
Traffic	Males	1	0	3.04	6.42	0 – 35
	Females	0	0	1.07	3.00	0 – 22

2 = “high school certificate”, 3 = “Tafe or vocational certificate”, 4 = “undergraduate diploma”, 5 = “undergraduate degree”, 6 = “honours”, 7 = “post-graduate diploma or similar”, and 8 = “post-graduate degree”.

Respondents were asked about their place of birth as either: Born in Australia, Foreign-born/ born overseas, I prefer not to answer, and Other. All respondents indicated that they were born in Australia or overseas, and for this reason the variable was coded dichotomously into 1 = “Australian born” and 0 = “not Australian born”.

Cultural background was measured with a multiple selection question that included options for Caucasian/white, Aboriginal or Torres Strait Islander, Asian, Pacific Islander, I prefer not to answer, and an option for other where respondents could specify a different cultural background. Caucasian/white was by far the most prominent response. Due to the small number of other responses, we recoded this measure into a dichotomous variable indicating whether the participant self-identified as a racial/ethnic minority with 1 = “racial minority” and 0 = “non-minority”. Those who indicated both ( $n = 19$ ), were coded as a 1.

Sexuality was measured with a question where respondents could select multiple options. The response options were heterosexual (straight), gay, lesbian, bisexual, asexual, demisexual, pansexual, queer, questioning, or unsure, I prefer not to answer and an option where respondents could specify an identity that was not listed. Heterosexual had the highest selection frequency. This variable was recoded into a dichotomous measure of sexuality where 1 = “heterosexual” and 0 = “non-heterosexual”. Some respondents selected heterosexual and another answer category ( $n = 11$ ). These respondents were coded as a 0.

## Analytical Approach

The current project was primarily interested in assessing the predictive ability of IPV offenders’ level of self-control on the level of IPV specialization. Two measures of specialization were used. The first is a multilevel item response theory (IRT) measurement approach (Osgood & Schreck, 2007). This approach models IPV specialization as a latent variable. Individual-level explanatory variables, in this case self-control and the demographic control variables, can be used to predict specialization across individuals. A two-level model was used, in which offense categories (i.e., IPV, violent, property, drug, and traffic crime) were nested within individuals.

The multilevel IRT measurement approach was a good fit for the project as it has substantial advantages when using self-report data through the use of the IRT framework and it can be applied to research questions that include mutually exclusive categories of offenses (i.e., IPV and non-IPV).

Unlike other measures of specialization (see Sullivan et al., 2009), this approach defines specialization independent of the overall rate of offending and has the ability to examine a variety of IPV and non-IPV offenses in a way where the results are not confounded by differences in offense base rates (Osgood & Schreck, 2007) that occur when the most serious of offenses are committed less frequently, as is often the case with offense data (Osgood et al., 2002).

The approach can be used with dichotomous (e.g., Sullivan et al., 2009) or frequency/count measures (e.g., McGloin et al., 2011) of offending. In the current study, frequency measures were used. For this reason, we followed the suggestions and/or precedent of the originators of this model (Osgood & Schreck, 2007; Schreck et al., 2012) as well as other scholars who have applied this IRT framework specifically to questions about IPV specialization (Bouffard & Zedaker, 2016) by using Poisson regression within the IRT framework. The Poisson model properly accounts for the skewed nature of the offense data, which are counts of the number of occurrences of the different offense types and as such are not normally distributed.

Following Osgood and Schreck’s precedent, we included a *Spec* variable that accounts for the proportion of IPV offenses to non-IPV offenses. The *Spec* variable for IPV items was coded as the proportion of items not classified as IPV, while the non-IPV items were coded as the negative proportion of items that were classified as IPV. For this reason, the values of this variable sum to zero for each individual. In this case, there were five crime categories; one IPV and four non-IPV categories. When the data are nested at the first level by offense type, *Spec* equaled 0.80 for the IPV category and -0.20 for the four other offense categories.

Equation 1 illustrates the level-1 model. Here,  $B_{0j}$  is a latent measure that corresponds to overall offending.  $B_{1j}$  is another latent measure that corresponds to the specialization variable, which represents the degree of variance in IPV offense concentration in the sample.  $B_{ij}D_{ij}$  represents the intercepts for each offense category ( $D$ ) and accounts for the base rate of each category. These variables account for the fact that more serious offenses are generally committed with less frequency than are less serious offenses. When respondent  $j$  endorses offense  $i$ , then  $Y_{ij}$  is equal to the frequency of the offending in that crime category, and when that respondent does not endorse the offense, then  $Y_{ij}$  equals 0.

*Level-1 Model for the Multilevel IRT Measurement Approach*

$$E(Y_{ij} | B_j) = \lambda_{ij} \quad (1)$$

$$\log[\lambda_{ij}] = B_{0j} + B_{1j}Spec + \sum_{i=2}^I B_{ij}D_{ij}$$

Equation 2 shows the expanded form of the level-1 model for the male and female sample that includes the offending category variables used in the current study. The property

**Table 3** Reliability and variance of overall offending and specialization

	Males ( <i>n</i> = 170)		Females ( <i>n</i> = 155)	
	Overall offending	Specialization	Overall offending	Specialization
Reliability	0.662	0.393	0.643	0.415
Variance $\tau$ (SE)	1.20 (0.19)	1.25 (0.33)	1.54 (0.26)	1.43 (0.37)
z-score	6.32	3.79	5.92	3.86

crime offense category was excluded from the model as a reference category.

#### *Level-1 Model for the Multilevel IRT Measurement Approach*

$$E(\text{Offence}_{ij} | B_j) = \lambda_{ij} \quad (2)$$

$$\log[\lambda_{ij}] = B_{0j} + B_{1j}(\text{Spec}_{ij}) + B_{2j}(\text{IPV}_{ij}) + B_{3j}(\text{Violence}_{ij}) + B_{4j}(\text{Drugs}_{ij}) + B_{5j}(\text{Traffic}_{ij})$$

Equation 3 shows the level-2 model that was used. Each variable included in the first level becomes an outcome variable at the second level. Individual-level predictors can be included to predict these outcome variables. In this case, predictors were included for overall offending ( $B_{0j}$ ) and specialization ( $B_{1j}$ ). Variables were entered as uncentered in the second level as the focus was on the slopes rather than the intercept (Woltman et al., 2012).

#### *Level-2 Model for the Multilevel IRT Measurement Approach*

$$B_{0j} = \gamma_{00} + \gamma_{01}(\text{Age}) + \gamma_{02}(\text{Education}) + \gamma_{03}(\text{AustralianBorn}) + \gamma_{04}(\text{RacialMinority}) + \gamma_{05}(\text{Heterosexual}) + \gamma_{06}(\text{SelfControl}) + U_{0j}$$

$$B_{1j} = \gamma_{10} + \gamma_{11}(\text{Age}) + \gamma_{12}(\text{Education}) + \gamma_{13}(\text{AustralianBorn}) + \gamma_{14}(\text{RacialMinority}) + \gamma_{15}(\text{Heterosexual}) + \gamma_{16}(\text{SelfControl}) + U_{1j}$$

$$B_{2j} = \gamma_{20}$$

$$B_{3j} = \gamma_{30}$$

$$B_{4j} = \gamma_{40}$$

$$B_{5j} = \gamma_{50} \quad (3)$$

The second measure of specialization used in the current study was the OSC. This is a measure of the proportion of offenses that are for a particular crime type, which in this case was the proportion of IPV offenses in an individual's reported criminal history. This approach was selected due to its popularity in prior specialization literature and its simplicity, which permits easier application and interpretation. The OSC is calculated using the following formula (Eq. 4), where the frequency of IPV offenses is divided by the total number of offenses (both IPV and non-IPV). An OSC value of 1 indicates perfect specialization, while a low OSC value indicates

generalization. In the current sample, the mean OSC was 0.44 ( $SD = 0.35$ ) for the males and 0.56 ( $SD = 0.35$ ) for the females.

#### *Offense Specialization Coefficient Formula*

$$OSC = \frac{IPV}{total} \quad (4)$$

The predictive ability of self-control on specialization as measured with the OSC was examined using a linear regression model that included self-control and the five demographic control variables.

## Results

### Multilevel IRT Measurement Approach

The level-1 model defines two latent measures that are the focus of our analysis: overall offending ( $B_{0j}$ ) and specialization ( $B_{1j}$ ). Table 3 shows the reliability and variance associated with each latent measure. The scores were obtained without including the predictive variables in the level-2 equation (just the error terms).

The reliability indicates how precisely overall offending and specialization were measured. Our reliability scores



are consistent with those reported by Sullivan et al., (2009; 0.33), McGloin et al., (2011; 0.25–0.32), and Osgood and Schreck (2007; 0.70–0.80) when these scholars examined specialization in violence.

The statistical significance of the variance components ( $\tau$ ) determines if the difference among individuals on the latent measures is greater than would be expected by chance. The variance component score for specialization can be viewed as a summary statistic that measures the overall extent of specialization. An absence of variance indicates a complete overlap in IPV and non-IPV offending, with observed variation across respondents only caused by chance. A high level of variance, however, would indicate that IPV and non-IPV offending are distinct. The  $z$ -scores all indicated variance at the  $p < 0.001$  level (i.e., a  $z$ -score above 3.29). This indicates that there is a statistically significant difference between individuals regarding their specialization in IPV versus non-IPV offending.

Table 4 presents the results from the Multilevel IRT model. The fixed effects are reported from the population average model with robust standard errors. The coefficients for specialization (i.e.,  $\gamma$ ) indicate how each unit

change in a predictor variable affects the ratio of IPV-to-non-IPV offenses. Here we can see that an increase in the level of education was associated with a statistically significant greater degree of specialization for males ( $\gamma = 0.163$ ,  $p = 0.008$ ) but not for females ( $\gamma = -0.011$ ,  $p = 0.879$ ). In contrast, self-control among the males did not have an effect considered statistically significant at the traditional  $p < 0.05$  level. For females, however, an increase in self-control was significantly associated with specialization ( $\gamma = 0.051$ ,  $p = 0.004$ ). Also, among the females, we found that being a racial minority increased specialization ( $\gamma = 0.841$ ,  $p = 0.018$ ). In terms of overall offending, a decrease in self-control significantly increased overall offending for both males and females ( $\gamma = -0.020$  and  $-0.045$  respectively), although the control variables showed no significant effect on overall offending after accounting for the other variables in the model. Interestingly, when examining the base rates of the different offenses, IPV was the most frequent offense committed by the males, but the least frequent offense committed by the females.

### Offense Specialization Coefficient

Table 5 presents the findings from multiple regression analyses where the OSC was the outcome variable. Like the IRT model, this analysis also determined which individual-level factors can explain variation in specialization levels and has an advantage of being much easier to fit and understand. For this reason, this model might present a parsimonious substitute for the more complex IRT model if it found similar results. Unlike the IRT model, however, the OSC does not account for variations in overall offending across individuals nor for different base-rates in the offense categories. In other words, it does not take into account the fact that different offense types might be easier to commit due to more universal opportunities to do so or the fact that more serious offenses are generally committed with less frequency across a sub-population of offenders.

Here, self-control was a significant predictor of specialization at comparable levels for both males and females ( $\beta = 0.214$  and  $0.255$  respectively), where an increase in self-control was associated with an increase in specialization. This finding is a partial contrast to the gender differences found in the IRT model where self-control was found to be a statistically significant predictor of specialization only among the females. Like the IRT model, females, but not males, who identified as racial minorities were more likely to specialize ( $\beta = 0.221$ ).

**Table 4** Hierarchical linear modelling predicting overall offending and specialization

		Males ( $n = 170$ )		Females ( $n = 155$ )	
		$\gamma$	SE	$\gamma$	SE
Overall Offending	Intercept	1.235***	0.347		0.535
	Age	0.005	0.005	-0.001	0.006
	Education	-0.063	0.035	-0.001	0.038
	Australian Born	0.175	0.172	0.017	0.205
	Racial Minority	0.204	0.164	-0.050	0.204
	Heterosexual	-0.163	0.160	0.151	0.181
	Self-Control	-0.020***	0.006	-0.045***	0.009
Specialization	Intercept	-0.821	0.805	-1.493	0.764
	Age	0.003	0.008	0.011	0.009
	Education	0.163**	0.061	-0.011	0.069
	Australian Born	0.070	0.319	0.368	0.303
	Racial Minority	-0.048	0.379	0.841*	0.352
	Heterosexual	0.310	0.308	0.545	0.304
	Self-Control	0.012	0.013	0.051**	0.017
Base Rates	IPV	0.035***	0.003	0.010***	0.002
	Violence	0.023***	0.006	0.044***	0.006
	Drugs	0.017***	0.003	0.025***	0.006
	Traffic	0.018**	0.007	0.012	0.021

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

**Table 5** Multiple regression predicting offense specialization coefficient

	Males ( <i>n</i> = 170)			Females ( <i>n</i> = 155)		
	<i>b</i>	<i>SE</i>	$\beta$	<i>b</i>	<i>SE</i>	$\beta$
Constant	0.162	0.159		-0.001	0.169	
Age	-0.003	0.002	-0.119	0.002	0.002	0.064
Education	0.024	0.013	0.141	-0.003	0.014	-0.020
Australian Born	-0.026	0.068	-0.031	0.068	0.074	0.076
Racial Minority	-0.008	0.078	-0.008	0.185	0.067	0.221**
Heterosexual	0.015	0.076	0.015	0.036	0.058	0.051
Self-Control	0.008	0.003	0.214**	0.010	0.003	0.255**
<i>R</i> <sup>2</sup>		0.077			0.113	

\**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001

## Discussion

Based on theory we expected that low self-control would be associated with offense versatility among IPV offenders. This was supported in the male sample when using the OSC to measure specialization but was not supported in the more complex IRT model among the males. When looking at the female sample, the hypothesis regarding specialization was supported when using both the multilevel IRT measurement approach and the OSC. It appeared, at least according to the OSC measure of specialization, that both men and women with low self-control were more versatile offenders. This is consistent with Gottfredson and Hirschi's General Theory of Crime, which suggests that when individuals with low self-control come into contact with illegal opportunities they will engage in these crimes impulsively. In other words, the diversity of criminal opportunities leads to generalization. The OSC findings are also in line with the limited prior literature on self-control and the diversity of criminal offending within IPV offender populations (Moffitt et al., 2000; Payne et al., 2010). The findings from the IRT model, which account for the overall offending rates as well as the variation in the base rates of the different offenses, however, confirmed an effect of self-control upon specialization only among females. The lack of such an effect among the males in the IRT model contrasts the OSC model where the effect was present for both males and females. These contrasting findings may indicate that the IPV specialization among males that has been found in the OSC model of this project as well as in the analyses of other scholars may be an artifact related more to variation in overall offending or the differences in the base rates of various offenses, both of which were controlled for in the IRT model. While it is difficult to determine from these data exactly how overall offending levels and base rate variation across the offense types might cause these differences, we suspect that it may have much to do with opportunities to commit different types of offenses (e.g., violence against those outside of the family will occur only to the extent that exposure to people outside of the family occurs).

Although these findings do not directly address questions about the causes of IPV beyond the factors present in our models, they do provide insight regarding whether different offense types may have unique causes that might be explored in other research. A high level of specialization in IPV, for example, is generally thought to occur due to a presumption that IPV has a unique set of causes – for example, if IPV were caused by the patriarchal attitudes, values, or beliefs among male perpetrators (often described as “traditional values”). This would be the case because while existing theory suggests that these factors are associated with increased IPV, existing theory has not suggested that they are linked with non-gender-based crime. For this reason, findings of strong IPV specialization would be expected if IPV, but not other offense types, were associated with these traditional values.

The gender differences we found within the IRT model, were unexpected. As such, their meaning and relevance are more speculative. One explanation includes the possibility that the causal factors responsible for IPV among female perpetrators are unique while those of male perpetrators are not. For example, it is not hard to imagine that males who hold traditional values are more likely to become jealous of rival males than males who do not hold these values (frequently mentioned in the literature as a substantial source of partner conflict). When this occurs, traditional males may direct violent reactions toward not only their female partner, but also toward the rival males regardless of their level of self-control – creating, at least in the way the offenses are currently classified, a more generalized offending situation unrelated to self-control levels. In contrast, female perpetrated IPV may have causes more unique to this particular offense type. If so, females who are jealous regarding rival females may direct reactions only toward their partner if they have high levels of self-control, but may direct reactions toward third parties if their self-control were low. Additionally, the same set of causes for different offense types may interact differently with self-control among females than among males. Again, however, the reasons underlying this unexpected finding are highly speculative and will require more investigation to understand.

## Implications

Many aspects of the criminal justice system assume that IPV is a specialized offense. As such, many jurisdictions have specialized family violence police, prosecutors, and courts (Australian Law Reform Commission & New South Wales Law Reform Commission, 2010; Klein, 2009). Similarly, the assumption of specialized offenders is prominent in much of the academic literature that addresses IPV despite credible evidence that many IPV offenders commit other offenses as well (e.g., Bouffard & Zedaker, 2016; Herrero et al., 2016).

It is important that IPV researchers examine the question of specialization more carefully, especially since work in this area suggests that current criminal justice approaches may only be addressing one subset of the IPV offender population (i.e., the specialists). In other words, it may be necessary to re-evaluate current criminal justice strategies for IPV offenders. Perhaps different types of treatment programs are appropriate for different types of IPV offenders. Domestic violence specific programs, such as those based on the Duluth-model, are perhaps more appropriate for those who specialize in IPV while other programs that treat underlining causes of broader criminality (i.e., low self-control, antisocial personality, substance abuse, etc.) may be best suited for those who are versatile in their offending.

Making changes in order to address non-specialized IPV offenders is only necessary if there are, in fact, meaningful differences between specialized and versatile offenders. Identifying any such differences would allow for the identification and application of practical and policy changes. For example, the CJS could consider the criminal history of offenders to examine their diversity and apply an intervention based upon identified motivational or causal differences between specialists and generalists. The current study, for example, found statistically significant differences in self-control between the specialists and generalists for female offenders using both models of specialization but more ambiguous and inconsistent evidence of significant differences for the males in that only the more sophisticated IRT model indicated a relationship between self-control and specialization.

As low self-control was identified as a predictor for both overall offending frequency and offense versatility for females in both of our models and in one of the models for males, it seems reasonable to address self-control in versatile offender populations, especially among females where the effect of self-control upon overall offending was the strongest. While anger management forms of intervention may be a theoretically viable form of amelioration, it is widely accepted in prior literature that anger management is ineffective and unsuitable as a solitary intervention, as anger is not seen as the sole or primary cause of violent behavior (Mackay et al., 2015). This may be due to the belief, as expressed by Gottfredson and Hirschi, that self-control is

a quite stable trait among adults and is resistant to change. Alternatively, it may be the case that existing anger management interventions are simply an inadequate intervention strategy that have the potential to be improved upon in the future. Cognitive Behavioral Therapy (CBT) may provide an alternative, but the selection of appropriate therapeutic interventions is beyond the scope of this study. What we can say is that if current or future anger management interventions are deemed helpful in improving self-control, the results of our analysis suggest that they may be applicable to the generalist as well as IPV specialist offender.

The study's findings also have implications regarding the move toward incorporating Risk, Needs, and Responsivity principles into community-based domestic violence programs, which have been implemented in certain geographic areas. For example, the Men's Behavior Change Programs that are run throughout Australia (Justice Strategy and Policy, 2018) are presumably based upon a belief that male IPV offenders specialize and are therefore at particular risk of additional IPV offending that might be ameliorated through meeting the specific needs of these types of offenders. This study, however, has found only scant evidence of that specialization among males.

In addition to these important implications for intervention, the finding that low self-control is associated with versatility in offending, particularly among the females, is of special interest for criminal justice practice more generally. The finding indicates that many IPV offenders with low self-control are committing other crimes, meaning they may contact the CJS in ways unrelated to IPV. Moreover, partner violence is often unreported, which means interventions cannot be implemented for many offenders who remain unknown to the CJS. If these offenders are apprehended for a non-IPV crime and successfully treated for self-control issues, such interventions may also reduce their IPV.

## Strengths, Limitations, and Directions for Future Research

This study included a number of strengths. First, it used self-report data collected specifically for the purposes of this project that included information on each offender's level of self-control. Without data on this specific factor, prior specialization research has been limited in the ability to empirically test the applicability of Gottfredson and Hirschi's often-cited General Theory of Crime to matters related to IPV.

Another strength is the comparison of two analytical approaches to measure specialization that are consistent with the broader non-IPV specialization literature. Due to data limitations and differing study aims, prior empirical work on IPV specialization has primarily used analytical approaches inconsistent with the broader specialization literature. Specifically, most prior research measured IPV specialization

as a dichotomy, where offenders who only committed IPV were considered specialists and offenders who committed at least one other type of crime were generalists. While this more basic operationalization may have suited the prior studies' purposes, a continuous measure of specialization is generally preferable as it does not restrict the full range of specialization.

The current study is limited, however, in a number of important ways. First, the generalizability of the findings may be limited by the small sample size and sampling strategy. Online community samples may differ from the more general population in many unknown ways. In addition, these samples may differ from justice-involved populations who are often of great interest and who are likely more severe or frequent offenders than those found within community samples. Although our sample included only those who had access to the internet and social media, those with such access currently include more than 70% of the population (Digital in 2020, 2020). Additionally, the sample contained participants from only a single country. While Australian culture is quite similar to that of other Western/ wealthy nations, there are clear cultural differences that may affect IPV and related offenses. For example, Australia is known to have a rate of sexual violence that is over twice the global average, which presumably is due to differences in cultural factors (Abrahams et al., 2014).

Moreover, the demographic breakdown of the sample differed somewhat from the Australian population. Specifically, there were a high number of females in the sample who did not identify as heterosexual. It is not clear how much this difference matters when trying to generalize to the population, although some research suggests that this may be common among young females (Women's Health Australia, 2019). While some studies have shown that heterosexual and non-heterosexual use of IPV is different (e.g., Dank et al., 2014; Freedner et al., 2002; Jones & Raghavan, 2012), this difference is not as pronounced for female samples (Swiatlo et al., 2020).

The current study also used self-report data, which is limited by factors such as poor recall and social desirability (Kirk, 2006). This may be particularly salient in the current study because it relies heavily on the veracity of respondents' survey answers. Importantly, it is critical to acknowledge that the use of a CTS-type measure for IPV has been criticized for lacking context in ways that may conflate serious domestic assault or other forms of abuse with innocuous behaviors such as horseplay (Ackerman, 2016, 2017; Dobash et al., 1992; Lehrner & Allen, 2018). At this point, however, no agreed upon alternative measure appropriate for survey research has been identified.

Finally, this study focuses on one theoretical risk factor for offense versatility. Although this sole focus is an important step toward empirically investigating the applicability of the General Theory of Crime to IPV, this narrow focus does not allow for the exploration into alternative explanations

for IPV specialization. For example, IPV specialization may have much to do with an offender's patriarchal attitudes. If male offenders are engaging in IPV due to beliefs about male domination, then they may not be very likely to engage in offenses against those who are not their partners, especially if they have high self-control.

For these and other reasons, further empirical investigation into the General Theory of Crime and IPV specialization is warranted, particularly because this perspective to understanding criminal specialization within the context of IPV has rarely been empirically tested. Low self-control relates to versatility, but if offenders lack criminal opportunities, what appears to be specialization may instead reflect a lack of opportunity to commit offenses outside of the home (McGloin et al., 2009). In addition, although anyone with a partner is often thought to have the opportunity to be violent toward that partner, actual opportunities may be altered by factors that can include the guardianship that occurs when children, parents, or friends may be present (Hayes, 2018). Unfortunately, it is beyond the scope of the current study to test the effect of criminal opportunities on IPV specialization, therefore, this matter must be addressed in another study.

Future research should also determine whether these results are similar in differing populations of IPV offenders. It is particularly important to replicate studies related to IPV on different sub-populations due to the emerging understanding that IPV tends to be experienced quite differently by different groups of people along such a variety of dimensions that the findings from one population cannot be readily generalized to others (Kimmel, 2002; Kuijpers, 2019; O'Leary, 1999, 2000). In addition to investigating these matters in different populations, future research should also consider other typologies of offenders and broaden the scope of research by investigating additional predictors that can explain IPV specialization, which could not be completed in the current study (e.g., substance abuse, family of origin violence, and patriarchal beliefs).

## Conclusion

The current study has provided important insight into IPV offending by considering the role of self-control in offenders' levels of IPV specialization while also examining gender differences. In doing so, the current study assessed one of the main assertions of Gottfredson and Hirschi's General Theory of Crime and built on the body of work in this area by examining a different population of interest (i.e., Australians) and incorporating an operationalization of specialization consistent with broader research literature on specialization not specific to IPV. The findings highlight the importance of addressing self-control issues amongst versatile IPV offenders and that this consideration is especially important for females.

## Appendix

**Table 6** All offense items organized by crime category

Category	Offense item
IPV	I destroyed something belonging to my partner
	I threatened to hit or throw something at my partner
	I threw something at my partner that could hurt
	I twisted my partner's arm or pulled their hair
	I pushed or shoved my partner
	I grabbed my partner
	I slapped my partner
	I used a knife or gun on my partner
	I punched or hit my partner with something that could hurt
	I choked my partner
	I slammed my partner against a wall
	I beat up my partner
	I burned or scalded my partner on purpose
	I kicked my partner
	I used force like hitting, holding down, or using a weapon to make my partner have sex (including oral sex)
I used threats to make my partner have sex (including oral sex)	
Property	Left a restaurant without paying?
	Taken something from a store without paying for it?
	Used someone else's credit card when you shouldn't have?
	Told a few white lies or omissions when filing your taxes?
	Intentionally damaged something that did not belong to you?
	Written or painted on a wall, sidewalk, or object you didn't own when you were not supposed to?
Violence	Gone into someone else's house to take something that you shouldn't have?
	Been in an argument with someone other than your partner where it got a bit physical?
	Been in a fight with someone other than your partner where someone was injured?
	Been in a fight with someone other than your partner where you injured someone?
	Held a gun without a permit?
Drugs	Injured an animal on purpose?
	Smoked a little weed?
	Smoked a lot of weed?
	Used a drug that could get you into more trouble than weed?
	Sold a little weed?
Traffic	Sold some pills?
	Sold a drug other than weed or pills?
	Gone through a red light after sitting alone in an intersection?
	Driven after drinking enough that you probably could have gotten in trouble?

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## Declarations

**Conflict of Interest** The authors declare that they have no conflict of interest.

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