On gender and violence: an exploration using logistic regression with ordered and multinomial outcome

Yijing Qu*

E-mail: yq46@duke.edu

part 1: ordered outcome

Data and Operationalizing variables

This method paper is based on Melanders (2005) study on the correlation between political gender equality and lower level of human rights abuse carried out by state actors, for example political imprisonments and torture. The dataset covers global data from 1977 to 1996. In feminist theories, it is argued that less patriarchal societies also tend to be less tolerant of human rights abuse. Thus the key explanatory variable used in the model is political gender equality. There are two indicators for political gender equality used in the paper: the percentage of women in parliament and a dummy variable for having female political leader, which refers to positions such as president, prime minister, and minister. In the dataset covering 1977 to 1996, female leaders are rare: out of 2300 country years only 73 of them have female political leaders.

The dependent variable is the level of personal integrity rights abuse, which is measured on a scale of 0 to 4: 0 representing states with no or insignificant levels of abuse and 4 repre-

senting states with the worst level of abuse. The data is compiled by the US Department of State and Amnesty International. The different levels of human right abuse is ordinal, which means they are categorical and ordered, but the space in between is not equal. Other data for control variable used in the paper are polity type and wealth. Polity type is derived from the *polity*2 dataset, with -10 being the least democratic and 10 being the most democratic. Wealth is represented by the gross national product.

Model Specification and results

The models employed in the paper is ordered logistic regression model. Apart from the ordered dependent variable and political gender equality indicators, the model also controls for the type of polity and gross national production. In addition, because much of the data is from war time, dummy variable for both civil and international war period are controlled. In order to account for autocorrelation, a lagged dependent variable is also included in the model and all the independent variables are lagged by one year. Considering the percentage of women in parliament and female political leaders are highly correlated both in theory, we also include an interaction term between having female political leader and percentage of women in the parliament. The second model also takes into consideration of the possible interaction between wealth and polity type, or in other words levels of democracy and GNP. As we see from the BIC test, the second model produces lower BIC, which suggest that the model with interaction between wealth and democracy is a better fit.

Female political leaders are rare, but the variable is significantly associated with the level of abuse. The percentage of women in parliament is nevertheless not found to be directly associated with lower levels of human rights abuse. As in the following plot, the predicted probability for the states human rights level does not change much as the percentage of women in the parliaments go up, holding all controls constant. Yet, not surprisingly, both GNP and polity type are very significantly correlated with different levels of human rights

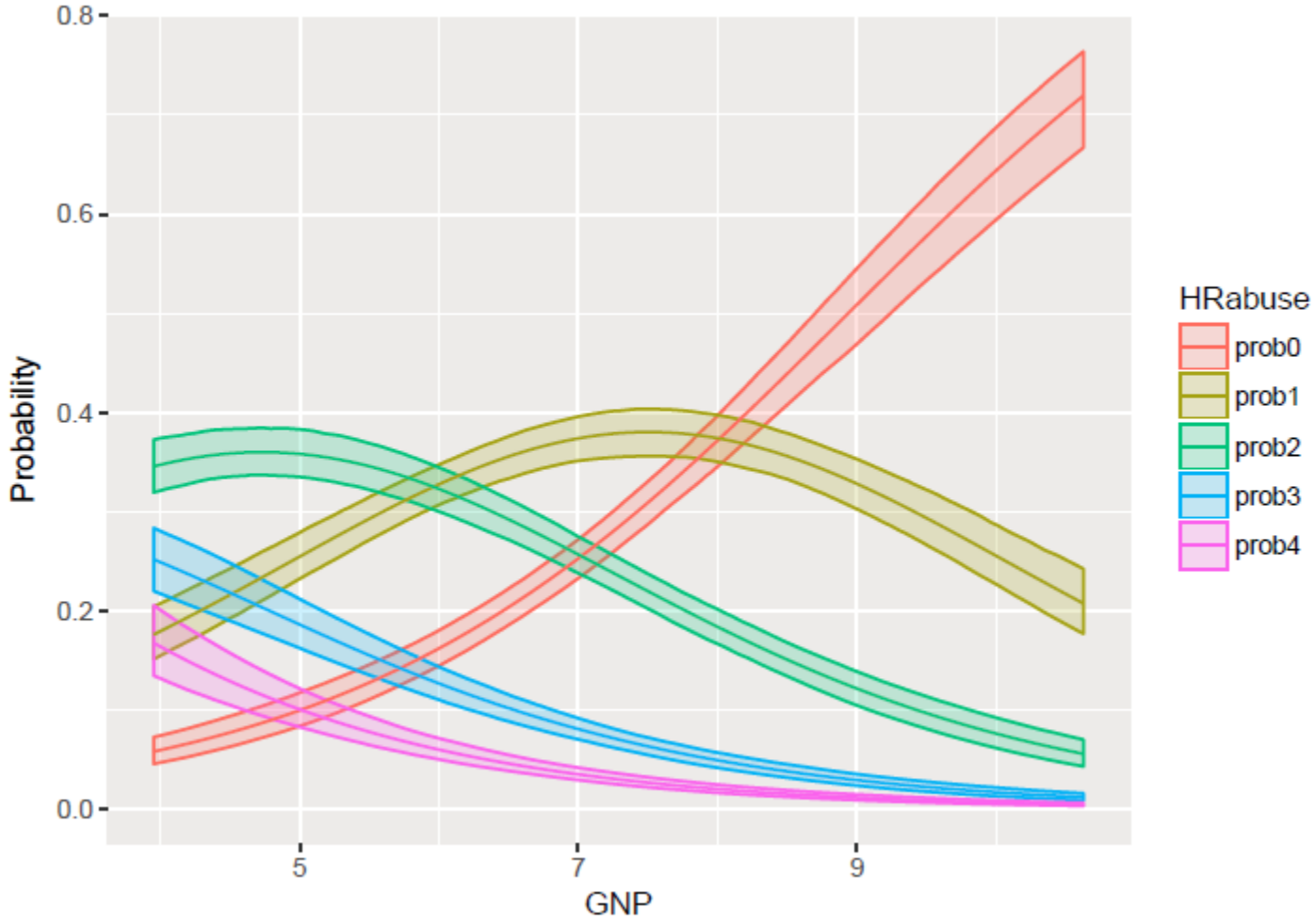
Table 1: Political gender equality and human rights abuse

	Dependent variable:		
	HRabuse		
	(1)	(2)	(3)
HRabuselag	2.470***	2.416***	2.414***
	(0.070)	(0.070)	(0.070)
civilwar	1.277***	1.291***	1.290***
	(0.185)	(0.184)	(0.184)
intlwar	0.382*	0.445**	0.446**
	(0.201)	(0.202)	(0.202)
femaleruler	0.020	−0.233	
	(0.433)	(0.466)	
parliamentRepresentation	−0.018***	−0.012**	−0.012**
	(0.006)	(0.006)	(0.006)
femruler*parliament	0.012	0.019	
	(0.033)	(0.038)	
polity	−0.040***	0.186***	0.185***
	(0.007)	(0.036)	(0.036)
GNP	−0.239***	−0.253***	−0.253***
	(0.039)	(0.040)	(0.040)
polity:GNP		−0.031***	−0.031***
		(0.005)	(0.005)
Observations	2,450	2,450	2,450
Note:			*p<0.1; **p<0.05; ***p<0.01

¿

abuse. As can be seen from the plots below that the female leadership has positive effect on human rights condition. Polity

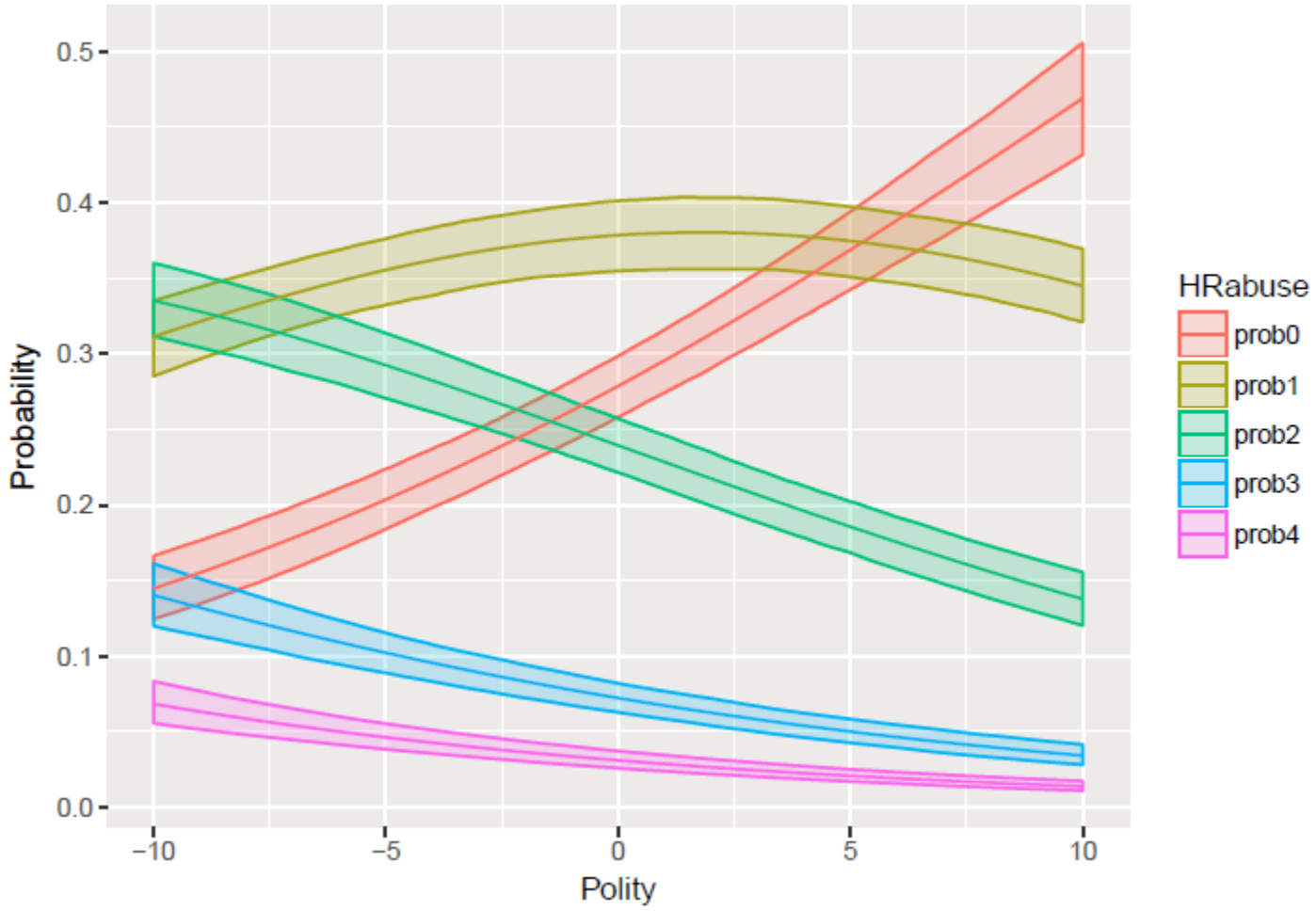
1.PNG



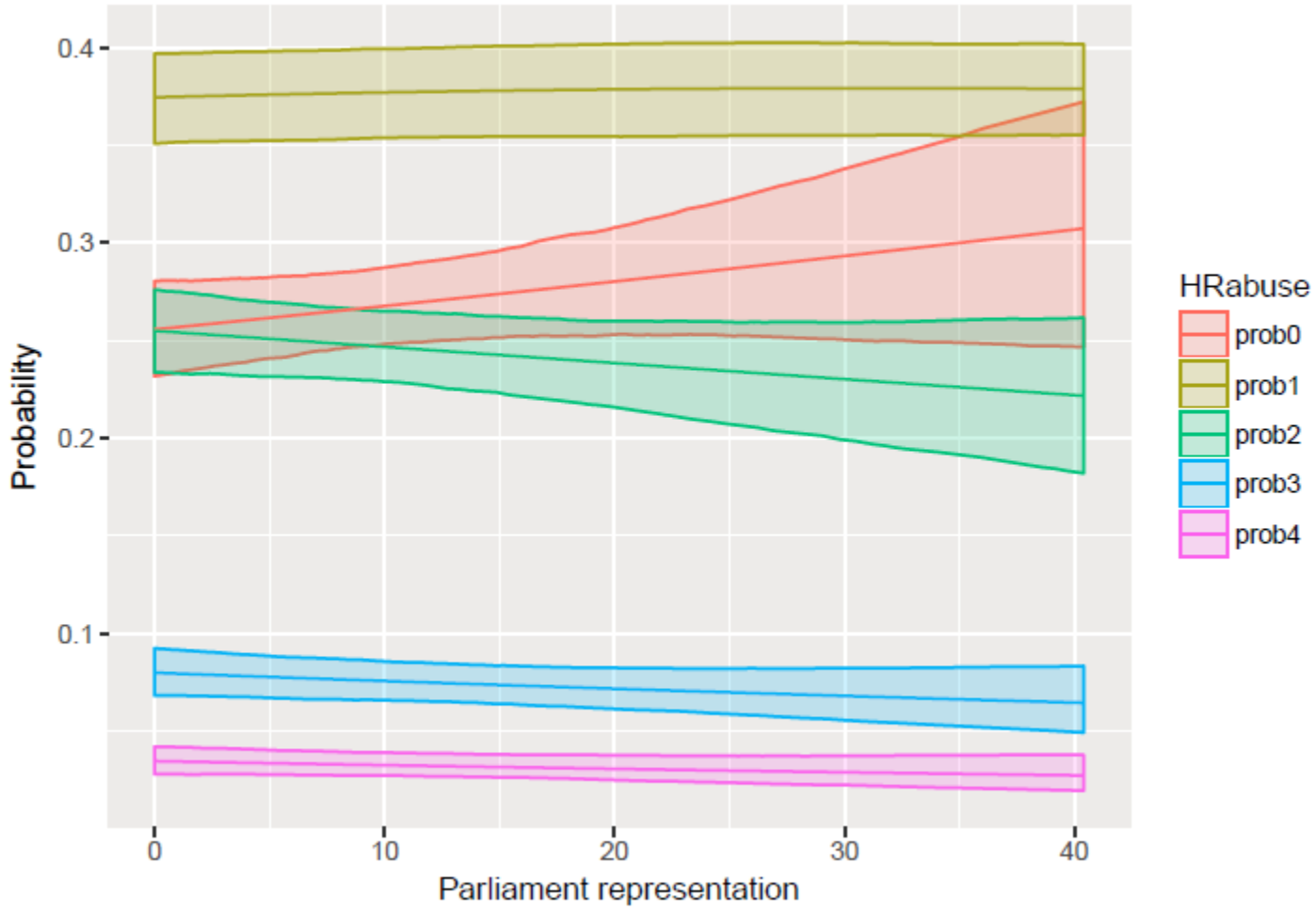
Scheme 2: Effect of GNP on the probability of levels of human rights abuse

Limitation

Like in the original paper, the modified model only explain the correlation but not the causality. There is obviously endogeneity issue when we try to discuss causality using this dataset. It is very hard to eliminate the hazard of reverse causality: whether it is because political gender equality, or more specifically, female political leaders and women in power, are likely to reduce cases and level of human rights abuse; or, equally likely, for states with



Scheme 3: Effect of polity on the probability of levels of human rights abuse



Scheme 4: Effect of female parliament participation on the probability of levels of human rights abuse

less human rights abuse, the gender equality is generally higher. Another serious problem of the casual inference can be omitted variable bias. Development and egalitarian ideology, for example, can be an omitted variable that causes lower level of human right abuse and is also highly correlated with gender equality. In this model, the gross national product is devised to function as an instrument variable for development, and polity type for egalitarian ideology, in order to minimize the omitted variable bias. However, as argued before, it is questionable to what extent they are capturing the omitted variable. It is highly possible for societies to be relatively wealthy but not fully developed nor egalitarian, which is especially true for economies depend on resources like oil. The co-variates also suffer from measurement error when measuring abstract variables such as polity type and human rights.

part 2: multinomial outcome

Data and Operationalizing variables

The second part of the paper also studies the relation between gender and use of violence. It is based on Asal et. al.s work about gender Ideologies and the political mobilization strategies employed by political groups in the Middle East. Based on previous literature that the strategic decision about employing violence, nonviolent activities, or a mixture of both, depend on the relationship with the government, success of their actions, external support, and religious or leftist ideology, Asal (2013) added gender ideology as another factor for the organizations decision making for their contentious behavior. As argued in the paper, the decision about whether to peacefully protest, use violence, or a mixture of protest and violence should be conceptualized more than continuum or scale. They are instead treated as multinomial variables because the transition from one tactic to another is motivated by a range of interactive effect produced by many variables, compared to escalating to violence or de-escalating to peaceful protest. In this sense the missed strategy is considered as a separate category rather than ordered variable in between violent and non-violent political

behavior.

The data employed in this paper is the Middle East Minorities at Risk Organizational Behavior dataset (MAROB), with data of 104 political organizations across 26 years (1980-2006). The multinomial dependent variable is the different strategies employed by the organization: 0 for non-contentious traditional political actions, which is not the target of research; 1 for non-violence protests; 3 for only using violence; 2 for mixed strategy. 57 percent of the organization years in the sample only employ non-contentious political behavior, 9 percent of the organizations only protest, 6 percent use both protest and violence, and 28 percent only with violence. The key explanatory variables are dummy variables for different ideology: gender inclusive ideology, religious ideology and leftist ideology. There are two major external factors considered– the relationship between the organization and the state, and the type of the polity itself. The polity data is derived from the Polity2 dataset and the Freedom House dataset, varying from 0 to 10: 0being the least democratic and 10 being fully functioning democracy. The relationship between the organization and the state is measured by the level of violence conducted by the government against the organization: 0 for State is not using lethal violence against the organization; 1 for State is using periodic lethal violence against the organization; 2 for State is using consistent lethal violence against the organization.

Model Specification and results

The hypotheses to be tested in the research include following: gender inclusive ideology is predictive for organizations inclination of acting non-violently or resort to non-contentious political activities; gender inclusive ideology is negatively correlated with only employing violence as strategy; violence carried out by the state is also highly predictive for the organization to be involved in violent activities; the polity type is correlated with the level of violence conducted by the state actors. This paper employs a time series multinomial logistic

regression analysis to examine the relationship between the ideologies of political organizations in Middle Eastern countries and their political behavior. The dependent variable is the 4 levels of multinomial outcomes and key explanatory variables are the gender inclusive, leftist and religious ideologies. The first model also control for the states polity type, considering if the organizations are based in a functioning democracy, they are more likely to resort to either traditional political channels, for example legislation, or more peaceful contentious activities like protest and public demonstration, compared to violence. Similarly, they are more likely to engage in violent activities if living under dictatorship, the organizations are more likely to resort to violence if they are suppressed by the state with violence. Thus the first model also control for the level of violent suppression carried out by the state actor. The dependent variable is lagged by two years and three years to account for the autocorrelation of the dependent variable.

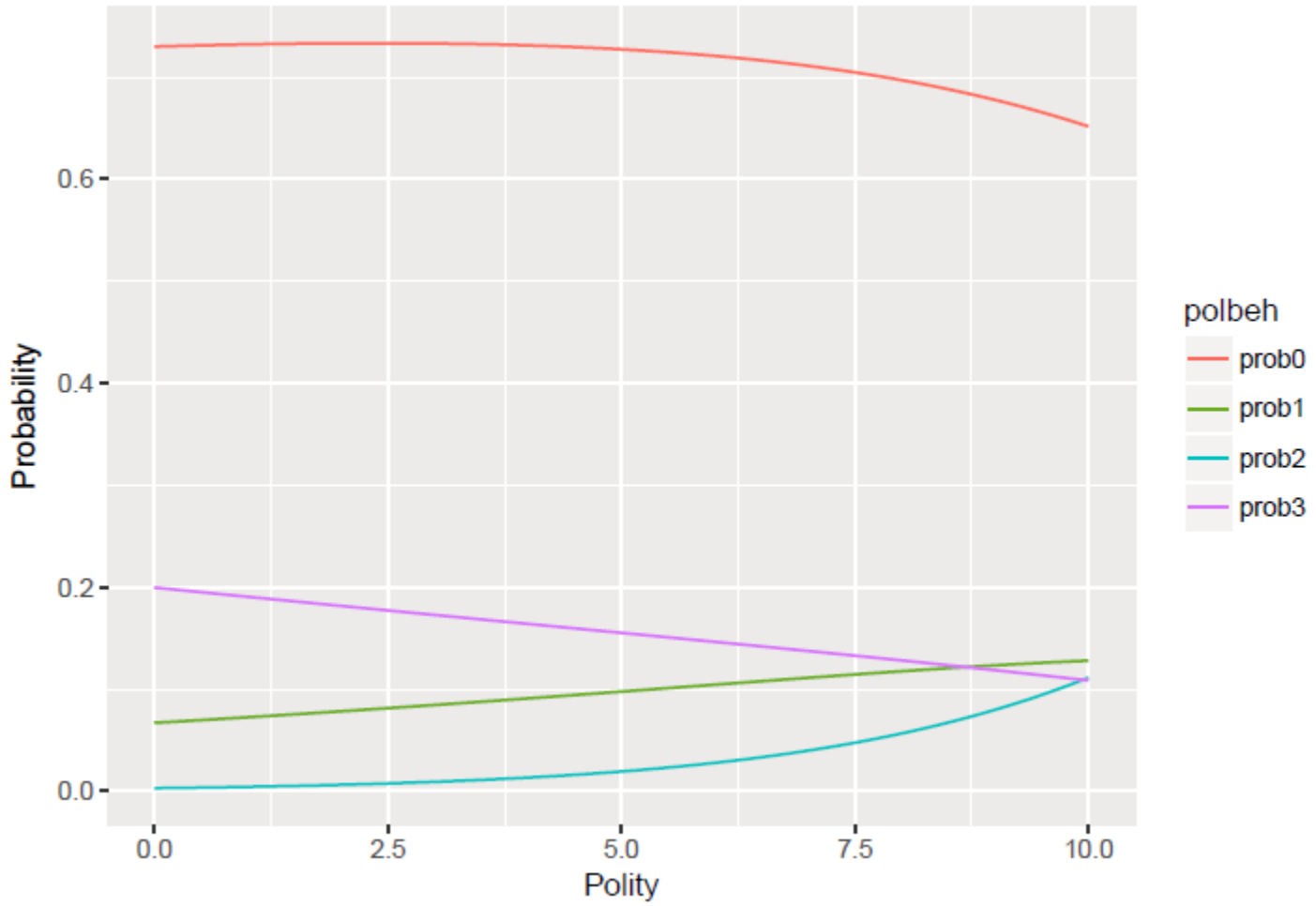
The result is significant for gender as an ideology. Gender inclusive ideology significantly unlikely to be organizations that only employs violence. As shown in the following plot, the probability changes drastically for using only violence and using non-violence as strategy when gender variable is present. Violence carried out by state actor is also highly predictive: as the level of violence escalate, the probability of the organization to go through traditional political channels almost diminishes to zero, and the third and fourth categories (mixed strategy and only violence), the probabilities soar to almost 0.4 and 0.6 respectively. The effect of polity on the political behavior choice is less significant, since when controlling everything else and setting state conducted violence to zero, most of the organizations resort to traditional political channels across different polity types.

The second model includes the interactive effect between polity type and violence level conducted by the state against the organizations. The assumption is that there will be less violence from the state actors in democracies. Contradictory to our hypothesis, the

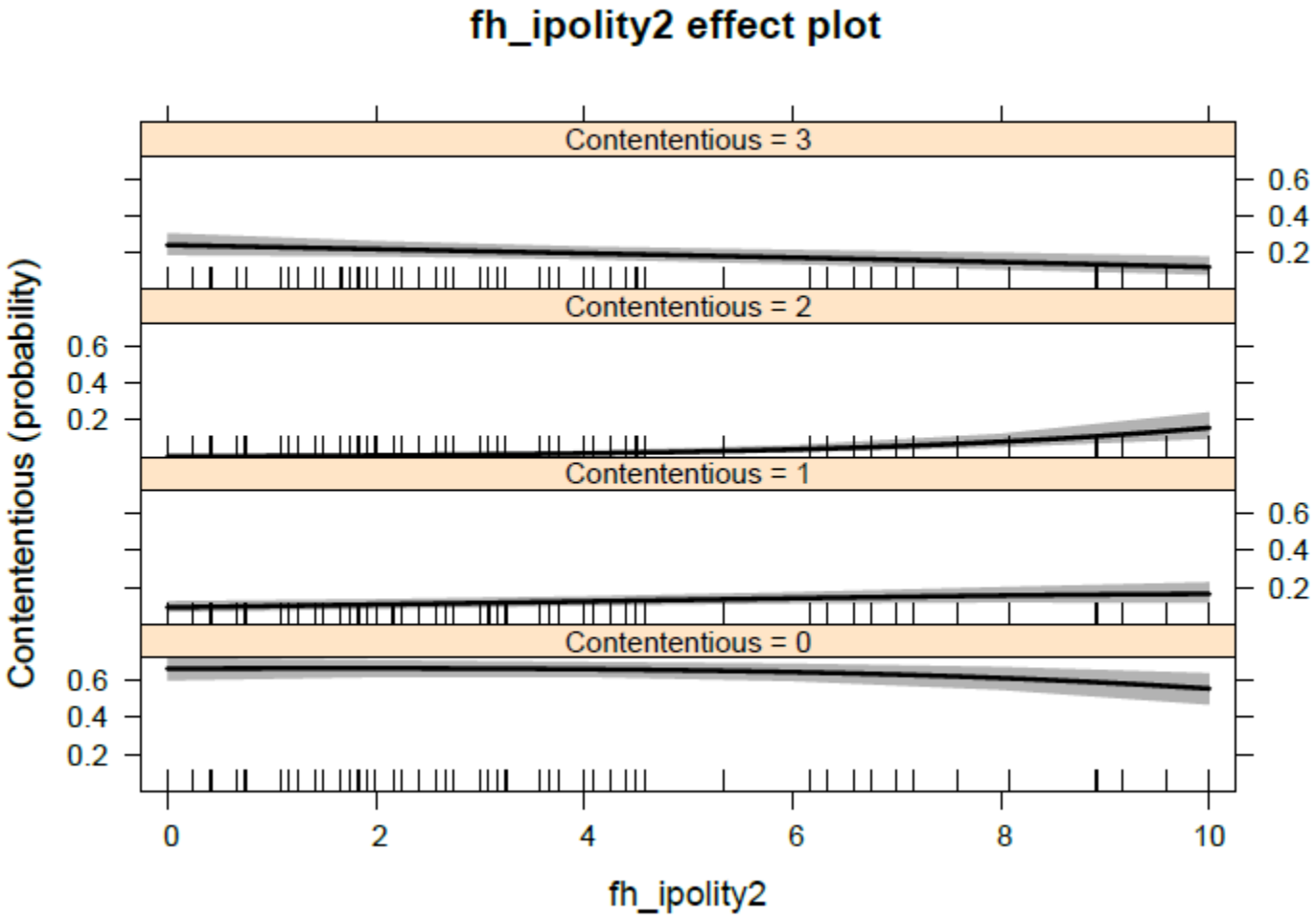
Table 1: gender ideology and contentious activities

	model1			*model2*		
	1	2	3	1	2	3
	(non-vio)	(mix)	(only vio)	(non-vio)	(mix)	(only vio)
DVtwolag	0.109	0.832***	0.644***	0.109	0.823***	0.642***
	(0.113)	(0.167)	(0.078)	(0.113)	(0.167)	(0.078)
DVthreelag	0.182*	0.682***	0.623***	0.181*	0.681***	0.623***
	(0.108)	(0.163)	(0.077)	(0.108)	(0.163)	(0.077)
polity	0.076**	0.371***	−0.050	0.078**	0.321***	−0.048
	(0.030)	(0.052)	(0.035)	(0.031)	(0.062)	(0.038)
Gender	0.898***	−1.123**	−1.025***	0.894***	−1.133**	−1.002***
	(0.232)	(0.517)	(0.303)	(0.232)	(0.539)	(0.301)
Religion	0.292	1.345***	0.144	0.295	1.350***	0.148
	(0.281)	(0.370)	(0.242)	(0.282)	(0.371)	(0.243)
Leftism	0.018	−0.196	0.388*	0.020	−0.235	0.396*
	(0.251)	(0.398)	(0.231)	(0.251)	(0.408)	(0.231)
StateViolence	0.697	3.227***	2.245***	0.772	2.699***	2.070***
	(0.457)	(0.361)	(0.315)	(0.666)	(0.553)	(0.447)
polity*Stateviolence				−0.017	0.114	0.036
				(0.134)	(0.099)	(0.090)
Constant	−2.714***	−7.175***	−2.718***	−2.722***	−6.894***	−2.717***
	(0.256)	(0.597)	(0.257)	(0.258)	(0.622)	(0.263)
Akaike Inf. Crit.	1,912.852	1,912.852	1,912.852	1,916.542	1,916.542	1,916.542

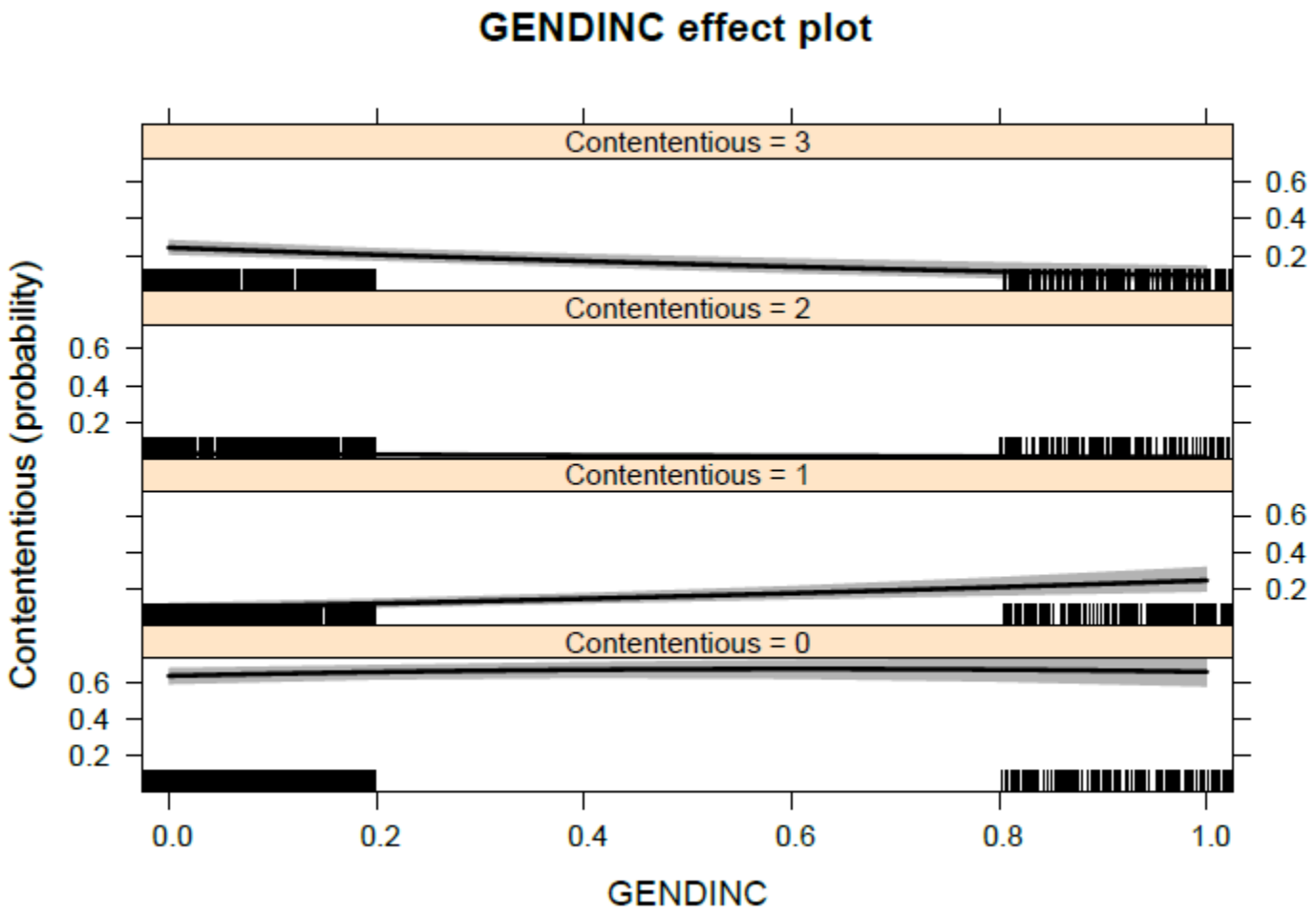
Note: *p<0.1; **p<0.05; ***p<0.01



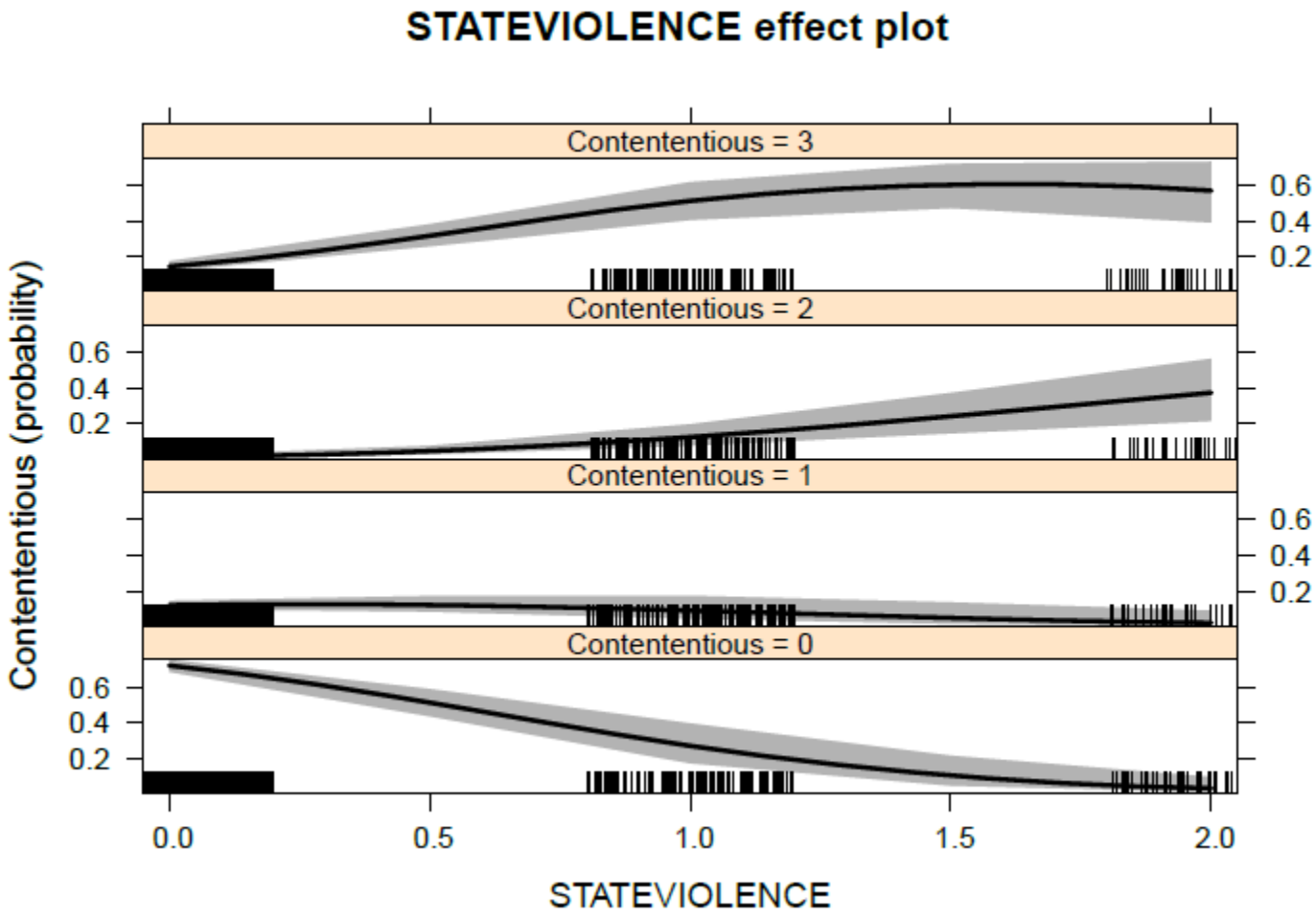
Scheme 6: Effect of polity type on the probability of strategies used by political organizations



Scheme 7: Effect of polity type on the probability of strategies used by political organizations



Scheme 8: Effect of polity type on the probability of strategies used by political organizations



Scheme 9: Effect of polity type on the probability of strategies used by political organizations

interaction term is nevertheless not significant and the correlation between the two terms are low. The BIC test suggest that the model does not fit better with an additional interaction term. Considering the high correlation between organizations level of violence and violence against the organization, an alternative hypothesis can be that rather than related with polity type as an individual specific characteristic, state level violence is more of an alternative specific characteristic: the more violent the state action is, the more violent the political group becomes, regardless of the polity type.

Limitation

The model used by Asal (2013) has a significant advantage in dealing with autocorrelation. The author test the autocorrelation error to ensure the including two and three-year lag is optimal.Unlike previous study, the causality seems to be only one-way, as ideology directs political behavior, and not the other ways around, although it might be arguable that the peaceful behavior tend to attract and mobilize women as the support group and the foundation of action, and thus the leadership of the organization decide to be ideologically gender inclusive. However, the state level violence as a variable can trigger endogeneity issue: organizations will receive more violent treatment if they engage in violent activities at the first place.

In terms of technical issue, both polity and state level violence in the model are computed as continuous variable for the better presentation in the plots and table. Nevertheless, the two variables are theoretically categorical and should be treated as factors.

References

.

Asal, V., R. Legault, O. Szekely and J. Wilkenfeld (2013). "Gender ideologies and forms

of contentious mobilization in the Middle East." Journal of Peace Research 50(3): 305 – 318.

Melander, E. (2005). "Political Gender Equality and State Human Rights Abuse." Journal of Peace Research 42(2): 149 – 166.