Electoral Systems, Ethnic Heterogeneity and Party System Fragmentation

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Taking into proper account the geographic distribution of ethnic groups and the operation of electoral systems within individual countries reveals that the impact of ethnic diversity and electoral systems on the number of parties has been underestimated. Contrary to earlier findings, this study reveals that ethnic diversity spurs party proliferation in countries with both majoritarian and proportional electoral systems, though the effect is stronger in the latter. The insights gained here provide a theoretically derived measure of ethnic diversity that is useful for estimating its effect on specifically political phenomena and generating an improved holistic measure of the impact of electoral systems. More crucially, the results indicate that electoral system designers have a greater capacity to structure electoral outcomes. The results rely on multivariate models created using a new database with election results from 1990 through 2011 in sixty-five free democracies.

Much comparative work over the past several decades has focused on explaining the number of political parties.[1] These efforts to understand the factors that promote party proliferation – and, relatedly, the expression of additional cleavages in the political system – are central to political scientific endeavors to comprehend the basic operation of electoral politics. Improved understanding of the factors that shape the number of parties and the expression of political cleavages are also vital to the construction of political institutions to resolve ethnic conflicts (or to prevent their emergence in the first place). If we cannot understand the likely outcome of different institutional fixes, attempts to engineer solutions to these problems will prove fruitless at best, but are more likely to be dangerous due to unintended consequences.[2] Current debates about the resolution of ethnic conflict often center on clashes over the effect of electoral arrangements.[3]

Fortunately, past work has made great strides in our understanding of the broad forces that shape the number of parties. Many scholars argue that heightened ethnic diversity and more permissive, proportional electoral systems encourage party proliferation.[4] Yet others find that these factors have little impact – or even the opposite effect.[5]

[1] Amorim Neto and Cox 1997; Clark and Golder 2006; Filippov, Ordeshook, and Shvetsova 1999; Hicken and Stoll 2011; Jones 2004; Lago Peñas 2004; Mylonas and Roussias 2008; Ordeshook and Shvetsova 1994; Powell 1982; Rae 1967; Sartori 1986; Selway 2010; Stoll 2008; Taagepera 2007; Taagepera and Shugart 1989.

[2] Bowler and Donovan 2013.

[3] Diamond and Plattner 2006; Pildes 2008.

[4] Amorim Neto and Cox 1997; Clark and Golder 2006; Filippov, Ordeshook, and Shvetsova 1999; Mylonas and Roussias 2008; Ordeshook and Shvetsova 1994; Powell 1982; Selway 2010.

[5] Barkan 2006; Birnir and Van Cott 2007; Hicken and Stoll 2011; Madrid 2005; Madrid 2012; Mozaffar 1997; Mozaffar, Scarritt, and Galaich 2003; Stoll 2008; Tronconi 2006.

This article argues that taking past significant advances to the next stage and untangling these mixed findings requires taking into account how electoral systems temper the impact of ethnic diversity within individual countries. Specifically, the impact of ethnic diversity on party proliferation varies dramatically depending on the geographic distribution of ethnic groups and the operation of the electoral system within each country. As Daniel Bochsler explored in work centered on new East European democracies, ethnic cleavages cannot manifest in the political system unless the ethnic group is large enough to overcome the barriers of the electoral system in place.[6] Strategic elites and voters respond to these incentives when deciding whether to band together to support ethnic parties to give voice to their interests, so scholars must examine not just the electoral system or ethnic diversity but how they operate together to shape politics. Building on past work that explores how ethnic geography and electoral systems intertwine systematically within the contexts of individual countries reveals that these characteristics have greater potential than previously thought to mold political outcomes.

A nice byproduct of this exploration of the direct linkage between ethnic geography and the ability of ethnic groups to overcome the threshold within individual countries is the creation of improved, theoretically driven measures of ethnic heterogeneity and electoral system permissiveness. Past work has grappled with the construction of independently derived measures of ethnic heterogeneity designed to predict political phenomena. Similarly, the creation of a single, more accurate measure of electoral system permissiveness should aid efforts to compare electoral systems across countries. This article further develops these ideas before presenting models that verify the hypotheses utilizing a new dataset with election results from sixty-five democracies from 1990 through 2011.

ELECTORAL SYSTEMS AS KEY MEDIATORS OF ETHNICITY IN POLITICS

Terminology is often treacherous, as one sort of cleavage can elide into another. Ethnicity is used here as a less unwieldy term for linguistic, religious, racial, and regional as well as ethnic identities. The key difference between ethnic and other sorts of cleavages is their basis in ascriptive characteristics. Past work suggests that ethnicity is socially constructed,[7] and that internal and international boundaries shape the relevance of ethnic identities.[8] I contend that electoral systems, in conjunction with regional or constituency boundaries, constrain the scope and size of politically active ethnic groups. The political system gives license only to ethnic cleavages that result in groups that are large enough to form the base for a viable ethnic political party.

Findings on the impact of ethnic diversity on the number of parties have been mixed. Many scholars argue that ethnic diversity results in greater numbers of successful political parties.[9] But others conclude that ethnic diversity decreases the number of parties or has no effect, and that the geographic concentration of ethnic groups has more influence on the proliferation of parties.[10] And some suggest that ethnic heterogeneity increases the number of parties in countries with proportional representation (PR) but not majoritarian electoral systems.[11]

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[6] Bochsler 2010; Bochsler 2011; Sartori 1986, 58–9; Taagepera and Shugart 1989, 73–4.

[7] Bates 1983; Eifert, Miguel, and Posner 2010; Scarritt and Mozaffar 1999.

[8] Chandra 2004; Posner 2004b, 2005.

[9] Amorim Neto and Cox 1997; Clark and Golder 2006; Lago Peñas 2004; Mylonas and Roussias 2008; Ordeshook and Shvetsova 1994; Powell 1982; Selway 2010.

[10] Birnir and Van Cott 2007; Madrid 2005, 2012; Mozaffar 1997; Mozaffar, Scaritt, and Galaich 2003; Tronconi 2006. Jones (2004) finds similarly that ethnic diversity does not increase the number of presidential candidates.

[11] Clark and Golder 2006; Ordeshook and Shvetsova 1994; Selway 2010.

Even the mechanism by which ethnic diversity has been likely to stimulate additional parties has been contested. Some view ethnic heterogeneity as a proxy for the general number of social cleavages.[12] Others see ethnicity as a simple and powerful cue to voters that facilitates the formation of parties with either an explicit ethnic agenda or an ethnic support base.[13] Ethnic parties seem especially likely to form in patronage-based democracies where parties gain votes based on the hope that they will reward their co-ethnic supporters when they capture state resources.[14] But scholars have also seen that ethnic concerns are likely to arise in affluent countries where voters feel freer to turn to post-material concerns unrelated to patronage.[15]

Regardless of whether due to patronage or post-material concerns, the view of ethnic diversity as a measure of the potential for additional parties with ethnic support bases – either ethnic parties or parties with core supporters in an ethnic group – is more compelling than an approach that sees it as a rough proxy for other social cleavages. Ethnic divisions are linked to class and status cleavages in only some countries.[16] In contrast, the perception of ethnic diversity through the comparatively simple lens of the division of society into identity groups able to cue support for parties linked to ethnicity is much more straightforward.

The view of ethnic groups as the building blocks of support bases for parties also aids the incorporation of ethnic diversity into models of the number of parties. Past work has taken a broad approach and has shown that ethnic diversity leads to more parties without regard to how each country's ethnic geography relates to the electoral system.[17] Though pushing our understanding of the impact of ethnic diversity forward, this approach likely underestimates the impact of ethnic diversity, as its effect depends upon whether groups can overcome the barriers to entry generated by the electoral system in their region or country.[18]

As a result, I expect that a party with an ethnic support base is more likely to attain electoral success if the ethnic group's share of the electorate exceeds the electoral threshold – the share of the vote needed to win seats – in the applicable constituency.[19] Through its articulation of the electoral threshold, the electoral system plays a gatekeeping function and renders some ethnic groups electorally relevant, but at the same time makes it unprofitable for other groups to form parties. This approach reflects that strategic voters and elites are more likely to invest support in a party that has a real chance of entry into the legislature.

Finland demonstrates the critical interaction between ethnic geography and the electoral threshold, and why ethnic heterogeneity should not lead to additional parties unless more ethnic groups can overcome the barriers placed by the electoral system. In Finland, the percentage of Finland Swedes exceeds the maximum share of the vote required to gain mandates in the constituencies with relatively high Finland-Swedish populations. Accordingly, the Swedish People's Party can gain seats as long as Finland Swedes support it cohesively enough, even without any support from other voters. In contrast, Sami speakers comprise around 1 per cent of the population in the Lapland constituency, well below the 12.5 per cent required to be certain to win one of its seven seats, and Sami parties have not emerged. Greater permissiveness does

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[12] Amorim Neto and Cox 1997, 162; Clark and Golder 2006, 696.
[13] Horowitz 1985.
[14] Chandra 2004; Posner 2005.
[15] Inglehart 1997.
[16] Horowitz 1985.
[17] Amorim Neto and Cox 1997; Clark and Golder 2006; Ordeshook and Shvetsova 1994. But see Bochsler 2010, 2011. Mozaffar, Scarritt, and Galaich (2003) and Mylonas and Roussias (2008) look at the general impact of geographic concentration.
[18] Farrell 2001; Taagepera and Shugart 1989.
[19] Bochsler 2011.

not help an ethnic group form a political party if it remains too small to overcome the threshold to enter the legislature.

This logic suggests that measures of ethnic heterogeneity that are used to explain party system fragmentation should include only groups likely to win seats, as electoral systems play a key gatekeeping role. The impact of the threshold articulated by the electoral system depends on ethnic geography; together, they shape which ethnic groups can form viable political parties. Including politically non-viable ethnic groups in ethnic heterogeneity measures can obscure their impact on party proliferation. Ethnic diversity should have a greater impact than previously realized once one includes only groups that are able to form viable parties.

Applying this Approach in Majoritarian Electoral Systems

Citing Maurice Duverger's claim that single-member plurality electoral systems create pressure toward a two-party system,[20] scholars contend that ethnic heterogeneity does not result in more parties in countries with majoritarian electoral systems.[21] After all, any party that splits into two separate parties may allow another party to win despite gaining fewer votes than their combined strength. While PR systems permit ethnic diversity to gain expression in the party system, majoritarian electoral systems squelch demands for additional parties. Yet several studies have found that PR systems have no impact, or a negative impact, on the number of political parties.[22]

Less recalled is Duverger's belief that 'the electoral system tends to candidate dualism *within each constituency*'.[23] Majoritarian electoral systems have incentives to create two main parties in order to maximize coalition size and the chances of victory; however, they do not have to be the same two parties across all constituencies. Smaller parties, including ethnic parties with regionally concentrated support, can succeed in countries with majoritarian systems.[24] Regional parties flourish in Canada, India, Mauritius, St. Kitts and Nevis and the United Kingdom.

Regardless of the electoral system, ethnic diversity should be more likely to shape the political scene when additional ethnic groups surpass the electoral threshold required to gain seats. The logical application of this idea to majoritarian systems is that ethnic diversity should result in more parties when more ethnic groups are sufficiently concentrated such that they form local majorities. Regional majority groups have the opportunity to dominate many constituencies and possibly benefit from the tendency of majoritarian systems to disproportionately reward majority groups. Yet regional minority groups will often require higher levels of internal group cohesion to form viable parties. Ethnic heterogeneity should have a measurably positive impact on the number of political parties, even in countries with majoritarian electoral systems, but only if ethnic minority groups comprise regional majorities.

Though ethnic diversity should have a positive effect even in countries with majoritarian systems, victory should be harder to achieve than under PR. Proportional systems invariably have lower electoral thresholds than the majority maximally required for a party to win seats under a majoritarian system. Since ethnic parties require higher levels of cohesion in

[20] Duverger 1954; Farrell 2001; Katz 1997; Norris 2004; Rae 1967; Riker 1982; Sartori 1997.

[21] Amorim Neto and Cox 1997; Clark and Golder 2006, 680–4; Ordeshook and Shvetsova 1994, 122; Selway 2010.

[22] Birnir and Van Cott 2007; Hicken and Stoll 2011; Madrid 2005, 2012; Mozaffar 1997; Mozaffar, Scarritt, and Galaich 2003. Stoll (2008) finds that the impact in majoritarian systems depends upon the measure of ethnic diversity chosen.

[23] Duverger 1950, 16.

[24] Farrell 2001; Heath, Glouharova, and Heath 2005; Lijphart 1994, 20–1; Norris 2004, 44; Sartori 1986.

majoritarian than in PR systems, ethnic heterogeneity should have a greater impact in countries with more permissive systems, in line with previous scholarship.[25]

Regional Political Boundaries Shape Ethnic Boundaries

Political borders help mold the contours of ethnic political organization. Daniel Posner shows that international borders profoundly influence intergroup relations in Africa.[26] Internal political boundaries can similarly shape politics, as ethnic group members who live inside and outside regions in which their group comprises a majority face very different challenges and incentives.[27] In Canada, Francophones inside and outside of Québec often have contrary interests, with the Bloc Québécois (BQ) taking stances inimical to Francophones outside of Québec. BQ opposition to additional rights for minority languages in Québec undermines efforts to protect French elsewhere. The separation of Québec from Canada would leave Francophones elsewhere a smaller, more vulnerable minority.

Internal boundaries work in tandem with electoral incentives. Regional boundaries, which often correspond to constituency boundaries in countries with PR, place limits on where different incentives operate and shape the scope of ethnic groups. Ethnic group members who live outside of regions where they exceed the exclusion threshold should not be considered part of the group for political purposes. Italian Swiss, for example, can easily support a linguistic party in heavily Italian Ticino. But the Italian Swiss minority of 10.2 per cent in neighboring Graubünden falls below the 16.7 per cent of the vote needed to be assured one of the canton's five seats. The Ticino League understandably limits its activities to Ticino and does not try to represent Italian Swiss more broadly.[28]

Additionally, if most group members live outside regions where they exceed the threshold, ethnic parties serve as inefficient vehicles to maximize the electoral power of ethnic minorities. The markedly decreased incentive to form ethnic parties suggests that such groups should not be counted separately for the purposes of assessing the political impact of ethnic diversity.

PROPERLY MODELING ELECTORAL SYSTEM PERMISSIVENESS

Most attempts to model the number of parties in a country rely on a measure of average district magnitude – the mean number of seats in electoral constituencies.[29] District magnitude appeals

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[25] Amorim Neto and Cox 1997; Clark and Golder 2006; Mylonas and Roussias 2008; Ordeshook and Shvetsova 1994; Selway 2010. However, Stoll (2008) finds that the impact of this interaction depends on the selected measure of ethnic diversity, with the interaction failing to achieve statistical significance for twelve of sixteen measures.

[26] Posner 2004b.

[27] Chandra 2004; Posner 2005.

[28] Portions of minority ethnic groups that live in areas where the group falls below the threshold can be counted as part of the majority. Though most countries with majoritarian systems subdivide regions into constituencies, one ought to examine their impact on a regional basis. The winner-takes-all nature of majoritarian systems causes ethnic minority parties to perform disproportionately poorly in regions where they constitute a minority. The greater tendency toward majority governments further reduces the prospects for entry into regional government, which is a disincentive to ethnic party formation. Conversely, ethnic parties have the potential to perform disproportionately well in regions and to enter regional government where the group is a majority. Ethnic data by constituency are often not easily available, and these factors explain why region can serve as a highly serviceable proxy even if one contends that constituency data would be preferable.

[29] Amorim Neto and Cox 1997; Birnir and Van Cott 2007; Brambor, Clark, and Golder 2007; Clark and Golder 2006; Hicken and Stoll 2011; Mozaffar, Scarritt, and Galaich 2003; Mylonas and Roussias 2008; Ordeshook and Shvetsova 1994; Selway 2010; Stoll 2008. Powell (1982) controls for the use of a majoritarian system, but Lago Peñas (2004) and Taagepera and Shugart (1989) take a more holistic view.

as a measure of system permissiveness because the threshold of exclusion – the maximum share of the vote required to gain a seat – has a strong mathematical relationship to it in many PR systems. Most commonly, the number of available seats in a constituency (n) results in a threshold of exclusion equal to $1/(n + 1)$, with average district magnitude being a good measure across multiple constituencies. Though it is a potentially powerful explanatory variable, district magnitude alone provides an inaccurate gauge of the accessibility of the electoral system to smaller parties and the strategic imperatives that influence elites' willingness to form (and voters to cast ballots for them), as explained in detail by Taagepera and Shugart, and Lijphart.[30]

First, system permissiveness does not increase with district magnitude in majoritarian electoral systems. On the contrary, higher district magnitudes accentuate the majoritarian aspects of the system, as they permit a party to sweep all of the seats in a multi-member district – a frequent occurrence.[31] Secondly, district magnitude does not necessarily accurately capture the permissiveness of PR electoral systems. Countries with PR often impose legal thresholds to receive seats at either the national or the district level that supersede the threshold implied by district magnitude.[32] Israel, for example, now imposes a 3.25 per cent threshold to qualify to receive seats in the Knesset – a threshold nearly four times higher than the maximum share of votes needed to win a seat based on the magnitude of Israel's single 120-member electoral district. The true threshold may also be determined by a combination of district magnitude and legal thresholds. Spain requires parties to win 5 per cent of the vote in an electoral district to qualify to receive seats, but this legal threshold only has an impact in the constituencies of Barcelona and Madrid, as district magnitude implies higher thresholds elsewhere.

Thirdly, prominent studies compound the problem by relying on district magnitude at the lowest tier of seat allocation when seats are further allocated at a higher tier – often statewide – in order to increase the overall proportionality of the system.[33] Attempts to solve this problem by controlling for the percentage of seats allocated in upper tiers are misguided, as the impact of the same average district magnitude may be radically different when there is an upper tier to correct for lower-tier distortions. Moreover, the share of upper-tier seats does not consistently relate to system permissiveness. Multi-tier systems with 10 or 50 per cent of their seats allocated in the upper tier may be equally permissive, as long as the upper tier contains a sufficient number of seats to correct for lower-tier distortions.

Electoral systems serve as barriers of varying intensity to the entry of additional political parties based on the threshold generated through a combination of constituency magnitudes, legal thresholds and other factors. Models need to reflect this reality and not focus on a single factor that may give a distorted reflection of the threshold that parties need to overcome to win seats. A holistic measure based on the overall threshold of exclusion should prove more powerful in explaining the number of parties, as it more accurately captures the independent variable and fits the theory of why electoral systems should have a major impact. Past work provides clear methods to calculate the threshold of exclusion based on the impact of district magnitudes, legal thresholds or their combined effects.[34]

DATA AND MODELS OF THE NUMBER OF PARTIES

The models presented here utilize a new dataset created for this study that contains election returns for sixty-five countries, including most democracies rated 'free' by Freedom House from

[30] Lijphart 1994; Taagapeara and Shugart 1989.
[31] Farrell 2001.
[32] Blais and Massicotte 2002; Katz 1997; Lijphart 1994; Taagepera and Shugart 1989.
[33] Amorim Neto and Cox 1997; Clark and Golder 2006; Lijphart 1994; Stoll 2008.
[34] Taagepera 1998, 2002; Taagepera and Shugart 1989.

1990 through 2011.[35] The dataset does not encompass democracies not rated 'free' for most of the period studied, as the openness of the political system conditions the number of parties in democratic polities.[36] Following Clark and Golder,[37] I use pooled ordinary least squares (OLS) models with robust standard errors clustered by country to estimate the model parameters. As their study builds successfully on previous work and similarly examines a broad set of elections from around the globe, it serves as a baseline against which to test my models.

Modeling the Effective Number of Parties

Each of the models predicts the *effective number of electoral parties*: the reciprocal of the sum of the squared proportion of the vote received by each party. Independent candidates are each treated as separate parties.[38] Gathering complete election results for small parties (which are often not reported in summaries), and for independents when necessary, resulted in a highly accurate calculation of the effective number of parties (correct within 0.01 parties).

The models further include measures of electoral system permissiveness, ethnic diversity and other controls. The *natural logarithm of the exclusion magnitude* gauges electoral system permissiveness.[39] Grounded in Taagepera and Shugart's work,[40] it takes into account legal thresholds as well as district magnitudes, and provides a more accurate mirror of the expectations generated by electoral systems. The exclusion magnitude transforms the exclusion threshold – the maximum percentage of the vote required to gain a seat in the assembly based on constituency magnitudes, legal thresholds or other factors – to express the same idea in terms of constituency size:

$$\text{Exclusion Magnitude} = \frac{100}{\text{Threshold of Exclusion}} - 1$$

Put more intuitively, the exclusion magnitude has the same exclusion threshold as a constituency with the same number of seats. Larger magnitudes indicate more permissive systems; I use the natural logarithm to reflect that the marginal impact of an increase in constituency magnitude on the vote share needed to enter the legislature declines as the number of seats rises. The exclusion magnitude should prove more powerful than equivalent measures in past works that examine the link between ethnicity and electoral systems to the number of parties.[41]

I derive the *effective number of electorally relevant ethnoregional groups* (EREG), the key measure of ethnic diversity, through an examination of the intersection of the electoral system and ethnic geography within each country:

$$\textit{Effective Number of Electorally Relevant Ethnoregional Groups}\ (EREG) = \frac{1}{\sum p_i^2}$$

where p equals the proportion of the country's citizen population in group i.[42] Only groups that can overcome the threshold of exclusion – that is, win a seat in the legislature if they are

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[35] Pacific island countries without formal party systems are not excluded, as are countries with multi-tier systems in which the upper tier does not correct for a lack of proportionality in the lower tier.

[36] Mylonas and Roussias 2007.

[37] Clark and Golder 2006, 290.

[38] Gallagher and Mitchell 2005; Laakso and Taagepera 1979. Online Appendix A contains the effective number of parties for each country and year.

[39] Online Appendix B shows the exclusion magnitude, the exclusion threshold from which it is derived and the determinant of the exclusion threshold for each country.

[40] Taagepera 1998, 2002; Taagepera and Shugart 1989.

[41] Taagepera and Shugart (1989) use a similar measure, but do not simultaneously estimate the impact of ethnic diversity.

[42] Amorim Neto and Cox 1997, 154.

sufficiently united in their voting behavior – are included as separate groups. Furthermore, groups are counted separately only if a majority of group members lives in regions where they can overcome the threshold, as indicated above in the discussion of the impact of internal boundaries. Group members who live outside areas where the group can pass the threshold are treated as part of the majority group.

Whenever possible, I collected the ethnic data needed to estimate EREG from official sources. I preferred data based on the citizen population rather than on the total population where it was available, and made special effort to locate it for countries in which it would likely produce important differences. I used regional and other data below the statewide level to determine whether a group had the potential to surpass the electoral threshold in a constituency, and then to calculate its size if it did. If ethnic data is unavailable or group size is heavily contested, I consulted unofficial sources to arrive at a reasonable estimate. Disputes over group size almost never would have made a difference in assessing a group's ability to pass the threshold.[43]

The relationship between ethnic heterogeneity and the number of parties should be stronger than in past studies due to the inclusion of only electorally viable groups in the measurement of ethnic diversity. An interaction between the effective number of ethnic groups and the exclusion magnitude tests for variations in the impact of ethnic heterogeneity as the system becomes more permissive. The impact of ethnic diversity should rise with the exclusion magnitude, but ethnic diversity should have an impact even in countries with majoritarian systems.

Like past studies,[44] the models control for the *effective number of presidential candidates* and the *proximity* of the presidential and legislative elections.[45] The proximity variable takes its maximum value of 1 when the two elections are held in the same year, and its minimum value of 0 when the presidential election is held halfway between legislative elections. The models also contain an interaction of the proximity and presidential candidates variables. Presidential campaigns may reduce the number of political parties, particularly when there are few candidates, as voters rally around and elites direct resources and media attention toward major presidential candidates and their parties. But the impact of presidential elections should decrease when they are not held in close proximity to legislative elections.[46]

Results and Comparison to Past Findings

I begin with models for established democracies – countries with democratic elections prior to 1990 – as the strategic effects of electoral systems may strengthen over time as voters gather information.[47] Column 1 of Table 1 displays the coefficients and standard errors for the model

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[43] Online Appendix C lists the effective number of ethnic groups for each country, the estimated size of groups used to calculate it and sources for the data. Examples of countries in which citizen data was utilized include Estonia, Latvia and Switzerland. Recently arrived immigrant groups were excluded due to their near-uniform failure to form successful parties.

[44] Amorim Neto and Cox 1997; Clark and Golder 2006.

[45] The effective number of presidential candidates is calculated in a manner parallel to the effective number of parties based on presidential candidate vote shares. Proximity is calculated as $2 \times \left| \frac{L_t - P_{t-1}}{P_{t+1} - P_{t-1}} - \frac{1}{2} \right|$, where L_t is the year of the legislative election, P_{t-1} is the year of the previous presidential election and P_{t+1} is the year of the next presidential election (see Amorim Neto and Cox 1997).

[46] Amorim Neto and Cox 1997; Golder 2006; Mainwaring and Shugart 1997. In models not shown here, controls for reserved seats and lower thresholds for ethnic minorities were tested (Lublin and Wright 2013). Neither had a significant impact, likely because they increase the effective number of parties by only a tiny amount when successful because the affected parties are small.

[47] Lago Peñas 2011.

TABLE 1   *Clustered OLS Models with Robust Standard Errors of the Effective Number of Electoral Parties, 1990–2011*

	(1)	(2)	(3)	(4)	(5)	(6)
	Established democracies	All countries	New democracies	All countries	Established democracies	All countries
Effective number# of electorally relevant ethnoregional groups (EREG)	1.88** (0.65)	1.66* (0.74)	−3.53 (2.68)			
ln(exclusion magnitude)	−0.33 (0.60)	−0.13 (0.60)	−1.82 (1.91)			
EREG × ln(exclusion magnitude)	0.83 (0.54)	0.68 (0.53)	2.23 (1.70)			
Effective number of presidential candidates	0.24 (0.16)	0.24^ (0.14)	0.19 (0.26)	0.13 (0.15)	0.19 (0.17)	0.17 (0.14)
Proximity	−0.51 (1.22)	−1.57^ (0.82)	−3.16* (1.38)	−2.95** (1.03)	−1.17 (1.10)	−2.15* (0.94)
Proximity × effective number of presidential candidates	0.42 (0.35)	0.62* (0.29)	0.94* (0.35)	0.96* (0.38)	0.48 (0.34)	0.72* (0.32)
South Africa		−12.94** (4.43)	−19.61 (11.40)			−0.93 (20.67)
Namibia		−11.68** (3.73)	−13.53 (8.75)			−6.44** (2.32)
Effective number of ethnic groups (Fearon)				0.37 (0.31)	0.82** (0.24)	0.29 (0.34)
ln(average lower-tier magnitude)				0.57 (0.35)	0.38 (0.39)	0.12 (0.39)
Percent upper-tier seats				0.01 (0.03)	0.01 (0.10)	0.04 (0.09)
Effective number of ethnic groups (Fearon) x ln(average lower-tier magnitude)				−0.00 (0.22)	0.16 (0.27)	0.31 (0.25)
Effective number of ethnic groups (Fearon) x percent upper-tier seats				−0.01 (0.01)	−0.01 (0.07)	−0.03 (0.06)
Constant	0.50 (0.77)	0.75 (0.86)	6.74 (2.87)	2.50*** (0.53)	1.58*** (0.42)	2.52*** (0.54)
Number of observations	257	349	92	349	257	349
Number of countries (clusters)	48	65	17	65	48	65
R^2	0.49	0.44	0.43	0.28	0.39	0.34

Note: the marginal impact of the effective number of electorally relevant ethnic groups (EREG) cannot be assessed by examining the standard errors on the coefficients of the base and interaction terms (Brambor, Clark, and Golder 2006). Instead, standard errors were calculated using the variance-covariance matrix with the effects and statistical significance most easily observed by displaying confidence intervals around the predicted marginal effects, as in Figure 1. ^p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001

of the effective number of electoral parties in established democracies, which contains my new measures of ethnic diversity and electoral system permissiveness. Figure 1a displays the marginal impact of changes in ethnic heterogeneity, as measured by the effective number of ethnic groups, on the effective number of electoral parties by the permissiveness of the electoral system with 95 per cent confidence intervals.[48]

[48] The marginal impact of the effective number of ethnic groups cannot be assessed simply by examining the standard errors on the coefficients of the base and interaction terms. Instead, standard errors and confidence intervals were calculated using the methodology outlined in Brambor, Clark, and Golder (2006).
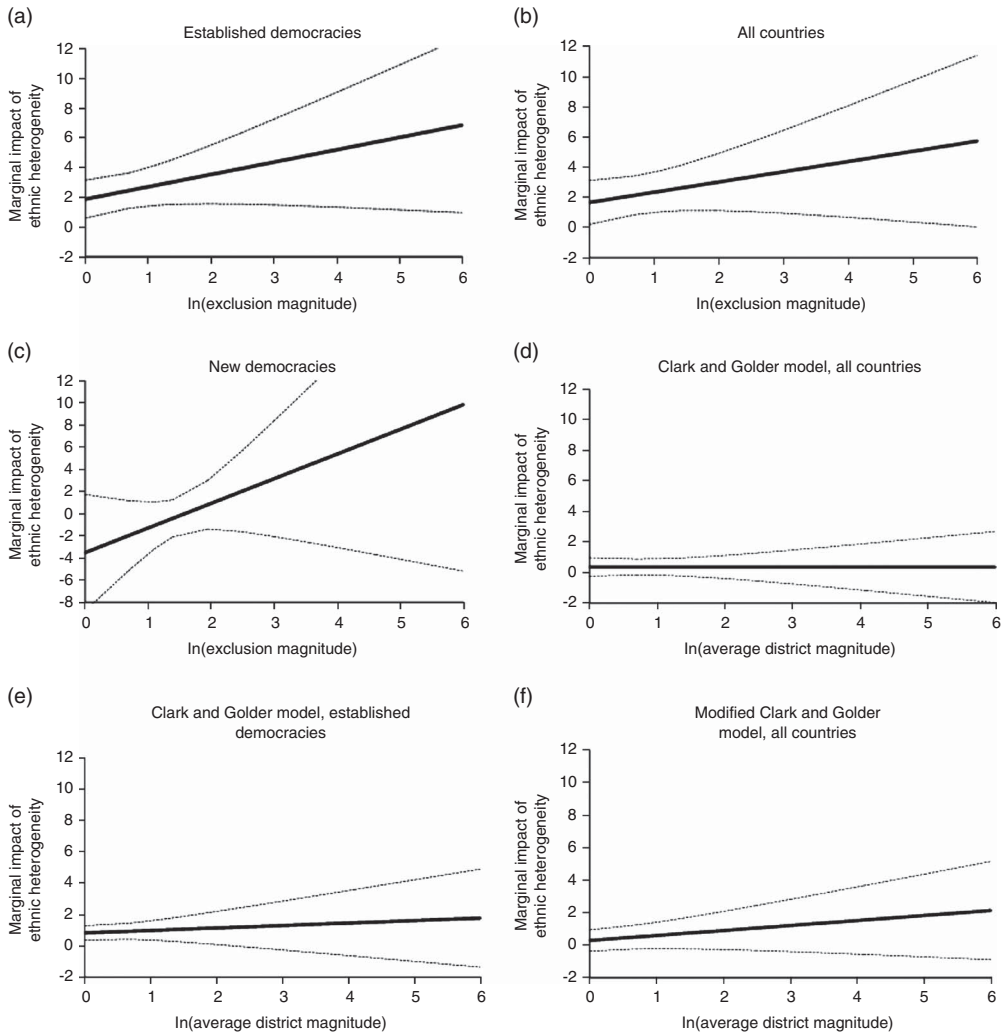
Fig. 1. Estimated impact of ethnic heterogeneity by permissiveness of the electoral system with 95% confidence intervals, 1990–2011

The results confirm that ethnic heterogeneity has a much more powerful impact on the effective number of parties than previously realized. The marginal impact of ethnic heterogeneity rises from 1.9 in majoritarian electoral systems (where ln(exclusion magnitude) = 0) to 6.9 when electoral system permissiveness reaches its maximum value (close to ln(exclusion magnitude) = 6). The relationship between ethnic diversity and party proliferation is stronger than in previous studies in which the marginal impact of ethnic heterogeneity does not rise much above two.[49] As anticipated, the improved measurement of electoral system effects based on Taagepera and Shugart's work reveals a tighter relationship

[49] Amorim Neto and Cox 1997; Clark and Golder 2006, 701; Stoll 2008.

between electoral systems and the number of parties.[50] The results do not support arguments that electoral systems fail to influence the number of parties.[51]

The model estimates also indicate that ethnic diversity creates demand for more parties even in majoritarian electoral systems. These findings diverge from previous studies.[52] But the results also confirm that the effect of ethnic diversity rises with electoral system permissiveness, which comports closely with these same studies. Greater ethnic diversity is more likely to gain expression in the political arena as barriers to entry fall. Reflecting past findings on the impact of presidential elections, the effective number of parties declines with the effective number of presidential candidates, though the impact shrinks for legislative elections held farther from the presidential election.[53]

Models not shown here that also include new democracies produce radically altered results. These differences, however, are driven entirely by two countries: Namibia and South Africa. Column 2 of Table 1 and Figure 1b show results with the addition of controls for these two countries. Once one controls for Namibia and South Africa, the relationship between electoral system permissiveness and the marginal impact of ethnic diversity in the model for all countries greatly resembles that for only established democracies. The marginal impact of ethnic heterogeneity rises from 1.7 in majoritarian systems to 5.7 in the most permissive systems. As for the model of established democracies, the results are statistically significant over the entire range of electoral system permissiveness.

Namibia and South Africa have far fewer parties – around twelve in Namibia and thirteen in South Africa – than predicted for other countries of similar ethnic composition with such highly permissive electoral systems.[54] The effect cannot be ascribed to any African tendency toward dominant party systems, as African countries with less permissive systems, such as Benin, produce more parties. Instead, it more likely reflects the unusually high regard held by black voters for the party that led their country's liberation movement against apartheid.

Column 3 in Table 1 and Figure 1c show the results for new democracies; the scale of the vertical axis differs from all other graphs in Figure 1. Unlike models for all and established democracies, the results are not statistically significant. Interestingly, Figure 1c suggests that ethnic diversity may reduce the number of parties in countries with majoritarian electoral systems. However, this result depends heavily on the sole majoritarian case with high ethnic diversity: Ghana. The desire to capture Ghana's powerful presidency, combined with the large number of geographically dispersed ethnic groups (most of which are not concentrated in regions where the group forms a majority) spurs coagulation into two major parties.[55]

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[50] Taagepera and Shugart 1989. The improved measurement of the effective number of ethnic groups accounts for the vast majority of the difference. A model with the new measure of electoral system permissiveness but Clark and Golder's (2006) measure of ethnic heterogeneity produces results that are only slightly improved over those of Clark and Golder (2006). The slope is slightly steeper with the maximum marginal impact of ethnic heterogeneity equal to 2.4 instead of 1.8, with the results achieving statistical significance at conventional levels ($p < 0.05$) until the natural logarithm equals roughly three rather than two. In contrast, a model with the new measure of ethnic heterogeneity but without electoral system permissiveness produces results very similar to those in Figure 1a.

[51] Hicken and Stoll 2011; Mozaffar, Scarritt, and Galaich 2003; Stoll 2008.

[52] Amorim Neto and Cox 1997; Clark and Golder 2006; Ordeshook and Shvetsova 1994; Singer and Stephenson 2009. In models limited to majoritarian democracies, the critical coefficient on EREG is identical to that for established democracies.

[53] Amorim Neto and Cox 1997; Clark and Golder 2006.

[54] In both Namibia and South Africa, the determinative allocation of mandates occurs within a single state-wide constituency with no legal threshold, which allows small parties to win seats with a low vote share.

[55] The other two majoritarian cases in new democracies are Lesotho and Mongolia. Lesotho has virtually no ethnic minorities. While ethnic minorities comprise 18 per cent of Mongolians, they are split among many different groups, with only ethnic Kazakhs exceeding 4 per cent of the population; the EREG = 1.07. See online Appendix C.

Otherwise, the graph indicates that ethnic diversity has an even greater impact on the number of parties as the electoral system becomes more permissive than in established democracies, though again the results are not statistically significant.

Conducted over a long time period and across many countries, Clark and Golder's study provides a valuable baseline against which to test previous approaches and results. The remainder of this section compares the results of my approach with theirs. Clark and Golder utilize the *natural logarithm of the average magnitude of the lowest tier* of constituencies and the *percentage of upper-tier seats* control for electoral system permissiveness.[56] They base their measure of ethnic heterogeneity on James Fearon's classification of ethnic groups.[57]

Columns 4 and 5 in Table 1 display the results of replicating Clark and Golder's model utilizing my new dataset of elections held in sixty-five free democracies from 1990 through 2011 for all countries in Column 4 and for established democracies in Column 5. Figures 1d and 1e show the predicted marginal impact of ethnic heterogeneity; both confirm the general lack of a substantively or statistically significant relationship between ethnic diversity and the effective number of parties.[58] The only statistically significant result is that ethnic heterogeneity has a small positive impact in established democracies with majoritarian electoral systems – which is at odds with Clark and Golder's contention that diversity only increases the number of parties in more permissive systems.[59] Column 6 in Table 1 modifies Clark and Golder's model through the addition of controls for Namibia and South Africa. Figure 1f uncovers that this tweaked model, though not statistically significant, comports more closely with their results.[60]

Analysis of data from 1990 through 2011 provides support for an approach stemming from the link between ethnic geography and electoral systems. Beyond the higher share of variance explained, the new model validates that ethnic diversity shapes party systems more than previously realized. Ethnic heterogeneity has an impact even in countries with majoritarian systems, though its effect rises with the permissiveness of the system. Finally, the results show the value of a more holistic measure of electoral system permissiveness that hews closely to the expectations generated by electoral systems.

IMPLICATIONS

The results demonstrate that the effect of both ethnic diversity and electoral systems on party system fragmentation is greater than previously thought. The approach presented here provides useful tools not only for the future study of the impact of both factors on other political outcomes, but also for identifying which ethnic cleavages are most likely to gain representation in the party system. As scholars and practitioners learn more about the influence of party systems and ethnopolitical divisions on ethnic conflict, this knowledge should prove useful in the construction of institutions designed to mitigate conflict and promote peace.

The Strong Impact of Ethnic Diversity and Electoral Systems

This study provides evidence that electoral systems have significant power to determine whether ethnic divisions can emerge in the party system. It further shows the importance of ethnic

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[56] Clark and Golder 2006.

[57] Fearon 2003.

[58] This finding is also true for data from the 1990s, so it does not rest on the inclusion of data from a later period than in Clark and Golder (2006).

[59] In Figure 1d, the lower bound of the confidence interval is above zero only when ln(average lower tier magnitude) <2.

[60] Clark and Golder 2006.

geography, as the distribution of a group across a country greatly influences its political weight and ability to serve as the basis of a viable ethnic party. Regional and constituency boundaries can also mold the territorial scope and size of politicized ethnic groups. Defining ethnic groups in a manner that reflects the possibilities created or limited by electoral rules brings the power of ethnic cleavages to shape the number of parties into sharper relief. While previous studies argue that ethnic diversity increases the number of parties by a maximum of two and has no impact at all in countries with majoritarian systems,[61] these results demonstrate that ethnic diversity has a greater effect on party system fragmentation. Ethnic heterogeneity magnifies the estimated effective number of parties by six in highly permissive electoral systems and by two in countries with less permissive majoritarian systems.

This study further unravels the puzzle of why electoral systems have a more muted impact in previous studies. Focusing primarily on district magnitude and not taking into account legal thresholds or ethnic geography leads to underestimating electoral system effects. Past results might lead one to conclude that existing theories inflate the influence of electoral institutions, but these results provide concrete validation of them.

Institutional design has been at the center of debates over how to prevent and resolve ethnic conflicts.[62] Increasing our understanding of the impact of electoral and political outcomes on ethnic conflict (and the joint impact of ethnicity and the electoral system on the party system) may help promote democratic stability and peace. The findings presented here indicate that institutions have a greater capacity to shape the fragmentation of the party system than previously thought. Proper comprehension of the permissiveness of the electoral system, and how it is interlinked with ethnic geography, should increase understanding of the likely impact of adopting a particular electoral system on the party system.

The Identification of Ethnic and Other Cleavages

Cleavages in many countries reinforce one another even if they do not overlap perfectly. Linguistic and religious cleavages fall along very similar lines in Cyprus, for example, where Greek speakers strongly tend to be Orthodox but Turkish speakers are almost always Muslim. But religion, language and caste crosscut rather than reinforce each other in India, and all have powerful claims to political relevance. Fortunately, the approach developed here centering on the relationship of ethnic geography to the electoral system provides guidance about which ethnic cleavages are likely to matter for the purposes of party formation in countries with cross-cutting cleavages. Ethnic cleavages are much less likely to spur the creation of additional political parties when the divide produces ethnic groups that are too small to overcome the barriers to entry in the political system. Cleavages may still enter into politics, but groups unable to pass the threshold of exclusion cannot serve as the base of an ethnic party. The electoral system pressures groups below the threshold either to opt out due to marginalization or to cohere with other groups in order to stay in the political game.

An approach centered on the electoral viability of groups indicates that the electoral system privileges linguistic over religious or caste cleavages in India. The division of the Subcontinent along religious lines effectively gerrymandered the boundaries of India such that few Muslim Indians live in constituencies in which they comprise a majority, making it difficult to form viable Muslim parties. Indeed, despite the political salience of religion, including Hindu-nationalist parties, the paucity of successful Muslim parties remains striking. Caste-based parties face similar problems; they can thrive only when they can organize alliances with other

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[61] Amorim Neto and Cox 1997; Clark and Golder 2006.
[62] Horowitz 1985; Roeder and Rothchild 2005.

groups on a regional basis, since Scheduled Castes form a majority in no constituency. In contrast, the electoral system does not serve as a barrier to parties centered on India's many linguistic minorities, as linguistic groups are highly concentrated (India's states are organized along linguistic lines). While parties supported solely by Muslims or Scheduled Castes find it hard to win parliamentary seats without allies, as they rarely form constituency majorities, linguistic parties do not face the same problem. An approach to ethnic diversity grounded in electoral potential shows a much stronger relationship to the number of parties.

This approach may have applications to other cleavages. For example, one might assess the viability of agrarian parties based on the share of voters in agricultural areas. Just as members of ethnic groups too small to serve as the base of a successful political party must either redefine the cleavage or link up with other groups, agrarian parties with a dwindling support base must do the same. Indeed, many agrarian parties in economically advanced democracies have rebranded in an effort to arrest their decline.

Measurement of Ethnic Diversity and Electoral System Permissiveness

The classification of ethnic groups and the identification of salient ethnic cleavages has been one of the most vexing problems facing scholars of comparative politics.[63] Beyond providing additional evidence that ethnicity is malleable and can be sculpted by political institutions, this study provides the first steps toward developing a theoretically driven measure of ethnic diversity for the purpose of assessing its impact on explicitly *political* phenomena that can be applied to many other questions in future studies. Much past work on these issues has involved efforts to assess the relationship between ethnic heterogeneity and economic growth in Africa; several scholars have developed measures of ethnic diversity.[64] While these measures often have value in predicting economic phenomena, measures based on assessments of political divisions cannot be used to assess the impact of ethnicity on the political outcomes from which they are derived. Alternatively, independent measures lacking a basis in theories about how ethnicity influences politics are unlikely to have much predictive power. The measure developed here takes into account the impact of political institutions on the expression of ethnic cleavages. Consequently, it has more explanatory power, as demonstrated in the models of the number of parties, and can be used to assess the relationship of ethnic heterogeneity to other political outcomes. The effective number of electorally relevant ethnoregional groups, as well as the specific groups used to calculate it, is available in online Appendix C for all countries in the study.

The measure of the permissiveness of electoral systems based on past work by Taagepera and Shugart should also facilitate future attempts to study the effect of electoral systems on politics. Though it is a single measure, it encapsulates many of the electoral system components that influence the ability of new parties to enter the legislature. The availability of the exclusion magnitude for a wide range of countries in online Appendix B should allow the influence of electoral systems to be studied more effectively in future analyses of political phenomena and may reveal that – regarding the effective number of parties – their impact has been underestimated.

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[63] Stoll (2008) tests the impact of many different measures on the number of parties.
[64] Alesina et al. 2003; Brock and Durlauf 2001; Easterly and Levine 1997; Posner 2004a.

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