ARTICLE IN PRESS

+ MODEL

Available online at www.sciencedirect.com

ScienceDirect

Electoral Studies xx (2006) 1–9

Electoral Studies

www.elsevier.com/locate/electstud

Are African party systems different?

Thomas Brambor [a], William Roberts Clark [b], Matt Golder [c,*]

[a] Stanford University, Department of Political Science, Encina Hall West, Stanford, CA 94305-6044, USA
[b] University of Michigan, Center for Political Studies and Department of Political Science, ISR 4202 Box 1248, 426 Thompson Street, Ann Arbor, MI 48106-1248, USA
[c] Florida State University, Department of Political Science, 531 Bellamy Building, Tallahassee, FL 32306-2230, USA

Abstract

Recently Mozaffar et al. [Mozaffar, S., Scarritt, J.R., Galaich, G., 2003. Electoral institutions, ethnopolitical cleavages and party systems in Africa's emerging democracies. American Political Science Review 97, 379–390] presented evidence suggesting that African party systems are somehow different from party systems elsewhere in the world. In doing so, they promoted the common notion of African exceptionalism. We believe that their conclusions are open to question because they draw inferences from a number of multiplicative interaction models in which they do not include all constitutive terms, interpret constitutive terms as unconditional marginal effects, and fail to calculate marginal effects and standard errors over a sufficiently large range of their modifying variables. By correcting these practices, we reach substantively different conclusions. Specifically, we find that African party systems respond to institutional and sociological factors such as district magnitude and ethnic fragmentation in the same way as party systems in more established democracies.
© 2006 Elsevier Ltd. All rights reserved.

Keywords: Africa; Party system; District magnitude; Ethnic heterogeneity

1. Introduction

Recently Mozaffar et al. (2003) presented evidence suggesting that African party systems are somehow different to party systems elsewhere in the world. They draw on information from 62 legislative elections in 34 African countries that held multiparty elections between 1980 and 2000 to examine how ethnopolitical cleavages and electoral institutions interact to determine party system size. They conclude that "high ethnopolitical fragmentation is likely to reduce the number of parties" (381) and that "district magnitude substantially reduces the number of electoral and legislative parties" (384) in Africa. These conclusions are quite startling given that they run directly counter to almost 50 years of party system research elsewhere in the world showing that ethnic fragmentation and district magnitude both *increase* party system size (Duverger, 1954; Powell, 1982; Riker, 1982; Amorim Neto and Cox, 1997; Clark and Golder, 2006). By explaining their findings in terms of the "distinctive morphology of African ethnopolitical groups" (385), Mozaffar et al. (MSG) promote the common notion of African exceptionalism. In this article, we show that MSG's unusual findings are actually the result of an inadequate

* Corresponding author. Tel.: +1 850 644 7302; fax: +1 850 644 1367.
E-mail addresses: thomas.brambor@stanford.edu (T. Brambor), wrclark@umich.edu (W.R. Clark), mgolder@fsu.edu (M. Golder).

0261-3794/$ - see front matter © 2006 Elsevier Ltd. All rights reserved.
doi:10.1016/j.electstud.2006.06.011

specification and incorrect interpretation of their interaction model. Our analysis indicates that African party systems are not qualitatively different from party systems in more established democracies.

MSG make at least three contributions to the recent literature addressing the sociological and institutional determinants of party systems. First, they extend recent analyses of party system determinants to emerging democracies in Africa. Second, they provide a new measure of ethnic fragmentation that attempts to capture only those ethnic groups that are politically salient. Third, they conduct the first systematic analysis of how the geographic concentration of ethnic groups affects party system size. While we recognize the importance of these contributions, the conclusions reached by MSG are open to question because they draw inferences from interaction models in which they (i) do not include all of the constitutive terms, (ii) interpret constitutive terms as unconditional marginal effects, and (iii) fail to calculate marginal effects and standard errors over a sufficiently large range of their modifying variables (Brambor et al., 2006). Using data generously provided by MSG, we reach substantively different conclusions once we correct these practices. In direct contrast to MSG, we find that African party systems respond to institutional and sociological factors such as district magnitude and ethnic fragmentation in the same way as more established party systems. At least with regards to these characteristics, African party systems do not seem to be particularly distinctive at all.

2. Model specification and results

Following the example of prominent works in the party system literature, MSG are interested in the institutional and sociological determinants of the number of parties. Specifically, they examine the institutional effects of district magnitude and the sociological effects of ethnic group fragmentation and geographic concentration on party system size.[1] To examine these features, MSG specify (i) a pure institutional model, (ii) a pure sociological model, (iii) an additive socio-institutional model, and (iv) an interactive socio-institutional model. Given the growing consensus that institutional and sociological factors interact to determine the number of parties (Duverger, 1954; Ordeshook and Shvetsova, 1994; Amorim Neto and Cox, 1997; Clark and Golder, 2006), we focus our attention primarily on the interactive socio-institutional model. The fully-specified interactive socio-institutional model is:

$$\begin{aligned}\text{Parties} = {} & \beta_0 + \beta_1 \text{Fragmentation} \\ & + \beta_2 \text{Concentration} \\ & + \beta_3 \log(\text{Magnitude}) \\ & + \beta_4 \text{Fragmentation} \times \text{Concentration} \\ & + \beta_5 \text{Fragmentation} \times \log(\text{Magnitude}) \\ & + \beta_6 \text{Concentration} \times \log(\text{Magnitude}) \\ & + \beta_7 \text{Fragmentation} \times \text{Concentration} \\ & \times \log(\text{Magnitude}) + \beta_8 \text{Proximity} \\ & + \beta_9 \text{Presidential candidates} \\ & + \beta_{10} \text{Proximity} \\ & \times \text{Presidential candidates} + \varepsilon \end{aligned} \quad (1)$$

Parties and Fragmentation measure the effective number of legislative parties and ethnic groups respectively.[2] Concentration captures the geographic concentration of ethnic groups. It is calculated as $\Sigma g_i c_i$ where g_i is the percentage of the population comprised by the ith ethnic group and c_i is a categorical variable indicating the geographic concentration of each group; c_i is zero if the group is widely dispersed, one if it is primarily urban or a minority in one region, two if it is a majority in one region but dispersed in others, and three if it is concentrated in one region. Magnitude is the average district magnitude and is logged to capture the intuition that the marginal effect of a unit change in district magnitude is smaller as magnitude increases. Presidential candidates measures the effective number of presidential candidates, while Proximity is a continuous measure of the temporal proximity of presidential and legislative elections. Although this is the fully-specified model, MSG actually estimate the following model:

$$\begin{aligned}\text{Parties} = {} & \gamma_0 + \gamma_1 \text{Fragmentation} \\ & + \gamma_2 \text{Concentration} \\ & + \gamma_3 \log(\text{Magnitude}) \\ & + \gamma_7 \text{Fragmentation} \times \text{Concentration} \\ & \times \log(\text{Magnitude}) + \gamma_8 \text{Proximity} \\ & + \gamma_{10} \text{Proximity} \\ & \times \text{Presidential candidates} + \nu \end{aligned} \quad (2)$$

[1] District magnitude measures the number of people elected in an electoral district. MSG also examine the institutional effect of presidential elections. Due to space constraints, we do not address this aspect of MSG's analysis in what follows. However, we can report that none of MSG's claims regarding presidential elections are supported by their data once we correctly specify and interpret their model. These additional results are available on request.

[2] Although MSG examine both electoral and legislative parties, we focus purely on legislative parties here. We can confirm that our claims apply equally well to their analysis of electoral parties.

Please cite this article as: Thomas Brambor et al., Are African party systems different?, Electoral Studies (2006), doi:10.1016/j.electstud.2006.06.011

The difference between models (1) and (2) is that MSG omit four constitutive terms. These are Fragmentation × log(Magnitude), Fragmentation × Concentration, Concentration × log(Magnitude), and Presidential candidates. By constitutive terms, we mean each of the elements that constitute an interaction term. Except in very rare circumstances that do not apply here, all constitutive terms should be included when specifying multiplicative interaction models (Brambor et al., 2006). This is because all of the parameters of interest will be estimated with bias if the coefficient on any omitted term is not exactly zero. The problem with omitting constitutive terms becomes clearer once one recognizes that this is equivalent to specifying a model without a constant term and forcing the regression line to go through the origin irrespective of the data. This equivalency arises due to the fact that constitutive terms help determine the intercept of the regression line. Just as it is commonly acknowledged that specifying a model without a constant term can have serious consequences for drawing valid inferences, it should be recognized that omitting constitutive terms in interaction models leads to the exact same problems.

By omitting the four constitutive terms that they do, MSG are implicitly assuming that $\beta_4 = \beta_5 = \beta_6 = \beta_9 = 0$. To be justified in making this assumption, MSG would at the very least have to provide a good theoretical argument as to why these variables have no effect on party system size when the relevant modifying variables are zero. However, at no point do MSG ever provide such a theoretical argument. In fact, MSG are not in a position to make such an argument since analysts can only have a theoretical justification for omitting constitutive terms if their variables are measured with a natural zero. This is because the coefficient on any constitutive term can be manipulated by arbitrarily rescaling the variables unless there is a natural zero (Braumoeller, 2004; Brambor et al., 2006). In other words, analysts such as MSG have no way of predicting *a priori* what the coefficient on a constitutive term will be before actually estimating their models. As a result, they should always include all of the constitutive terms. We will show that almost none of MSG's inferences concerning African party systems can be sustained once we estimate and correctly interpret the fully-specified model.

The results of our reanalysis are presented in Table 1. Despite exhaustive efforts, we were unable to exactly replicate the results presented by MSG.[3] As a result, the numbers presented in the 'MSG' columns are taken directly from the corresponding columns in Table 2 of their article. Although worrisome, the fact that we were unable to replicate their results is not an issue that we wish to address here. We are more concerned with the specification and inferential errors that MSG make. The remaining columns in Table 1 present the results from our reanalysis when a fully-specified model is employed. With the exception of the last column, all of the fully-specified models use the (STATA formatted) data provided by MSG. Because we noticed several errors in the MSG data, we use the last column in Table 1 to present results from a fully-specified model that uses corrected data.[4] We should note at this point that our claims regarding the errors in MSG's analysis *do not* depend on whether we use the data that they provide or the corrected data.

3. The effect of ethnopolitical fragmentation

Contrary to at least 50 years of research suggesting that ethnic heterogeneity encourages the formation of political parties, MSG argue that "high ethnopolitical fragmentation is likely to reduce the number of parties" (381). According to MSG, this happens because high fragmentation either produces "such a high degree of vote dispersion among large numbers of small parties that most are unlikely to secure enough votes to win seats or produces small numbers of large multi-ethnic parties by encouraging them to campaign for votes across intergroup and intragroup cleavages" (381).

[3] MSG kindly make two versions of their data available online (one in Excel, one in STATA). We noticed that the average district magnitude for Benin in 1995 and for Sao Tomé et Principe in 1994 differ across the two datasets. We were unable to replicate MSG's results using either dataset. When contacted, MSG were unable to help us with our attempts at replication. We also noticed that Benin was coded as having a Concentration score of 3.24 even though the maximum possible score for this variable is 3. Finally, the data also indicate that MSG use the log of average district magnitude rather than the "natural log of district magnitude" as they report (383).

[4] We found several errors in the MSG data. For example, the average district magnitude of Angola in 1992 is reported as 220. While the Angolan legislature did have 220 seats, 130 were allocated in an upper tier with the remaining 90 seats distributed among 18 districts. Thus, the average district magnitude at the constituency level is actually five. As another example, MSG record that Proximity is zero for Niger in 1993. Since legislative and presidential elections occurred within 2 weeks of each other in 1993, Proximity should be one according to the way this variable is constructed. We noticed several other errors similar to these. As we discuss in more detail a little later, we also believe that the Concentration variable is coded misleadingly for 11 observations.

Please cite this article as: Thomas Brambor et al., Are African party systems different?, Electoral Studies (2006), doi:10.1016/j.electstud.2006.06.011

ARTICLE IN PRESS
+ MODEL

Table 1
Institutional and sociological determinants of the effective number of legislative parties (dependent variable: effective number of legislative parties)

Regressor	Institutional		Sociological		Additive socio-institutional		Interactive socio-institutional		
	MSG	Fully-Specified	MSG	Fully-Specified	MSG	Fully-Specified	MSG	Fully-Specified	Fully-Specified Corrected Data
Fragmentation			−0.03**	−0.35**	−0.03**	−0.25*	−0.01*	−0.31*	−0.03
			(0.01)	(0.12)	(0.01)	(0.10)	(0.00)	(0.12)	(0.21)
Concentration			0.17	−0.20	0.09	−0.54**	0.49**	0.11	0.29
			(0.16)	(0.27)	(0.18)	(0.19)	(0.19)	(0.27)	(0.29)
Log(Magnitude)	0.17	0.17			0.26	0.34**	−0.65**	0.66	0.23
	(0.20)	(0.12)			(0.17)	(0.12)	(0.23)	(0.45)	(0.47)
Fragmentation × Concentration			0.02**	0.26**	0.02**	0.24**		0.15**	0.01
			(0.01)	(0.08)	(0.01)	(0.06)		(0.05)	(0.07)
Fragmentation × Log(Magnitude)								−0.07	−0.07
								(0.10)	(0.08)
Concentration × Log(Magnitude)								−0.86*	−0.32
								(0.35)	(0.20)
Fragmentation × Concentration × Log(Magnitude)							0.01**	0.18*	0.11*
							(0.00)	(0.08)	(0.04)
Proximity	−2.76**	−1.22**			−1.98**	−0.83	−1.90**	−0.58	−0.62
	(0.62)	(0.45)			(0.50)	(0.46)	(0.44)	(0.43)	(0.58)
Presidential candidates		0.60**				0.54**		0.50**	1.24**
		(0.18)				(0.19)		(0.18)	(0.40)
Proximity × Presidential candidates	0.89**	0.14			0.53**	−0.03	0.58**	0.04	−0.50
	(0.20)	(0.29)			(0.17)	(0.30)	(0.16)	(0.27)	(0.37)
Constant	2.66**	1.43**	1.65**	2.08**	2.09**	1.45**	2.12**	1.27**	0.31
	(0.48)	(0.23)	(0.15)	(0.23)	(0.30)	(0.28)	(0.31)	(0.30)	(1.11)
R^2	0.24	0.45	0.40	0.40	0.53	0.69	0.52	0.76	0.73
N	62	62	62	62	62	62	62	62	62

*$p < 0.05$; **$p < 0.01$ (two-tailed); robust standard errors in parentheses.

Please cite this article as: Thomas Brambor et al., Are African party systems different?, Electoral Studies (2006), doi:10.1016/j.electstud.2006.06.011

MSG then claim that the geographic concentration of ethnic groups helps "to counteract the reductive effect of ethnopolitical fragmentation on the number of parties" (381). Finally, the authors claim that this moderating effect itself "will depend on the district magnitude" (381).

We find the claim that ethnic fragmentation should reduce the number of parties somewhat odd. One of the quotations cited above indicates that MSG themselves believe that ethnic fragmentation can lead to a "large number of small parties". In other words, they seem to accept that ethnic fragmentation can lead to a large number of electoral parties. Their claim that only a small number of these parties will actually win seats is really only a claim about legislative parties and relies, presumably, on there being a disproportional electoral system where votes are not accurately translated into seats. A more plausible statement about ethnic fragmentation's effect is that it will increase the effective number of parties so long as the electoral system is sufficiently permissive (Duverger, 1954; Clark and Golder, 2006). District magnitude matters in this causal story because it is the decisive factor determining electoral system permissiveness. District magnitude moderates the expansionary effect of ethnic fragmentation through its mechanical effect on the way votes are translated into seats and through its strategic effect on the way voters and political entrepreneurs behave at election time. This suggests that ethnic fragmentation should only increase party system size when the district magnitude is sufficiently large; it should never *reduce* the number of parties. Finally, we expect the expansionary effect of ethnic fragmentation to be stronger when ethnic groups are geographically concentrated (Riker, 1982). This is because the benefits of organizing along ethnic lines are likely to be larger in these circumstances.

MSG claim that their results support their hypotheses. First, they state that "ethnopolitical fragmentation independently reduces the number of electoral and legislative parties" based on sociological and additive socio-institutional models that do not include the interaction term Fragmentation × Concentration. These results are not actually presented by MSG; instead, they are referred to in footnote 7 of their article. MSG explain their unusual findings in terms of the "distinctive morphology of African ethnopolitical groups" (385). When attempting to replicate these results, we were unable to find any evidence that ethnic fragmentation ever had a significant independent reductive effect on the number of legislative parties. According to our analysis, the coefficient and standard error associated with Fragmentation were 0.04 (0.06) in the sociological model and 0.07 (0.06) in the additive socio-institutional model.[5] In other words, we found no evidence that the morphology of African ethnopolitical groups was distinctive.

Although MSG claim that ethnic fragmentation reduces the number of parties in general, they go on to say that ethnopolitical concentration should counteract this reductive effect. This suggests that the coefficient on Fragmentation should be negative and that the coefficient on Fragmentation × Concentration should be positive. The results from the sociological and additive socio-institutional model in Table 1 appear to support this finding. However, the quantity of interest is really the marginal effect of ethnic fragmentation and how this is modified by group concentration. To examine this requires calculating the marginal effect of ethnic fragmentation at various levels of group concentration. To some extent, MSG do this (385). Using the results from the sociological model, they report that a one unit increase in ethnic fragmentation will lead to 0.04 more parties when geographic concentration is high (2.56) and 0.04 fewer parties when group concentration is low (0.63).

While we believe that reporting these numbers is better than simply presenting a traditional table of results such as Table 1, the information that can be gleaned from them is rather limited. First, the numbers that MSG report come from the pure sociological model. MSG never provide information about the marginal effect of ethnic fragmentation from the additive socio-institutional model or their preferred interactive socio-institutional model. Second, there is no way of knowing if the marginal effect of ethnic fragmentation is statistically significant at these levels of group concentration since no standard errors are provided. Finally, the reported numbers represent only a snapshot of ethnic fragmentation at two levels of group concentration. Much more useful information can be obtained by calculating the marginal effect and standard error for ethnic fragmentation across a substantively meaningful range of the modifying variables.

[5] Testing for the independent effect of Fragmentation raises significant interpretation issues if we actually believe that Fragmentation influences the number of parties interactively with Concentration as MSG do. This is because the results from an unconditional model specification not only capture the underlying causal effect of Fragmentation, but also the distribution of the omitted modifying variable Concentration. In practice, it makes little sense to talk about the unconditional effect of ethnic fragmentation when we have a conditional hypothesis (Brambor et al., 2006).

Please cite this article as: Thomas Brambor et al., Are African party systems different?, Electoral Studies (2006), doi:10.1016/j.electstud.2006.06.011

This is precisely what we do in Fig. 1 using the results from the fully-specified interactive socio-institutional model. Fig. 1(a) uses data from MSG, while Fig. 1(b) uses the corrected data. Figs. 1(a,b) plot the marginal effect of ethnic fragmentation (the solid sloping lines) as the permissiveness of the electoral system changes and at different levels of group concentration. The marginal effect of ethnic fragmentation is calculated as

$$\frac{\partial \text{Parties}}{\partial \text{Fragmentation}} = \beta_1 + \beta_4 \text{Concentration} + \beta_5 \log(\text{Magnitude}) + \beta_7 \text{Concentration} \times \log(\text{Magnitude})$$

Because the use of confidence intervals for each sloping line would make Fig. 1 hard to read, we indicate when the marginal effect of ethnic fragmentation is significant at the 95% level by placing a star at these points.[6]

We remind the reader that MSG claim that 'high ethnopolitical fragmentation is likely to reduce the number of parties' in Africa (381). In what follows, we show that if this is the case at all, it is under extremely rare circumstances. In fact, when ethnic fragmentation has a statistically significant effect on party system size it is much more likely to be positive than negative.

Using data from MSG, Fig. 1(a) suggests that ethnic fragmentation does reduce the number of parties when Concentration is zero. On the face of it, this would seem to support MSG's claim that ethnic fragmentation reduces the number of parties at low levels of group concentration (385). However, this is not the case. There are 12 observations for which group concentration is coded as zero. Of the 12, 11 have a Fragmentation score of *exactly* one. In other words, 11 of these observations have a single ethnopolitical group. The way the Concentration score is calculated simply indicates that these single groups are geographically dispersed across their respective countries. It should be obvious that in electoral (and geographic) terms, the fact that there is *exactly* one ethnopolitical group in a country means that it must be 'concentrated' in each electoral district; this is simply an artefact of having only one ethnopolitical group in the country. As a result, it seems misleading to code these observations as having a Concentration score of zero.

The corrected data takes account of our concerns and recodes these 11 observations as having a Concentration score of three (maximally concentrated). Once we do this, there is no longer any evidence that ethnic fragmentation ever significantly reduces the number of parties (Fig. 1(b)). In contrast, there is considerable evidence that ethnic fragmentation increases the number of parties under a wide set of circumstances. More specifically, Fig. 1(b) indicates that ethnic fragmentation increases the number of parties when district magnitude is sufficiently large and when ethnic groups are sufficiently concentrated geographically (Concentration > 1). As we predict, ethnic fragmentation never has a significant effect on the number of parties in highly non-permissive electoral systems such as those with single member districts (when $\log(\text{Magnitude}) = 0$). These results support our causal story, but not MSG's claim that ethnic fragmentation generally reduces the number of parties (381).

To summarize, our analysis indicates that MSG incorrectly imply that the effect of ethnic fragmentation is qualitatively different in African party systems compared to its effect in party systems elsewhere. While it is true that there is some limited evidence that ethnopolitical fragmentation may lead to fewer parties when ethnic groups are radically decentralized using the MSG data, 11 out of 12 of these observations occur when the 'decentralized' ethnic group is the only ethnopolitical group in the country. In that sense, the status of these groups as 'decentralized' is artificial. Once the data is recoded to recognize this, there is no evidence that ethnic fragmentation ever has a significant reductive effect on party system size. In fact, ethnopolitical fragmentation appears to have the effect that scholars since Duverger (1954) suggest that it should have—it either has no effect or it increases the number of parties depending on the permissiveness of the electoral system. We recognize that some readers may disagree with our criticism of the Concentration variable and prefer to use MSG's data and Fig. 1a. However, even if you do this, the evidence still suggests that in 80% of the sample ethnic fragmentation either has no effect on the number of parties or increases it. In other words, it is extremely

[6] The reader may have noticed that almost all of the model parameters in the last column of Table 1 are insignificant at the 95% level. It would be wrong to immediately conclude from this that Fragmentation, Concentration, and Magnitude never have a significant effect on the number of parties. This is because we are primarily concerned with whether the marginal effect of Fragmentation is ever significant and not with whether any specific coefficient is individually significant. If the covariance terms in the standard error of the marginal effect are negative, then it is entirely possible for the effect of Fragmentation to be significant even if β_1, β_4, β_5, and β_7 are all statistically insignificant. In fact, Fig. 1(b) clearly illustrates this point since ethnic fragmentation does significantly influence the number of parties over a wide range of its modifying variables. The more general point here is that insignificant coefficients on interaction terms should not be taken as evidence for the absence of statistically or substantively meaningful modifying effects (Brambor et al., 2006).

Please cite this article as: Thomas Brambor et al., Are African party systems different?, Electoral Studies (2006), doi:10.1016/j.electstud.2006.06.011

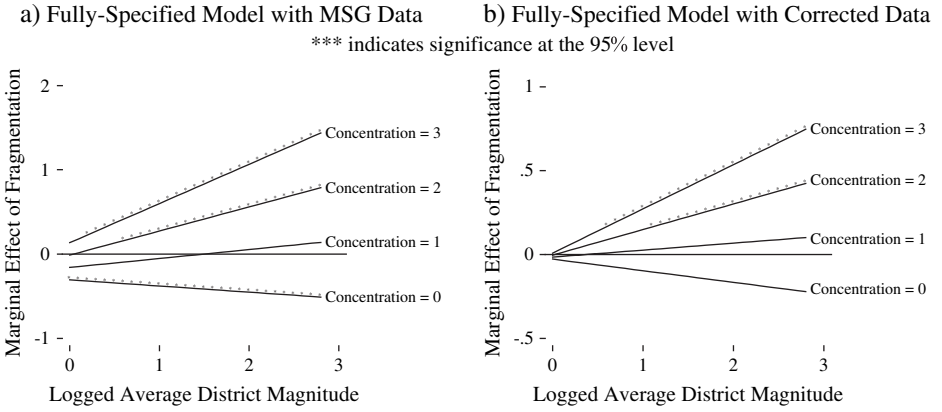

Fig. 1. Marginal effect of ethnopolitical fragmentation on the effective number of legislative parties.

difficult to justify MSG's claim that "high ethnopolitical fragmentation is likely to reduce the number of parties" (381) even when we stick with their own data.

4. The effect of district magnitude

MSG also claim that "district magnitude substantially reduces the number of electoral and legislative parties" (387). Note that this is in direct contradiction to all previous work examining the effect of electoral system proportionality on party system size (Duverger, 1954; Riker, 1982; Powell, 1982; Taagepera and Shugart, 1989; Lijphart, 1994; Amorim Neto and Cox, 1997; Clark and Golder, 2006). MSG make their claim based on the fact that the coefficient on district magnitude (β_3) is negative and significant in their interactive socio-institutional model. The problem is that this coefficient only represents the marginal effect of district magnitude when there are no ethnopolitical groups and when group concentration is zero. This is easy to see once one remembers that the marginal effect of logged average district magnitude is

$$\frac{\partial \text{Parties}}{\partial \log(\text{Magnitude})} = \beta_3 + \beta_5 \text{Fragmentation} + \beta_6 \text{Concentration} + \beta_7 \text{Fragmentation} \times \text{Concentration}$$

Since it is never the case that there are no ethnic groups, β_3 is substantively meaningless and should, therefore, not be interpreted.

Using the results from the fully-specified socio-institutional model, we plot the marginal effect of logged average district magnitude (the solid sloping lines) across the observed range of ethnic fragmentation and group concentration in Fig. 2. As before, Fig. 2(a) uses MSG's data, while Fig. 2(b) uses the corrected data. Stars are used to indicate when the marginal effect is statistically significant at the 95% level.

Fig. 2(a), based on data from MSG, suggests that an increase in district magnitude may sometimes have a significant reductive effect on the number of parties. However, this is only the case when ethnic fragmentation is sufficiently low and group concentration is sufficiently high. It turns out that less than 20% of the sample fall within the required range of significance. It should be obvious that this is not compelling evidence for MSG's *unconditional* claim that "district magnitude substantially reduces the number of electoral and legislative parties" (387). However, the fact that we find that district magnitude has a significant negative effect on the number of parties under any conditions is somewhat odd. After all, it has been a staple of the institutionalist literature to argue (and find) that countries with large district magnitudes tend to encourage large numbers of parties. Given the unusual nature of this finding and the fact that we had noticed some data collection errors for the average district magnitude variable in the MSG dataset, we thought that this result might disappear when we estimated the same model with corrected data.

As expected, Fig. 2(b) shows that district magnitude never has a significant reductive effect on the number of parties. We should point out that this result is not due to our decision to recode 11 of the observations for the Concentration variable. Almost identical figures are produced if we simply correct the data relating to the average district magnitude and leave the Concentration variable unchanged. The overwhelming story illustrated by Fig. 2(b) is that countries with larger district magnitudes are likely to have larger party systems so long as

Please cite this article as: Thomas Brambor et al., Are African party systems different?, Electoral Studies (2006), doi:10.1016/j.electstud.2006.06.011

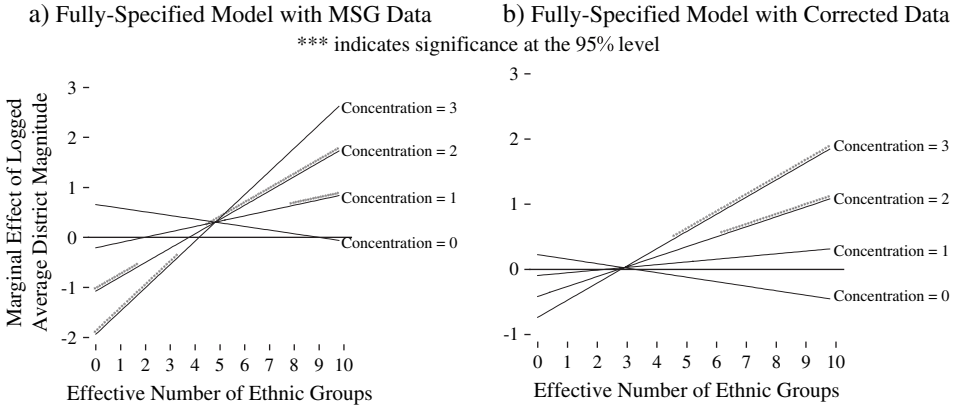

Fig. 2. Marginal effect of district magnitude (logged) on the effective number of legislative parties.

ethnic fragmentation is sufficiently large. Fig. 2(b) also indicates that the expansionary effect of district magnitude will be greater when group concentration is high as Riker (1982) predicted. In sum, then, there is no robust evidence to support MSG's claim that an increase in district magnitude will reduce the number of parties in the real world. This is exactly what one would expect based on the existing party system literature.

5. Conclusion

Are African party systems different? While the recent study by MSG suggests that they are, our analysis has shown that very few of the conclusions reached in MSG's study regarding the institutional and sociological determinants of party systems withstand rigorous scrutiny. This is primarily because MSG incorrectly specify their interaction model and misinterpret their results. Specifically, they exclude some of the constitutive terms, interpret constitutive terms as unconditional marginal effects, and do not calculate substantively meaningful marginal effects across a range of the modifying variables. While several of the inferences made by MSG directly counter almost 50 years of party system research, our conclusions are similar to recent findings in the literature. Although we do not wish to entirely dismiss the notion of African exceptionalism, our analysis does undermine the common idea that African party systems are somehow distinctive. At least with respect to the effect of district magnitude and ethnopolitical fragmentation, African democracies seem to be quite typical.

While the substantive focus of this article has been African party systems, our analysis should be put in a wider methodological context. After all, it is important to recognize that MSG are not alone in their mistreatment of interaction models. If one focuses purely on the party system literature, MSG's basic model specification and interpretation are in many ways consistent with all previous attempts to analyze the interactive effect of sociological and institutional factors on party system size (Amorim Neto and Cox, 1997; Filippov et al., 1999; Jones, 1994; Ordeshook and Shvetsova, 1994). All of these studies omit at least one constitutive term; many omit all or multiple constitutive terms. None of these studies calculate the full range of marginal effects or standard errors for their independent variables, and a large proportion interpret constitutive terms as unconditional marginal effects. In other words, MSG are in good company. Nor are the methodological issues that we raise confined to this one particular research area; they are, in fact, widespread throughout political science. In an examination of three political science journals (American Journal of Political Science, American Political Science Review, Journal of Politics) from 1998 to 2002, Brambor et al. (2006) find that of the 156 articles that employ interaction models only 16 (10%) actually include all constitutive terms, do not make mistakes interpreting these terms, and calculate substantively meaningful marginal effects and standard errors. We believe that empirical analyses using interaction models will dramatically improve if analysts become more self-conscious of these methodological issues.

It should be noted that these methodological issues are not minor econometric quibbles that lack substantive import. For example, African policy makers who wish to constrain party system fragmentation would be encouraged to increase the permissiveness of the

Please cite this article as: Thomas Brambor et al., Are African party systems different?, Electoral Studies (2006), doi:10.1016/j.electstud.2006.06.011

electoral system by MSG's analysis. This is because MSG claim that increases in "district magnitude substantially reduces the number of electoral and legislative parties" (387). Our results clearly indicate that this would be a mistake and would actually have the effect of increasing party system fragmentation—the exact opposite of the desired goal. This could be particularly dangerous in presidential democracies if Mainwaring (1993) is correct that multi-partism and presidentialism is the 'difficult combination'. This is but one example of how our conclusions differ in substantively important ways from those of MSG. Another is that we found that ethnic fragmentation increases the number of parties so long as the electoral system is sufficiently permissive. In contrast, MSG had claimed that "high ethnopolitical fragmentation is likely to reduce the number of parties" (381). Clearly, the specification and interpretation of multiplicative interaction models matters, not just in a statistical sense but in a substantive sense as well.

Acknowledgements

Our thanks go to Joel Barkan, Nathaniel Beck, Kelly Kadera, Jonathan Nagler, Michael Gilligan, Sona Nadenichek Golder, Michael Lewis-Beck, G. Bingham Powell and Leonard Wantchekon for extremely useful comments on this paper. The data, codebook, and all computer code necessary to replicate the results and figures in this analysis will be made publicly available at http://www.fsu.edu/~polisci/people/faculty/mgolder.htm on publication. STATA 8 was the statistical package used in this study.

References

Amorim Neto, O., Cox, G., 1997. Electoral institutions: cleavage structures, and the number of parties. American Journal of Political Science 41, 149–174.

Brambor, T., Clark, W., Golder, M., 2006. Understanding interaction models: improving empirical analyses. Political Analysis 14, 63–82.

Braumoeller, B., 2004. Hypothesis testing and multiplicative interaction terms. International Organization 58, 807–820.

Clark, W., Golder, M., 2006. Rehabilitating Duverger's theory: testing the mechanical and strategic modifying effects of electoral laws. Comparative Political Studies 39, 679–708.

Duverger, M., 1954. Political Parties: Their Organization and Activity in the Modern State. John Wiley & Sons, Inc., New York.

Filippov, M., Ordeshook, P., Shvetsova, O., 1999. Party fragmentation and presidential elections in post-communist democracies. Constitutional Political Economy 10, 3–26.

Jones, M., 1994. Presidential election laws and multipartism in Latin America. Politic Research Quarterly 47, 41–57.

Lijphart, A., 1994. Electoral Systems and Party Systems: A Study of Twenty-Seven Democracies, 1945–90. Oxford University Press, Oxford.

Mainwaring, S., 1993. The presidentialism, multipartism, and democracy: the difficult combination. Comparative Political Studies 26, 198–228.

Mozaffar, S., Scarritt, J.R., Galaich, G., 2003. Electoral institutions, ethnopolitical cleavages and party systems in Africa's emerging democracies. American Political Science Review 97, 379–390.

Ordeshook, P., Shvetsova, O., 1994. Ethnic heterogeneity, district magnitude, and the number of parties. American Journal of Political Science 38, 100–123.

Powell, G.B., 1982. Contemporary Democracies: Participation, Stability and Violence. Harvard University Press, Cambridge.

Riker, W., 1982. The two-party system and Duverger's Law: an essay on the history of political science. American Political Science Review 76, 753–766.

Taagepera, R., Shugart, M., 1989. Seats and Votes: The Effects and Determinants of Electoral Systems. Yale University Press, New Haven.

Please cite this article as: Thomas Brambor et al., Are African party systems different?, Electoral Studies (2006), doi:10.1016/j.electstud.2006.06.011