CRIMINOLOGY

DOES THE GENDER GAP IN DELINQUENCY VARY BY LEVEL OF PATRIARCHY? A CROSS-NATIONAL COMPARATIVE ANALYSIS*

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We examined cross-national variation in the gender differential in offending, which is often referred to as the gender gap in crime. Analyses were directed toward two empirical questions: 1) Is the gender gap narrower in less patriarchal sociocultural settings, and if so, 2) is this outcome a result of higher levels of offending on the part of girls, lower levels of offending on the part of boys, or some combination thereof? To address these questions, we compiled a multilevel, cross-national data set combining information on self-reported offending from the second International Self Report Delinquency Survey (ISRD-2) with normative and structural indicators of societal levels of patriarchy. The results from regression equations showed the gender gap in delinquency to be narrower at reduced national levels of patriarchy. The predicted probabilities calculated from regression coefficients suggested that this narrowing is a result of increased offending among girls and, to some extent, of decreased offending among boys in less patriarchal nations. Sensitivity checks with alternative model specifications confirmed these patterns but also identified a potential outlier. We discuss the implications of these descriptive findings for etiological research and theory.

The decline of patriarchy has transformed the social order of Western democratic nations. For instance, the growth in labor force participation of women has contributed to the erosion of the patriarchal family structure in the United States (Ruggles, 2015). As a result of their increased economic independence, contemporary women are less likely to marry, more likely to divorce, and more likely to delay family formation. The "rise of women" (DiPrete and Buchmann, 2013) has been particularly striking in the educational

arena. To illustrate, in the United States, the gender gap in educational attainment has not merely closed, but among cohorts born since 1960, women outperform men by an increasing margin. These social trends have not escaped the attention of criminologists. Forty years have passed since the controversial claim that women were becoming more similar to men in their participation in criminal activities (Adler, 1975, 1977). Nevertheless, compared with other areas of social life, evidence of gender convergence in criminal activity remains weak at best, despite an extensive body of scholarship (Heimer, 2000; Heimer, Lauritsen, and Lynch, 2009; Lauritsen, Heimer, and Lynch, 2009; Schwartz et al., 2009; Steffensmeier et al., 2005, 2006).

In what follows, we suggest possible reasons why research has not produced more conclusive evidence of gender convergence in offending behavior. These arguments point to limitations with the trend study paradigm. To supplement previous approaches, we exploit data from a cross-national survey of self-reported delinquency among adolescents. These individual-level data are linked to national indicators of patriarchal norms and gender inequality to create a multilevel file of individuals nested within countries. In a manner of speaking, our approach is to "read history sideways" (Thornton, 2005) to observe more variation in patriarchy than is typically possible with available time-series data. The results yield qualified support for the hypothesis that the gender gap in delinquent offending is narrower among nations that are less patriarchal.

THE RESEARCH CONTEXT

Although an interest in gender patterns and differences in offending can be found in the works of several criminologists in the late 1800s and early 1900s (Scheider, 2000), Freda Adler's 1975 book, *Sisters in Crime: The Rise of the New Female Criminal*, is generally regarded as a starting point for the development of gender-centered theorizing. Premised on the notion that women embedded in the public domain have less traditional gender ideologies, Adler put forth the claim that emancipated women would also be more inclined to commit crime, giving rise to the liberation–emancipation perspective. Rita Simon's work (1975) was also prominent in fostering dialogue on gender and crime in the 1970s. In the monograph *Women and Crime*, Simon argued that women traditionally had fewer criminal opportunities than men as a result of their more limited participation in activities outside the domestic sphere. She further reasoned that with the emergence of the women's movement and the appreciable growth of the numbers of women in the labor force, women would increasingly be exposed to opportunities for certain types of crime, and like men, some would take advantage of them.

The claims of the liberation–emancipation perspective prompted a vigorous response in the criminological community. Some critics characterized the theoretical underpinnings as naïve and misleading (Chesney-Lind, 1986). Numerous scholars disputed the assumption that as women made strides in society toward more equal treatment, they would begin to mirror men in various realms of life (Box and Hale, 1984; Daly and Chesney-Lind, 1988; Giordano and Cernkovich, 1979; Heimer, 2000). Indeed, to some extent, criminological literature on the changing gender order became mired by its association with the rejected mechanism of the "masculinization of women" as put forth by the liberation perspective.

In a recent elaboration, Hunnicutt and Broidy (2004) suggested that the abandonment of the liberation perspective may have been premature: "It is not unreasonable," they

noted, "to think that the changing social position of women has had some effect on crime" (p. 131). It is also important, they argued, to consider how the changing gender order affects the behavior of *men* (see also Applin and Messner, 2015; Estrada, Bäckman, and Nilsson, 2015). One such vein of criminological theorizing is the *ameliorative perspective*, which posits that positive changes in women's status may lead to declines in men's violence (see Lei et al., 2014, for a recent empirical test of this perspective among youth). According to this perspective, these declines are attributable to a less dichotomized gender order that results from increases in women's status. In such an environment, men are less likely to see and use violence as a marker of masculinity (Lei et al., 2014) or as a way to elevate status (Whaley and Messner, 2002).

UNDERSTANDING THE GENDER GAP

The incorporation of feminist insights in research on gender and crime stimulated more advanced theorizing about socialization processes and expanded the scope of inquiry to include youthful offending. Power-control theory (Hagan, Simpson, and Gillis, 1979, 1987) directed attention to a patriarchal family structure as a prime source of the gender gap in common forms of delinquency. In patriarchal families, according to the theory, parents exert more control over daughters than over sons, which leads daughters to be more risk averse than sons and thus less likely to engage in delinquent activity. In contrast, the socialization experiences of sons and daughters are more similar in egalitarian families, which is expected to reduce the gender gap in delinquency. Efforts to assess power-control theory have yielded some support for the theory (Hagan, Gillis, and Simpson, 1985, 1990; Hagan, Simpson, and Gillis, 1979, 1987, 1988), although contrary findings published in the empirical literature (Jensen and Thompson, 1990; Singer and Levine, 1988) have stimulated modifications and elaborations of the perspective (e.g., Blackwell, 2000; Blackwell, Sellers, and Schlaupitz, 2002; McCarthy, Hagan, and Woodward, 1999).

Another prominent example of feminist research on the gender gap is Heimer and De Coster's (1999) reformulation of differential association theory to understand gender differences in violent behavior (see also De Coster, Heimer, and Cumley, 2013: 323–4). Heimer and De Coster (1999) expanded the classic formulation of the theory by arguing that not only are boys and girls exposed to a different number of pro-violent definitions, but also they may learn them differently as a result of the internalization of traditional gender definitions. Gender differentiation is also present in the family through parental control and socialization. Girls are closely monitored by parents, reducing their exposure to definitions favorable to violence, and they are more likely to form emotional bonds within their families. Concerning delinquent peers, Heimer and De Coster (1999) expanded differential association theory by postulating that boys will not only have more delinquent friends, but also their interactions with these friends will be different, with boys experiencing more peer encouragement for violence and delinquency. In their empirical assessment, Heimer and De Coster (1999) found that much of the gender gap in delinquency could be explained through these theorized processes.

CHANGES IN THE GENDER GAP IN CRIME

A great deal of empirical work has been focused on the questions of whether the gender gap has changed, and if so, why. This research has been focused on adult offending

(with some exceptions, e.g., Carrington, 2006; Steffensmeier et al., 2005), with mixed results. On the surface, it seems that women's offending has increased. In the United States, women's imprisonment has almost doubled since 1970 (Heimer et al., 2012), although their level of incarceration remains low compared with that of men. Although some scholars argue that these trends reflect changes in women's behavior, others suggest that the changes are merely an artifact of a wider net being cast by police officers as cultural views on women have shifted (Curran, 1984; Schwartz et al., 2009; Steffensmeier et al., 2005, 2006). Still other researchers observe that the closing gender gap may be because men are committing *less* crime (Heimer, 2000; Lauritsen, Heimer, and Lynch, 2009). As noted by Heimer (2000), a great deal of this research relies on official measures of crime, given that "self-report studies of offending typically focus on juveniles rather than adults, and because even longitudinal self-report studies typically cover relatively short windows of time" (p. 430).

A bulk of studies aimed at examining changes in the gender gap are based on data from the United States, and the data for the studies typically span 20- to 30-year time periods, with the data from the entire body of studies ranging from 1960 to 2005. Studies by Heimer (2000) and Lauritsen, Heimer, and Lynch (2009) span slightly longer time frames, although the body of work encompasses the same general period from 1960 to 2005. Relying on official data to measure changes in criminal *behavior* is challenging, and there is no direct control for changes in policing that may differentially impact women. Contrasting official data with victimization data has been one tactic to untangle this methodological issue, yet a firm consensus has not been achieved among scholars who study this topic (for instance, see Heimer, Lauritsen, and Lynch, 2009; Lauritsen, Heimer, and Lynch, 2009; Schwartz et al., 2009).

In several studies, changes in the gender gap outside of the United States have been assessed. Carrington (2006) found that, in Australia, the decline in juvenile crime in recent decades is a consequence of a drop in the number of boys who appeared before court. At the same time, official rates of female delinquency had increased notably from the early 1960s, even after experiencing a decline in more recent years. Carrington (2006) attributed these changes mainly to alternations in policies concerning the juvenile justice system, although noting that increases in violent offending of young women may be partially a consequence of increased involvement in mixed-sex youth subcultures.

In a study that examined the gender gap in crime in Sweden, Estrada, Bäckman, and Nilsson (2015) used conviction data that extend well past the scope of the studies discussed earlier, ranging from 1841 to 2010. Estrada, Bäckman, and Nilsson (2015: 8) observed that, "Sweden is *one of the few countries in the world* with access to long-term criminal justice series" (emphasis added). The researchers also relied on more recent (1980–2011) longitudinal birth-cohort data to account for limitations of official data, that is, the dark figure of crime, and the fact that "the risk of being convicted and registered for crime is cumulative at the individual level as the years pass, and thus, comparisons of the gender gap become more comprehensive" (p. 9). The long time frame of their data allows for greater insight into historical changes in offending and crime control and punishment than is possible through shorter time-series approaches.

The historical conviction data from Sweden show that "the decline in the gender gap in both violent and theft crime … started gaining momentum in the mid-20th century. Thereafter, the trend has continued right on into the 2000s" (p. 9). This decline was a unique feature to this period and not found in any other stretch of time covered by their

time-series data. Estrada, Bäckman, and Nilsson (2015) proposed different explanations for the declining gender gap directly after World War II (WWII) and as it occurred since the 1980s. For post-WWII, the reasons are less "gender-specific" and more a consequence of changes in opportunities for offending that are experienced by all individuals in society, whereas after 1980, changes are attributed more to the gender structure of society. The researchers did not rely on direct measures of patriarchy or gender equality as predictors of these changes but situated the trends in offending along historical axes to interpret changes in the gender gap and convictions among men and women. This is a common practice for trend study approaches, based on the assumption that levels of patriarchy decline with the passage of time once the impetus is set in motion, often using the women's movement as a starting point.

## CROSS-NATIONAL COMPARATIVE RESEARCH

Cross-national studies of gender and crime are dominated by aggregate-level comparisons of either police (Interpol) or homicide (WHO) data. In early studies, Hartnagel and Mizanuddin (1986), South and Messner (1986), Clark (1989), and Steffensmeier, Allan, and Streifel (1989) examined how development, modernization, and women's status are related to women's offending and the gender gap in crime. The results of these studies show mixed support for the effects of changes in modernization and women's status on offending, with some variation based on offense type.

A more recent generation of studies has been aimed at examining variation by gender in macro-level correlates of criminal offending (Agha, 2009; Chernoff and Simon, 2000; Hunnicutt and Broidy, 2004). In an analysis of gender disaggregated total conviction rates in 10 countries, Hunnicutt and Broidy (2004) found that indicators of both women's liberation and economic marginalization increased women's conviction rates more than those of men. By contrast, Agha (2009) found little evidence of gender difference in societal predictors of homicide.

By comparing official crime and criminal justice statistics among three Nordic and three English-speaking countries, Schwartz (2013) examined gender convergence in violent offending. With information about 1) the assault-to-homicide ratio and 2) the case flow from arrest to imprisonment as proxies for changes in policing, she concluded that "on balance, girls and women are not any more violent" (p. 814) but that net-widening of enforcement has increased the number of women and girls arrested, at least in the United States and the United Kingdom.

TAKING STOCK

Despite the impressive amount of progress, significant gaps remain in the literature on the gender gap and criminal offending. First, with the exception of research by Estrada, Bäckman, and Nilsson (2015), trend studies are limited to data covering short periods representing recent sociohistorical contexts. This limitation is potentially serious because fundamental changes in gender dynamics and structures are likely to unfold over long spans of time. Studies that are focused on, say, the United States from ca. 1980, are unlikely to capture the relevant social forces. Second, trend studies of the gender gap do not typically include direct measures of patriarchy. This limitation is significant because a common thread running through much of the scholarship on the gender gap in crime is directed toward understanding how the offending (and victimization) of men and women

Figure 1. Variation in Patriarchal Values Over Time and Across Nations
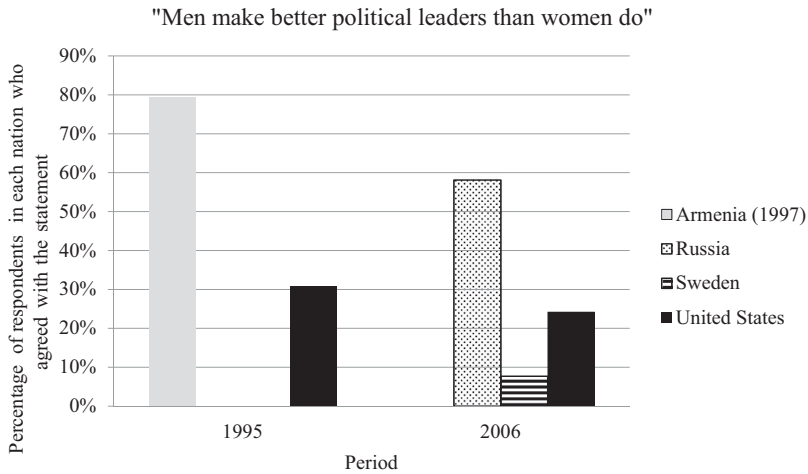
Source: World Values Survey (various years).

is "shaped by the gender inequality inherent in patriarchy" (Lilly, Cullen, and Ball, 2007: 208). These two points are illustrated jointly by figure 1, which presents both trend and cross-national data from the World Values Survey (WVS).

To describe societal variation in adherence to patriarchal gender norms, we report in figure 1 the percentage in the population who agree with the claim: "Men make better political leaders than women do." The trend data are limited to a single nation—the United States (black bar)—and cover two time points, 1995 and 2006. Consistent with expectations, we observe a clear reduction (ca. 5 percent-point) in the prevalence of attitudes favoring men as political leaders during the 12-year period. Nevertheless, this change is minor compared with the differences between nations at either time point. The left side of figure 1 compares the United States and Armenia around 1995, and it shows that Armenians were 2.5 times (and almost 50 percent-points) more likely than Americans to agree with this statement. The right side of figure 1 presents similar statistics from 2006 for Russia, Sweden, and the United States. In light of these comparisons, Sweden is 7.5 times less likely to embrace patriarchal norms than Russia and 3.0 times less likely than the United States. The results from this simple analysis point to the utility of cross-national data as a source of societal variation in such slow-moving social facts as the gender order.

Although there has been prior cross-national research conducted on gender differences in criminal offending, in those studies, researchers have invariably relied on official statistics as the measure of offending behavior, leaving open the possibility that, as observed by Schwartz (2013), any convergence in such data is caused by enforcement, not by behavior. Moreover, even as measures of behavior, official statistics are known to be biased toward more serious types of offending (Boivin and Cordeau, 2011). It is possible that most of the gender convergence in offending behavior is limited to what Hagan, Gillis, and Simpson (1985) have described as common delinquency.

As a contribution to this literature, in the present study, we take advantage of two complementary sources of cross-national data to operationalize the extent to which

the macro-social context is more or less patriarchal: the WVS and the United Nations' Gender Inequality Index (GII). By linking this information to individual-level data from the International Self Report Delinquency Survey (ISRD-2), we can relate societal indicators of patriarchy to common forms of offending committed by adolescents.

THE CURRENT STUDY

We examine the hypothesis that the size of the gender gap in delinquency is positively associated with the level of patriarchy in society. As noted, much of the theorizing in this area assumes that patriarchy or gender inequality is at least partially responsible for greater involvement of young men in offending behavior. Our secondary research question pertains to the processes underlying the hypothesized relationship. If the gender gap in delinquency is narrower among adolescents in less patriarchal nations, is this a result of elevated offending by girls, lower offending among boys, or some combination thereof? Classic liberation theory, as well as power-control theory, would emphasize the first process as the most probable. The ameliorative perspective (Lei et al., 2014) is consistent with the second process, whereas differential association theory, as formulated by Heimer and De Coster (1999), is equally compatible with both processes contributing to the narrowing of the gender gap.

In what follows, we take advantage of data from a cross-national survey of adolescents living in countries that exhibit substantial variation in levels of patriarchy. By using multiple indicators of delinquent offending and patriarchal social order, our purpose is to observe convergence in the gender gap that has mostly eluded prior research. Although the descriptive goal of this research may be considered modest, we concur with Robert K. Merton, who wrote that "before one proceeds to explain or to interpret a phenomenon, it is advisable to establish that the phenomenon actually exists, that it is enough of a regularity to require and to allow explanation" (Merton, 1987: 2).

DATA AND METHOD

CROSS-NATIONAL DELINQUENCY SURVEY

We used data from the second wave of the ISRD-2 to measure delinquent behavior. ISRD-2 was administered in 30 nations and includes a total of 67,883 individual respondents (Marshall and Enzmann, 2012). The number of countries included in the present analysis varies between 19 and 27 as a result of the availability of data on the macro-level indicators (see table 1 for details). In each country, the ISRD-2 data were collected between November 2005 and February 2007 in classrooms during school hours. Students responded to pencil-and-paper surveys in all but two nations; Finland and Switzerland administered the surveys via computers. The ISRD-2 data collection guidelines recommended that external staff, instead of teachers, supervise respondents in the classroom. As a result of the cost of hiring external staff, adherence to this recommendation varied across participating nations (Marshall and Enzmann, 2012: 59). In light of prior research on the impact of supervision conditions on response quality (Kivivuori, Salmi, and Walser, 2013), there is little reason to assume that this source of heterogeneity introduced meaningful bias in the data.

Table 1. National Indicators of Patriarchy and ISRD-2 Sample Size

Nation[a]	Items from World Values Survey[b]			Gender Inequality Index (2005) (range 1–0)	ISRD-2 Sample N
	WVS-jobs % agree	WVS-university % agree	WVS-leaders % agree		
Armenia (1997)	59.9	42.3	83.2	0.40	2,044
Austria	26.7	n/a	n/a	0.13	2,944
Belgium	25.1	n/a	n/a	0.13	2,308
Boznia and Herz.	26.5	17.6	32.8	n/a	2,017
Cyprus (2006)	36.5	10.8	34.8	0.15	2,310
Czech Republic	18.4	33.1	50.7	0.15	3,245
Denmark (1999)	6.2	n/a	n/a	0.07	1,376
Estonia (1999)	13.5	34.1	69.2	0.24	2,611
Finland (2000)	9.9	14.2	20.9	0.10	1,364
France (1999)	21.8	21.2	6.8	0.14	2,398
Germany	27.2	10.3	13.5	0.11	3,478
Hungary	24.7	20.1	52.5	0.23	2,203
Iceland	3.5	n/a	n/a	0.12	591
Ireland	15.4	n/a	n/a	0.20	1,563
Italy (2005)	22.0	8.0	19.2	0.18	5,300
Lithuania	24.4	23.1	55.9	0.19	2,175
Netherlands	12.4	17.6	5.4	0.08	2,330
Norway (1996)	14.4	15.9	10.9	0.08	1,694
Poland (2005)	30.8	15.4	43.3	0.16	1,458
Portugal	29.5	n/a	n/a	0.17	2,616
Russia	36.4	34.4	59.9	0.35	2,313
Slovenia	17.8	23.3	44.8	0.18	2,233
Spain (2007)	17.4	13.2	20.7	0.12	1,789
Sweden	2.3	7.8	18.4	0.07	2,282
Switzerland (1996)	27.4	n/a	n/a	0.08	3,643
United States (2006)	6.8	7.9	24.7	0.29	2,400
Venezuela	31.4	15.2	40.0	0.47	2,322

ABBREVIATIONS: n/a = not applicable; Herz. = Herzegovina; WVS = World Values Survey.
[a]In most cases, the WVS data were collected in 1999–2001. For some nations, the information was not available for these years. In those cases, the year in parentheses indicates the wave of the WVS used.
[b]Items indicate agreement with 1) men should have priority for jobs, 2) men should have priority for university education, and 3) men make better political leaders. See text for details.

According to the ISRD-2 research protocol, each country was to collect a city-based sample of youths from grades 7 to 9 (corresponding to age categories 12–13 and 15–16). The targeted sample size was 2,100 students per country. Ideally, the national samples were to include five cities (one large city, one medium-sized city, and three small or rural towns), with 700 respondents from each of the three ecological contexts. Unfortunately, these sampling guidelines were not followed uniformly by each participating country. Nine nations, eight of which are in our analysis sample (Bosnia and Herzegovina, Czech Republic, Estonia, France, Hungary, Portugal, Spain, and Switzerland) opted for a national random sample; in which case they were expected to oversample at least one large city. In Denmark and Finland, the entire survey was limited to a single sample from a large city (Marshall and Enzmann, 2012: 27–9).

In the complete ISRD-2 sample, the school access rate was estimated to be 74 percent (as calculated from the initially sampled schools). Within participating schools, the individual response rate was estimated at 65–70 percent (Marshall and Enzmann, 2012: 44).

The nations included in the analysis are listed in table 1, which also includes the ISRD-2 sample sizes for each country.

MEASURES

GENDER AND DELINQUENCY

The gender of respondents was determined on the basis of their response to the question "Are you a boy or a girl?" We considered two measures of self-reported delinquency: total delinquency and the variety index of delinquent offending (VIDO, henceforth).[1] Total delinquency is a dichotomy indicating participation in at least one delinquent act in the past 12 months. VIDO captures the number of different types of delinquent offending in which the respondent had engaged in the past 12 months. For each measure, the list of possible offense types were interpersonal assault, group fighting, carrying a weapon, extortion, robbery, shoplifting, vandalism, theft from car, car theft, bicycle theft, burglary, and drug dealing. VIDO was coded into four categories to reduce skewness of the distribution: $0 = $ none, $1 = $ one item of delinquency, $2 = $ two items, and $3 = $ three or more items.

PATRIARCHAL SOCIAL ORDER

We used two alternative sources, the WVS and the GII, to measure cross-national variation in patriarchy. Participants in various waves of the WVS[2] have been asked to respond to three statements about the role of women in society: 1) "Men should have more right to a job than women;" 2) "university is more important for a boy than for a girl;" and 3) "men make better political leaders than women do." The percentage of the respondents who agree with the statement (either strongly or somewhat) serves as an indicator of the level of patriarchal normative order in the nation. The question about jobs (WVS-jobs, henceforth) was available for 27 countries, whereas the other two items (WVS-university and WVS-leaders) were available for only 20 countries participating in the ISRD-2 (see table 1 for details).

The Gender Inequality Index (GII) describes gender-based disparities in areas of human development and social achievement across nations (United Nations Development Programme, 2015). Three dimensions are assessed: reproductive health, empowerment, and economic status. To capture these dimensions, differences across gender ratios in certain measures are incorporated into the index, including educational attainment, based on the proportion of adults with some secondary education, and the rate of labor market participation for those older than 15 years of age. The index also includes calculations based on the maternal mortality ratio, the adolescent birth rate, and the proportion of parliamentary seats held by women. Possible index scores range from 0 to 1, with 0 indicating gender equality and 1 indicating the greatest disparities between men and women. The GII was created by calculating the mean score across the dimensions for each gender and by combining these scores through use of the geometric mean of indicator-specific means to create the final GII score for the country. Specific calculations and original data sources

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1.   We also created dichotomous measures of property crime and violent offending and included them in our analysis. The results (available from the authors) conformed to the findings reported here.

2.   The WVS website provides detailed information about this source, including differences among the seven waves of the survey: http://www.worldvaluessurvey.org/wvs.jsp.

are included in the technical notes for the *Human Development Report* (United Nations Development Programme, 2013: 7–8).

CONTROL VARIABLES

We assume our measure of gender (see earlier) aligns closely with the biological sex of the respondents. As any deviation from this assumption is likely to be trivial, there is little need for control variables at the individual level of analysis. A person's biological sex is determined prior to birth by a process that, for the purposes of this study, can be understood as random (i.e., void of systematic selection). Such potentially criminogenic parental characteristics as low socioeconomic status (SES) or personal characteristics as hyperactivity cannot influence the sex of the child. For this reason, it would be inappropriate to include those kinds of factors as control variables for the individual-level association between gender and delinquency. To the extent that variables such as family SES or hyperactivity are related to the sex of the child, the former must have been influenced by the latter, which would make them mediating variables of the gender effect.[3]

Consistent with this argument, in this research, we feature only two individual-level controls, the sole purpose of which is to address methodological sources of bias. The associations were adjusted for *age* because the average ages of the national samples varied between 13.26 (Cyprus) and 14.15 (Estonia). Given that these are critical ages of pubertal development and that girls mature earlier than boys, it was deemed prudent to control for age in the analysis. The ISRD-2 includes information about the *quality rating* of the responses as assessed by the coders of the survey. The rating categories are 1 = "usable," 2 = "doubtful," and 3 = "unusable." Responses in the third category were automatically removed from the sample. Instead of removing the doubtful responses, we used the dichotomous information as a control variable in case it is systematically related to the gender of the respondent.

The selection of controls is more complicated at the nation-level of analysis. We recognize that patriarchy is related to several other characteristics of the society. For example, in our data, the Nordic countries stand out as the most gender-equitable group of nations. Thus, any association between a measure of patriarchy and delinquency is confounded by characteristics related to the Nordic region, such as cold climate, low child poverty rate, and the percentage of Lutherans in the population.[4] Nevertheless, it is not the purpose of this descriptive study to establish the causal effect of patriarchy on gender gap independently of such factors. As we argue in the Discussion section, it would be difficult to accomplish such a goal with cross-sectional data. Although a case could be made for not including any nation-level controls, we deemed it reasonable to hold constant differences in two fundamental characteristics of socioeconomic development: gross national income (GNI) and infant mortality, which we use as a proxy measure of poverty (Pridemore, 2008). In addition, because the sampling frames of the surveys varied somewhat across the participating nations, we included a dummy variable indicating whether the national sample includes only urban respondents (Marshall and Enzmann, 2012).

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3. The sex of the child may influence family SES if, for example, male offspring protect against divorce (Morgan, Lye, and Condran, 1988).
4. Lutheranism is the official state religion in Denmark, Finland, Iceland, Norway, and Sweden.

METHOD OF ANALYSIS

We used multilevel regression to estimate cross-level interaction effects between (male) gender and indicators of patriarchy on delinquency. Evidence of statistically significant positive interactions is consistent with the hypothesis that the gender gap in delinquency is larger at higher levels of patriarchy. Predicted probabilities from these equations were calculated to examine the second research question, that is, whether any narrowing of the gender gap was produced by increases in female offending, decreases in male offending, or some combination of the two.

For each offending measure, a series of multilevel models was estimated with the use of either the *meqrlogit* (total delinquency) or the *meqrpoisson* (offending variety) command in Stata 13.1 (StataCorp, College Station, TX; individuals nested in schools nested in countries). The first model, the unconditional random-intercept model fitted without any predictors, partitions variance into individual-, school-, and country-level components and establishes a baseline against which to evaluate subsequent models. The effects of person- and country-level covariates are introduced in the next model. Here the male variable is centered within country-level clusters, yielding a person-level estimate that is independent of country-level effects (Raudenbush and Bryk, 2002). Reintroducing country-level means into the model provides a level-3 control for differences between countries in the proportion of the population that is male. In the third model, the slope for the gender predictor is allowed to vary freely, providing an estimate of heterogeneity in the effect of gender across countries. Finally, we estimate a cross-level interaction between the person-level effect of male gender and each indicator of patriarchy to determine whether the gender gap in delinquent offending is smaller in nations with increased levels of gender equality.

RESULTS

DESCRIPTIVE STATISTICS

Table 1 lists the nations included in the analysis and displays how they scored on the four measures of patriarchy. The first three sets of statistics reveal the percentage of the population in each country that agreed with the statements from the WVS. The first series indicated agreement with the idea that men should have priority for jobs. Nearly 60 percent of the respondents from Armenia (first row) agreed with this compared with 27 percent in Austria. The lowest levels of agreement were observed in Sweden (2.3 percent) and Iceland (3.5 percent). Note that the question about jobs was available for each of the 27 countries, whereas the other two questions were not. The GII varies from .40 (Armenia) to .07 (Sweden). The last series of statistics in table 1 displays the size of the ISRD-2 sample in each nation. The smallest sample is from Iceland ($n = 591$), followed by Finland ($n = 1,364$); Italy had the largest number of youth participating in ISRD-2 ($n = 5,300$). The median sample size was 2,308.

Descriptive statistics for the variables used in the multilevel models are presented in table 2. The term "overall" refers to individual-level variation averaged across the entire sample; "between" refers to the variation in country means; and "within" refers to the variation in the deviation of individual scores from the respective country mean. In the last column of table 2, N refers to the number of observations at level 1 (individuals); n refers to the number of observations at the nation-level; and n-bar refers

Table 2. Descriptive Statistics

Variable		Mean	SD	Min	Max	Observations
Total Delinquency	overall	.215	.411	0	1	$N = 61,750$
	between		.060	.111	.386	$n = 27$
	within		.407	−.171	1.104	n-bar = 2,287.04
Variety Index of Delinquency	overall	.351	.769	0	3	$N = 61,552$
	between		.124	.170	.732	$n = 27$
	within		.760	−.381	3.181	n-bar = 2,279.7
Age	overall	13.900	1.106	11	18	$N = 62,836$
	between		.361	13.258	14.454	$n = 27$
	within		1.051	10.446	18.493	n-bar = 2,327.26
Male	overall	.496	.500	0	1	$N = 62,905$
	between		.019	.457	.528	$n = 27$
	within		.500	−.033	1.039	n-bar = 2,329.81
Quality rating (1 = doubtful)	overall	.024	.154	0	1	$N = 63,057$
	between		.021	.000	.087	$n = 27$
	within		.153	−.063	1.024	n-bar = 2,335.44
Urban sample	overall	.325	.469	0	1	$N = 63,057$
	between		.465	0	1	$n = 27$
	within		0	.325	.325	n-bar = 2,335.44
GNI	overall	23,421.910	10,265.780	3,190	41,900	$N = 63,057$
	between		10,730.140	3,190	41,900	$n = 27$
	within		0	23,421.910	23,421.910	n-bar = 2,335.44
Infant mortality	overall	6.602	4.648	2.750	23.650	$N = 63,057$
	between		4.915	2.750	23.650	$n = 27$
	within		0	6.602	6.602	n-bar = 2,335.44
WVS-jobs	overall	22.787	10.949	2.300	59.900	$N = 63,057$
	between		12.202	2.300	59.900	$n = 27$
	within		.000	22.787	22.787	n-bar = 2,335.44
WVS-university	overall	18.846	10.004	7.800	42.300	$N = 47,966$
	between		9.886	7.800	42.300	$n = 20$
	within		.000	18.846	18.846	n-bar = 2,398.30
WVS-leaders	overall	34.535	21.131	5.400	83.200	$N = 47,966$
	between		21.817	5.400	83.200	$n = 20$
	within		.000	34.535	34.535	n-bar = 2,398.30
Gender Inequality Index	overall	.177	.098	.065	.474	$N = 61,040$
	between		.103	.065	.474	$n = 26$
	within		.000	.177	.177	n-bar = 2,347.69

ABBREVIATIONS: SD = standard deviation; GNI = gross national income; WVS = World Values Survey.

to the average number of observations per country. The mean of total delinquency is .215, indicating that 21.5 percent of the individuals in this cross-national sample had committed at least one act of delinquency in the past 12 months. A mean of .351 for the variety index shows limited variety in offending. Respondent ages range from 11 to 18, with a mean of 13.90. The distribution is heavily concentrated between ages 12 and 15, with 92 percent in that category; fewer than 2 percent of the respondents were either younger than 12 or older than 16. Boys made up approximately half of the overall sample (49.6 percent) and between 45.7 and 52.8 percent of respondents in each country. Most respondents were selected with a national-based, as opposed to a city-based, sampling frame (67.5 percent) and seem to have provided high-quality answers to survey questions (97.6 percent). The 5-year mean GNI of countries in the sample is 23,421.910 and ranges from a low of 3,190 in Armenia to a high of 41,900 in Norway. For the infant mortality rate, the 5-year mean is 6.602 per 1,000 live births, with a high of 23.65 in Armenia and a low of 2.75 in Iceland. Finally, although all four indicators of patriarchy

reveal a slight tendency toward gender equality, a wide range of gender norms and values is represented.

MULTIVARIATE MODELS

For brevity, we report results based on two of the four indicators of patriarchy: WVS-jobs and GII.[5] The findings pertaining to the other two indicators are provided in the online supporting information.[6]

CROSS-LEVEL INTERACTION EFFECTS

Table 3 includes results from models featuring the dichotomous measure of total delinquency as the dependent variable. Panel A features WVS-jobs as the measure of patriarchy; results based on GII are presented in panel B. Fixed-effects coefficient estimates presented in the top panel are in the log-odds metric and may be interpreted as odds ratios when exponentiated.

In panels A and B, model 1 is the unconditional model without any predictors. The variances of random intercepts for schools and countries are statistically significant in both panels, supporting a three-level modeling strategy in which individuals are nested in schools nested within countries [compared with ordinary least-squares (OLS) regression, likelihood ratio (LR) $\chi^2 = 1{,}789.55$ in panel A and LR $\chi^2 = 1{,}678.35$ in panel B]. The unconditional intraclass correlation is the estimated proportion of intercountry variability in total delinquency and equals .035 in panel A and .033 in panel B.[7]

Model 2 is a random slopes model that estimates the main effect of each predictor on delinquency and allows for the person-level effect of male gender to vary across countries. In both panels, the person-level effects of age, male gender, and quality rating are all statistically significant, indicating increased odds of offending at older ages, among boys compared with girls, and among those whose responses were judged by raters as doubtful. Neither measure of patriarchy, nor any of the country-level covariates, affects delinquency at the .05 level of statistical significance. The estimated variance of random slopes is statistically significant, ranging from .133 in panel A to .135 in panel B. Thus, the magnitude of the gender effect on offending differs significantly across countries. Overall, model 2 exhibits a statistically significantly improved fit compared with the unconditional model (LR $\chi^2 = 2688.54$ in panel A and LR $\chi^2 = 2598.00$ in panel B) and explains between 36.97 and 38.10 percent of the cross-national variability in delinquency.

Model 3 is the full model in which the cross-level interaction between gender and the indicator of patriarchy is incorporated. The interaction term exhibits a statistically

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5.   The jobs-related indicator was chosen because it has the most complete data compared with the other two WVS-based measures of normative context.

6.   Additional supporting information can be found in the listing for this article in the Wiley Online Library at http://onlinelibrary.wiley.com/doi/10.1111/crim.2017.55.issue-4/issuetoc.

7.   For a three-level logit model (individuals nested in schools nested countries), the formula for the intraclass correlation at the country-level is as follows:

$$\frac{\sigma_{v_0}^2}{\sigma_{v_0}^2 + \sigma_{u_0}^2 + \pi^2/3}$$

where $\sigma_{v_0}^2$ is the estimated level-3 variance and $\sigma_{u_0}^2$ is the estimated level-2 variance.

Table 3. Multilevel Logistic Regression Models Predicting Total Delinquency (Standard Errors in Parentheses)

Variable	Panel A: WVS-Jobs			Panel B: Gender Inequality Index		
	1	2	3	1	2	3
Fixed Effects						
Person level						
Age		.211***	.211***		.209***	.209***
		(.011)	(.011)		(.011)	(.011)
Male		.926***	.472***		.913***	.566***
		(.074)	(.123)		(.076)	(.132)
Quality rating (1 = doubtful)		.992***	.990***		1.003***	1.003***
		(.066)	(.066)		(.067)	(.067)
Country level						
Mean male		6.659	6.585		8.577*	8.538*
		(3.811)	(3.822)		(4.066)	(4.082)
GNI		.013	.013		.007	.007
		(.009)	(.009)		(.010)	(.010)
Infant mortality		−.020	−.020		−.000	−.000
		(.021)	(.021)		(.028)	(.029)
Urban sample		−.131	−.129		−.118	−.117
		(.146)	(.147)		(.144)	(.145)
WVS-jobs		.004	.003			
		(.007)	(.007)			
Gender Inequality Index					−1.047	−1.094
					(1.289)	(1.295)
Cross-level						
Male × WVS-jobs			.021***			
			(.005)			
Male × Gender Inequality Index						1.978**
						(.656)
Intercept	−1.380***	−7.748***	−7.705***	−1.357***	−8.397***	−8.369***
	(.071)	(1.895)	(1.900)	(.070)	(1.935)	(1.943)
Random Effects						
Country level						
Intercept	.126*	.078*	.078*	.119*	.075*	.076*
	(.037)	(.024)	(.024)	(.035)	(.024)	(.024)
Slope		.133*	.072*		.135*	.095*
		(.042)	(.025)		(.043)	(.032)
School level						
Intercept	.227*	.197*	.195*	.222*	.190*	.191*
	(.017)	(.016)	(.015)	(.017)	(.015)	(.015)
Model Statistics[†]						
LL	−31,127.86	−29,783.59	−29,774.44	−30,338.27	−29,039.27	−29,033.42
Wald χ^2		814.54***	930.74***		790.14***	850.82***
LR χ^2	1,789.55***	2,688.54***	18.29***	1,678.35***	2,598.00***	11.70***

ABBREVIATIONS: GNI = gross national income; LL = log likelihood; LR = likelihood ratio; WVS = World Values Survey.
*p < .05; **p < .01; ***p < .001 (two-tailed). [†]Wald χ^2 tests overall model significance. LR χ^2 tests the difference between the current model and the model immediately prior. LR χ^2 for Model 1 tests the difference between multi- and single-level regression models.

significant and positive effect on delinquency in each panel (b = .021 in panel A; b = 1.978 in panel B) and explains between 29.6 and 45.9 percent of the variability in random slopes. These results reveal that the gender gap is larger in more patriarchal societies (i.e., being male has a stronger effect on delinquency as patriarchy increases)

**Table 4. Multilevel Poisson Regression Models Predicting Offending Variety (Standard Errors in Parentheses)**

Variable	Panel A: WVS-Jobs			Panel B: Gender Inequality Index		
	1	2	3	1	2	3
Fixed Effects						
Person level						
Age		.174***	.174***		.173***	.173***
		(.007)	(.007)		(.007)	(.007)
Male		.840***	.440***		.827***	.535***
		(.064)	(.103)		(.065)	(.114)
Quality rating (1 = doubtful)		.852***	.851***		.856***	.857
		(.033)	(.033)		(.033)	(.033)
Country level						
Mean male		6.801*	6.737*		8.422*	8.392*
		(3.148)	(3.152)		(3.329)	(3.333)
GNI		.015*	.015*		.009	.009
		(.007)	(.007)		(.008)	(.008)
Infant mortality		−.018	−.018		−.006	−.006
		(.017)	(.017)		(.024)	(.024)
Urban sample		−.150	−.148		−.141	−.141
		(.121)	(.121)		(.118)	(118)
WVS-jobs		.001	.001			
		(.006)	(.006)			
Gender Inequality Index					−.787	−.827
					(1.063)	(1.064)
Cross-level						
Male × WVS-jobs			.018***			
			(.004)			
Male × Gender Inequality Index						1.667**
						(.867)
Intercept	−1.197***	−7.085***	−7.045***	−1.173***	−7.694***	−7.672***
	(.067)	(1.563)	(1.565)	(.066)	(1.584)	(1.585)
Random Effects						
Country level						
Intercept	.114*	.052*	.052*	.105*	.050*	.050*
	(.033)	(.016)	(.016)	(.031)	(.016)	(.016)
Slope		.102*	.056*		.102*	.074*
School level		(.032)	(.018)		(.032)	(.024)
Intercept	.246*	.199*	.199*	.241*	.193*	.193*
	(.014)	(.012)	(.012)	(.014)	(.012)	(.012)
Model Statistics[†]						
LL	−48,750.33	−46,482.83	−46,476.33	−47,621.02	−45,420.14	−45,416.36
Wald χ²		1,556.67***	1,702.15***		1,530.68***	1,597.60***
LR χ²	4,374.31***	4,535.00***	13.01***	4,140.74***	4,401.76***	7.56**

ABBREVIATIONS: GNI = gross national income; LL = log likelihood; LR = likelihood ratio; WVS = World Values Survey.
*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed). [†]Wald χ² tests overall model significance. LR χ² tests the difference between the current model and the model immediately prior. LR χ² for Model 1 tests the difference between multi- and single-level regression models.

and, correspondingly, that the gender gap in delinquent offending is smaller in nations with more equal normative context (WVS-jobs) and lower levels of structural gender inequality (GII).

Table 4 reports the results from equivalent Poisson regression models with VIDO as the dependent variable. The pattern of findings is nearly identical to those reported

Figure 2. Predicted Means (WVS-jobs)

Panel A: Total Delinquency

Panel B: Variety Index
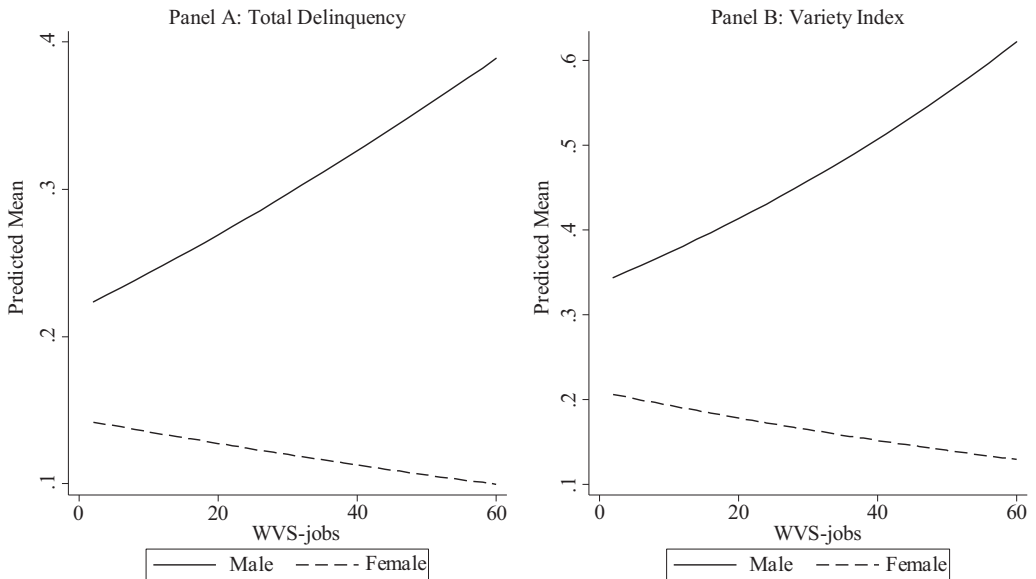
for total delinquency, except in this analysis, the effects of GNI and the proportion of males in the national sample reach conventional levels of statistical significance in the WVS-jobs models. As before, the interaction between male gender and each measure of patriarchy exhibits a statistically significant and positive effect on offending variety ($b = .018$ in panel A; $b = 1.667$ in panel B). Including the interaction term in the model explains between 27.5 and 45.1 percent of the variability in random slopes. Thus, the more patriarchal the society is, the stronger the effect of male gender is on VIDO.

PREDICTED PROBABILITIES

The results from the multivariate models provide evidence that indicators of patriarchy (WVS-jobs and GII) moderate the individual-level association between gender and delinquency. This pattern was observed for each measure of delinquent offending. Although these coefficients were in the expected direction—showing an increased gender gap among more patriarchal nations and thus a narrowing of the gap among nations with increased gender equality—it remains to be seen which process is responsible for these effects. As recognized in our second research question, these patterns could be produced by increases in female offending, decreases in male offending, or a combination of the two. To examine the nature of observed interactions, we computed the predicted probability of offending at representative values of patriarchy, fixing all covariates at their overall means and setting random effects equal to their prior mean value of 0.[8] The resulting plots are presented in figures 2 and 3.

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8. This yields a probability of offending in an average country rather than the average probability over all countries.

Figure 3. Predicted Means (GII)
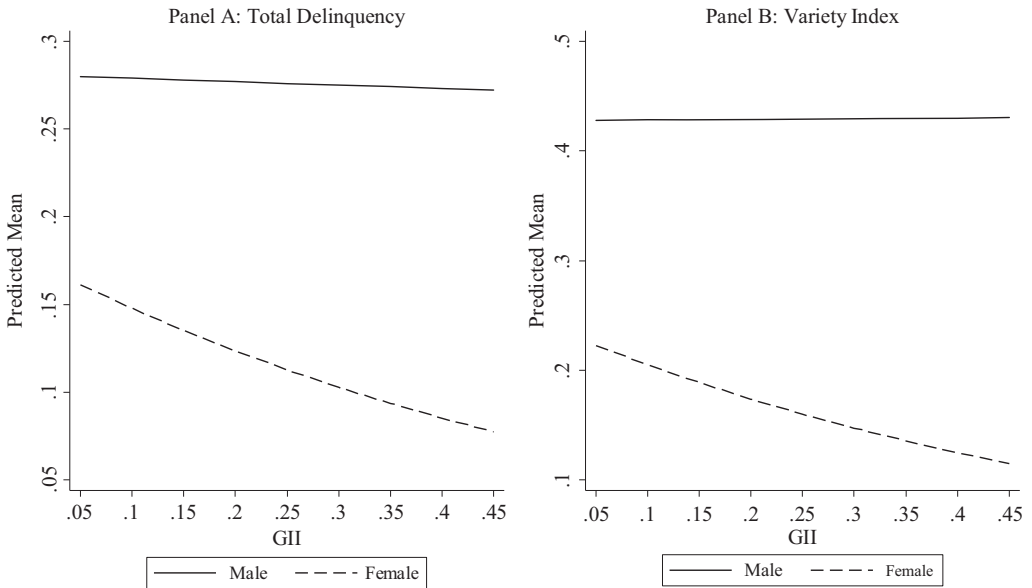
Predicted probabilities from models with WVS-jobs as the measure of patriarchy are presented in figure 2. Across both measures of delinquency, the patterns show that the observed convergence in the gender gap is a result of a *combination* of decreased offending among boys and increased offending among girls in less patriarchal societies. These processes yield a between-gender difference in offending probabilities that is approximately .08 to .21 smaller in countries with more gender-equal normative contexts. Thus, the less patriarchal the normative context is, the weaker the effect of gender is on criminal offending.

The patterns are noticeably different in figure 3, which plots predicted probabilities from models based on GII as the structural indicator of patriarchy. In both panels, the narrowing of the gender gap at decreased levels of gender inequality is a result of increased offending among girls in more equal nations. These patterns are consistent with the predictions concerning young women's behavior put forth in power-control theory and Heimer and De Coster's (1999) elaboration of differential association theory, and the patterns depicted in figure 2 additionally support the ameliorative perspective. Note that, as reported in the online supporting information, the patterns in figure 2 also were observed for models when the other two normative measures of patriarchy (WVS-leaders and WVS-university) were used.

SENSITIVITY CHECKS

As also reported in the online supporting information, the results from models with the two additional indicators of patriarchy replicated the patterns reported in figure 2. Moreover, as stated (footnote 1), we repeated these analyses with two additional measures of delinquency: violent and property offending. In each case, the regression equation

produced statistically significant positive cross-level interaction effects between male gender and the measure of patriarchy. On a more sobering note, in the regression diagnostics, a potential outlier in the data was identified. As shown in table 1, Armenia is the most patriarchal nation in this sample. The gender gap in offending was also exceptionally large among Armenian adolescents. With this in mind, we reestimated models after removing Armenia from the sample. In these models, the cross-level interactions remained positive but failed to reach the conventional standard for statistical significance. For total delinquency, the relevant coefficients were .004 [standard error (SE) = .004] and .531 (SE = .353), respectively, with WVS-jobs and GII as indicators of patriarchy. For the variety index of delinquency, the equivalent interactions were .004 (SE = .003) and .405 (SE = .318). Thus, the results presented in the main analyses proved sensitive to data from a single nation. We discuss the implications of this important finding in the next section.

DISCUSSION

SUMMARY

Our analyses were directed toward addressing two empirical questions. First, to what extent are indicators of societal levels of patriarchy associated with the gender gap in delinquency? Second, to what extent does any narrowing of the gender gap in more gender-equal societies come about by higher levels of female offending, lower levels of male offending, or some combination of the two? To address these questions, we compiled a data set that merged information on self-reported offending from the ISRD-2 with indicators of patriarchal value orientations from the WVS and a structural measure gender inequality from the United Nations (GII).

This data set has several unique features that enabled us to go beyond prior research. The gender order of a society tends to be "sticky," changing rather slowly and, thus, limiting opportunities for examining the relationship between patriarchy and gender differences in offending in time-series analyses with readily available data. The cross-national design, in contrast, yields appreciable variation in the measurement of gender norms and structures.

In addition, in contrast with much of the research on the gender gap and crime, our data are based on self-reported offending. Reliance on official statistics to address the issues at hand is problematic given the potential influences of the gender order of society on the activities of law enforcement agencies (Schwartz, 2013; Schwartz, Steffensmeier, and Feldmeyer, 2009; Strom et al., 2014). Moreover, self-report data allow for us to examine common forms of delinquency that have been the subject of much theorizing in the literature but are not detected well in official statistics.

The results of our analyses offer qualified evidence that the degree of patriarchy in a society is in fact related to the gender gap in delinquency. The results from a series of multilevel regression models showed consistent support for the hypothesis that patriarchal national environment moderates the association between gender and delinquent offending: The average "male effect" on delinquency was observed to be the largest among nations that adhere to more patriarchal gender norms and where the position of women in the social structure is the most disadvantaged. This finding was robust in analyses aimed at examining the hypothesized interaction effect across four measures of both delinquency and patriarchy. In other words, we found a statistically significant and positive cross-level interaction effect in each of the 16 models estimated.

To explore the processes underlying the associations between the indicators of patriarchy and the gender gap in delinquency, we estimated and plotted predicted probabilities of offending by using the regression results for the cross-level interactions at differing levels of patriarchy. The resulting patterns varied depending on the measure of patriarchy. With the *normative* measures—the ones derived from the WVS—we found evidence for a dual process such that in countries with less patriarchal value systems, boys were less likely and girls were more likely to engage in delinquency. When the *structural* measure of gender inequality (GII) is used, the narrowing of the gender gap seems to stem from increased offending among girls, with no variation in the level of offending among boys. We are not certain whether these differences truly reflect the measurement of patriarchy along the normative–structural distinction. For example, it is possible that a structural measure other than GII would generate a different pattern.

Nevertheless, assuming this distinction is the source of the difference, it is conceivable that structural measures capture environmental conditions in which women and girls are provided with increased opportunities to participate in delinquent offending, whereas normative measures capture changes in mentalities or cultural values that (also) influence male offending. Although GII and the WVS-jobs exhibit a moderately strong correlation ($r = .55$), it is possible for a country to be more patriarchal with respect to structural conditions and less patriarchal with respect to gender-normative values. For example, in our data, Cyprus is 1.7 times *more* patriarchal than the sample average for WVS-jobs but 1.2 times *less* patriarchal than the average GII score (see table 1). Compared with boys living in several countries with higher levels of structural gender inequality (e.g., Estonia, Slovenia, and the United States), boys in Cyprus seem to be more exposed to traditional definitions of masculinity and other values consistent with higher levels of offending. Perhaps a change in culture, as opposed to a change in social structure alone, is a necessary condition for significant reductions in boys' offending. Future research should be aimed at pursuing this hypothesis. As noted by Estrada, Bäckman, and Nilsson (2015), there is a need for more comprehensive theorizing on the mechanisms that link changes in patriarchy and the gender order to the illegitimate behaviors of men.

LIMITATIONS

We chose to use cross-national data because this approach entails two methodologically desirable properties noted earlier: substantial variation in societal levels of patriarchy and unfiltered measures of offending behavior. As with most research, the choice of data comes with trade-offs. The standard ISRD-2 protocol involved the use of local rather than of nationally representative samples. Some countries included localities of varying population sizes, whereas others concentrated on a single city. Nine of the 30 participating nations opted for a national sample, introducing additional heterogeneity into the pooled data (Marshall and Enzmann, 2012: 28). The participation rates of schools also varied across countries, ranging from 15–18 percent in the Netherlands to 100 percent in five other countries (Marshall and Enzmann, 2012: 37–8). It is not known whether school refusals were related to sociodemographic characteristics of the catchment areas. At the level of individual respondents, parental refusals and student absenteeism at the time of data collection introduced additional variation to the national samples. Among countries where such information is available, the nonresponse rates

**Figure 4. Association Between Patriarchal National Environment
and the Gender Gap in Property Offending in Four Nations**
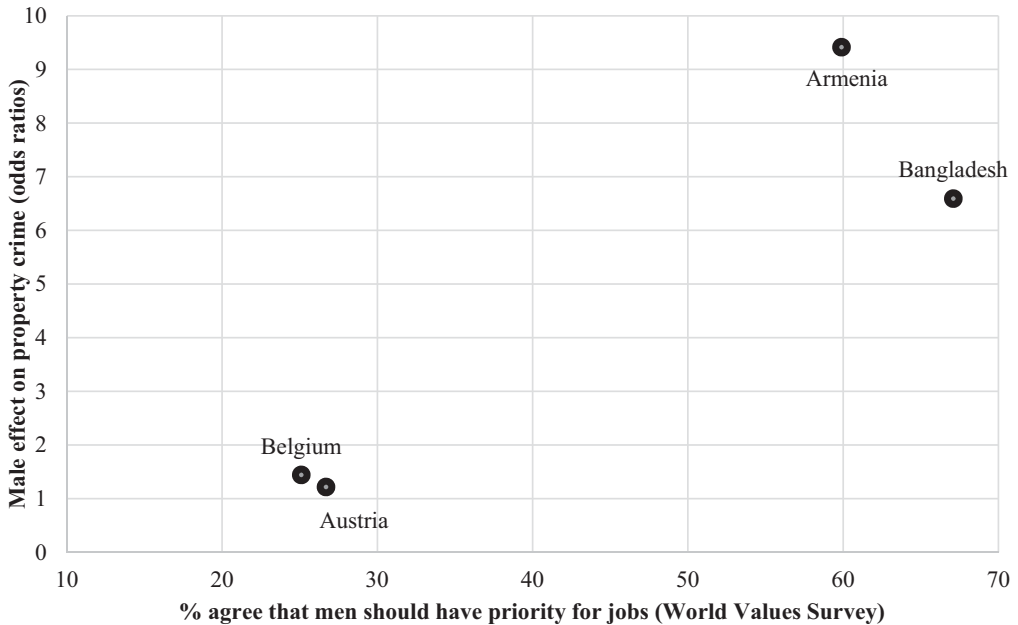
NOTE: Offending data for Bangladesh is not based on ISRD-2.

resulting from student absence ranged from 1 to 18 percent (Marshall and Enzmann, 2012: 41). Because students can be absent for reasons that are authorized (e.g., illness, travel, or participation in extracurricular activities) or unauthorized (truancy), it is difficult to assess the nature of bias caused by this issue. A detailed evaluation of the methodological problems associated with ISRD-2 concluded that the differences in the design and execution of the national samples do not compromise the comparability of these data (Marshall and Enzmann, 2012). This conclusion is supported by evidence from two studies in which the results of ISRD-2 were consistent with those obtained from other cross-national surveys of self-reported delinquency (Kivivuori, 2007; Steketee, 2012).

One limitation with this particular sample of nations is that it does not feature many truly patriarchal or "traditional" countries. The fact that Armenia stood out from the other nations in the sample illustrates this issue. Recall that nearly 60 percent of the Armenian respondents agreed that men should be given priority for jobs. According to the WVS, this statistic is lower than the equivalent rates in such nations as Algeria (66 percent), Bangladesh (67 percent), and Egypt (90 percent). Unfortunately, none of those countries was included in ISRD-2. We were, however, able to identify another data source containing measures of self-reported offending from Bangladesh (Brauer, Tittle, and Antonaccio, 2013). The results presented in figure 4 show the magnitude of the gender gap in two highly patriarchal nations (Armenia and Bangladesh) and two Western European nations (Austria and Belgium) with significantly lower levels of patriarchy as indicated by data from WVS.

Each data point in figure 4 is based on a logistic regression model featuring male gender as the predictor and age as the only control variable (J. Brauer, personal communication, November 2016).[9] Because the data from Bangladesh were collected with a different instrument and the participants were adults (aged 18 or older), the results are not directly comparable with those of ISRD-2. Nevertheless, it is still informative to observe that, as depicted in figure 4, the gender gap in property offending in Bangladesh is close to that of Armenia, emerging as a similar "outlier" compared with Austria and Belgium. (The analysis is focused on property crime because it is the most comparable measure of offending between the two data sources.)

Although merely illustrative, these results support the interpretation that Armenia "behaves" as a theoretically consistent counterpoint to such nations as Finland and Sweden. Evidence from this preliminary test suggests that the effects observed in our research might have been stronger and more robust with access to more complete cross-national data. This conjecture is based on the assumption that such a sample would have included a critical mass of nations like Armenia, that is, nations with high levels of patriarchy and a wide gap in offending between boys and girls. We encourage additional data collections from such nations to test this hypothesis in future research.

IMPLICATIONS

The contrast between Sweden and Armenia underscores the fact that the level of patriarchy is only one of many sources of heterogeneity in this sample of nations. By drawing on the Inglehart–Welzel Cultural Map (Inglehart and Welzel, 2005), Sweden represents the statistical extreme of the Protestant-European cluster characterized by high secular-rational values, whereas Armenia belongs in the Orthodox cluster and stands out as the most traditional country in that group. We recognize that the cross-national differences in the gender gap observed in our data, although related to indicators of patriarchy, may be caused by some other aspect of the social order. As noted, the Nordic nations score very low on indicators of patriarchy (see table 1) and are associated with comparatively small gender effects. It is well known that this cluster of nations is more progressive in most areas of social life, such as education, welfare spending, and crime control (Esping-Andersen, 1990; Gorard and Smith, 2004; Pratt, 2008). Perhaps the reduced gender gap in offending observed in these types of nations is a function of more general cultural, institutional, and structural forces, or of these forces in combination with more equal gender norms and structures.

Such questions, although valid and important, are outside the scope of the present study, the focus of which was on examining the extent to which indicators of patriarchy are empirically associated with the gender gap delinquency. We contend that these descriptive analyses are nevertheless instructive, indicating that such an association exists and, paraphrasing Merton (1987), that there is indeed enough regularity to require explanation. We consider it prudent to refrain from pursuing etiological research questions in the absence of suitable data. Considerable endogeneity and complexity exist in the association between a patriarchal social order and other theoretically salient macrosocial characteristics. Is Sweden less patriarchal than Armenia because Sweden has embraced more socially supportive policies, or are those policies a consequence of the stronger

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9.   The results from the Bangladesh data were shared by Dr. Jonathan Brauer.

presence of women in the political sphere? If, as suggested in the literature (Hill and King, 1995; Klasen, 2002; Lagerlöf, 2003), gender relations of the society influence its socioeconomic development, controlling for economic factors is problematic because such variables should be understood, at least in part, as mediators rather than as sources of spuriousness. Thus, in the absence of historical time-series data tracking trends in patriarchy and competing explanatory factors, it would be difficult, if not impossible, to draw unambiguous conclusions about causal processes. It is clear, however, that the patterns observed in our research are consistent with plausible etiological theories of gender and criminal offending. We leave to future research the difficult task of disentangling the dynamics of influence among relevant macro-level characteristics.

If we assume the association between patriarchy and the gender gap in delinquency is not spurious, a second important task for future research is to explicate the processes linking this macro-level property to delinquent behavior at the individual level of analysis. Why is it that the narrower gender gap in delinquency in less ideologically patriarchal societies comes about as a result of higher probabilities of offending of young women in these contexts? Power-control theory and the elaborated version of differential association theory provide insights into possible mediators, including changes in the realms of gendered familial dynamics, the attitudes and behaviors of young women, and the dynamics and composition of mixed-sex peer groups. We can thus conjecture that a possible mechanism connecting patriarchal ideologies to a wider gender gap in youth delinquency is that families with more gender-equal views will exert less control on young women and will facilitate the acquisition by young women of less traditional gender definitions, thus, increasing their delinquent propensities, at least in the short run.

As to why decreases in patriarchal ideology lead to *less* male delinquency, several mechanisms are possible. As the lines between dichotomized ideals of gender begin to blur, the outer extremes of expressed masculinity may become less acceptable through a civilizing process mitigating male dispositions conducive to rule breaking. This argument may seem counterintuitive given the *increases* in female offending that are occurring alongside these declines, yet the offending of youth is not solely a construction or consequence of gender. Indeed, researchers have identified numerous other social correlates of juvenile offending (e.g., Oesterle et al., 2012). Young women live in the same society as young men; they inhabit the same families and populate the same schools. It seems probable, then, that the impetus for offending has long been present, with social constraints tied to acceptable or proper behavior for women, both external and those that have been internalized, restricting the tendency of young women to engage in illegitimate behavior. As these constraints are loosened, young women may react to social forces that have historically propelled young men toward crime and violence, *suggesting these factors may be moderated in their effect by the prevalent gender culture*. Moreover, it seems probable that certain types of masculinity have traditionally served as an added driving force toward crime, particularly violence (Messerschmidt, 1993), and the effects of this particular correlate are reduced in a society where masculinity and femininity are not as highly dichotomized, and regressive masculinity is not valued. For instance, in an elaboration of power-control theory, McCarthy, Hagan, and Woodward (1999) suggested that in less patriarchal families, mothers may question patriarchal schemes, and encourage their sons to rethink them as well. Additionally, mothers may increase their control on their sons relative to the control sons experience in more patriarchal families. In sum, these efforts may

yield a reduction in offending among young men in families that follow a less patriarchal blueprint. Furthermore, this approach offers a possible explanation for why ideology may be a somewhat more salient factor than structure when it comes to influencing the behaviors of young men: If mothers are working but still adhere to a more traditional gender ideology, the previously stated changes in parenting may not occur. We acknowledge that although these possibilities align with the findings of our study, our analyses pertain to macro, societal-level beliefs, rather than to individual ideologies.

Although these theoretical arguments provide plausible reasons for anticipating that the erosion of patriarchal family structures has the potential to "bring up" the delinquent involvement of girls to approach that more commonly observed for boys, we caution against the conclusion that a rise in the overall level of delinquency in a society is an inevitable, albeit unfortunate, cost of greater gender equality. Countervailing mechanisms are possible, some of which have been discussed in a recent theoretical elaboration of institutional anomie theory by Applin and Messner (2015). These authors proposed that increased participation of women in the paid labor market, a common manifestation of greater gender equality, is likely to weaken the social control properties of the family *but only insofar as* that movement is not accompanied by the corresponding shift of men's time and energy into the familial realm. Indeed, the GII is likely capturing, albeit indirectly, structural changes to the family. These changes may act as a clue to the role of changing structural gender equality on young women's offending. Research findings reveal that when women invest more time in the workforce, men correspondingly spend more time doing housework and engaging in childcare but not commensurate with the time once invested by women (e.g., Bianchi et al., 2012). Therefore, increases in young women's delinquency may reflect something of a cultural lag in parental investment in the family relative to institutional engagement in the market economy. To the extent that the family becomes reprioritized, as reflected in men's greater involvement in familial roles, the offending of both young women and young men might decline as the social control functions of families are enhanced. Notably, the measures of gender inequality and patriarchy in our study generally capture elements of equality in the public realm but do not assess the changing structure of the family or capture the full multidimensionality of patriarchy. Future research on the interrelationship between the public and private realms, and how this interrelationship pertains to the gendering of juvenile delinquency, would be highly beneficial. The results of such research might reveal that more fundamental changes in the gender order are required to inhibit an upward trajectory of young women's offending and to bend the trajectory of young men's offending downward.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article at the publisher's web site:

Figure S1. Predicted Means (WVS-University)
Figure S2. Predicted Means (WVS-Leadership)
Table S1. Multilevel Logistic Regression Models Predicting Total Delinquency (Standard Errors in Parentheses)
Table S2. Multilevel Poisson Regression Models Predicting Offending Versatility (Standard Errors in Parentheses)