

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

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Abstract

This paper applies a scaling method developed by Aldrich & McKelvey (1977) to the Political Elites in Latin America surveys in order to map the ideal points of legislators, as well as to recover the basic space in nine Latin American countries. The representation of the ideological configuration of each of these countries matches very well the way in which their political landscapes have been described both in the popular press and in the scholarly literature. These findings buttress the validity to the estimates obtained using the A-M procedure. The results in this paper also show that survey data can be reliably used to locate legislators' ideological positions in a multi-dimensional ideological space in a manner analogous to roll call-based methods that are commonly used in the scholarship on the U.S. Congress. The main advantage of this method is that it does not rely on recorded votes, so is not affected by the validity of roll call data as unbiased indicators of legislator's preferences. Most importantly, because it does not require access to voting records, the approach suggested in this paper can be applied anywhere around the world.

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Introduction

The purpose of this paper is to show how survey responses can be used to recover a basic space using a method developed by Aldrich and McKelvey (1977) for scaling individuals' reported perceptions of the locations of stimuli along a scale with labeled endpoints. In particular, I analyze data from the Universidad de Salamanca's Parliamentary Elites of Latin America (PELA) survey to offer an assessment of the ideological organization of nine Latin American countries.

The recovered space in each country contains two main elements: the location of the stimuli; and the locations of the legislators on the left-right continuum. My results indicate that the A-M procedure reliably reproduces the data being scaled. First, the representation of the ideological configuration of each of these countries closely matches the way in which their political landscapes have been described both in the popular press and in the scholarly literature. Second, an examination of the ideological positions of individual legislators recovered through the A-M procedure suggests that survey data can be reliably used to identify their policy preferences in a manner analogous to methods based on recorded vote data that are frequently used in the U.S. Congress literature. The main advantage of this method is its non-reliance on recorded votes, thereby overcoming concerns over the validity of roll call data as unbiased indicators of legislator preferences. And since it does not require access to voting records, the approach suggested in this paper can be applied to any country in the world.

The rest of the paper proceeds as follows. The first section discusses some of the problems associated with the use of recorded votes to assess legislators' policy preferences. In section two, I describe the data and present an overview of the statistical model used to estimate legislators' ideal points and the placement of the stimuli. In section three, I discuss my main empirical findings. A final section concludes.

1 Measuring Legislators' Policy Preferences

Since the seminal work of Davis, Hinich, and Ordeshook (1970), the Euclidean model has become the standard for formal theoretical and empirical work on legislatures. Empirically, much of the work relies on the use of roll call data – the recorded votes in these legislatures – to estimate legislators' ideal points. These estimates, in turn, allow researchers to describe both legislators and legislatures. Particularly, the distribution of ideal points reveals how cleavages between legislators reflect partisan affiliation or geographical schisms, and whether these divisions remain stable or become more polarized over time (e.g., McCarty, Poole, and Rosenthal 2006).

The use of roll call data to analyze lawmakers' preferences has emerged as a common practice not only in the study of the U.S. Congress, but also in comparative politics. Most notably, scholars of Latin American legislatures have taken advantage of roll-call data to advance the understanding of those institutions (Figueiredo and Limongi 2000; Londregan 2000; Ames 2001; Carey 2002; Desposato 2003; Morgenstern 2004; Jones and Hwang 2005; Alemán and Saiegh 2007).¹

However, the use of roll call votes to identify legislators' preferences has been criticized on the grounds that agenda manipulation and strategic voting tend to affect the inferences that can be made from the record of public votes (Ames 2002; Cox and McCubbins 2005). According to this view, much of the policymaking and bargaining action in most 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. Since the roll call data only reflects votes that reach the legislative floor, they might not be a random sample of the universe of legislative decisions. For example, Hug (2006) and Gabel et. al. (2007) show that roll-call votes are biased indicators of legislative preferences in the Swiss and European Parliaments, respectively.

The existence of these problems has led scholars 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.

From a practical standpoint, the main pitfall associated with the use of roll call data is the scarcity of information (Morgenstern 2004). Recorded votes are ubiquitous in the U.S. Congress, but are rare in many legislatures. 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, meaning that the votes remain invisible (Carey 2006).²

In the case of Latin America, several studies have attempted to circumvent this problem by measuring the policy positions of political actors using survey data (e.g. Latinobarómetro or country electoral polls) or expert surveys (Coppedge 1998; Altman and Luna 2006; Wiesehomeier and Benoit 2008).³ Although these studies are valuable sources for comparing a wide set of countries, they are not without problems. First, relying on expert surveys to assess the location of political actors in different national contexts undoubtedly raises the issue of intercoder reliability. Second, these studies tend to restrict their attention to the location of political parties and/or prominent politicians. Therefore, they do not provide the information needed to make appropriate judgments about the ideological positions of individual legislators.⁴

2 Data and Methods

Aside from the validity and reliability concerns discussed above, some scholars question the idea 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). They 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). Thus, Morgenstern (2004) suggests collecting data that simply asks legislators to place themselves on a common scale.

Asking respondents to place themselves and/or stimuli on issue/attribute scales is a common survey item to social scientists. For example, the American National Election Study has been collecting seven-point scale data since 1968. The endpoints of these scales are labeled, and the respondent is asked to place himself/herself on the scale (his/her “ideal point”) along with a set of political figures and the two main political parties. These types of data for legislators have been collected by the Instituto de Estudios de Iberoamérica y Portugal of the University of Salamanca, Spain and contained in the PELA survey.⁵

The PELA survey constitutes the empirical foundation for this study, which includes the countries of Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Mexico, Paraguay, and Uruguay. The respondents included members of both major and minor parties and were asked a very broad range of questions ranging from policy positions to personal characteristics. The respondents cannot be individually identified, as the surveys are anonymous. However, all legislators were asked about their partisan affiliations, and each of the surveys is representative of the partisan composition of each country’s lower house of the national legislature. ⁶ Detailed information regarding these surveys is available in Appendix 1.

The respondents sampled by PELA were asked to locate themselves, their country's main parties, and their country's leading political figures on a 10-point left-right ideology scale (where 1 represented 'far left' and 10 'far right').⁷ I use the responses to these questions to recover the basic space in each of these countries. The main idea here is to treat the preferential choice data as Euclidean distances between respondents and stimuli.

One important problem associated with these type of data is that the scale may have different meanings to different people. Namely, respondents may be anchoring their responses according to their own interpretation of the endpoints. Moreover, 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.⁸

In addition, and associated with the ambiguity of the endpoints, is the problem that respondents may interpret the intervals on the scale differently. Namely, an extreme leftist may see less difference between a center-left and center-right politician than a moderate would. Finally, 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 not agreement.

The Aldrich-McKelvey (1977) (henceforth A-M) scaling procedure overcomes these problems by factoring out the variations due to differential responses to the scale by placing all respondents in a common space such that their perceptions are most in agreement with the common perception of the stimuli. Therefore, one can use this technique to construct estimates of legislators' ideal points and the location of the stimuli on a left-right dimension using the responses to the ten-point scales described above.⁹

Given the problem that different respondents may report their perceptions of the left-right scale differently, the method requires simultaneous estimation of these individual "distortion parameters." The basic A-M model assumes that individual i 's perception of stimulus j is given by

$$Y_{ij} = Z_j + e_{ij}$$

where Z_j is the true location of j and e_{ij} is a random variable which has zero expectation, positive variance which is independent of i and j (homoscedastic), and zero covariance across the i s and j s.

In the second stage of the data generation process, Aldrich and McKelvey assume that the stimuli hold fixed positions on an underlying true issue dimension and that a respondent's perception of the stimuli issue scale positions are simple linear mappings from the stimuli positions.

Formally, letting X_{ij} represent the position where respondent i reports that he/she sees stimulus j , they assume that for each respondent, there are scalars $c_i, w_i \in \mathbf{R}$ such that

$$c_i + w_i X_{ij} = Y_{ij} = Z_j + e_{ij},$$

or

$$X_{ij} = \frac{1}{w_i}(Y_{ij} - c_i) + \frac{e_{ij}}{w_i},$$

Given the X_{ij} matrix of reported positions, the A-M scaling procedure recovers the true parameters \hat{Z}_j, \hat{c}_i and \hat{w}_i . To obtain the legislator's ideal point in the common space, A-M merely subjects it to the same transformation that his/her perceptions are subjected to. Namely, if X_{i0} represents the i^{th} respondent placement of his/her ideal point, then

$$\hat{Y}_{i0} = \hat{c}_i + \hat{w}_i X_{i0},$$

is the estimate of his/her ideal point in the common space.¹⁰

I estimate legislators' ideal points and the location of the stimuli on the left-right dimension using a Fortran program, MCKALNEW.FOR, developed by Keith T. Poole to implement the Aldrich and McKelvey scaling method (1977).¹¹ One of the drawbacks of the Aldrich-McKelvey estimator is its inability to handle missing values. Fortunately, Poole's generalization of their method can analyze a data matrix with missing entries. The procedure in Poole (1998a) is particularly useful since it can perform an Aldrich-McKelvey scaling of an issue in more than one dimension. This enables researchers to determine whether the scale is really one dimensional. I used a computer program developed by Keith T. Poole to implement his scaling procedure, BLACKBOX.EXE, to analyze the PELA data including missing entries and in more than one dimension.¹²

3 Basic Space: Main Results

Table 1 summarizes the analyses of the left-right scales from the nine PLEA surveys using the Aldrich-McKelvey procedure. Columns 2-4 indicate the number of respondents for the survey, the number of stimuli in each survey, and the percentage of respondents that were dropped from the analysis due to missing data.

< *Table 1 Here* >

Recall that A-M does not handle missing data, so legislators 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, is the 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).

The ratio of the overall variance to perceptions in the scaled data to the average variance reported in column 5 gives an indication of the reduction of variance due to different interpretations of the scale accomplished by the A-M technique. The figures indicate substantial reductions in variance for all nine cases. These range from about 27 percent of the variance in the original data in the case of Brazil to roughly 8 percent for Chile. The 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; Palfey and Poole 1987). Nonetheless, even when allowing for bias in this estimator, the results indicate that the A-M scaling produces a considerable reduction of variance in perceptions due to differential responses to the scale itself.

The estimates presented in column 6 indicate the number of respondents with negative weights \hat{w}_i for each country. These are respondents who see the political universe as *backward*. For 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. The presence of these respondents has non-trivial consequences for the reliability of some of the estimates. On the one hand, respondents who see things backwards tend to improve the fit of the model (Aldrich and McKelvey 1977: 116). On the other hand, as Palfrey and Poole (1987) note, respondents who see the political space as backward have a very low level of information about politics. Therefore, their presence negatively affects the recovery of the individual legislators' ideal points, as the uninformed group will be mapped toward the center of the space regardless of their true distribution. On a more positive note, the number of respondents who see things backwards enables us to make inferences about the significance of the definition of "left" and "right" in a given country/time period. 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).

These caveats notwithstanding, it should be noted that the scaling results pertaining the location of the stimuli should not be affected by the presence of the uninformed respondents. Monte 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.

The last column in Table 1 indicates the one-dimensional fit of the models. As it should be expected, given that the left-right scales are designed to be one-dimensional, in almost every case the R^2 is quite large. On average, the left/right dimension explains approximately 70 percent of the variance of the scaled positions. A notable exception is the case of Paraguay, where the R^2 is considerably smaller. This is not surprising, given the presence of uninformed respondents discussed above.

These findings of an underlying left-right dimension in the nine countries for the PELA survey square well with existing studies. Although some early Latin American scholars portray parties as based primarily on clientelistic and populist ties rather than an ideological basis (e.g. Mainwaring and Scully 1995), more recent studies demonstrate that political elites have a clear and coherent understanding of the ideological meaning of left and right, and that even parties who might be labeled as clientelistic are organized around ideological dimensions (Alcántara 2004; Rosas and Zechmeister 2000; Zoco 2006). Indeed, using 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 contestation¹³

To check the robustness of the A-M estimates, I analyzed the data 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).¹⁴

< *Figure 1 Here* >

As Figure 1 demonstrates, the results from estimation of the basic space in one dimension when missing entries are included indicate that the A-M procedure reliably reproduced the data being scaled. This is not surprising. Monte Carlo tests in both Aldrich (1977) and McKelvey and in Poole (1998a) show that their estimation procedures accurately reproduce the true data even with high levels of error and missing data.

With respect to the robustness of the results in the presence of respondents with negative weights, Figure 1 indicates that the estimates are quite reliable, as most of the stimuli lie in the 45 degree line. There are a few exceptional cases where the stimuli recovered using different methods are not similar. These cases overwhelmingly correspond to parties/politicians in Costa Rica and Paraguay. These differences are likely due to idiosyncratic events that took place in these countries when the surveys were carried out. I will return to this issue below when I examine the cases of Costa Rica and Paraguay in more detail.

Along with the existence of respondents who see things backwards, another reason that may affect the goodness-of-fit of these models is the dimensionality of the basic space. As mentioned above, the main advantage of Poole's generalization of the A-M method is its ability to test the number of salient dimensions. Results from estimation of the basic space in two dimensions for each of these countries indicate that the left-right continuum accommodates the perceptions that legislators have of themselves and of the main political parties/politicians in their countries very well. Once again, the comparison between the configurations recovered by the two procedures shown in Figure 1 confirms the reliability of the estimates. In all cases (except Paraguay), the R^2 in one dimension is very large and the increment to adding a second dimension is quite small.

3.1 Scaled Stimuli

The analysis above focused just on the reliability and overall one-dimensional fit of the A-M estimates. However, the recovered space in each country also contains detailed information on the location of the stimuli which can be used to further validate the results. In addition, these data offer concrete and systematic evidence of patterns of legislative competition and of legislators' ideological orientations. Therefore, this information can also highlight which groups form coalitions, resolve whether parties are unified or factionalized, and determine the issues on which groups divide. I now present some brief illustrations of the numerous uses of the data generated by these procedures. In particular, I examine the main characteristics of the basic space in Argentina and Costa Rica.

Figure 2.a. shows the stimulus coordinates for two basic dimensions estimated by Poole's procedure using the responses to the PELA left-right scale in Argentina. The first basic dimension is the left-right dimension and the order of the political stimuli – 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. As Figure 2.a. demonstrates, the second dimension essentially separates the Peronists from the Non-Peronists, indicating that the spatial map generated with the survey data provides a very good representation of the Argentine political system.¹⁵

< *Figure 2.a. Here* >

Moreover, 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– bodes well with the “big tent” characteristics of this traditional party. Second, the location of the other traditional party, the Unión Civica Radical (UCR) is also in line with established interpretations of Argentine politics. It 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 structure of the space recovered 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 2.b. shows the correlation between the location of Argentina’s main political figures as recovered by the A-M procedure and by the expert assessments compiled by Wiesehomeier and Benoit.¹⁶ Clearly, a strong association exists between the scaled positions obtained from the PELA surveys and the left-right placement by the country’s experts.¹⁷

< *Figure 2.b. Here* >

Turning to Costa Rica, the fit of the one-dimensional model is an r-squared of .64, and adding a second dimension only improves the overall r-squared to .73. However, examining the structure and fit of the basic space presented in Figure 3, it 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 3 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 the Costa Rican politics, typically receiving the combined votes of more than 90% of registered voters. In 2001, Ottón Solís, 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, preventing 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*. To 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 re-

alignment 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.

The brief analysis of the Argentine and Costa Rican cases illustrated just some of the many ways the scaling procedures described above can be used. Beyond this practical demonstration, the scaling results also provide an important validation for such methods, 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.

3.2 Distribution of Ideal Points

The recovered locations of the legislators on the left-right continuum can also be used to examine how well these ideological preferences match the partisan composition of these legislatures. In party systems organized along ideological lines we should expect to find recognizable patterns linking party membership and legislative preferences (Luna and Zechmeister 2005; Rosas 2005).

Another main advantage of the A-M scaling procedure is that it can be used to scale legislators and stimuli in a common issue space. The interval level data on stimulus and legislator positions can therefore be used to address various propositions regarding executive-legislative relations. For example, the data are ideally suited to properly construct gridlock

intervals (e.g. Krehbiel 1998) 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 4 graphs the ideal points 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. The most striking pattern is how Colombia's main parties overlap with each other on the left-right dimension. As Figure 4 shows, they are quite heterogeneous, and tend to occupy the center of the political spectrum. Most importantly, the recovered location of the parties squares well with existing interpretations of Colombian politics (see Archer and Shugart 1997; Pachón 2002).

< *Figure 4 Here* >

The representation of the ideological configuration of the Colombian political landscape presented in Figure 4 also gives face validity to the estimates obtained using the A-M procedure, as it 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 who would have to deal with an unwieldy multiparty coalition in Congress. As Pachon (2002) notes, Uribe's candidacy became the axis of a realignment of the party system. The previ-

ously 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). Thus, 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’ ideal points are presented in Figure 5. 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) has very little ideological coherence, as its members identify with ideological positions both at the far left and the far right.¹⁸ 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 have little overlap with those of legislators from the other parties.

< *Figure 5 Here* >

As in the case of Colombia, the ideological organization of Bolivia’s political setting recovered by the A-M estimates captures extremely well 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...”

¹⁹ 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 pulling out. Several days later, on October 2003, Sanchez de Lozada resigned and left the country.

3.3 Comparison between Survey and Roll Call based Estimates

Unlike the cases of Colombia and Bolivia, the Chilean and Paraguayan legislatures systematically take and record roll-call votes. With these data, we can generate specific comparisons

between estimates recovered using the A-M procedure and more traditional scaling methods. As stated above, the PELA survey grants anonymity to the respondents, so unfortunately we cannot make comparisons across individual legislators. Nonetheless we can match legislators based on their political affiliations and can thus infer the partisan distribution of ideal points.

Figures 6.a. and 6.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).²⁰ Each figure shows the position of the overall legislative median and of the median legislator in each of the main parties/coalitions in Chile.

< Figures 6.a.-6.b Here >

Both Figure 6.a. and 6.b. demonstrate almost no difference exists 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, whereas the correlation between the latter and the Bayesian estimates is .99.²¹ 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 the distribution of preferences obtained from roll call votes lends further support to idea of using survey responses to recover a basic space.

One final test regarding the reliability of the estimates recovered using survey data involves the comparison between the stimuli configuration generated by Poole's basic space scaling procedure and Optimal Classification scores.²² For this purpose, I focus on the case of Paraguay, another country for which multiple roll call votes exist. Figure 7.a. shows the stimulus coordinates for two basic dimensions estimated with Poole's procedure using the responses to the 1998 PELA left-right scale in Paraguay.

< *Figure 7.a. Here* >

Figure 7.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, shows 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 (nowadays 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 each other 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, defeating 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 existing political situation is not surprising, given that these factional struggles played themselves out 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. There was some speculation 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).

Finally, Figure 7.b. plots the the two dimensional coordinates of Paraguayan legislators generated using Keith T. Poole's Optimal Classification program. 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).²³ 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 7.b. Here* >

The spatial map generated by the Optimal Classification scaling procedures 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 Ovedistas 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 7.b., as it shows the distinction between the different legislative factions who supported/opposed González Macchi.

Taken together, the survey-based and roll-call-based estimates demonstrate a remarkable similarity in the way in which they recover the main fault lines in Paraguayan politics during those turbulent years. These findings suggest once again that using survey responses to recover a basic space is a valid alternative to more traditional methods based on roll call votes.²⁴

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' policy preferences. As illustrated with the cases of Argentina and Costa Rica, these data provide concrete and systematic evidence of patterns of political competition and can 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, as exemplified by the Colombian and Bolivian cases, to assess the relative position of the legislature vis-a-vis the executive.

In addition, the close similarity of 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 systematically distinct from the rest of the votes. Given that the approach suggested in this paper does not require access to voting records, it can be applied to any legislature in the world.

More generally, the techniques discussed in this paper can be used to generate data to test a myriad of hypotheses in comparative legislative studies. For example, the ideal points of individual legislators can be used to resolve the debate over party unity or party factionalization when roll call data do not exist. We can also go on to 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

¹Similarly, numerous comparative scholars have examined legislative institutions around the world – including the European Union, and the United Nations – using roll call data (e.g. Voeten 2000; Hix 2001; Rosenthal and Voeten 2004).

²According 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.

³Michael Coppedges 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. Taken from expert surveys collected in late 2006 and early 2007 by the authors, 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.

⁴The data collected by Wiesehomeier and Benoit allows one to differentiate between the presidents individual position and that of legislative parties in a common policy space. However, they are still ill-suited to explore the ideological positions of individual legislators.

⁵For a detailed description of the Elites Parlamentarias en Iberoamérica Survey, see Garcia and Mateos, 2001.

⁶Unlike previous rounds of PELA, 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.

⁷For 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 dimension.

⁸Just to give one example, one of the respondents in the 2003-2007 Argentine survey located himself/herself in the left-most category (1), and placed his/her perceptions of all the stimuli in right-of-center categories (i.e. he/she gave a score of 7 to both ARI and Carrio, a score of 8 to Kirchner, and a score of 10 to Lopez Murphy).

⁹Rosas (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).

¹⁰For a more detailed description of this methodology see Aldrich and McKelvey (1977)

¹¹MCKALNEW.FOR was originally written by Keith T. Poole at the University of Oregon in October 1978. The version used to generate the analyses in this paper was updated by Keith T. Poole in August of 1996. 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.).

¹²I used both the Basic Space Program (BLACKBOX.EXE) and the Basic Space Program for a Transposed Issue Scale (BLACKBOX_TRANSPOSE.EXE). Both programs were made available to me by Keith T. Poole.

¹³The one-dimensional fit of each of these models 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.

¹⁴I normalized the first basic dimension recovered by Poole's procedure so that it could be directly compared to the Aldrich-McKelvey configuration.

¹⁵The one-dimensional fit of the model is an r-squared .of 77, and one of .82 in two dimensions, which indicate that the scale is indeed one-dimensional.

¹⁶ The experts in the Wiesehomeier and Benoit survey were primarily academics, ideally

specialized 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 2.b. is the average of the responses. For comparability, I use the one-dimensional A-M estimates.

¹⁷One 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 done in 2007.

¹⁸The position of the median NFR legislator coincides with the location of the legislature's median and thus it is omitted to avoid cluttering the graph. The NFR was mostly a vehicle for the candidacy of Manfred Reyes. At 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.

¹⁹These were of words of Luis Eduardo Siles, quoted in the New York Times on March 10 2003.

²⁰The W-NOMINATE scores were obtained from Morgenstern (2004), and the Bayesian estimates from Aleman and Saiegh (2007).

²¹As expected, there is also a high correlation between the NOMINATE scores and the Bayesian ideal points.

²²Optimal Classification (OC) is a scaling procedure that performs non-parametric unfold-

ing 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. 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 OC method see Poole (2005).

²³The roll call data contain 275 non-unanimous votes taken by Paraguayan legislators between January 15th, 1999 and December 29th 2000. The correct classification is 94.5% (0.94511) with an APRE of .79 (0.79564). The eigenvalue pattern suggests the presence of a second dimension underlying the data.

²⁴The 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.

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Table 1
Overall Fit Statistics of PELA Left-Right Scales

Country	Respondents	Stimuli	% Missing	Reduction in Variance	Number Negative	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

Figure 1

Comparison between
A-M and Basic Space Coordinates

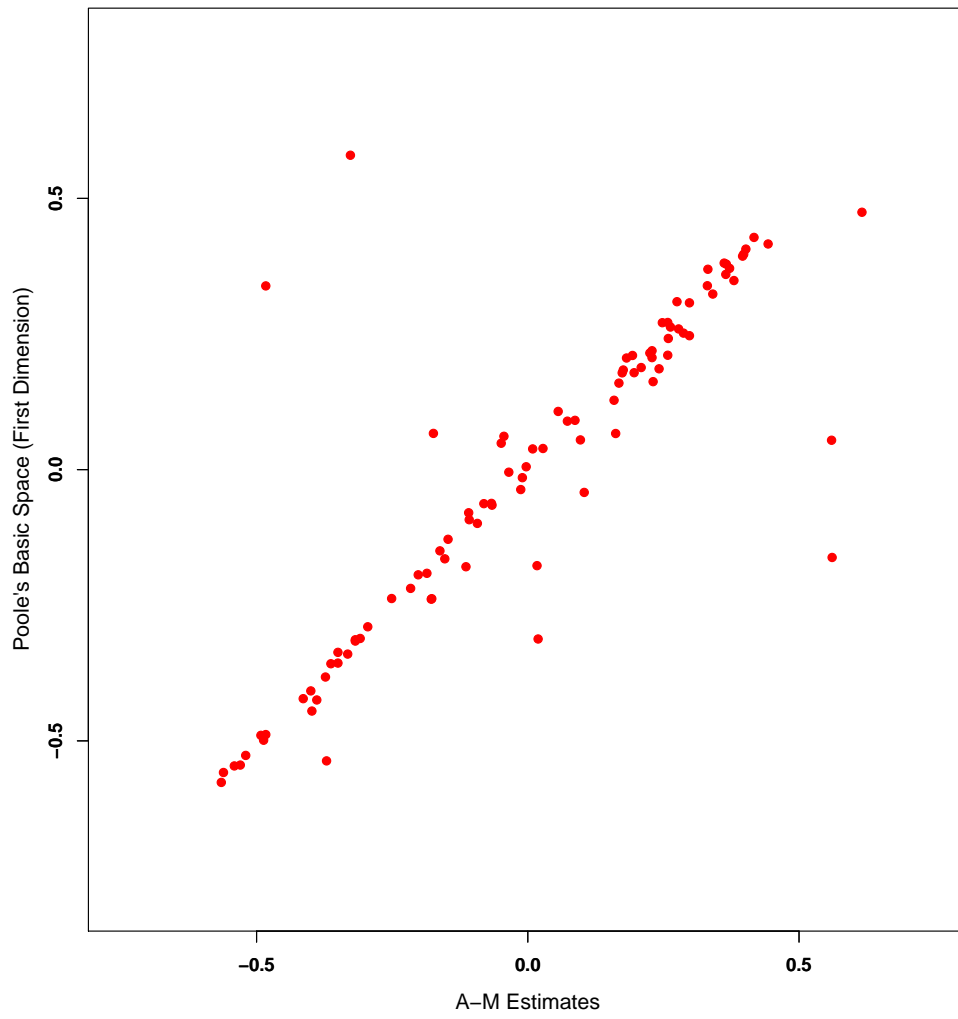


Figure 2.a. and 2.b.

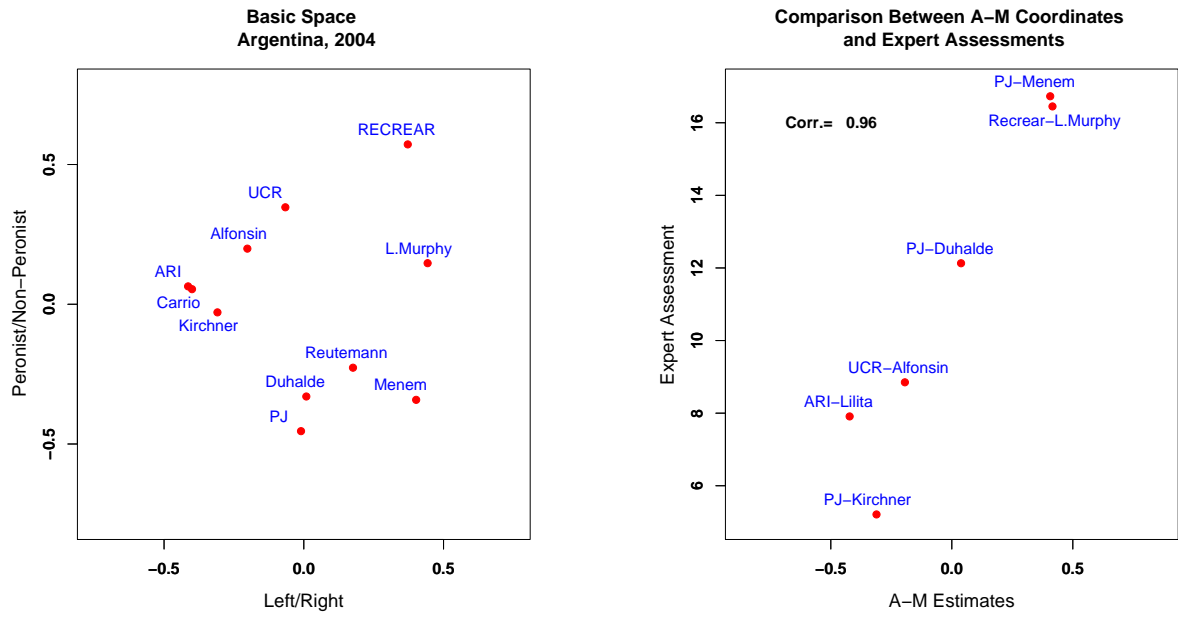


Figure 3

Basic Space
Costa Rica, 2002

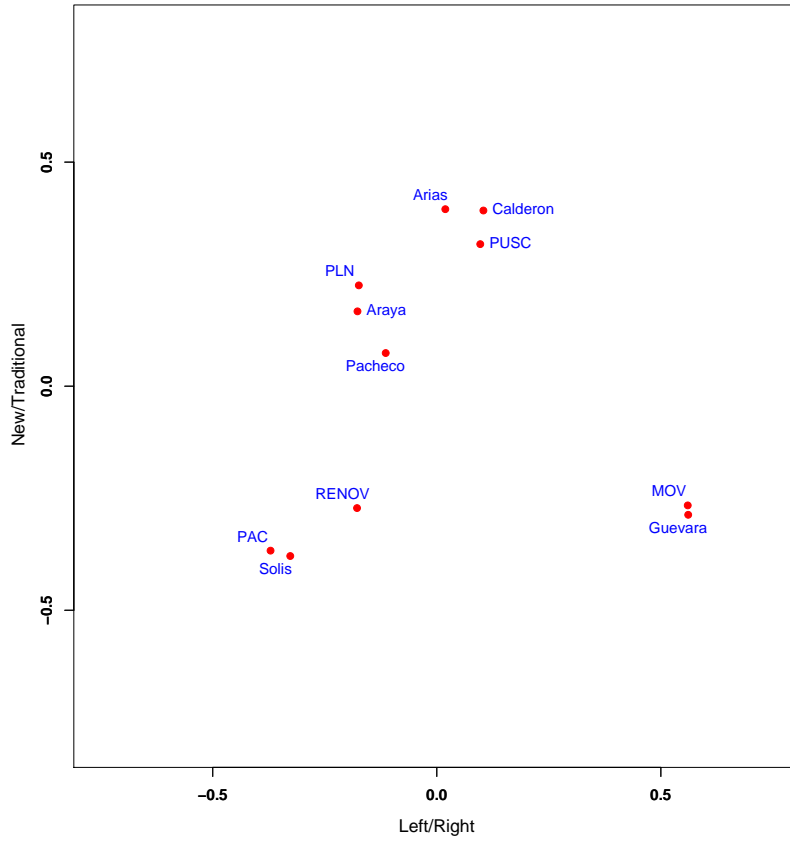


Figure 4
Colombian Legislators
From 2004 PELA 10-Point Scale

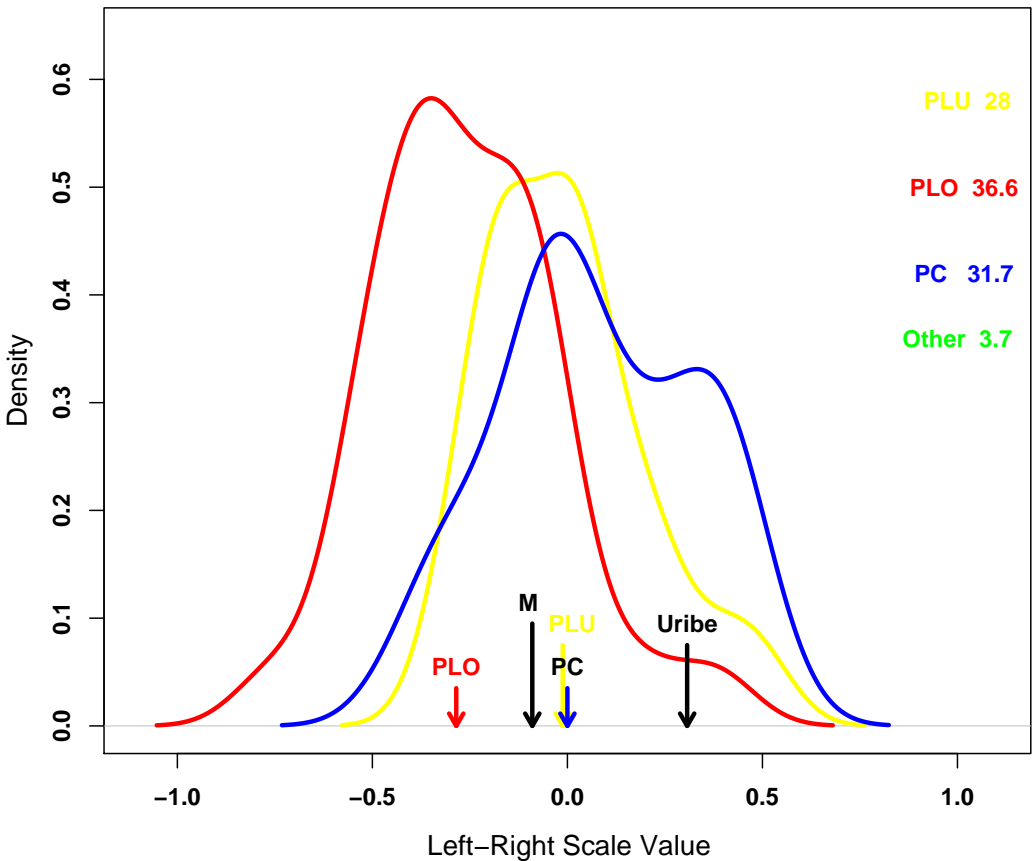
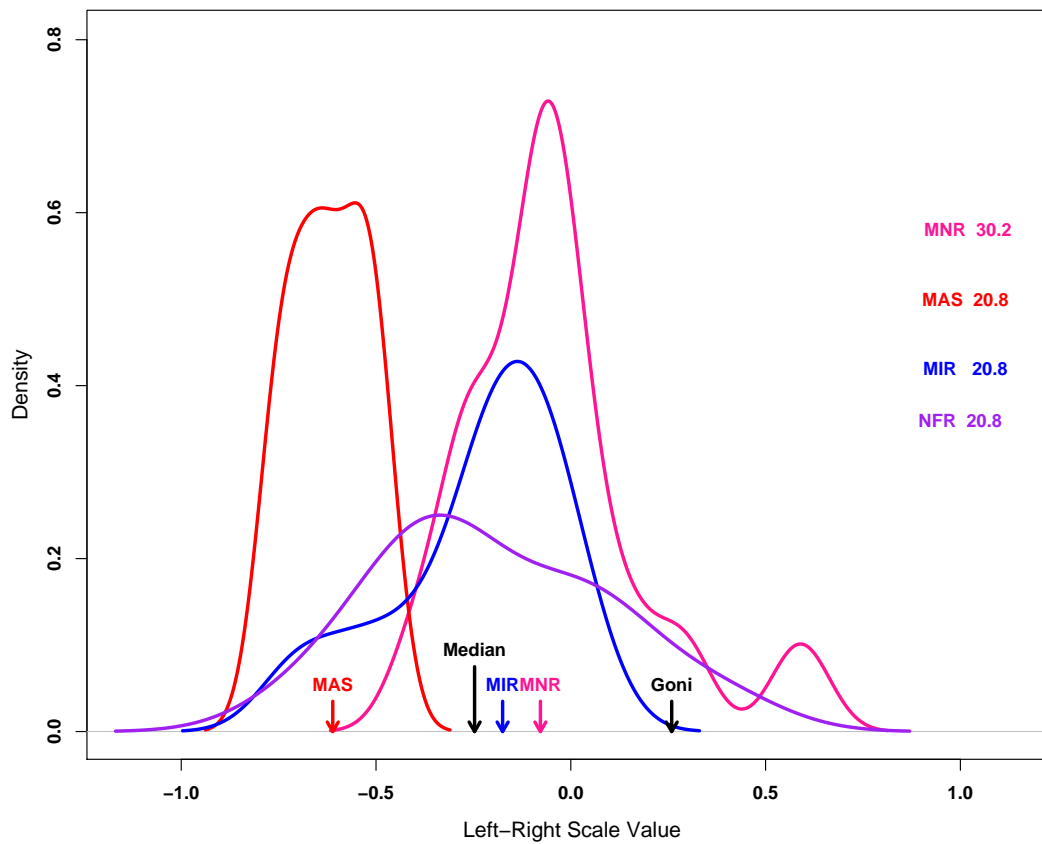
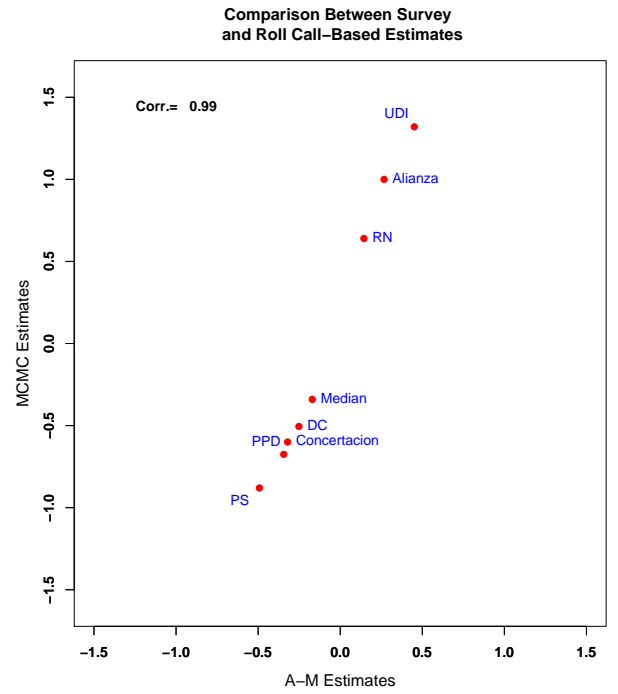
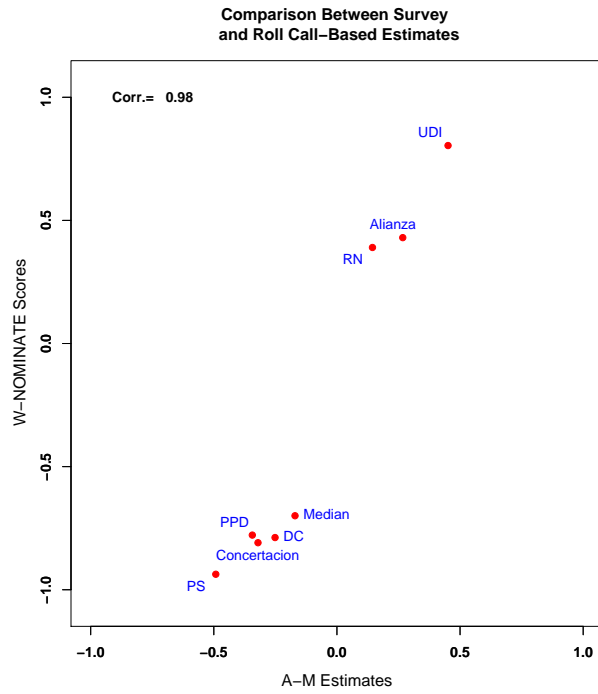


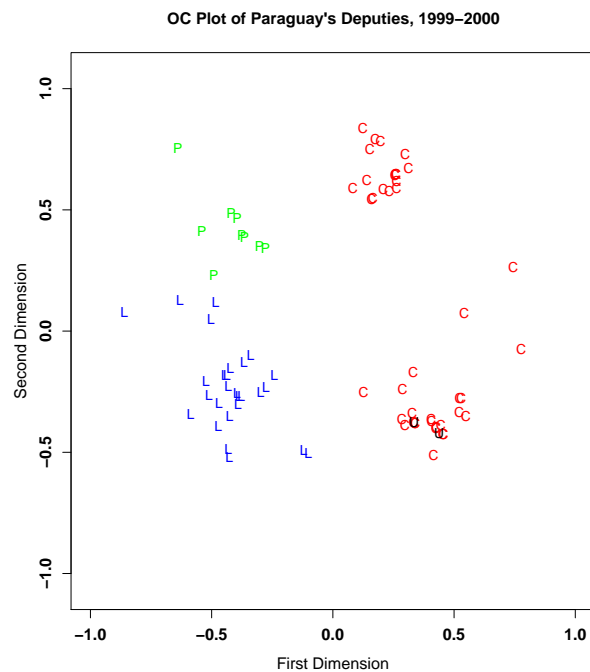
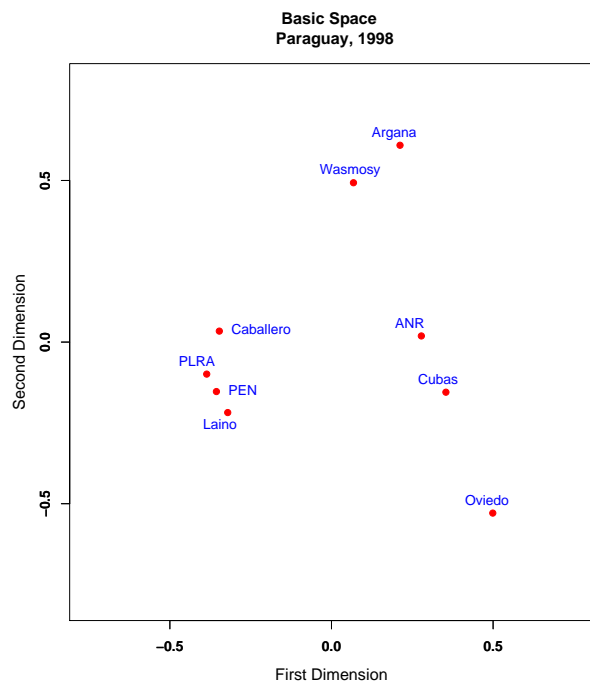
Figure 5
Bolivian Legislators
From 2004 PELA 10-Point Scale



Figures 6.a. and 6.b.



Figures 7.a. and 7.b.



Appendix 1

Description of PELA Surveys

Country	Legislative Period	Size of Chamber	Respondents	Conducted on:
Argentina	2003-2007	257	105	Apr./June 2004
Bolivia	2002-2007	130	80	Jul./Sept. 2003
Brazil	2003-2007	513	134	June/Dec. 2005
Chile	2002-2006	120	88	Aug./Sept. 2002
Colombia	2002-2006	166	95	May/June 2002
Costa Rica	2002-2006	57	51	May/Jul. 2002
Mexico	2003-2006	500	124	Mar/Sept. 2004
Paraguay	2003-2008	80	56	Aug./Sept. 2003
Uruguay	2000-2005	99	68	Mar./Jul. 2001