Appendix 2.1

Mapping Ideological Space into Partisan Divides

As suggested in the introductory remarks to Chapter 2, our discussion of ideological and partisan organization naturally feeds into an ancillary debate regarding the potential for partisan realignment in Latin America. In this appendix, we explore how the factor and discriminant analyses reported in the chapter inform this debate. We start by suggesting novel ways to measure "simplicity" at the ideological and partisan levels. This exercise allows us to comment on the possibility of further programmatic party structuration in Latin America. We then wrap up the analysis by considering opportunities for party realignment along the three issue bundles that we have consistently explored namely, economics, political regime, and religion.

Simplicity of the Ideological Space

As we turn to the sharpness or simplicity of ideological spaces in Latin America, our purpose is to determine how "structured" legislative ideological spaces are, regardless of their issue contents. A simple ideological space is one where elicited factors account for a relatively large proportion of variance in legislators' issue positions. Consider, for example, Chile and Ecuador. In the former, factor 1 accounts for a sweeping 39% of common variance on legislators' issue stances. Factor 2, albeit important, accounts for much less variance (14%), and factor 3 for even less (11%). Issue positions in Chile are largely determined by the first underlying factor. In other words, a single strong ideological dimension predominantly structures the issue stances of legislators.

In Ecuador, conversely, each of three factors explains on average about 15% of common variance in the issue space. Were we to use a legislator's score on factor 1 to predict her stance on any particular issue, we would be more likely to get a correct forecast in Chile than in Ecuador. Legislative issue positions in Chile are much more predictable—the ideological space is much simpler—than in Ecuador. In short, simplicity is the power of underlying ideological dimensions to predict individual issue stances. It is only in this sense that we declare the Chilean legislature to be ideologically simpler than the Ecuadorean legislature. We believe that simplicity is a virtue in politics: an ideological space similar to Chile's makes democratic representation much easier, because effective democratic representation requires voters to be able to derive information about legislators' stances on a variety of issues from loose ideological statements, cues, platforms, or banners. This condition is best approximated by simply structured spaces.

Factor eigenvalues and related measures of predictive power provide good summaries of the comparative simplicity of Latin American legislatures. Table 1 ranks legislatures by looking first at the predictive power of factor 1, then at the combined predictive power of factors 1 and 2 (these correspond to the numbers in the "proportion explained" row in Table 2.1 in the book). Not surprisingly, both measures are highly correlated (Pearson's $r = .98$), and the only changes in rank occur near the top, where Peru and Uruguay trade places, and in the lower half of the table, with changes in the ranks of Argentina and Colombia.

The rankings in columns 1 and 2 of Table 1 are not completely satisfactory because they fail to account for differences in the measure of "common variance" that appears next to each country's name in Table 2.1. A more fitting statistic obtains from multiplying the predictive power of column 2 by the country-specific percent of "common variance." The results are displayed in the third column of Table 1. These numbers can be interpreted as the capacity of factors 1 and 2 to predict "total variance" on legislators' positions on the twenty-seven original issues. The ranks of ideological simplicity shift drastically after correcting for common variance, particularly in the case of Venezuela. This country is now demoted several ranks (from fifth to ninth), a result that corresponds more closely to common intuitions about the state of ideological disarray following the slow dissolution of Venezuela's *partidocracia*.

Simplicity of the Partisan Space

We now develop indicators of the simplicity of partisan spaces, regardless of their substantive contents. In order to distinguish simple (more programmatically structured) from complex (unstructured) partisan spaces, we classify Latin American legislatures according to the predictive power of inferred partisan dimensions—that is, the information that voters obtain about politicians' issue stances and partisan membership from knowledge of their positions on underlying partisan dimensions. To do so, we employ a variety of statistics that stem from the discriminant analysis reported before. We appraise the programmatic structure of Latin American partisan spaces by combining the power of inferred discriminant functions to predict partisanship with their power to predict issue stances. This combined measure can be seen as a proxy of the average value of legislative party labels in a given party system.

Two caveats should be kept in mind when building this measure. First, a potential theoretical criticism is that because voters use party labels to get cues about the ideological stances of politicians, our approach mistakenly inverts the flow of causality by predicting party membership from underlying ideological stances. Indeed, the arrow of causality goes from party label to inferred stances,

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Table 1: Ideological Simplicity of Legislatures

Common Variance in Issue-Space Explained by Factor 1		Common Variance in Issue-Space Explained by Factors 1 and 2		Total Variance in Issue-Space Explained by Factors 1 and 2	
Chile	0.40	Chile	0.54	Chile	0.194
Mexico	0.35	Mexico	0.54	Uruguay	0.189
Uruguay	0.31	Peru	0.47	Argentina	0.179
Peru	0.29	Uruguay	0.46	Bolivia	0.168
Venezuela	0.27	Venezuela	0.43	Mexico	0.162
Bolivia	0.26	Bolivia	0.42	Colombia	0.156
Argentina	0.24	Colombia	0.41	Peru	0.141
Brazil	0.24	Brazil	0.39	Ecuador	0.132
Colombia	0.23	Argentina	0.38	Costa Rica	0.125
Dominican Republic	0.21	Dominican Republic	0.36	Brazil	0.125
Costa Rica	0.18	Costa Rica	0.33	Venezuela	0.125
Ecuador	0.18	Ecuador	0.33	Dominican Republic	0.122

Table 2: Partisan Simplicity of Legislatures

Country	Predictive Power	Proportional Reduction of Error	Average Structural Coefficients	Index of Partisan Simplicity
Chile	0.81	0.75	0.38	0.29
Mexico	0.91	0.85	0.32	0.27
Uruguay	0.80	0.69	0.37	0.26
Costa Rica	0.94	0.87	0.24	0.21
Argentina	0.83	0.74	0.27	0.20
Colombia	0.95	0.86	0.19	0.16
Ecuador	0.71	0.59	0.20	0.12
Brazil	0.72	0.62	0.17	0.11
Dominican Republic	0.77	0.64	0.17	0.11
Venezuela	0.56	0.44	0.26	0.11
Peru	0.76	0.44	0.22	0.09
Bolivia	0.54	0.38	0.18	0.07

but our analysis reports only measures of statistical association between party membership and ideological positions and does not depend on the ability of voters to predict partisanship from politicians' issue stances. The second caveat concerns the incontestable fact that "proportional reduction of error" statistics, like R^2, are strictly not comparable across samples. Still, the exercise reveals interesting findings about Latin American legislative parties. With these caveats in mind, we present summary statistics regarding the simplicity of partisan spaces in Table 2.

Our partisan simplicity score appears in the last column of Table 2, but columns 1 through 3 present intermediate statistics that are important in their own right. Column 1 collects the percentage of correct predictions of legislators' party membership using their inferred scores on discriminant functions.[1] However, the simple predictive success of significant discriminant functions is a flawed summary mea-

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[1]To predict party membership, we inferred party mean positions (the "centroids" in Table 2.6 in the book) and legislators' scores along each country's first discriminant function (DF1). (We considered information from first and second discriminant functions in Chile and Mexico, on account of their statistical significance, and we considered DF1 in Colombia, despite its marginal significance). We predicted legislators to belong to the party whose mean position was spatially closer to their own position. For example, if Parties A and B have centroids x_A and x_B, and legislator i's position is x_i, then i is predicted to belong to A if $(x_A - x_i)^2 < (x_B - x_i)^2$. See Rosas 2005 for further details and theoretical justification.

sure of simplicity because it does not correct for number of parties in the legislature (it is easier to predict partisanship in legislatures with fewer parties) and because even highly predictive discriminant functions might fail to convey information about politicians' issue stances. To redress these problems, column 2 first compares the predictive success of significant discriminant functions against a trivial prediction model that excludes information about politicians' ideological stances (PRE). In practice, measuring against a random prediction yardstick helps correct for cross-country differences in the number of legislative parties entered in the analysis.[2]

Column 3 then displays the average size of structural coefficients (ASC) as a proxy for the power of inferred discriminant functions to predict issue stances.[3] Where structural coefficients are low, inferred discriminant functions carry little information about the issue stances of legislators. In the extreme, a structural coefficient of "0" means that the inferred discriminant function is uncorrelated with the issue indicator, therefore providing no information to correctly guess a legislator's stance on this issue. Evidently, ASC scores punish legislatures with low structural coefficients in many issues; this corrects distortions introduced by cases like Colombia, where the PRE statistic is high despite the fact that the partisan dimension separating liberals from conservatives provides little information about the issue stances of legislators. The implicit assumption in carrying out this comparison is that our twenty-seven primordial issues cover the main topics of political contention in every legislature. Because the set of primordial issues is comprehensive, we are at ease with this assumption.

We produce columns 2 and 3 because they represent two different features of programmatic simplicity. On the one hand, PRE statistics summarize the extent of ideological specialization (between-party separation) and ideological sufficiency (spread around mean party positions) of parties along the main axes of partisan disagreement. On the other hand, ASC scores transmit information about policy stances contained in the main axis of partisan disagreement. Exclusive attention

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[2]The generic PRE measure is (Error by baseline − Error by rule A)/Error by baseline (Costner 1965). This correction is in the spirit of "proportional reduction of error" (PRE) methods, in which the predictive purchase of complex models is deemed high only if it improves upon simpler baselines (examples of PRE statistics include R^2 in OLS regression, the κ statistic used to measure interrater coding agreement in content analysis, or Poole and Rosenthal's (1997) "marginals" method). In this case, the baseline is the expected number of correct predictions that would obtain from placing legislators randomly in different parties, with prior knowledge about party shares in the sample. In Peru, for example, we would expect a 0.57 rate of correct predictions by placing legislators randomly in Cambio '95, UPP, and APRA, knowing only their relative sample shares (73, 17, and 10%, respectively).

[3]To be precise, statistics in column 3 are averages over the absolute values of structural coefficients on DF1.

to either of these features would lead to erroneous conclusions about the level of programmatic structure of legislative party systems. In legislatures with high PRE scores and low structural coefficients, for example, voters might perceive plenty of ideological disagreement but be unable to tell what this disagreement is about. However, we also submit that legislatures are more simply organized along programmatic lines to the extent that discriminant functions are powerful predictors of both issue stances (ASC) and partisanship (PRE). Column 4 gathers the product of PRE and ASC, which we construe as an indicator of the average amount of information carried by party labels in a legislature and, therefore, as an indirect measure of the programmatic structure of Latin American partisan spaces.

Ideology, Partisanship, and the Possibility of Partisan Realignment

The results produced in Chapter 2 and the measures derived herein allow us to account for two different aspects of partisan structure, namely, strength (Table 2.6 in the book) and simplicity (Table 2). It is not surprising to find that partisan strength scores correlate positively with simplicity scores. After all, those party systems which are neatly divided along economic, regime, and religious fault lines will tend to present crisp programmatic messages to information misers in the electorate. For this reason, in Part II of the book we are content with using partisan strength scores as appropriate indicators of the extent of partisan structure of these legislatures. Here, we exploit the information displayed in panel (a) in Figure 1 to underscore one of the main points of our discussion, namely, that Latin American legislatures might not vary much in regard to the variety of views, attitudes, and opinions represented by legislators, but that they differ from each other in the extent to which parties comprise similarly minded politicians. Indeed, legislators' opinions are seldom reducible to a single perfectly informative ideological dimension and, when everything is said and done, there is not even much cross-national variation in the predictive powers of these dimensions. Thus, Chile, Mexico, and Uruguay display simpler ideological spaces than Brazil or the Dominican Republic, but what really distinguishes these three legislatures from the rest are their relatively simple partisan spaces. This means that the attitudes of Chilean, Mexican, and Uruguayan legislators are much more predictable because parties in these legislatures are generally successful in either attracting politicians with similar views or indoctrinating politicians so that they will profess to share similar preference profiles.

Be that as it may, we also note that partisan simplicity is not extended to every contentious issue bundle in a legislature. In particular, note that the correlations between each of the partisan strength indices (Table 2.6 in the book), on the one hand, and the simplicity scores (Table 2), on the other, are not consistently high. Note in particular that though the correlation between the economic-distributive

Figure 1: Ideological and partisan simplicity in three realms

(a) Economic distribution
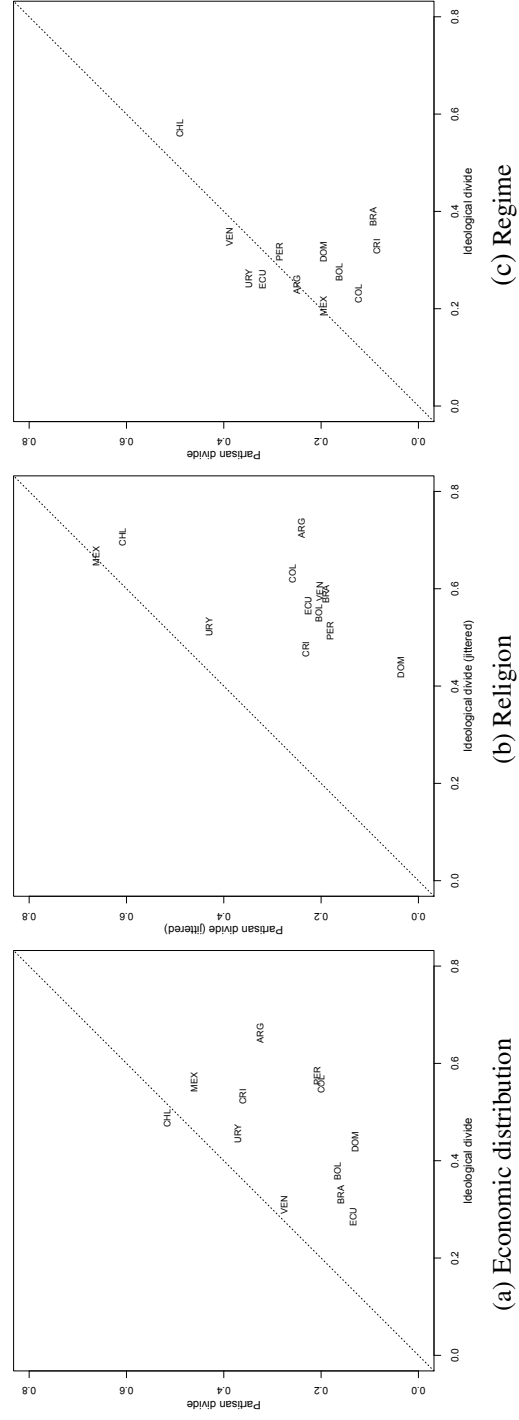
(b) Religion

(c) Regime

partisan strength score and the simplicity score is .91 and that between religion and simplicity is .85, the political regime correlation with partisan simplicity is only .32, which is much lower than we had expected. Upon closer inspection, three legislatures—Ecuador, Peru, and Venezuela—have partisan simplicity scores that are much lower than we would expect from inspection of their political regime strength scores. It is obvious to us that partisan simplicity incorporates information about the value of party reputations above and beyond that offered by partisan strength scores. For some reason, these three legislative party systems are not incorporating disagreements about political regime issues into a simpler partisan structure.

Panels (a), (b), and (c) in Figure 1 plot the partisan and ideological strength scores derived in Chapter 2 (Tables 2.3 and 2.6 in the book) to map the location of all twelve Latin American legislatures in three different realms: economic distribution, religion, and political regime. The first noticeable trait is the staggering variety of national experiences, which makes it difficult to develop one overarching measure of programmatic structure. The Chilean partisan and ideological divides, for example, receive high scores in terms of simplicity, and these scores correspond well with the fact that economic distributive, religious, and regime issue bundles are divisive at both the individual and party level. The Chilean experience, however, is unique. The second and third highest-ranked countries in terms of partisan simplicity are Uruguay and Mexico, which already combine substantive issue bundles in different ways (economics and political regime concerns are divisive in Uruguays partisan space, economics and religion are divisive in Mexico). Even more varied combinations of issue bundles occur in legislatures with lower partisan simplicity scores.

More important, these plots bring to the fore two related matters. First, consider the potential symmetry of partisan against ideological strength scores around the 45° line in all of these plots. There is no pretense in our argument that these two scores correspond so perfectly to each other that we might ever observe all of our legislatures perfectly aligned in the unlikely case of absolute coincidence between ideological and partisan simplicity. We do believe, however, that a positive correlation between ideological and partisan strength scores lends credence to the commonsense expectation that ideological divides "give rise" to partisan divides. The correlations between partisan and ideological strength scores are all indeed positive, implying that substantive issue bundles that divide legislators also tend to divide parties. If we heroically assume that ideological divides among legislatures mirror ideological fault lines among the electorate, then we could conclude that appropriate substantive representation is achieved by systems that lie close to the 45º line. For example, we could argue that Venezuelan legislative parties do not show division around economic issues because there is no such division at the mass level or that Chilean parties appropriately mirror how significant this very same

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divide is among Chilean citizens.

However, a glance at the scatterplots confirms that correspondence along the 45° line is far from perfect, which leads to the second point, namely, that in the latter half of the 1990s there was ample opportunity for partisan realignment in Latin American legislatures. This is most obvious in legislatures that combine high scores on the horizontal axis with very low scores on the vertical axis (i.e., those cases below the 45° line). For example, the economic-distributive divide apparent among Colombian and Peruvian legislators does not translate into a divisive partisan dimension. Keeping with our assumption that ideological strength scores reflect popular sentiment, we could see such issue bundles as underrepresented. Conceivably, a savvy political entrepreneur could inspire partisan realignment by underscoring economic-distributive issues in these two countries, and in so doing provide more meaningful substantive representation of issues that divide the electorate. This same conclusion applies to the religious divide in most countries. Only Chile, Mexico, and Uruguay are close to achieving "appropriate" levels of representation along religious concerns.

Finally, we underscore the remarkable arrangement of legislatures regarding political regime ideological and partisan divides. Notice that inclusion of Chile, an obvious outlier, increases the apparent correspondence between partisan and ideological political regime divides. Indeed, when Chile is not considered, we fail to find any association between the ideological and the partisan regime divides. We therefore conclude that the political regime dimension cannot be summarily characterized by our separate measures of ideological and partisan divides. Thus, in Chapter 8 we develop a finer characterization of regime divides that distinguishes between retrospective opinions regarding the harshness of authoritarian regimes and prospective appeals to the electorate based on questioning the merits of representative democracy. We believe this characterization provides a more meaningful way of analyzing enduring disputes about political regime in Latin America.