

Recovering a Basic Space from Elite Surveys: Evidence from Latin America*

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Abstract

This paper uses elite survey data and scaling techniques to estimate the location of political actors (parties, chief executives, and legislators) in a common ideological space. The recovered ideological configuration in each of these countries accurately reflects the manner in which their political landscapes have been described both in the popular press and in the scholarly literature. These findings buttress the validity of the estimates obtained using elite surveys. The results in this paper also show that data generated by survey responses can be reliably used to locate legislators' ideological positions in a low-dimensional space in a manner analogous to roll call-based methods that are commonly used in the scholarship on the U.S. Congress. The approach suggested in this paper has two important advantages over methods that use roll call data and/or expert surveys. First, it does not rely on recorded votes, thus it is unaffected by concerns about the validity of roll call data as unbiased indicators of legislator's preferences. And, because it does not require access to voting records, this approach can be applied anywhere around the world. A second virtue of elite-based measures is that they can be used to estimate the location of political actors (parties, chief executives, and individual legislators) in a common ideological space.

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Introduction

The main purpose of this paper is to demonstrate how elite survey responses can be used to estimate the location of political actors (parties, chief executives, and legislators) in a common low-dimensional ideological space. I analyze data from nine Latin American countries included in the Universidad de Salamanca's Parliamentary Elites of Latin America (PELA) survey. In particular, I examine the responses to questions where legislators were presented with the task of locating themselves and other relevant political actors on a ten-point ideological scale. I rely on the Aldrich-McKelvey (1977) scaling procedure to correct for interpersonal incomparability, or *differential item functioning* (DIF).¹

The analysis presented in this paper suggests that elite data can be reliably used to measure the spatial preferences of political actors. It also indicates that the scaling technique produces estimates that are quite similar to those generated by methods relying on the judgment of country expert and roll call data. Moreover, the estimates of the ideological configuration of each of these countries accurately depict the way their political landscapes have been described by popular accounts and in the scholarly literature. The results also indicate that data generated by survey responses can be employed to estimate legislators' ideological positions in a low-dimensional space, in a manner analogous to roll call-based methods frequently used in the U.S. Congress literature (e.g. Poole and Rosenthal 1997).

The approach presented in this paper offers two main advantages over methods using roll call data and/or the opinions of country experts. First, this method does not rely on

recorded votes, so it overcomes any concerns pertaining to the validity of roll call data as unbiased indicators of legislators' preferences. Moreover, since this method does not require access to voting records, this approach can be applied worldwide. An additional virtue of measuring spatial preferences using elite data is that it allows us to compare ideological preferences across institutions. Therefore, the estimated preferences of political actors can be used to address various propositions regarding executive-legislative relations.

The rest of the paper proceeds as follows. In section one, I summarize the strengths and weaknesses of the different instruments frequently used to measure the positions of political actors in ideological spaces. The following section, describes data and estimation. In section three, I discuss my main empirical findings. A final section concludes.

1 Measuring Politicians' Policy Preferences

Since the seminal work of Davis, Hinich, and Ordeshook (1970), the Euclidean spatial model has become the standard for formal theoretical and empirical research on many aspects of the political process. For example, the capacity to locate political parties within a common space allows us to compare party systems in terms of important indicators like the degree of polarization, the direction of political competition, and so on (Mair 2001).

One essential requirement in operationalizing several of these models is to develop accurate measurements of the positions of political actors in policy and/or ideological spaces (Laver 2001; Hug and Schulz 2007). Often, such indicators are constructed using a variety of data sources and analytical techniques, such as the use of roll-call votes in parliaments,

expert surveys and elite studies (Mair 2001). These measurement strategies have contrasting advantages and drawbacks. In this section, I summarize the strengths and weaknesses of each instrument.

1.1 Roll call data

Recorded votes in legislatures (roll call data) are the most commonly used data source to measure politicians' spatial preferences. A well-established strategy is to use some type of statistical technique, such as multidimensional scaling, to represent patterns of legislative voting. These estimation methods typically yield a set of policy dimensions on which the positions of key actors can be placed, revealing how cleavages between them reflect partisan affiliation or geographical schisms, and whether these divisions remain stable or become more polarized over time (e.g., Poole 2005; McCarty, Poole, and Rosenthal 2006).

Recovering politicians' ideological positions from recorded votes is a frequently used practice not only in the study of the U.S. Congress, but also in comparative politics. Indeed, according to some views this particular approach is the *gold standard*, and numerous scholars have examined legislative institutions around the world – including the European Union, and the United Nations – using this approach (e.g. Voeten 2000; Figueiredo and Limongi 2000; Londregan 2000; Ames 2001; Hix 2001; Carey 2002; Desposato 2003; Morgenstern 2004; Rosenthal and Voeten 2004; Jones and Hwang 2005; Alemán and Saiegh 2007). However, despite its merits and centrality, the use of roll call data is not without its critics. These criticisms tend to highlight a number of theoretical as well as practical problems with inferring legislators' ideological preferences from their votes.

If, for example, agenda manipulation and strategic voting exists, then votes may fail to accurately reveal legislators' preferences (Ames 2002; Cox and McCubbins 2005). According to this view, much of the policymaking and bargaining action in many legislatures takes place before proposals reach the voting stage, in public pronouncements and debate, in legislative committees and party caucuses, or during negotiations between executive and legislative actors, or between party leaders and rank-and-file legislators. If this is the case, observed votes (i.e. those that reach the legislative floor) may not be a random sample of the universe of legislative decisions, prompting doubts that unbiased estimated estimates of preferences can be recovered from voting records (Vandoren 1990; Jackson and Kingdon 1992; Londregan 2000; Kam 2001; Laver 2001; Hug 2006; Gabel et. al. 2007).

Other scholars have questioned the belief that voting scores reflect legislators' ideologies altogether. In particular, they argue that the use of actions (votes) to impute policy positions can be problematic (Krehbiel 2000). These skeptics do not doubt the role of ideology in influencing legislative behavior; but they are concerned about how these ideological predispositions can be measured. In particular, they claim that in order to assess the impact of ideology on behaviors such as roll call votes, measurements of ideology that are constructed independently of the roll call votes themselves are required (Jackson and Kingdon 1992).²

From a practical standpoint, the main drawback associated with the use of roll call data is the scarcity of information (Morgenstern 2004). While voting records in the United States are routinely available in a convenient, spreadsheet-type form, this source of data is rare in many legislatures across the world. For example, in numerous Latin American legislatures, most of the information contained in voting records is invisible to all but those present for

the votes themselves (Carey 2006). The amount of visible votes in these countries reflect the technological and procedural obstacles to recording and publishing votes. However, some legislatures in which the technology is available still do not record, or else record but do not publish; thus, the votes remain invisible. According to Carey (2006), electronic systems are in place in the Costa Rican, Panamanian, and Venezuelan assemblies, but they are never used, while the electronic systems in the Argentine and Colombian lower chambers are very rarely employed. In other cases, the systems are used regularly, but voting records are not systematically published.

An additional challenge in measuring spatial preferences pertains to the ability to compare preferences across institutions. Placing different political actors in a common spatial map is important because a large body of spatial theory predicts how legislative and executive institutions should interact. However, the problem of estimating a common map for a legislature and an executive can be quite a challenge (Poole 2005). As Bailey notes, “... no matter how well preferences are estimated within an institution, they are not comparable across institutions without clear points of reference ...” (Bailey 2007: 434). In spite of some important difficulties, previous research demonstrates that it is technically possible to make such comparisons. Still, the corresponding prerequisite, namely a common policy space for all actors analyzed, can only be estimated if the appropriate ancillary information, such as interest groups’ ratings of legislators, is available.³ Unfortunately, these additional informational requirements are unlikely to be met in most cases outside the United States, rendering these technical innovations generally unusable for comparative research.

1.2 Expert data

Another commonly used instrument for measuring party positioning are expert surveys. These studies usually seek to establish interval level measures of party distances along a number of ideological dimensions by polling *knowledgeable* experts and asking them to assign a score on these dimensions to as many of the relevant parties as possible. These surveys have a number of advantages. First, because they reflect the judgement of experts – who are presumably well informed – they carry with them a certain sense of validity. Second, expert judgments are quick, easy and comprehensive (Mair 2001; Marks et. al. 2007). Therefore, they allow the collection of comparable and standardized data across a much wider variety of countries that could be afforded by evidence drawn from roll call data.

Expert surveys have been used in a variety of studies. For example, Castles and Mair (1984) asked experts from seventeen OECD countries to locate parties in their own country on a left-right scale. This study was followed by a more systematic poll by Huber and Inglehart (1995), who sought to locate parties on a left-right scale in forty-two countries. In the case of Latin America, several studies have attempted to circumvent the lack of roll call data by measuring the policy positions of political actors using expert surveys (Coppedge 1998; Altman and Luna 2006; Wiesehomeier and Benoit 2008).⁴

Although this approach is a valuable way of comparing numerous countries, it is not devoid of problems. Marks et. al. (2007) offer a good summary of the main weaknesses of expert data. First, because these measures are based on subjective judgments, reliability across experts may be problematic. Second, experts are likely to know more about major

parties and less about obscure ones, thereby creating some reporting asymmetries. Third, if experts are asked to evaluate the location of parties retrospectively, their judgments may be affected by subsequent events. Finally, experts may draw on party rhetoric as well as on a party's action in their evaluation, and therefore end up conflating preferences with behavior (Marks et. al. 2007).

In addition to these problems, expert surveys tend to restrict their attention to the location of political parties and thus they do not contain enough information to assess the ideological position of individual legislators. Sometimes questions regarding the location of the chief executive and/or prominent politicians are also included in these surveys. For example, the survey conducted by Wiesehomeier and Benoit (2008) asked respondents to differentiate between the president's individual position and that of major political parties. Nonetheless, while this instrument may help us place some political actors in a common spatial map, it is still ill-suited to measure legislators' spatial preferences.⁵

1.3 Elite data

Data gathered from interviews with political elites have also been used to assess the positions of political actors in policy/ideological spaces. In this case, actual politicians, rather than country experts, are asked to place the political parties of their country, along with other relevant political actors and themselves on a common ideological scale that has been defined a priori. For example, national legislators may be presented with the task of locating themselves and the other political actors on a ten-point (or seven-point) ideological scale.

This method has two important virtues. First, unlike roll call votes, legislators' responses to these surveys are unrelated to their voting behavior. Therefore, this instrument is not contaminated by the effects of legislative or party institutions, including party discipline, agenda-setting, log-rolls, and the like (Kam 2001; Morgenstern 2004).⁶ A second advantage of elite data is that they can be used to estimate the location of political actors (parties, chief executives, and individual legislators) in a common ideological space.

One notable dataset used by a number of researchers to position Western European parties on a left-right scale stems from surveys conducted on European Parliament's members. As of 2008, the data comprises a valuable time-series, running back to every directly elected Parliament since 1979.⁷ Outside of Western Europe, the most comprehensive study of this type has been conducted by the Instituto de Estudios de Iberoamérica y Portugal of the University of Salamanca. These researchers established the Latin American Parliamentary Elites (PELA) project and conducted four waves of surveys in the lower chambers of 18 Latin American countries since 1994. Appendix 1 shows the amount of elite data that is available from the PELA project.⁸

Aside from measuring legislators' preferences directly, this approach has the advantage of generating ideological scales with unambiguous interpretations. However, estimating ideological locations on a predetermined scale also carries a number of disadvantages. First, predetermined scales force respondents to cluster on only seven or ten points (as the case may be), and thus the survey-based estimates of legislators' preferences are coarse relative to the actual positions that underlie the left-right ideological dimension under investigation (Kam 2001; Laver 2001). Second, the scale may have different meanings to different people.

Namely, respondents may be anchoring their responses according to their own interpretation of the endpoints.⁹ Third, and associated with the ambiguity of the endpoints, is the problem that respondents may interpret the intervals on the scale differently. For example, an extreme leftist may see less difference between a center-left and center-right politician than a moderate would. Finally, as Aldrich and McKelvey (1977) note, given the forced categorization, respondents tend to place their perceptions of the stimuli, as well as their placement of their own ideal points, more frequently in the “prominent” categories (one, three, five, seven, nine).

These problems are quite common in studying individual level perceptual data and their consequences are well understood. In essence, the difficulty is that if one uses the raw data to make inferences, the conclusions can be seriously misleading. For example, it is possible that complete agreement exists in the perceptions of the stimuli, but due to different interpretations of the scale, we might interpret this as little or no agreement. As I show in the next section, this problem is not entirely avoidable, but can be appropriately handled by using existing scaling techniques.¹⁰

From a practical standpoint, given how costly, both in terms of time and money, it could be for an individual researcher to carry out reliable and extensive interviews with a number of politically active individuals, the main concern is whether this data source can be easily acquired. Fortunately, a large amount of studies that use surveys of legislators exist and thus, the data are readily available for use. By my own (and likely incomplete) account, in addition to the aforementioned surveys of members of the European Parliament and those included in the PELA project, elite data for the following country/periods are

available: Bangladesh (1973-74), Britain (1992, 1997, 2001), Bulgaria (1993), Canada (1992), Czech Republic (1993-94, 1996, 1998, 2000, 2003), Estonia (2000), Germany (1994, 2003-04), Greece (2007), Hungary (1993), Latvia (2000), Lithuania (2000), Poland (1993), Russian Federation (1993-1996), Switzerland (1974, 2006), Turkey (1984, 1988, 1995), and eleven national parliaments in Western Europe (1996).¹¹ Therefore, while roll call data is quite sparse outside of the United States, data based on surveys of legislators provide a valuable way of estimating the preferences of political actors over long periods of time in a large number of countries.

In sum, as the discussion presented above shows, it is very important to develop accurate measurements of the positions of political actors in ideological spaces. However, all the instruments that are frequently used in the literature have both strengths and weaknesses. In this section, I have made an effort to systematically make the case for and against each of the three most widely used indicators (roll call data, expert survey data and elite survey data), as well as to examine some of the tradeoffs associated with the use of elite data. My conclusion is that, despite its disadvantages, responses to elite surveys constitute an ideal instrument to estimate both the location of key political actors and to measure the ideological preferences of legislators around the world. Among the data sets currently available, the PELA project stands out as one of the best sources to construct measures of ideological positions using elite data. In the next section, I describe in more detail the PELA data and the estimation technique that I use to estimate of politicians' ideological locations.

2 Data and Estimation

The PELA project constitutes the empirical foundation for this analysis. Given the vast amount of data available from these surveys, I have restricted my focus to the following nations: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Mexico, Paraguay, and Uruguay. The selection of countries did not respond to any criteria other than my own interest and expertise on these polities. However, none of the results presented in this paper depend on this decision.¹²

Table 1 shows the sample size and response rate for each of the selected surveys. The overall response rate is quite high: on average more than half of the actual members of these legislatures (57.3 percent) completed the surveys. These response rates range from 90 percent in the case of Costa Rica (which has a quite small legislature) to 24-26 percent in the cases of Mexico and Brazil, two countries with very large legislative bodies. The surveys also show very low attrition rates (i.e. the difference between the projected/actual samples) and are quite representative of the partisan composition of these legislatures. As mentioned above, the respondents cannot be individually identified, as the surveys are anonymous. However, all legislators were asked about their partisan affiliations. Unlike previous rounds of the PELA study, which suffered from non-representative sampling, in the surveys used here –the latest round – none of the included parties are extremely under/over-represented, compared with their actual legislative shares.¹³

< *Table 1 Here* >

With respect to the survey's content, all respondents were asked a very broad range

of questions ranging from policy positions to personal characteristics (such as age, gender, etc.). The main goal of this paper is to show how elite data can be used both to estimate the location of key political actors and to measure the ideological preferences of legislators. Therefore, before I proceed to describe the particular PELA survey questions that I take into consideration, a brief discussion of the conceptualization of ideology used in this study is in order.

Following the traditional literature on mass behavior, ideology is conceived here as a *constraint* on policy positions, such that positions on a broad range of issues are related to each other in consistent and identifiable ways. Hence, ideology reduces differences in the positions of political actors over many policies to differences in their positions on a low-dimensional space (Converse 1964; Gabel and Huber 2000). As Poole (1998a) notes, constraint has a natural geometric interpretation, and therefore, an important consequence of the idea that ideological preferences have a spatial manifestation is that it is possible to use survey data to come up with a low-dimensional representation of politics in the respondents' countries.¹⁴

Hence, I base my analysis on the answers given by legislators to a handful of questions included in the PELA surveys. Specifically, I examine those questions that asked the respondents to locate themselves and the other political actors on a 10-point scale. The typical format of these questions is: "When we talk about politics, the expressions left and right are usually used. Where would you place < yourself > on an scale where 1 is left and 10 is right?" The questions containing political *stimuli*, such as the country's main political parties or its leading politicians, were phrased in the same way.¹⁵

These are the most straightforward questions asking respondents to reveal their ideological position and to evaluate the location of other key political actors.¹⁶ However, as mentioned above, using the raw data provided by these responses can be problematic due to interpersonal incomparability, or *differential item functioning* (DIF). As King et. al. (2004) note, one of the most satisfactory approaches to correcting for DIF is the Aldrich-McKelvey (henceforth A-M) scaling procedure. Aldrich and McKelvey estimated the positions of candidates and voters in a common issue space in the United States in the 1968 and 1972 presidential elections (Aldrich and McKelvey 1977). In analogous fashion, one can use their technique to estimate the location of key political actors and legislators in a common ideological space using the responses to the ten-point scales from the PELA surveys described above.¹⁷

The basic A-M model assumes that the actual positions of the political stimuli (i.e. key political actors) are the same for all respondents; as such, they can be used as anchors to adjust both actor and legislator ideological positions. Since these actual positions are unobserved, one must assume that legislators have unbiased perceptions of each actor's positions but that the reported positions are linearly distorted in an unknown, yet estimable, manner.¹⁸ One criticism of the A-M approach is that because of the limited computational resources available at the time, they recognized but did not model several other features of the problem, such as the ordinal nature of the response categories (King et. al. 2004). However, subsequent work by Palfrey and Poole (1987) indicate that the A-M procedure recovers the stimulus locations very well, even if errors are heteroskedastic over stimuli.¹⁹

Poole (1998a) generalizes the A-M procedure to multiple dimensions and to handle issues

relating to missing data. His procedure can be used to produce Eckart-Young lower rank approximations and can be applied to a wide variety of perceptual data as well as preference data.²⁰ Therefore, in the analysis presented in the next section I use both Aldrich and McKelvey (1977) and Poole (1998a) as my estimation techniques.²¹

3 Basic Space: Main Results

In this section, I demonstrate how the elite data and the scaling techniques described above can be used to estimate the location of political actors (parties, chief executives, and legislators) in a common low-dimensional ideological space. I first analyze the reliability of this approach to determine whether the use elite data is appropriate to measure the spatial preferences of political actors. Second, to evaluate the validity of these techniques, I examine the extent to which they produce estimates similar to those generated by methods that rely on expert surveys and roll call data. Finally, I demonstrate one significant benefit of this method by showing how it effectively situates different political actors in a common spatial map.

3.1 Reliability Checks

The goal of this section is to demonstrate the reliability of the scaling estimates for the ten-point ideological scale administered to the PELA survey respondents. Table 2 reports the results, with the second column indicating the number of survey respondents who located themselves and the other political actors on the left-right scale, and the third column

indicating the number of stimuli (i.e. political actors other than the respondent) that were included in each survey.

< *Table 2 Here* >

The fourth column indicates the percentage of respondents that were dropped from the analysis because they failed to locate either themselves or at least one of the stimuli on the scale.²² To check the robustness of the A-M estimates in light of these missing data, I reanalyzed the PELA survey responses using Poole's scaling procedure, which allows the recovery of latent dimensions from very sparse matrices (Poole 1998a). Figure 1 shows the configuration of the stimuli recovered using the A-M procedure (in the horizontal axis) and the one generated using Poole's basic space method (in the vertical axis).²³ The results indicate that the A-M procedure reliably reproduced the data being scaled.²⁴

< *Figure 1 Here* >

Table 2 also reports different measures of goodness-of-fit of the basic one-dimensional model (i.e. the A-M estimates). The ratio of the overall variance of perceptions in the scaled data to the average variance is reported in column five. This measure indicates the reduction of variance due to different interpretations of the scale accomplished by the A-M technique. The results reported in Table 2 clearly show that the A-M scaling procedure produces a considerable reduction of variance in perceptions due to differential responses to the scale itself. These reductions range from about 27 percent of the variance in the original data in the case of Brazil to roughly 8 percent for Chile.²⁵

The estimates presented in column 6 indicate the number of respondents with negative weights \hat{w}_i for each country. As Palfrey and Poole (1987) note, these are individuals who have very low levels of political information. The presence of such respondents may come as a surprise, given that the PELA survey was administered to legislators, not voters. However, it is certainly an indicator regarding the significance of the notion of “left” and “right” in some of these countries. If legislators are confused about the location of major parties in a left-right scale, then the party labels may not be meaningful indicators of their ideological orientations. In other words, if legislators are not well informed about the political stimuli, then we must be in the presence of an ideologically disorganized party system (Rosas 2005).²⁶

Accounting for the number of respondents who may interpret the political space as backward is important because their presence may affect the recovery of the individual legislators’ ideal points. The reason is that the uninformed group will be mapped toward the center of the space regardless of their true distribution. Fortunately, as Table 2 shows, this problem is restricted to the cases of Costa Rica and Paraguay. On the other hand, the scaling results pertaining to the location of the stimuli should not be affected by the presence of the uninformed respondents (Palfrey and Poole 1987).²⁷ As Figure 1 demonstrates, the estimates are quite reliable (most of the stimuli lie on the 45 degree line). There are a few exceptional cases where the stimuli recovered using these methods are different. These cases, again, overwhelmingly correspond to parties/politicians in Costa Rica and Paraguay. I return to this issue below when I examine these countries in more detail.

Finally, the dimensionality of the ideological space is another factor that affects the goodness-of-fit of these models. The last column in Table 2 indicates the one-dimensional

fit of the models by way of the R^2 value. In almost every case, it is quite large: on average, the left/right dimension explains approximately 70 percent of the variance of the scaled positions.²⁸ This is to be expected, given that the left-right scales are designed to be one-dimensional. The high R^2 values in column six also conform to current findings in the literature. Recent studies (e.g. Rosas and Zechmeister 2000; Zoco 2006) have challenged the traditional view that Latin American parties are primarily clientelistic/populistic entities by demonstrating that political elites have a clear and coherent understanding of the ideological meaning of left and right.²⁹

As a further robustness check, I also calculated estimates of the basic space in two dimensions for each of these countries using Poole's generalization of the A-M method. Figure 1 shows an explicit comparison between the one-dimensional estimates and the first basic dimension recovered by Poole's procedure. It is clear that these two measures are highly correlated. Further examination of the two-dimensional estimates for all countries suggest that most political actors are primarily located along the left-right dimension.³⁰ In some cases, the second dimension reflects affective rather than ideological divisions (e.g. the extent to which respondents personally like/dislike particular politicians). In some other cases the second dimension corresponds to local ideological schisms which, for the most part, tend to overlap rather than substitute traditional left-right divisions. Finally, in a few countries, the apparent salience of a second dimension is related to idiosyncratic events that took place in these countries when the surveys were conducted. However, irrespective of its nature, the analysis reveals only a very modest gain from using a second dimension.

A closer look at the case of Costa Rica offers a number of interesting insights. The one-dimensional fit of the model is an r-squared of .64, and adding a second dimension only improves the overall r-squared to .73. However, the structure and fit of the basic space presented in Figure 2, suggests that when the survey was taken (May/July 2002), the respondents held somewhat different interpretations of the concepts of “left” and “right”. On the one hand, the basic dimension does reflect a classic liberal/conservative or left/right divide. On the other hand, the spatial map also reflects the realignment of the party system in Costa Rica at the turn of the century.

< *Figure 2 Here* >

In the five elections held between 1982 and 1998, two parties – the Partido Liberación Nacional (PLN) and the Partido Unidad Social Cristiana (PUSC) – dominated Costa Rican politics, typically receiving the combined votes of more than 90% of registered voters. In 2001, Ottón Sols, an ex-PLN deputy and former minister of planning formed the Partido Acción Ciudadana (PAC) in order to challenge the “ideological centrism” of the two parties. In the 2002 elections, PAC and another relatively new party, the Partido Movimiento Libertario founded by Otto Guevara in 1994, won 20 seats in the Legislative Assembly and prevented either traditional party from holding a majority. In addition for the first time since 1936, no presidential candidate met the 40 percent threshold and a runoff had to be held.

As Lehoucq (2005) points out, dissatisfaction with the political establishment surfaced in several ways. In public opinion surveys spanning 2001 and 2002, only 7.8 percent of

respondents between 17 and 25 years of age, and only 36.9 percent of older adults were willing to approve Costa Rica’s 20-year-old two-party system. Similarly, the average proportion of voters calling themselves independents, rose from a low of 17.1 percent during the presidency of Oscar Arias (1986-90) of the PLN to a high of 30.8 percent by 2000 (Lehoucq 2005). Therefore, it appears that many of the respondents in the PELA survey tended to conflate the concepts of left and right with the idea of “traditional” versus “new” parties. This interpretation may also explain why so many Costa Rican legislators viewed the political space *backwards*.³¹

In sum, the results presented in Table 2 along with the additional tests reported in this section suggest that the one-dimensional estimates are quite reliable. Overall, the A-M procedure consistently produced sound measures of the location of political actors in a common ideological space. I turn now my attention to validity concerns.

3.2 Cross-Validation: Scaled Stimuli

The analysis in the previous section centered on the reliability and overall one-dimensional fit of the A-M estimates. However, the recovered ideological space in each country also contains detailed information regarding the location of key political actors that can be used to further validate the results. In this section, I evaluate the validity of the measures of ideological preferences that were generated using the elite survey data. In particular, I examine the extent to which the positions of key political actors in the ideological space generated by the scaling method compare to the estimates produced by the alternative methods summarized

above. I focus on the cases of Argentina and Paraguay and contrast the elite-based estimates with measured constructed from expert surveys and roll call data.³²

Figure 3.a. shows the location of Argentina's main political actors generated from the responses to the PELA left-right scale using Poole's (1998) procedure. The first basic dimension corresponds to the left/right divide, and the way in which the country's main political actors are ordered – from Elisa Carrio and her party (ARI) at the far left to Eduardo Duhalde and the Peronist party (PJ) near the center of the spectrum to Ricardo Lopez-Murphy and his party (Recrear) at the far right – is intuitively appealing. With respect to the second dimension, Figure 3.a. clearly demonstrates that it essentially separates the Peronists from the non-Peronists. This evidence indicates that the spatial map generated with the survey data provides a very good representation of the Argentine political system. It should also be noted that the one-dimensional fit of the model is an r-squared .of 77, compared to an r-squared of .82 in two dimensions, which suggests that the left-right divide matters the most.

< *Figure 3.a. Here* >

It is also worthwhile to note the disparate location of the Peronist Party (PJ) and some of its main figures, with Nestor Kirchner at the left and Carlos Menem at the right; this bodes well with the “big tent” characteristics of this traditional party. The location of the other traditional party, the Unión Civica Radical (UCR) is also in line with established interpretations of Argentine politics. The UCR is close to the PJ in the left-right dimension, but as the main opposition that Peronists faced for decades, it clearly stands out as different in the second dimension.

Taken as a whole, the ideological space obtained from the legislators' responses closely resembles different classifications of Argentine parties based on experts' opinions (Coppedge 1998; Carey and Reynolds 2007; Wiesehomeier and Benoit 2008). To further substantiate this claim, Figure 3.b. presents the correlation between the left-right location of Argentina's main political figures as recovered by the A-M procedure and by the expert assessments compiled by Wiesehomeier and Benoit.³³ Clearly, a strong association exists between the scaled positions obtained from the PELA surveys and the left-right placement by the country's experts.³⁴

< *Figure 3.b. Here* >

A second validity test of the survey-based estimates involves a comparison between the location of Paraguay's main political actors obtained from Poole's (1998) procedure and Optimal Classification scores.³⁵ Figure 4.a. plots the the location of Paraguay's main political actors generated from the responses to the PELA left-right scale.

< *Figure 4.a. Here* >

The representation of the ideological space depicted in Figure 4.a. clearly reproduces the inter-party and intra-party schisms in Paraguay. The first dimension separates the Colorados (Wasmosy, Argaña, Cubas and Oviedo) from everybody else (the PLRA's Domingo Laino and PEN's Guillermo Caballero). The second dimension captures the distinction between the Colorado factions, with Oviedo and Cubas in one side of the ANR location and Wasmosy and Argaña on the other. Historically, partisan politics in Paraguay centered on the competition between two nineteenth-century organizations, the Colorados (or National Republican

Association, ANR) and the Liberals (today called Authentic Radical Liberals, PLRA). Under the aegis of Gen. Alfredo Stroessner, the Colorados dominated Paraguayan politics for decades. However, after the country's transition to democracy in 1989, the Colorado party progressively separated into several factions (Molinas et. al. 2008).

The atomization of the Colorado party occurred from 1992 to 1998. In late 1992, Luis M. Argaña and Juan Carlos Wasmosy confronted on another in the Colorado presidential primary. The commander of the Cavalry, Gen. Lino Oviedo intervened in the vote-counting process to ensure the defeat of Argaña. This move placed Gen. Oviedo in a highly influential position during the new Wasmosy administration after 1993. However, the insistence of Gen. Oviedo to encroach in the political process eventually led to a showdown with President Wasmosy. In April of 1996, Wasmosy ordered the retirement of his military ally and Oviedo responded with a failed insurrection. This action ultimately led to Oviedo's arrest and justified his proscription in the 1998 general election, even though the General had emerged as the favorite candidate in the Colorado primary and defeated Argaña. Because Oviedo was under arrest, his running mate Raúl Cubas Grau became the official Colorado candidate for 1998. For legal reasons, Luis M. Argaña became his vice-president (Molinas et. al. 2008).

The fact that the map constructed using legislators' responses to the PELA survey so accurately represent the current political situation is not surprising, given that these factional struggles exist in the Paraguayan congress. President Cubas' decision to release Oviedo from prison immediately after taking office in August of 1998 created a new confrontation with the Argaña faction and an impeachment threat from Congress. Some speculation emerged that the legislature would remove President Cubas and install Argaña as the new chief executive,

when the Vice-President was shot in March of 1999. The killing of Argaña triggered a wave of protests that ended with the resignation of Cubas and the installation of Luis González Macchi as interim president (Molinas et. al. 2008).

Figure 4.b. plots the the two dimensional coordinates of Paraguayan legislators generated using Optimal Classification. For comparability with the 1998 PELA data, I restricted the analysis to those votes made in the Paraguayan legislature between 1999 and 2000 (which included the same legislators that participated in the survey).³⁶ The C tokens are Colorados, the L tokens are Liberales (PLRA), the P tokens are members of PEN, and the U tokens are members of Unace.

< *Figure 4.b. Here* >

The spatial map generated by the Optimal Classification scaling procedure also captures the political situation in Paraguay at the end of the twentieth century quite well. In May of 2000, a failed military coup took place and, in the midst of several corruption scandals, the Oviedistas and the Liberal Party attempted to impeach González Macchi at least three times. In contrast, the leading members of the Partido Encuentro Nuevo (PEN) –including its 1993 presidential candidate, Guillermo Caballero – participated in González Macchi’s cabinet. Still in exile and banned from running in the presidential election, Gen. Oviedo ordered the transformation of his Colorado faction into a new party, Unace (Unión Nacional de Colorados Eticos), for the 2003 race (Molinas et. al. 2008). These developments are reflected quite well in Figure 4.b., as we see a clear separation between the different legislative factions who supported/opposed González Macchi.

The brief analysis of the Argentine and Paraguayan cases illustrated just some of the many ways in which elite data can be used to estimate the ideological location on political actors. Beyond this practical demonstration, the scaling results provide an important validation for this approach, as the recovered location of partisan positions along the left-right ideological dimension in these two countries coincide with the way parties have been described in the literature and with estimates generated by expert surveys and roll call data.

3.3 Cross-Validation: Legislators' Ideological Positions

The previous section demonstrates that using elite surveys to estimate the location of key political figures produces valid results. One of the main benefits of the elite data, though, is that it also can be used to measure legislators' preferences directly. For example, the recovered locations of the legislators on the left-right continuum can be used to examine the extent to which these ideological preferences match the partisan composition of the corresponding legislatures (Luna and Zechmeister 2005; Rosas 2005).

I analyze the validity of the elite-based estimates by comparing the ideological position of Chilean legislators recovered using the A-M procedure with those obtained using roll-call based scaling methods. Unlike most Latin American countries, the Chilean legislature systematically takes and records roll-call votes. But because the PELA survey grants anonymity to the respondents, we cannot directly compare individual legislators. Nonetheless we can match legislators based on their political affiliations and thus infer the partisan distribution of ideal points.

Figures 5.a. and 5.b. present a comparison between W-NOMINATE scores and Bayesian MCMC estimates for the members of the Chilean House between 1998 and 1999 and A-M estimates generated using the 1998 PELA survey (which included the same legislators).³⁷ Each figure shows the position of the overall legislative median and the median legislator for each of the main parties/coalitions in Chile.

< *Figures 5.a.-5.b Here* >

Both Figure 5.a. and 5.b. reveal almost no difference in the scores produced by W-NOMINATE, the Bayesian MCMC estimates, and the ideological positions recovered through the A-M procedure. The correlation between the NOMINATE scores and the ideal points generated using the PELA surveys is 0.98, while the correlation between the latter and the Bayesian estimates is .99.³⁸ It should also be noted that partisan positions along the left-right ideological continuum coincide with the way in which Chilean parties have been typically ordered (Londregan 2000; Siavelis 2004; Morgenstern 2004; Aleman and Saiegh 2007). More importantly, the fact that the estimates from the self-declared ideological placements of Chilean legislators closely match those obtained from roll call votes lends further support to the validity of using survey responses to recover legislators' ideological positions.³⁹

3.4 Bringing it all together: Common-Space Ideological Locations

Overall, the results presented above suggest that using survey responses to recover a basic space is a valid alternative to more traditional methods based on expert data and/or roll call votes. But more importantly, the main advantage of measuring spatial preferences using elite data over other approaches is that it allows us to compare ideological preferences

across institutions. Therefore, these data can be employed to address various propositions regarding executive-legislative relations. For example, the scaled estimates are ideally suited to properly construct gridlock intervals or to test if the ideological reputation of executives and/or legislators is a reliable predictor of policy outcomes (e.g. Johnson and Crisp 2003).

To illustrate how the A-M estimates can be used to assess the ideological makeup of legislatures and to gauge the relative position of legislators vis-a-vis executives, I focus on the cases of Colombia and Bolivia. Figure 6 graphs the ideological locations of Colombian legislators based on their membership in the country's main political parties. The figure also shows the scaled positions of (1) the median legislator within each party; (2) the overall median legislator in the legislature; and (3) the president of Colombia, Alvaro Uribe. It is striking to note how Colombia's main parties overlap with each other on the left-right dimension. As Figure 6 shows, they are quite heterogeneous, and tend to occupy the center of the political spectrum. Moreover, the recovered location of the parties squares well with existing interpretations of Colombian politics (see Archer and Shugart 1997; Pachón 2002).

< *Figure 6 Here* >

The representation of the ideological configuration of the Colombian political landscape presented in Figure 6 closely follows the way in which recent political developments have been described both in the popular press and in the scholarly literature. In May/June of 2002, when the PELA surveys were conducted, the press portrayed Alvaro Uribe as an independent tasked with the responsibility of dealing with an unwieldy multiparty coalition in Congress. As Pachón (2002) notes, Uribe's candidacy became the axis of a realignment of the party

system. The previously dominant Liberal Party (PL), of which Uribe had been a member of before contesting the 2002 presidential election as an independent, became fractured. The “officialist” leadership of the Liberals (PLO) openly opposed Uribe’s government and his policies. However, he retained the support of a substantial minority within the party, including a majority of the elected Liberal congressmen (classified as “Uribist” Liberals (PLU) by the media). In addition, the Conservative Party (PC) became a close political ally of the president (Pachon 2002). Therefore, the spatial map clearly captures the realignment of the Colombian party system and the position of legislators from different factions of the Liberal party vis-a-vis the executive.

The distribution of Bolivian legislators’ ideological positions are presented in Figure 7. First, notice how well the spatial map represents the ideological dispersion exhibited by this highly fragmented legislature. The heterogeneity of Bolivia’s political parties clearly emerges in the graphical representation: a substantial overlap exists in the ideal points of legislators belonging to Bolivia’s traditional parties, the Movimiento de Izquierda Revolucionaria (MIR) and the Movimiento Nacionalista Revolucionario (MNR). Also notice how the highly personalist party, Nueva Fuerza Republicana (NFR) possesses very little ideological coherence, as its members identify with ideological positions both at the far left and the far right.⁴⁰ This is not the case, though, with the members of the Movimiento al Socialismo (MAS). These legislators’ ideal points are located to the left of the political spectrum and overlap with legislators from the other parties.

< *Figure 7 Here* >

Similar to the case of Colombia, the ideological organization of Bolivia's political setting recovered by the A-M estimates accurately depicts Bolivia's political situation in 2003. Gonzalo Sanchez de Lozada, familiarly known as "Goni", was elected president of Bolivia in August of 2002 after a difficult coalition-building process. The government coalition included the MNR and the MIR. However, once he took office, Mr. Sanchez de Lozada clashed with many of the career politicians with whom he had to deal with as president. An advocate of free-market policies, and one of Washington's most stalwart allies in South America, Sanchez de Lozada also had to face a growing leftist indigenous movement led by Evo Morales of the MAS. Early in 2003, Sanchez de Lozada stood alone against an array of forces that made governing nearly impossible. As a member of congress from the governing party states, the government was "... in the cross-fire, from extremists on the right, extremists on the left...".⁴¹ By the time the PELA surveys were conducted, from July to September of 2003, the two sides in Congress had bickered relentlessly, with opponents seeking to prod the president into resigning. Finally, in September, with popular revulsion growing, leaders of the two parties from the precarious governing coalition announced that they were thinking of leaving the government. Several days later, on October 2003, Sánchez de Lozada resigned and left the country.

The Colombian and Bolivian cases are good examples of how the elite data can be used to estimate the location of parties, chief executives, and individual legislators in a common ideological space. As the analysis in this section demonstrates, this is clearly one of the main virtues of the survey-based method.

Conclusions

The analyses presented in this paper indicate that with the appropriate scaling methods, we can use survey data to obtain reliable estimates of legislators' ideological preferences. As illustrated with the cases of Costa Rica, Argentina, and Paraguay, these data provide concrete and systematic evidence of patterns of political competition. They can also be employed to uncover the main dimensions of conflict in each of these countries. The recovered locations of the legislators on the left-right continuum can also be used to assess the relative position of the legislature vis-a-vis the executive.

In addition, the strong correlation between the survey-based and roll-call-based estimates indicates that using survey responses to recover a basic space is certainly a valid option to legislative scholars. This finding poses important implications for the study of legislatures when votes are not recorded or when recorded votes are not a random sample of the universe of legislative decisions. Given that the method used in this paper does not require access to voting records, it can be applied to any legislature in the world.

More generally, the approach championed in this article not only provides real benefits in situations where roll call data are not available but can also help researchers test a myriad of hypotheses in comparative legislative studies. For example, knowing the ideological locations of individual legislators can resolve the debate over party unity or party factionalization when roll call data do not exist. We can also determine which issues create salient divisions amongst the parties and legislators to address various propositions regarding executive-legislative relations or to explore the quality of representation in young democracies.

Notes

¹The use of differential item functioning (DIF) to refer to interpersonal incomparability originated in the educational testing literature: a test question is said to have DIF if equally able individuals have unequal probabilities of answering the question correctly (cf. King et. al. 2004).

²These criticisms have led researchers to consider alternative indicators of legislators' preferences. Monroe, et. al. (2007) use records of legislative debates to capture legislators' positions on political issues. Another alternative focuses in the use of cosponsorship data (Aleman et. al. 2007; Fowler 2006). However, while promising, both of these approaches are not free of criticisms. As Carey (2006) notes, rhetorical ideological proximity might fail to identify the dividing lines between support and opposition for legislative proposals. In the case of cosponsorship, Crisp et. al. (2008) argue that the data generating process is undertheorized and understudied. In particular, they examine the properties of ideal point estimates from cosponsorship data and suggest that there are problems with using such data in all but very exceptional circumstances.

³For example, Poole and Rosenthal (1997) use interest groups and some common roll calls to combine the two chambers in the U.S. congress. In a similar fashion, Bailey (2007) employs the positions taken by U.S. presidents and members of congress on Supreme Court cases to “bridge” across institutions.

⁴Michael Coppedge's classification of Latin American political parties includes about

800 parties, accounting for 97 percent of the vote, in 166 legislative elections in eleven Latin American countries up to 1995. Each party is classified as left, center-left, center, center-right, or right and Christian or secular; or as personalist, other, or unknown. The Wiesehomeier and Benoit data contains policy positions on numerous dimensions of policy for both parties and presidents in 18 presidential systems from Latin America gathered by the authors from expert surveys collected in late 2006 and early 2007.

⁵Another source of data that is commonly used to measure party positioning, *electoral manifestos* also suffers from the same problem. Data collection efforts such as the Manifesto Research Group (MRG) have allowed researchers to estimate the policy preferences of political parties. However, the location of individual legislators cannot be inferred from these measures.

⁶In some of these studies, the respondents cannot be individually identified, as the surveys are anonymous. While this places a restriction on matching the responses with other data sources, it ensures that responses are sincere. As Kam (2001) notes, there seem to be little incentive for respondents to misrepresent their preferences in an anonymous survey.

⁷The groups that conducted these surveys were led by Karlheinz Reif and Rudolf Wildenman (1979-84 parliament), Rudolf Hrbek and Carl-Christoph Schweitzer (1984-1989 parliament), Shaun Bowler and David Farrell (1989-94 parliament), Bernhard Wessels (1994-99 parliament), and the European Parliament Research Group (EPRG) (1999-2004 and 2004-09 parliaments). For additional information see: <http://www.lse.ac.uk/collections/EPRG/survey.htm>

⁸For a more detailed description of the Elites Parlamentarias en Iberoamérica project, see

García-Diez and Mateos (2008) and Alcántara (2008), or go to <http://americo.usal.es/oir/elites/>

⁹Moreover, the fact that respondents are asked to locate their own ideal points on the scale may exacerbate this tendency (Wilcox et. al. 1989). For example, a legislator who perceives himself/herself as a true “leftist” is likely to interpret the endpoints of the left-right scale in order to accommodate his/her own ideal point, thus pushing his/her perceptions of the candidates farther to the right than a “less committed leftist” would.

¹⁰King et. al. (2004) suggest the use of *anchoring vignettes* as a method to evaluate and improve the information revealed by surveys. These vignettes are descriptions of hypothetical people or situations that survey researchers can use to correct otherwise interpersonally incomparable survey responses. Ideally one would like to use such vignettes to enhance interpersonal comparability when measuring the preferences of key political actors. Unfortunately, this is not feasible due to data restrictions. The use of the vignettes must be implemented at the design stage and none of the elite surveys available to date have included vignettes.

¹¹The sources of these studies (in the order they are mentioned in the text) are Jahan(1976), Norris and Lovenduski (1992), Norris (1997, 2001), Markowski (1997), Erickson (1997), Linek (2005), Pettai (2005), Patzelt (1994), Wessels (2004), Edinger and Vogel (2005), Nikolakopoulos (2008), Markowski (1997), Pettai (2005), Pettai (2005), Markowski (1997), Remington and Smith (1998), Kerr (1981), Bailer et. al. (2006), Kalaycoglu (1984 and 1988), Hazama (2005), and Katz and Wessels. (1999). See Appendix 3 for the complete reference list.

¹²The particular surveys that were used along with their main characteristics are indicated in boldface in Appendix 1.

¹³For more details on the partisan distribution of the surveyed legislators go to the PELA study's website: <http://americo.usal.es/oir/elites/>

¹⁴As Poole (1998) notes, this low dimensional space was dubbed a basic space by Ordeshook (1976).

¹⁵For example, the Argentine legislators sampled in 2004 were asked to locate themselves, four parties, the PJ, the UCR, the ARI and RECREAR, and six prominent politicians, Carlos Menem, Lilita Carrio, Ricardo López-Murphy, Eduardo Duhalde, Raul Alfonsín, and Nestor Kirchner on the left-right scale.

¹⁶As such, this is the first paper that uses elite data to estimate the positions of key political actors in Latin America. Rosas (2005) uses PELA to assess the level of ideological organization of Latin American legislative parties. However, his unit of analysis is the legislative *party system* rather than each individual legislator. Zoco (2006) also uses PELA to analyze the ideological organization of the legislative branch at both aggregate (political party) and individual (legislator) levels. However, she restricts her analysis to Central America. Unlike these studies, which work with a correlation or covariance matrix computed from the data matrix, the scaling procedure in this paper analyzes the data matrix directly without any intervening transformations of the original data. Other studies based on the Salamanca surveys use the respondents' raw data, and thus fail to correct for some of the problems outlined above (cf. Alcántara 2008).

¹⁷Of course, as King et. al. (2004) note it would be even better to correct for DIF at the design stage, but unfortunately this is not possible here as I am working with secondary data collected by the PELA team.

¹⁸For a more detailed description of their methodology see Aldrich and McKelvey (1977); see also Poole (1998) and King et. al. (2004).

¹⁹Palfrey and Poole (1987) also show that the respondent positions may be biased toward the mean if the respondents are poorly informed.

²⁰It is indeed important to bear in mind is that the answers to the PELA questions described above can be considered as preferential data -each legislator is asked to report his/her most preferred position on the scale- as well as perceptual data - each legislator is asked to place where he/she thinks a number of political actors are on the scale.

²¹I use MCKALNEW.FOR, a Fortran program developed by Keith T. Poole to implement the Aldrich and McKelvey scaling method (1977). The program is available from Keith T. Poole at <http://voteview.com/>. For the theory of the program, and a more detailed description of the methodology employed here see Aldrich and McKelvey (1977), Palfrey and Poole (1987), and Poole (1998a and 1998b.). I use BLACKBOX.EXE and BLACKBOX_TRANSPOSE.EXE, two computer programs developed by Keith T. Poole to implement Poole's (1998a) scaling procedure. Both programs were made available to me by Keith T. Poole.

²²Legislators were only included in the scalings if they placed themselves and all stimuli on the 10-point scale and saw at least some variance in the positions of the stimuli. Of

practical note, this resulted in a considerable reduction in the number of respondents in the cases of Costa Rica (40 percent), Bolivia (32 percent), Mexico (24 percent) and Argentina (23 percent).

²³I normalized the first basic dimension recovered by Poole's procedure so that it could be directly compared to the Aldrich-McKelvey configuration.

²⁴These results are not surprising: Monte Carlo tests in both Aldrich and McKelvey (1977) and in Poole (1998a) show that their estimation procedures accurately reproduce the true data even with high levels of error and missing data.

²⁵The estimates of the overall variance to perceptions in the scaled data have to be taken with a grain of salt, though, as they are not completely free of bias (Aldrich and McKelvey 1997; Palfrey and Poole 1987).

²⁶For example, in the cases of Costa Rica and Paraguay, 5 out of 31 and 9 out of 56, respectively (or approximately 16 percent of the legislators) have estimated weights that are negative.

²⁷Monte Carlo work conducted by Aldrich and McKelvey and Palfrey and Poole (1987) show that the recovery of the configuration of stimuli is very accurate even when the error level is very high and a large number of respondents are reporting mirror or semi-mirror images.

²⁸It should be noticed that once again, the exception is the case of Paraguay, where the R^2 is considerably smaller.

²⁹Using data from expert surveys, Wiesehomeier and Benoit (2008) find that positioning of presidents and parties on nearly all political issues neatly reduces to a single dimension of left-right contestation. The one-dimensional fit is also very consistent with existing assessments of the nature of the party systems in the literature. For example, Rosas (2005) constructs an index of ideological organization of legislative parties. According to his results, Chile and Uruguay rank much higher than the other countries. These results also square well with those obtained by Jones (2005). He develops an index to capture the extent to which parties are institutionalized and programmatic. According to his index, Chile and Uruguay exhibit the most programmatic party systems.

³⁰A graphical representation of the estimated location of key political figures in each of these countries is provided in Appendix 2.

³¹To further determine whether this was the case, I conducted additional analysis of the Costa Rican basic space using the PELA surveys from 1998, before the realignment of the party system took place. As expected, the one-dimensional fit of such model was very large (an r-squared of .78) and the increment to adding a second dimension was quite small. The second basic dimension essentially separated former presidents Figueres and Arias from everyone else.

³²I chose Paraguay because it is one of the few Latin American countries for which multiple roll call votes exist.

³³ The experts in the Wiesehomeier and Benoit survey were primarily academics, ideally those who specialize in political parties and electoral processes of their countries. In each

country they asked experts to place parties on a general left-right dimension, taking all other positions into account (the endpoints of the scale were 1, for Left and 20, for right). The data in Figure 3.b. is the average of the responses. For comparability, I use the one-dimensional A-M estimates.

³⁴One small caveat regarding this comparison is that the PELA survey took place between April and June of 2004 while the Wiesehomeier and Benoit one was conducted in 2007.

³⁵Optimal Classification (OC) is a scaling procedure that performs non-parametric unfolding of binary choice data. Given a matrix of binary choices by individuals (for example, Yes or No) over a series of Parliamentary votes, OC produces a configuration of legislators and cutting lines/planes that maximize the correct classification of the choices. For the theory of the program, and a more detailed description of the OC method see Poole (2005).

³⁶The roll call data contain 275 non-unanimous votes taken by Paraguayan legislators between January 15, 1999 and December 29, 2000. The correct classification is 94.5% (0.94511) with an aggregate proportional reduction in error (APRE) of .79 (0.79564). The eigenvalue pattern suggests the presence of a second dimension underlying the data.

³⁷The W-NOMINATE scores were obtained from Morgenstern (2004), and the Bayesian estimates from Aleman and Saiegh (2007).

³⁸As expected, there is also a high correlation between the W-NOMINATE scores and the Bayesian ideal points.

³⁹The scaling results generated by the A-M method for the cases of Argentina and Brazil

are also very similar to the findings in Jones and Hwang (2005), who use examine Argentine Chamber deputy behavior through roll-call vote analysis, and those in Zucco (2007), who explicitly examines the evolution of the ideological organization of the Brazilian legislature using both survey responses and roll call data.

⁴⁰The position of the median NFR legislator coincides with the location of the legislature's median and thus I omitted it to avoid cluttering the graph. The NFR was mostly a vehicle for the candidacy of Manfred Reyes. In the 2002 elections, he won 20.9% of the popular vote and the party obtained 25 out of 130 seats in the Chamber of Deputies. Three years later, its presidential candidate, Gildo Angulo, won only 0.7% of the popular vote and the party obtained no legislative seats.

⁴¹These were the words of Luis Eduardo Siles, quoted in the New York Times on March 10 2003.

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Table 1
Sample Size and Response Rates
Selected PELA Surveys

Country	Size of Legislature	Projected Sample	Actual Sample	Response Rate (%)	Attrition Rate (%)
Argentina	257	108	105	41	2.8
Bolivia	130	79	80	61	0
Brazil	513	134	134	26	0
Chile	120	90	88	73	2.3
Colombia	166	96	95	57	1
Costa Rica	57	51	51	90	0
Mexico	500	125	124	24	0.8
Paraguay	80	62	56	70	10.7
Uruguay	99	80	73	74	9.6

Source: <http://americo.usal.es/oir/elites/>

Table 2
Overall Fit Statistics of PELA Left-Right Scales

Country	Respondents	Stimuli	% Missing	Reduction in Variance	Number Negative ^a	R^2
Argentina	81	11	23	.162	1	0.75
Bolivia	54	12	32	.153	0	0.77
Brazil	118	12	12	.269	2	0.61
Chile	81	11	8	.084	0	0.87
Colombia	82	10	14	.166	0	0.78
Costa Rica	31	11	40	.198	5	0.61
Mexico	94	12	24	.191	1	0.69
Paraguay	56	7	0	.145	9	0.38
Uruguay	62	10	8	.115	1	0.82

^a This measure indicates the number of respondents with negative weights \hat{w}_i . These are individuals who have very low levels of political information.

Figure 1

Comparison between
A-M and Basic Space Coordinates

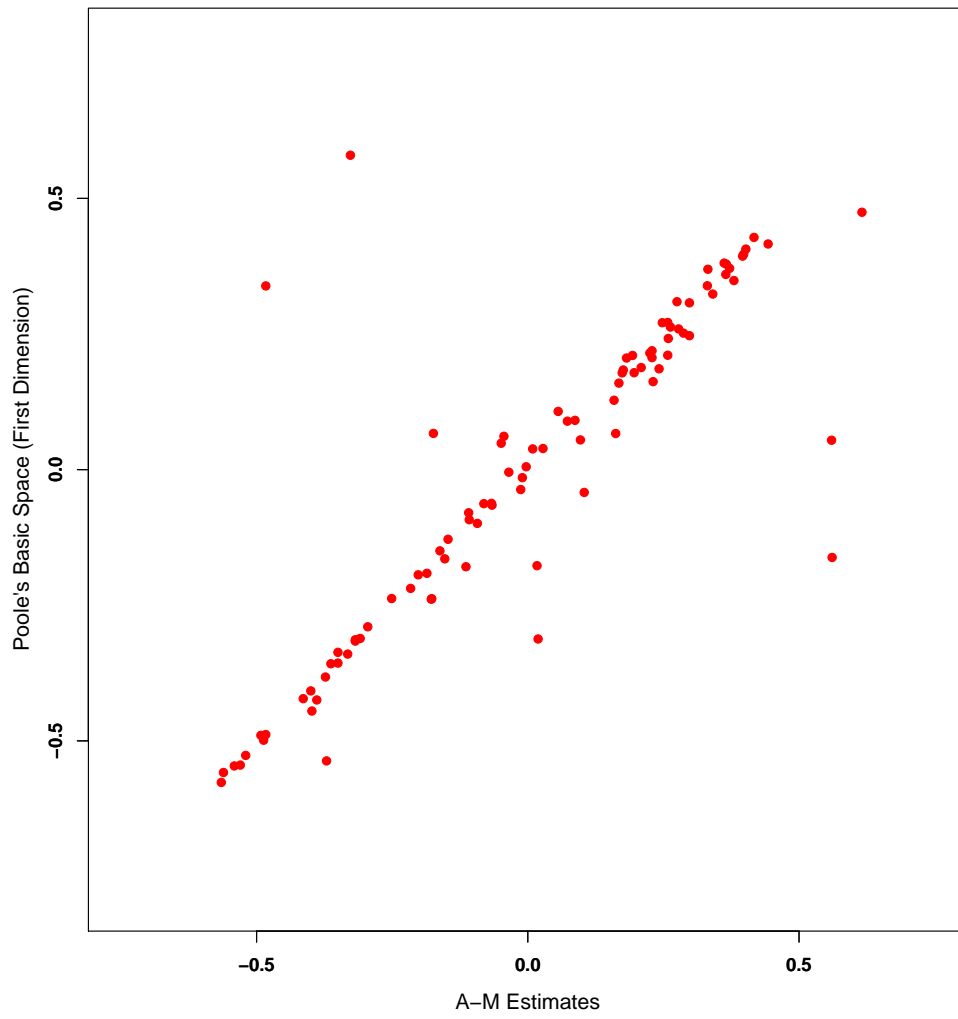


Figure 2

Basic Space
Costa Rica, 2002

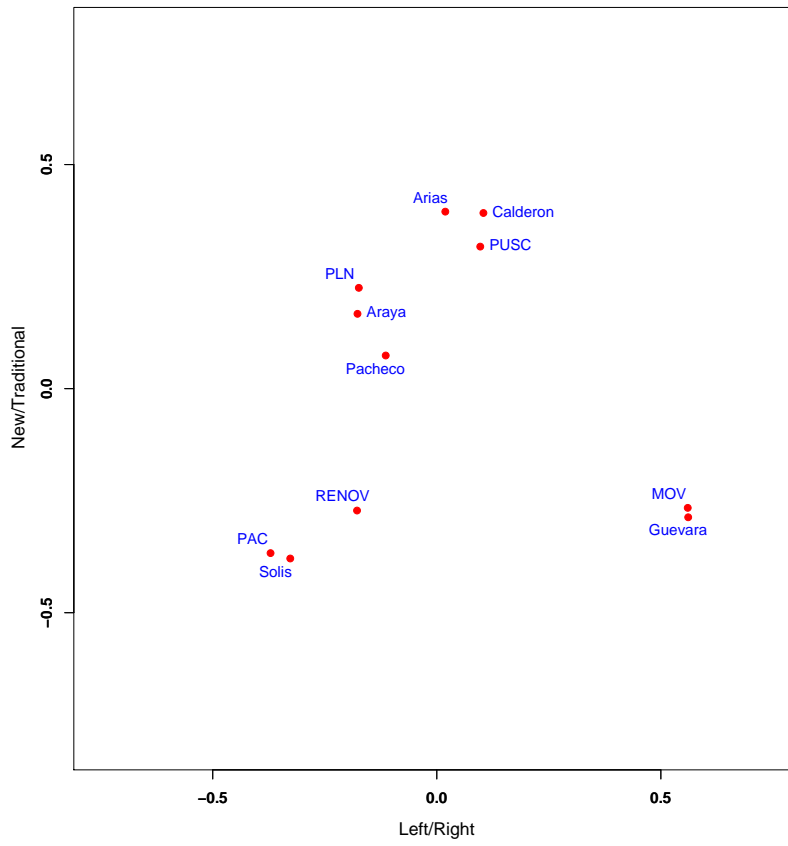
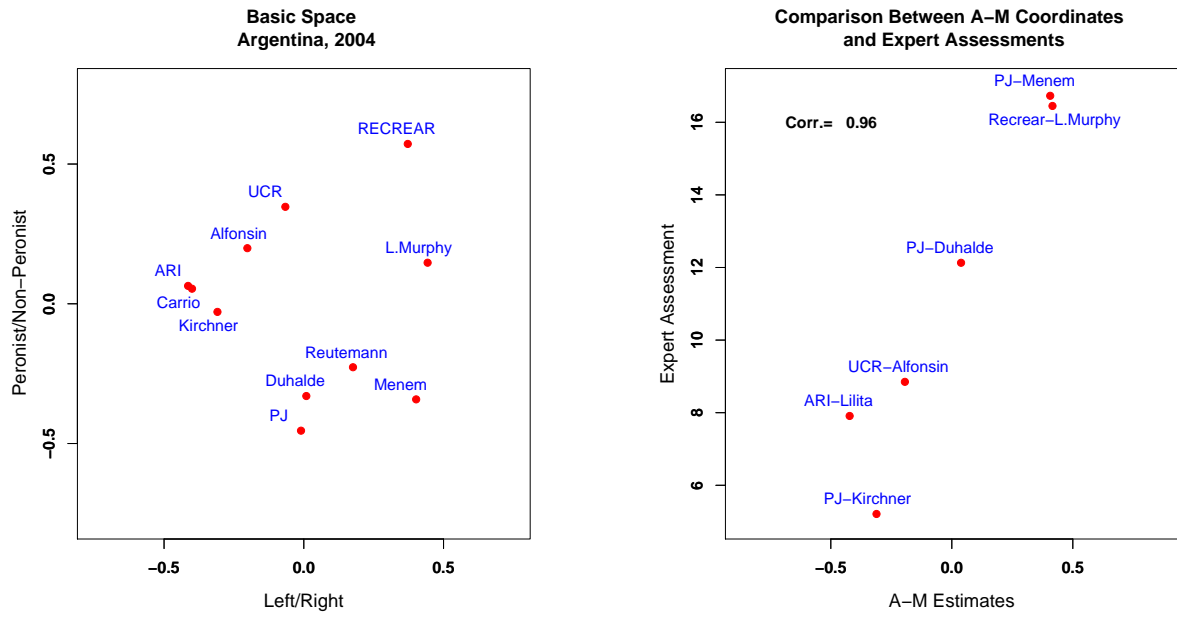
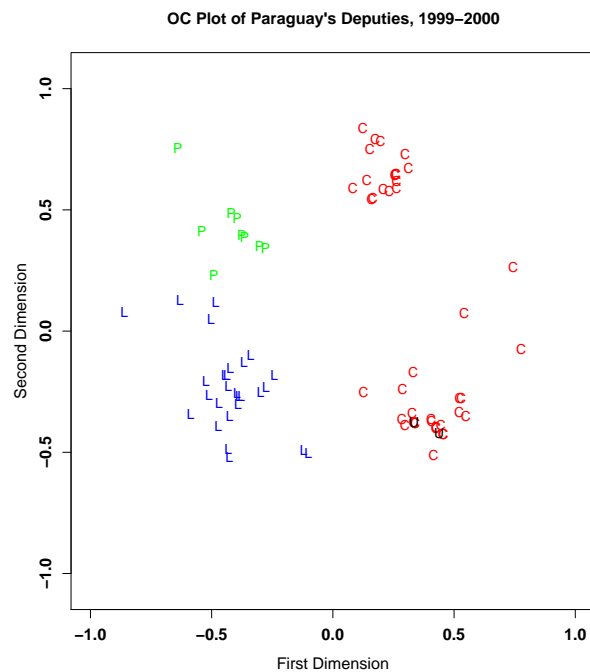
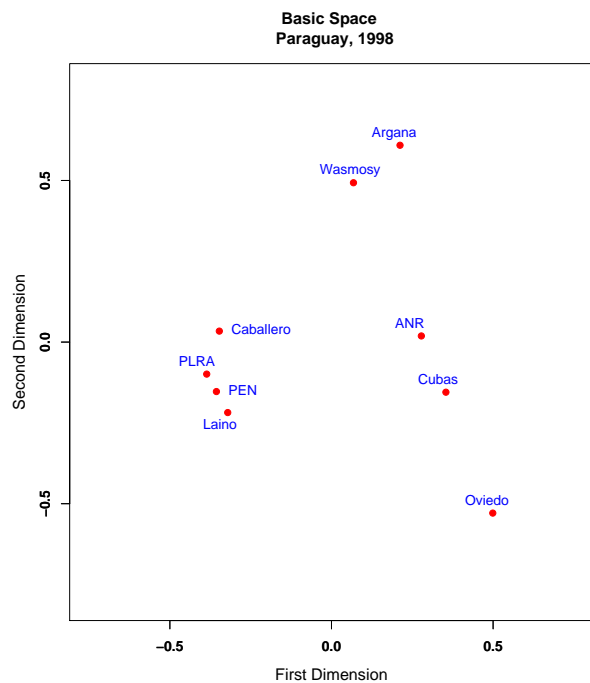


Figure 3.a. and 3.b.



Figures 4.a. and 4.b.



Figures 5.a. and 5.b.

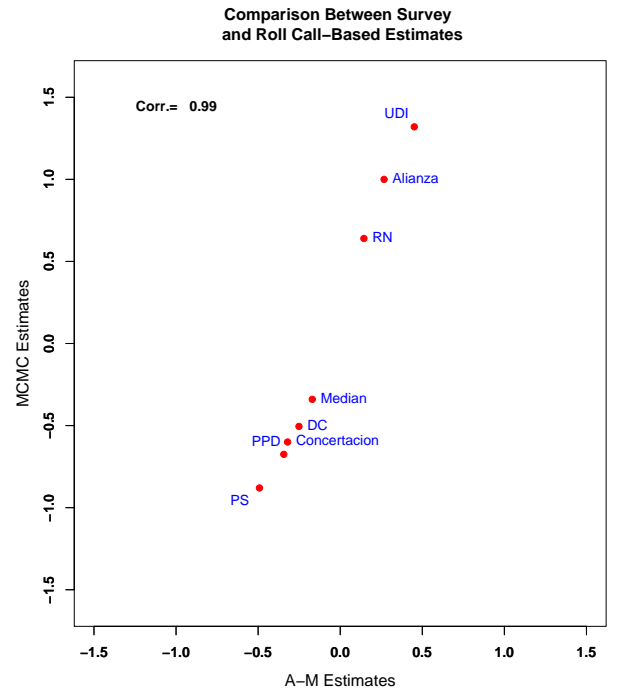
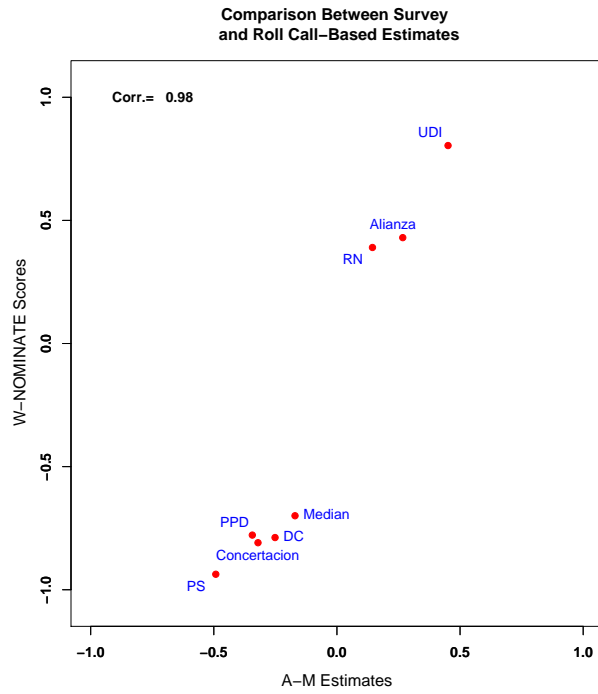


Figure 6
Colombian Legislators
From 2004 PELA 10-Point Scale

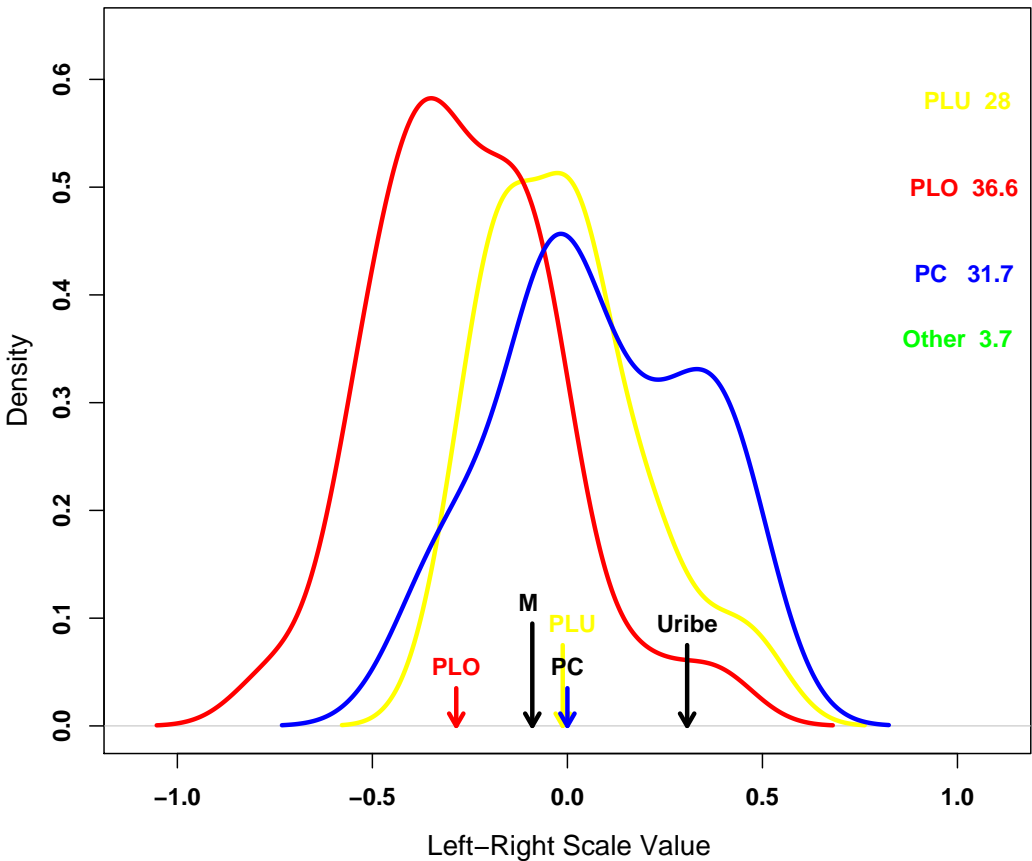
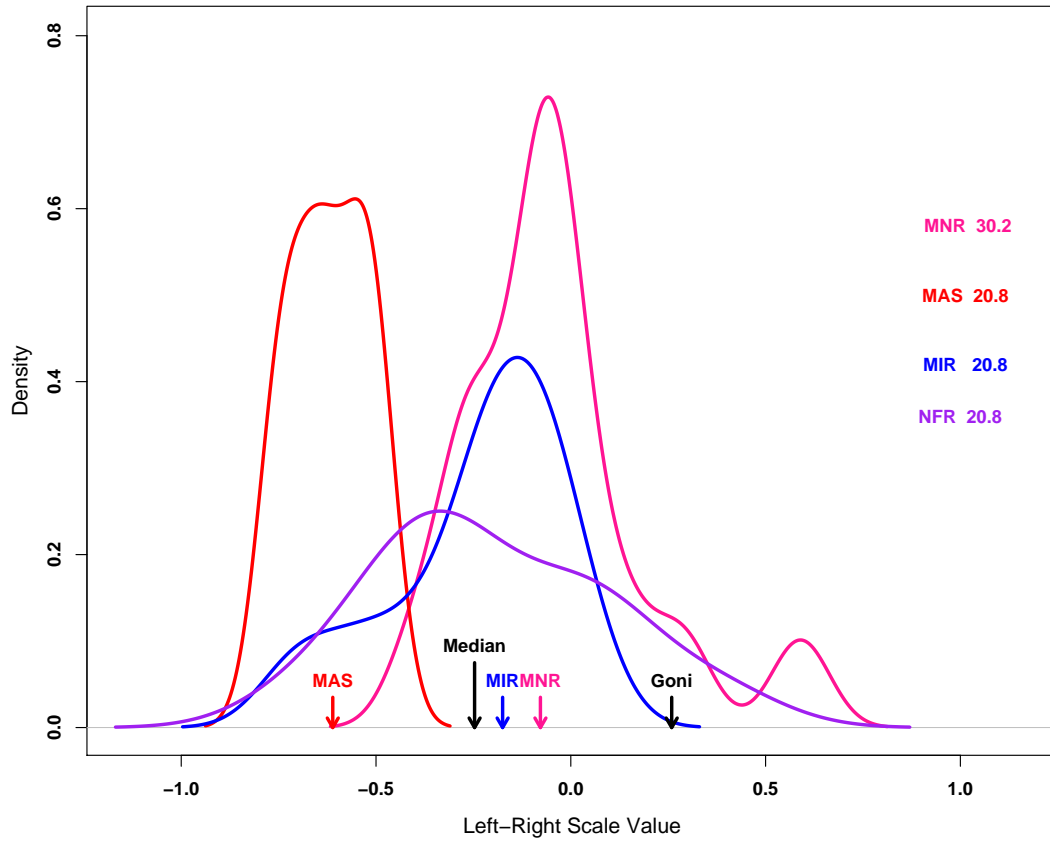


Figure 7
Bolivian Legislators
From 2004 PELA 10-Point Scale



Appendix 1

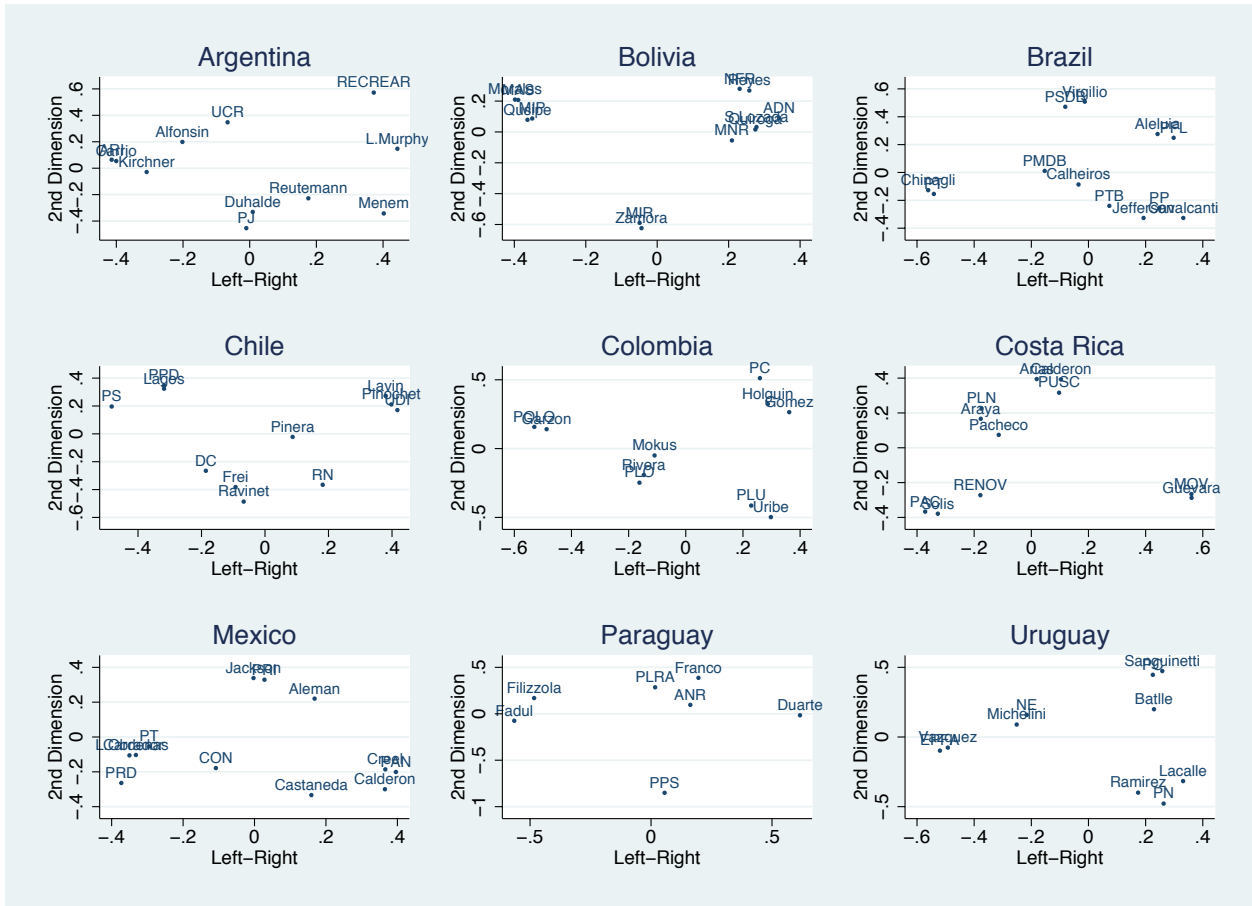
Elite Data from PELA Surveys

Country	Wave 1			Wave 2			Wave 3		
	Session	Responses	Date	Session	Responses	Date	Session	Responses	Date
Argentina	95-97	68	Aug./Sept. 96	97-01	128	May/June 98	03-07	105	Apr./June 04
Bolivia	93-97	74	Aug./Sept. 96	97-02	98	Jul./Aug. 98	02-07	80	Jul./Sept. 03
Brazil							03-07	134	June/Dec. 05
Chile	93-97	93	Sept./Dec. 94	97-01	89	Apr./Jul. 98	02-06	88	Aug./Sept. 02
Colombia				98-02	88	Jul./Aug. 98	02-06	95	May/June 02
Costa Rica	94-98	52	Sept./Oct. 94	98-02	49	Aug./Sept. 98	02-06	51	May/Jul. 02
Ecuador	96-98	72	Aug./Sept. 96	98-02	112	Aug./Sept. 98	02-06	98	Mar./Apr. 03
El Salvador	94-97	46	Aug. 94	97-00	58	Apr./Jun. 98	00-03	64	Aug./Sept. 00
Guatemala	95-99	63	Aug./Sept. 98	00-04	79	Aug. 02	04-08	121	Sept. 04
Honduras	94-97	67	Aug./Sept. 94	97-01	71	Jul./Aug. 98	02-06	102	Oct. 02
Mexico	94-97	123	Jun./Jul. 95	97-00	126	Mar./Apr. 98	03-06	124	Mar/Sept. 04
Nicaragua				96-01	70	Aug./Sept. 98	02-06	60	Sept./Nov. 02
Panama							99-04	n/a	n/a
Paraguay	93-98	47	Aug./Sept. 96	98-03	65	Aug./Sept. 98	03-08	56	Aug./Sept. 03
Peru	95-00	87	Oct./Dec. 95	01-06	83	Aug./Oct. 01			
Dom. Republic	94-98	62	May/Sept. 95	98-02	103	Jul./Sept. 00	02-06	118	Apr./Aug. 03
Uruguay	95-00	73	Aug./Sept. 96	00-05	68	Mar./Jul. 01			
Venezuela	93-98	69	Mar./Apr. 95	00-05	100	Oct./Nov. 00			

Source: <http://americo.usal.es/oir/elites/>. Boldfaced entries indicate surveys used in this study.

Appendix 2

Two-Dimensional Ideological Space: All Countries



Appendix 3

Additional Elite Data Sources

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