

Polygyny or Misogyny? Reexamining the “First Law of Intergroup Conflict”

Kristian Skrede Gleditsch University of Essex and Centre for the Study of Civil War

Julian Wucherpfennig ETH Zurich

Simon Hug University of Geneva and Centre for the Study of Civil War

Karina Garnes Reigstad University of London

Kanazawa (2009) proposes a “first law of intergroup conflict,” suggesting that polygyny and its impact on access to reproductive women provides “the ultimate cause” for civil war. This controversial claim is supported by an empirical analysis at odds with most existing studies of civil wars. We reconsider the influence of polygyny in a more conventional statistical model. We fail to find evidence that ethnic groups with polygyny engage more frequently in civil wars, although it is possible to find results indicating that civil wars may be more common in states with legal polygamy. We detail how these findings seem at odds with Kanazawa’s theory and argue that misogyny seems a more plausible source of insights into the context for civil war and peace. We then show that civil wars are less common when women’s rights are better established and that legal polygamy has no discernable residual effect once women’s rights are considered.

A First Law of Intergroup Conflict?¹

Kanazawa argues that the risk of civil war is a function of “the relative availability of reproductive women” (2009, 25). According to Kanazawa, reproduction is the key individual motivation; polygyny “reduces the availability of reproductive women in groups” (27), and the reproductive motive and frustration increase the risk of violent warfare. Based on the “Savanna principle,” stipulating that “the human brain has difficulty comprehending and dealing with entities and situations that did not exist in the ancestral environment” (27), Kanazawa expects reproductive frustration to give rise to civil conflict involving polygynous groups. However, there should not be any effect on interstate war, since “men’s evolved psychological mechanisms, adapted to and designed for the ancestral environment, would not incline them then to channel their heightened desire through” bureaucratic structures, where “political leaders who control these institutions already have multiple mates” (29). Kanazawa claims that polygyny “explains” so much of the “variance in civil war

experience” that it should be regarded as “the first law of . . . civil wars” (25).

Kanazawa’s reported results are generally inconsistent with previous research on civil war, and many details in the empirical analysis are highly unclear. His theory strikes us as odd and questionable. The postulated contrast between civil and interstate wars—where organized bureaucracies are held to play a major role—seems to equate the former with unorganized violence, which overlooks the role of the state as an actor in civil wars and the importance of collective action in rebellion (see the definition employed for Kanazawa’s data in Small and Singer 1982). Still, the claims of a law-like link between polygyny and civil war merits closer scrutiny.

We reexamine the evidence for a link between polygyny and civil war in a more conventional model of civil war and consider whether specific ethnic groups practice polygyny and participate in conflict. We find no evidence that polygynous groups are more likely to be involved in civil war, although there is some evidence that states that allow for polygamy may be more conflict prone. We critique Kanazawa’s

¹An online appendix with supplementary material for this article is available at <http://www.journals.cambridge.org/JOP>. Data and supporting materials necessary to reproduce the numerical results is available at <http://privatewww.essex.ac.uk/~ksg/publ.html>.

proposed evolutionary explanation and argue that misogyny, or variation in the relative status of women, seems more important for the risk of civil war than polygyny.

Untangling Kanazawa's Analysis

The analysis in Kanazawa (2009, 31) suggests that only polygyny and "national IQ" are statistically significant predictors of civil war experience². The model specification is highly unconventional, however, and the results are in stark contrast to previous results on civil war. For example, economic development, which has been emphasized as consistently robust in other studies (see, for example, Hegre and Sambanis 2006), is held to be completely irrelevant to civil war.

Kanazawa's (2009) analysis is poorly documented and appears to suffer from a number of problems.³ Kanazawa indicates that he creates a measure of a country's "conflict experience" from a factor analysis of the Small and Singer (1982) civil and interstate war data for the period 1816–1980. The reported number of cases for the analyses (N = 133) suggests that the observations must refer to a cross-section of countries, but there is no discussion of how conflict data for 164 years are aggregated to a single cross section. Moreover, there is no indication of what year(s) the information on features such as democracy and economic development may refer to. The cited democracy data from Bollen (1990) are available only for a few years after 1960, and it appears as if Kanazawa tries to account for conflict over the period using covariates measured towards the end, despite obvious problems of temporal ordering. While Kanazawa invokes the absence of conflict between democracies as "the first law of interstate conflict" (2009, 31), his analysis of interstate wars only considers individual states and could not by construction reflect this dyadic relationship.⁴

Kanazawa does not consider the specific groups engaging in conflict or compare the rate at which polygynous groups participate in conflict to others.

²Kanazawa's results suggest a positive relationship between national IQ and conflict, although he does not comment on these results.

³Kanazawa refused to make his data available and did not respond to questions that would have allowed us to replicate his analysis.

⁴Researchers generally agree that there is little evidence that individual democratic states engage less frequently in interstate conflict (see Russett and Oneal 2001).

In the spirit of Kanazawa's (2009, 33) explicit call for more disaggregated analysis, we reexamine the link between polygyny and conflict using the new Ethnic Power Relations (EPR) data on ethnic groups and their specific involvement in conflict (see Wimmer, Cederman, and Min 2009). We use a theoretically better motivated model of the risk of conflict by ethnic groups as our point of departure, based on Cederman, Wimmer, and, Min (2010). This also allows us to compare any effects of polygyny on conflict to other features highlighted in existing research on civil war.

Polygyny and Ethnic Groups

Kanazawa claims to use an overall polygyny score for countries, based on a four-level index of the extent of polygyny within specific ethnic groups, multiplied by their relative population shares. Without access to Kanazawa's actual polygyny data, we turn to his cited source, namely the *Encyclopedia of World Cultures* (EWC) (Levinson 1991–95). While the EWC provides summaries of different cultures including marital institutions, it does not actually provide information on the frequency of polygyny in any standardized form, or as a scale in the way suggested by Kanazawa. The examples cited by Kanazawa (2009, 30) of the Turks (held to be monogamous) and Kurds (held to be polygynous) are highly ambiguous; The entry for the Kurds simply states that "according to the Quran, a man may have up to four wives . . . however, few men can afford even two wives" (Levinson 1991–95, 176). The entry for Turks does not mention polygyny, but many reports indicate examples of polygamy among ethnic Turks despite polygamy being illegal in Turkey.⁵ It does not seem possible to recreate Kanazawa's polygyny scores without additional information on the specific criteria used and how the material was interpreted. We opt for the simpler alternative of a dummy variable for all EPR groups listed under polygyny in the index of ECW.

The ECW seems primarily focused on minority groups and provides less information on dominant groups and cultures. As such, it may understate the extent to which polygyny is permitted.⁶ We also consider whether a state allows for polygamy under common law, based on the WomanStats project

⁵E.g., <http://www.timesonline.co.uk/tol/news/world/article489773.ece>.

⁶Any such biases, however, would also apply for Kanazawa's (2009) analyses, as this is based on the same source.

(Caprioli et al. 2009). This allows us to examine differences in civil war risk for states that allow for polygamy and groups that practice polygyny in other legal contexts.

Polygyny, Misogyny, and Civil War

The EPR data provide a list of ethnic groups and their size, as well as their political status in terms of access to executive power, based on an expert survey. The civil war coding is based on the PRIO/Uppsala Conflict Data Program (see Gleditsch et al. 2002), and considers whether specific ethnic groups are involved in a civil conflict with more than 25 battle deaths, either in terms of the specific motive, or claims of insurgent groups, or patterns of recruitment.

We follow the model specification in Cederman, Wimmer, and Min (2010), who consider civil war onset by year and a number of group and country characteristics. Space constraints preclude us from providing details on their model and data, and we refer to the original paper and the online appendix for further information. Model 1 in Table 1 shows the results for a logistic regression of ethnic conflict onset for all groups in the EPR data, adding the indicator for whether the group practices polygyny to the core model. The estimated coefficient for polygyny is not significantly different from 0 and yields no evidence that polygynous groups are more likely to engage in conflict. The coefficient is also small, indicating a trivial effect on the log-odds of conflict. By contrast, groups that are excluded from state power or “downgraded” (i.e., of experiencing a loss in access to state power over the last two years) are notably more likely to see conflict onset. Model 2 adds the legal polygamy variable to the model. We find a positive coefficient on the risk of civil war for states that allow for polygamy, but we note that the size of the coefficient remains much smaller than the coefficients for excluded and downgraded groups. Moreover, any effect only pertains to the legal practices of the state rather than individual groups, and there is no significant residual effect for groups practice polygyny. As such, there is no basis for concluding that polygynous groups have a higher risk of conflict than monogamous groups, even when controlling for legal polygamy in states.

We have considered a number of alternative specifications, none of which suggest any evidence that polygynous groups are more likely to engage in civil wars (see appendix for details). There is no evidence of an interaction between group polygyny

and legal polygamy, and in some specifications we even find lower estimated risks of conflict for polygynous groups. Varying the criteria for legal polygamy (e.g., by including cases with recognition under customary law) tends to yield yet smaller estimated coefficients, in some cases not significantly different from 0 by conventional significance criteria.

Many of the features included in the group level analysis, such as GDP per capita and legal polygamy, are state level features that do not vary across groups within a country. To ensure that our results do not stem from a disproportionate number of groups originating in specific countries, we also consider a country level analysis, based on the Fearon and Laitin (2003) model and data for civil war at the country level. This considers various political, economic, and geographical state characteristics as predictors of civil conflict. Given Kanazawa’s focus, we consider only Fearon and Laitin’s ethnic conflicts category here. Model 3 in Table 1 displays the estimated results and suggests a similar positive and significant effect on ethnic conflict for states with legal polygamy.

It is difficult to see how these results can be regarded as consistent with Kanazawa’s claim of discovering a “first law of civil war,” comparable to the democratic peace in the case of interstate conflict. The fact that we find no evidence of groups practicing polygyny being more likely to be involved in civil war seems inconsistent with Kanazawa’s claims based on the “Savanna principle” and how constraints on opportunities for reproduction under polygyny leads to frustration and violence similar to ancestral violence, in stark contrast to organized warfare.⁷ Since we at best can find a positive effect for states that endorse polygamy, the effects of civil war seem to follow from state rather than group characteristics. When we distinguish conflicts by incompatibility, we also find a large positive effect for legal polygamy on conflicts over the government, fully comparable with the effect on secessionist conflicts. This seems inconsistent with Kanazawa’s theory and claims about alleged implications for organized violence, since attacks on the state normally require greater

⁷Goldstein (2001, 246) reviews a number of studies suggesting that polygyny is more common in societies with high mortality due to warfare, but these studies see warfare as shaping marital institutions rather than polygyny causing civil war. The fact that polygyny in practice often tends to consist of marriage to widows and wives of deceased siblings suggest that polygyny may be a response to an excess “supply” of women. If so, polygyny is less likely to have the dramatic consequences implied by Kanazawa in terms of constraining the availability of reproductive women.

TABLE 1 Estimates of the Risk of Ethnic Civil War, by Group and Country

	Group Level			Country Level	
	1	2		3	4
Excluded	1.157*** (0.258)	1.202*** (0.249)	Ongoing War	-0.871* (0.350)	-1.339* (0.591)
Downgraded	1.663*** (0.369)	1.619*** (0.363)	GDP p.c.	-0.301** (0.106)	-0.587* (0.240)
Group Size	0.283*** (0.076)	0.267*** (0.075)	Population	0.380*** (0.105)	0.197 (0.125)
Warhistory	0.823*** (0.171)	0.778*** (0.161)	% Mountainous Terrain	0.148 (0.103)	0.130 (0.137)
GDP p.c.	-0.394*** (0.106)	-0.294** (0.103)	Non-contiguous	0.588 (0.502)	1.954** (0.672)
Population	-0.011 (0.093)	-0.038 (0.090)	Oil	0.681 (0.376)	-0.259 (0.655)
Peaceyears	-0.141* (0.071)	-0.144* (0.071)	New State	1.757*** (0.421)	3.615*** (0.944)
Spline 1	-0.001 (0.001)	-0.001 (0.001)	Instability	0.415 (0.259)	0.223 (0.459)
Spline 2	0.000 (0.000)	0.000 (0.000)	Polity	0.007 (0.021)	0.036 (0.021)
Spline 3	0.000 (0.000)	0.000 (0.000)	Ethnic Fractionalization	-0.365 (0.766)	-0.302 (1.071)
Group Polygyny	0.198 (0.498)	0.208 (0.493)	Religious Fractionalization	1.620 (0.493)	1.234 (1.143)
Legal Polygamy		0.608* (0.237)	Legal Polygamy	0.849* (0.386)	0.501 (0.542)
Constant	-1.683 (1.167)	-2.626* (1.237)	CIRI		-3.374* (1.376)
Observations	24393	24393	Constant	-8.906*** (1.073)	-4.613** (1.501)
Log-Likelihood	-784.8	-780.9	Observations	5186	2134
			Log-Likelihood	-300.2	-129.6

Robust standard errors (clustered by country) in parentheses
 *** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$

capacity and organization than smaller peripheral insurgencies.

The effects of states having legal polygamy are also substantively small compared to other features such as political exclusion in our group-level analysis or the higher risk of conflict in new states at the country level. As such, it is difficult to see why any link between polygynous marital institutions and civil war should be elevated to the status of a “law,” and highlighted over other features affecting the risk of civil war. The democratic peace may be regarded as an empirical law in the sense that we do not have any clear counterexamples of wars between two democracies (see Ray 1993). It is obviously not the case that civil war only occurs in the presence of polygyny or that all states with legal polygamy experience civil war.

We find the empirical evidence difficult to reconcile with Kanazawa’s claim about civil war emanating from reproductive frustration in polygynous groups. However, we do not dispute that societies with misogyny, or discrimination against women, may be more likely to see civil war. A considerable literature on this topic, largely ignored by Kanazawa, argues that societies where men and women have more equal status see less civil war and interstate

conflict, and in our view offers more plausible theoretical foundations.⁸ Melander (2005), for example, emphasizes the commonality between gender roles that legitimize female subordination and dominance in war (see also Caprioli 2000; Goldstein 2001). The emergence of more equal gender roles strengthens norms of respect and individual inviolability and extend social norms that reject abuse and violence to a wider sphere. From this perspective, gender equality should be associated with less collective violence, including both civil war and interstate war. Another interpretation argues that greater gender equality is associated with less conflict since women tend to be less supportive of violence than men. Although many studies have demonstrated gender effects with respect to aversion to the use of violence (see Regan and Paskeviciute 2003; Togeby 1994), survey data from four countries in the Middle East actually show that these gender differences

⁸Kanazawa (2009,32) acknowledges the results in Caprioli (2005) on how societies with greater gender inequality are more prone to civil war. However, he ignores her alternative theoretical perspective, and simply argues that these empirical findings support his theory, since “[s]ocieties characterized by greater degrees of gender inequality tend to have higher degrees of resource inequality among men ... and ... are more likely to be polygynous” (Kanazawa 2009, 32).

disappear when taking into account attitudes to gender inequality (Tessler and Warriner 1997). This perspective suggests that any effects from legal polygamy to civil war should be considered part of a more general link between misogyny and violence. We find it instructive that polygamy seems to become less common with education and female emancipation and that we see increasing calls for bans on polygamy from women's groups in many countries. An interesting recent example of opposition to polygamy in Indonesia featured bodybuilders flexing their muscles while linking polygamy to violence against women, in a clear subversion of traditional gender roles.⁹ While evolutionary perspectives emphasizing the reproductive motive presumably would see these features as largely inescapable and enduring traits, norms concerning misogyny, gender roles, and violence may be better seen as socially constructed features that can change quickly over time. This view seems much more consistent with the observed patterns of violence around the world and trends in conflict over time than the alleged reproductive constraints arising from polygyny.

We evaluate the relative importance of legal polygamy and misogyny for conflict empirically using data from Cingranelli and Richards (2005) on women's political, social, and economic rights. The data provide ordinal scales with four levels, for 1981 to 2004, ranging from a value of 0, where women have no rights whatsoever, to a value of 3 when rights are guaranteed, enforced, and with some notable effects. We constructed a summary indicator (CIRI) based on the sum of the indicators, rescaled to range from 0 to 1 (see appendix for further details). Model 4 in Table 1 adds the indicator for women's rights to country level Model 3. Since the data are available from 1981 only, the number of observations is obviously reduced considerably relative to Model 3. Adding the CIRI women's right indicator results in the coefficient for legal polygamy on ethnic civil war onset switching sign, although the negative coefficient is not statistically significant. (Constraining Model 3 to the shorter time frame yields a positive, but not significant coefficient for the legal polygamy variable, see appendix.) By contrast, the CIRI women's rights indicator displays a negative and statistically significant association with ethnic civil war. In terms of the effects on the log-odds of civil war, we note that the negative CIRI coefficient in Model 4 is over seven times larger than the positive coefficient for legal

polygamy in Model 3. Despite the limited time frame, our analyses of the available data thus seem clearly consistent with our claim that legal polygamy at best is a special case of more general misogyny, and there is no support for Kanazawa's interpretation that the empirical results for gender equality on civil war reflect more fundamental implications of polygyny.

Conclusion

Research on conflict has always been a highly interdisciplinary field. We are in principle open to the idea that evolutionary approaches may be helpful for understanding political phenomena and conflict (see, for example, Fowler and Schreiber 2008). However, efforts to provide contributions to existing questions from new angles can often be strengthened if they consider existing theoretical arguments and research, and when researchers proceed in an open and transparent manner. We conclude from our reexamination that Kanazawa's analysis fails to meet these criteria and that there is little evidence for Kanazawa's alleged "first law of civil war." In our view, Kanazawa's evolutionary explanation linking polygyny and conflict through reproduction as the ultimate human motivation is unlikely to be particularly helpful understanding civil war, and it seems unfortunate to deemphasize the political motivation for violence, and especially the role of political exclusion and poor state governance in motivating resort to rebellion. On a more constructive note, however, we also think that the empirical results suggest that a continued focus on misogyny and how the relative status of women may be associated with differences in "bad governance" and the propensity of individuals to accept the use violence can provide helpful insights into understanding the context of civil war and peace.

Acknowledgments

We thank Nils Petter Gleditsch, Rose McDermott, Nils Metternich, and Valerie Hudson for helpful discussions and comments. Gleditsch acknowledges the support of the European Science Foundation through the Economic and Social Research Council (RES-062-23-0259) and the Research Council of Norway (180441/V10). Hug and Wucherpennig acknowledge the support of the European Science Foundation through the Swiss National Science Foundation (116795).

⁹See <http://www.thejakartapost.com/news/2009/10/26/bodybuilders-flex-muscles-against-polygamy.html>.

Manuscript submitted 19 November 2009
 Manuscript accepted for publication 28 April 2010

References

- Bollen, Kenneth A. 1990. "Political Democracy: Conceptual and Measurement Traps." *Comparative Studies in International Development* 25 (1): 7–24.
- Caprioli, Mary. 2000. "Gendered Conflict." *Journal of Peace Research* 37 (1): 51–68.
- Caprioli, Mary. 2005. "Primed for Violence: The Role of Gender Inequality in Predicting Internal Conflict." *International Studies Quarterly* 49 (2): 161–78.
- Caprioli, Mary, Valerie M. Hudson, Rose Mcdermott, Bonnie Ballif-Spanvill, Chad F. Emmett, and S. Matthew Stearmer. 2009. "The WomanStats Project Database: Advancing an Empirical Research Agenda." *Journal of Peace Research* 46 (6): 839–51.
- Cederman, Lars-Erik, Andreas Wimmer, and Brian Min. 2010. "Why Do Ethnic Groups Rebel? New Data and Analysis." *World Politics* 62 (1): 87–119.
- Cingranelli, David L., and David L. Richards. 2005. "The Cingranelli-Richards (CIRI) Human Rights Dataset." Binghamton, NY: Binghamton University.
- Fearon, James D., and David D. Laitin. 2003. "Ethnicity, Insurgency, and Civil War." *American Political Science Review* 91 (1): 75–90.
- Fowler, James H., and Darren Schreiber. 2008. "Biology, Politics, and the Emerging Science of Human Nature." *Science* 322 (5903): 912–14.
- Gleditsch, Nils Petter, Peter Wallensteen, Mikael Erikson, Margareta Sollenberg, and Haavard Strand. 2002. "Armed Conflict, 1945-99: A New Dataset." *Journal of Peace Research* 39 (5): 615–37.
- Goldstein, Joshua S. 2001. *War and Gender: How Gender Shapes the War System and Vice Versa*. Cambridge: Cambridge University Press.
- Hegre, Håvard, and Nicholas Sambanis. 2006. "A Sensitivity Analysis of the Empirical Literature on Civil War Onset." *Journal of Conflict Resolution* 50 (4): 508–35.
- Kanazawa, Satoshi. 2009. "Evolutionary Psychological Foundations of Civil Wars." *Journal of Politics* 71 (1): 25–34.
- Levinson, David. 1991–95. *Encyclopedia of World Cultures, Vols. 1-10*. Boston, MA: G.K. Hall.
- Melander, Erik. 2005. "Gender Equality and Intrastate Armed Conflict." *International Studies Quarterly* 49 (4): 695–714.
- Ray, James L. 1993. "Wars between Democracies: Rare or Non-Existent?" *International Interactions* 18 (3): 251–76.
- Regan, Patrick M., and Aida Paskeviciute. 2003. "Women's Access to Politics and Peaceful States." *Journal of Peace Research* 40 (3): 287–302.
- Russett, Bruce M., and John Oneal. 2001. *Triangulating Peace: Democracy, Interdependence, and International Organizations*. New York: W.W. Norton.
- Small, Melvin, and J. David Singer. 1982. *Resort to Arms: International and Civil Wars, 1816-1980*. Beverly Hills, CA: Sage.
- Tessler, Mark, and Ina Warriner. 1997. "Gender, Feminism, and Attitudes Toward International Conflict." *World Politics* 49 (2): 250–81.
- Togebly, Lise. 1994. "The Gender Gap in Foreign Policy Attitudes." *Journal of Peace Research* 31: 375–92.
- Wimmer, Andreas, Lars-Erik Cederman, and Brian Min. 2009. "Ethnic Politics and Armed Conflict: A Configurational Analysis of a New Global Data Set." *American Sociological Review* 74 (2): 316–37.

Kristian Skrede Gleditsch is Professor, Department of Government, University of Essex, Colchester UK CO4 3SQ and Research Associate, Centre for the Study of Civil War, PRIO, Norway.

Julian Wucherpennig is PhD Candidate, Center for Comparative and International Studies, ETH Zürich, Switzerland CH-8092.

Simon Hug is Professor, Department of Political Science, Faculty of Economics and Social Sciences, University of Geneva, Switzerland CH-1211 and Centre for the Study of Civil War, PRIO, Norway.

Karina Garnes Reigstad is MA student, Centre for International Studies and Diplomacy, School of Oriental and African Studies (SOAS), University of London.