

The Radex Structure of Political Conflict: Argentina's Impossible Game (1955-1966)

Juan Pablo Micozzi and Sebastián M. Saiegh*

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Abstract

In this article, we examine a two-dimensional, circular model of political conflict. We consider O'Donnell (1973)'s canonical interpretation of regime instability in Argentina between 1955 and 1966, the *impossible game*, and evaluate such characterization empirically through the analysis of roll call votes. Multidimensional Scaling (MDS) analysis supports a two-dimensional *radex* representation composed of two intercorrelated facets: (1) ideological outlook (its elements being “liberal” versus “nationalistic”), and (2) attitudes toward peronism. The radex structure, resembling a dart board, derives from the combination of a one-dimensional simplex (with radial lines capturing stands on peronism) and a one-dimensional circumplex (with concentric circles corresponding to ideological outlook). These findings indicate that, because of the circular – and thus multidimensional – nature of political conflict during the 1955-1966 period, stable political outcomes failed to exist.

*Department of Political Science, University of New Mexico, jmicozzi@unm.edu, and Department of Political Science, UCSD, ssaiegh@ucsd.edu.

1 Introduction

Recovering the ideological positions of political elites from recorded votes is a frequently used practice not only in the study of the U.S. Congress, but also in comparative politics. Indeed, in recent years, numerous scholars have examined legislative institutions around the world including the European Union and the United Nations using this approach. These studies have certainly helped to advance our understanding of how different political systems work, including the configuration of coalitions and the government formation process, inter-branch bargaining, and even the prospects for democratic stability.

The contributions of these studies notwithstanding, the “shadow” of the United States’ Congress still looms large over many of them. To be more specific, the well-deserved influence of Poole and Rosenthal (1997) has, to some extent, projected the simple *geometric* structure of Congress onto other polities. Yet, while the liberal-conservative continuum does an extraordinary job at characterizing the structure of political conflict in the United States, politics tend to be more “messy” (for lack of a better word) in other latitudes. For example, the structure of conflict in many countries pits the government versus the opposition (Jones and Hwang 2005; Spirling and McLean 2007; Zucco 2009; Aleman and Saiegh 2012); and/or involves multidimensional schisms (Rosenthal and Voeten 2004; Hansen and Debud 2011).

Consider a polity where schisms vary both in *intensity* and *type* of disagreements. The structure of conflict, in this case, could be analyzable into two components. A linear component of intensity, distinguishes *friend* from *foe*, and can be represented by a simplex. A second circular component distinguishes the relevant actors by their ideological locations. In this kind of structure, referred to as a “circumplex”, the positions of the relevant political actors are found to array in a circular arrangement. The simplest representation of a political landscape with these overall characteristics is given by a two-dimensional *radex* structure (Guttman 1954). The natural coordinates are polar coordinates, with distance from the center corresponding to intensity of disagreement and with angular position around the perimeter corresponding to the type of disagreement. Such a structure thus combines the one-dimensional simplex, the *polar* partitioning of intensity, and the one-dimensional circumplex, the *modular* partitioning of ideological outlooks (Shepard 1978).

To illustrate how the radex model can enhance our understanding of politics we consider O'Donnell's canonical interpretation of regime instability in Argentina between 1955 and 1966 (O'Donnell 1973). In his seminal book, *Modernization and Authoritarianism*, O'Donnell presents a game-theoretical model of Argentine politics and concludes that party democracy was tantamount to an "impossible game." He fails to provide, however, an appropriate correspondance between such definitional system and the empirical structure of political conflict in Argentina during the 1955-1966 period. Instead, he relies on "an intuitive approximation and not a precise measure" of the Peronismo vs. anti-Peronismo cleavage to characterize his model (O'Donnell 1973: 171).

We evaluate the impossible game through the analysis of roll call votes during the period of conditioned democracy (1958-1962, 1963-1966). Multidimensional Scaling (MDS) analysis supports a two-dimensional *radex* representation: the spatial map resembles a dart board, composed of a set of concentric circles (circumplexes) with radii of those circles (simplexes). The recovered configuration indicates that legislators' ideal points are elements of both a circumplex and a simplex with lowest density in the center and increasing density towards the boundary. In two dimensions, a minimum configuration often arranges points on a set of concentric circles. The analysis of legislators' agreement scores, however, shows that a fair amount of differentiation in the raw dissimilarities exists. Therefore, we can safely reject the notion that the circular shape is a consequence of the null structure of the MDS solution.

The placement of the points in the spatial diagram is only part of the information provided by the MDS analysis. Additional information is supplied by the cutting lines representing votes on certain issues, the fitness statistics, and the specific fits of individual cutting lines and the classification errors for each one. These are essential elements that allow us to further interpret the recovered spacial map. A substantive examination confirms the appropriateness of the radex representation. The *polar* facet cuts the space into subspaces that correspond to legislators' positions regarding Peronism. The *modular* partitioning corresponds to the nature of Argentina's ideological divisions at the time (liberal versus nationalist). The location of legislators' along the polarizer facet indicates that, although some legislators with moderate views on the issue of peronism did exist, most legislators held more intense and

thus more distant views. The modular facet reveals that the whole gamut of ideological positions were represented in the Argentine Congress. Taken together, both partitions suggest that Argentina’s main political leaders during the 1955-1966 period could be placed in the periphery of a circle with the following order: Frondizi (0°), Alsogaray (45°), Aramburu (90°), Balbin (135°), Illia (180°), Cantoni (225°), Peron (270°), and Seru Garcia (315°).

The paper makes two important contributions. From a methodological standpoint, high-dimensional circular representations have a long history in the psychometric literature. Indeed, Guttman’s radex and the classic application of the circular structure of colors are good examples. In political science, the radex structure of conflict has generally been ignored. Our findings demonstrate that certain political situations are better characterized by a geometrical representation where two elementary structures, the simplex and the circumplex are concatenated. More importantly, the results presented in this paper highlight the relationship between theory construction and data analysis in the social sciences. As Poole (2005) notes, the fruitful partnership of MDS with social choice theory has enabled scholars to test a multitude of hypotheses. In this case, we can empirically examine the implications of intransitive preference patterns for the stability of democratic regimes.

This last remark leads to our second, substantive, contribution. Based on McKelvey (1976, 1979) and Schofield (1978), our empirical findings indicate that O’Donnell was right when he posited the existence of an *impossible game*; however, not for the reasons he indicated. Given the circular, and thus multidimensional, nature of political conflict during the 1955-1966 period, a stable solution failed to exist. The irony, though, is that such state of affairs was not the result of the impossibility to reach a unique outcome, but rather than too many outcomes were actually possible. More generally, by characterizing the different coalitions that formed in support of military coups as well as those that could have formed in support of the continuation of Argentina’s democratic regimes, the analysis in this paper provides interesting insights for the regime breakdown literature.

The reminder of this paper proceeds as follows. In Section 2, we discuss the circular model of political conflict. In Section 3, we reexamine Argentina’s impossible game. In Section 4, we present our main findings. A final section concludes.

2 The Radex Model of Political Conflict

The concept of the radex, a structure of covariation, was introduced by Guttman (1954). The radex is a concatenation of two more elementary structures, the simplex and the circumplex. The geometrical representation of the former, a straight line, is quite familiar to political scientists. The circumplex is a structure that arranges items in a circular order. It is very much like a simplex that has been bent into a circle so that items located at the greatest extremes lose their status by being brought into proximity with each other (Shepard 1978). As such, this representation is ideally suited to study countries where “normal” politics may take very peculiar forms. Including, for example, situations where extremists of the left and right may coalesce together to defeat the center (Rosenthal and Voeten 2004).

A circular structure is intrinsically a one-dimensional configuration embedded in a two-dimensional space (Weisberg 1974). Yet, as Fabrigar et al. (2007) note, postulating such a representation is more specific than simply proposing that two dimensions exist. First, what distinguishes a circumplex representation from other two-dimensional representations is that the nature of the relationship among voters can be described as an ordering of their positions along the circumference of a circle. Second, a circular representation precludes voters’ positions from falling neatly along the axes. Instead, it holds that some of them will always fall between any two axes that are drawn through the two-dimension circumplex space (Purcell 1982; Larsen and Diener 1992). Finally, the circumplex model also implies that a very high or very low value on one dimension is accompanied by a moderate value on the other dimension (Larsen and Diener 1992; Fabrigar et al. 2007).

Consider now the situation where a voter’s issue positions correlate positively with voters who are nearby on the circumference of the circle, correlate near zero with voters located one-quarter way (90°) around the circle, and correlate negatively with voters located in the directly opposite side of the circle. Figure 1 displays a hypothetical circumplex representation for eight voters (Fabrigar et al. 2007). Taking V1 as the reference voter, this representation implies that V1 should have a stronger positive association with V2 than with V3. The strength of association with V1 should begin to increase, though, as one moves counter-clockwise toward V4. But, voters located in this quarter of the circle should be negatively

associated with V1. And, the negative association should be strongest between V1 and V5. The nature of the relationship among voters should be similar in the “lower half” of the circle: voters falling between 180° and 270° should display decreasing negative associations. The association between V1 and V7 should be at its weakest point. Moving toward V1, the associations with this voter should become positive, and their magnitude should increase as one approaches 360° (Fabrigar et al. 2007).

< Figure 1 Here >

Consider now what happens if the voters in our example vary according to both in the *type* as well the *intensity* of their disagreements. The structure of conflict, in this case, would add a linear component of intensity (distinguishing, say *friend* from *foe*) to the existing circular component. And, every voter will now be characterized by being an element of both the simplex and the circumplex. In the geometrical mapping of such structure, called a radial expansion, the circumplexes are represented by circles and the simplexes by radii of those circles. The location of each voter now will be determined by two factors, her ideological outlook and the intensity of her animosity toward other voters. A voter’s ideological position determines the angle of her location on any of the concentric circles, and the intensity of her disagreements vis-a-vis other voters determines her distance from the common center – the greatest the intensity, the greater the distance from the center.

Given a space with those characteristics, what should be expected in terms of policy outcomes? Since the seminal work of Davis, Hinich, and Ordeshook (1970), the spatial model of voting has become the standard for formal theoretical and empirical work on collective decision making. The usual and simplest approach to the spatial analysis is to assume that preferences are restricted to a domain where a unique Condorcet winner exists. In that context, majority voting is a strategyproof rule and is even robust to manipulations by any coalition of voters. In a multidimensional spatial setting such as the one examined here, however, except in the case of a rare distribution of ideal points (like radial symmetry) no Condorcet winner exists. Therefore, it will always be possible to find a sequence of majority victories leading from any given outcome to any other outcome (McKelvey 1979).

The disequilibrating consequences of the multidimensionality of the choice space notwithstanding, a stable outcome may exist under some very special circumstances. Consider the hypothetical situation depicted in Figure 2a. In this example, any five of the voters V1-V9 are needed to form a majority. Notice that the location of voters V1 through V8 are arranged symmetrically around V9. Hence, no alternative can defeat the V9's preferred policy package. If V9 gets to make a proposal, there will be no voting cycles, no chaos (Laver and Schofield 1990).

< Figure 2 Here >

The configuration of policy preferences presented in Figure 2a, however, is extremely unlikely to arise in practice. Moreover, any small departure from radial symmetry would destroy the equilibrium. Figure 2b illustrates this problem. V1 has changed its position slightly toward the location of V2. This small move can muster the support of voters V1, V2, V3, V4 and V5 to choose a proposal different than the one favored by V9. But, this would lead to a situation where any point in the space can be beaten by another on the basis of a majority vote (Shepsle 2010).

3 Argentina's Impossible Game (1955-1966)

Chronic civic and military cycles have characterized Argentine politics between 1930 and 1983. Recurrent instability was analyzed from different perspectives in the literature (Di Tella 1971; Germani 1978; Smith 1989), but a particular tradition traced the path of most studies on democratic breakdown after the second wave of democratization: O'Donnell's (1973) Bureaucratic-Authoritarian state. It is argued in this seminal contribution that Argentina faced an impossible game between 1958 and 1966, performed by forbidden actors (Peron and peronism), tolerated actors (other political parties) and the military (ultimate veto players). The game was impossible because peronism was the by-default victor in competitive races; other winners in restricted elections lacked legitimacy and could not succeed in attracting masses; and armed forces would act as enforcers of the exclusion of peronists. Given these rules and the interactions among players, no stable equilibrium could be reached to iterate the democratic game.

O'Donnell's model is based on elites and citizens with polarized preferences, which makes none of the two feasible outcomes (return of Peron, or government by any party excluding the peronism) tolerable by the other pole. As a consequence, the military, playing their moderating role (Stepan 1973), would lead repeated coups and boost a civic-military vicious cycle. It must be noted that, in order for this model to work, several assumptions need to be taken as givens. On the one hand, O'Donnell assumes a bimodal distribution of voters' and elites' preferences that prompts centrifugal dynamics of competition. Even consistent with common sense and conventional historical views, no empirical evidence is offered to bolster this supposition. On the other hand, the author argues that a single dimension (peronism vs. anti-peronism) is driving political dynamics.¹ Following the same theoretical guidance, other authors (Kvaternik 1987, 1991) have explained the impossibility of the game based the absence of moderates, as a product of the emptiness of the political center.

With these assumptions, O'Donnell characterizes his game along a single continuum. Peronism occupies a pole, and the fragmented and diverse anti-peronism lies on the other. The restrictive bipolar assumption theoretically prevents actors from pursuing votes (and allies) in the opposite pole. Therefore, only two feasible outcomes exist if electoral competition is tolerated: either peronism wins the election, or the opposite pole coordinates and presents a candidate that can win the presidency. Expectations, then, would forecast a similar scenario to that of 1946, when a huge coalition of parties was created to challenge Peron's candidacy. The first problem with this prediction is that the system can only tolerate a unique outcome: the electoral defeat of Peron. Given that, now and then, any (even masked) version of peronism was likely to win, a second problem became systemic: even if the opposition could coordinate, it would always be defeated. As such, the civic-military cycle ensued.

Even recognizing the logical consistency of the model, there are several problems with this perspective. First, it is not clear that each group is homogeneous, a fact that complicates the structure of the game. Specifically, although Peron remained as the main actor of his

¹As O'Donnell put it, "the cleavage between Peronistas and anti-Peronistas (basically paralleling the cleavage between working class and low middle class vs. the rest of society) became paramount in Argentine politics. Since 1946, and particularly after 1955, the distribution of political preferences in Argentina can be represented as a bimodal pattern that reflects the polarization resulting from the extreme saliency of that cleavage" (pp. 169).

pole in the exile; other players of the peronist movement faced incentives and temptations to capitalize the scenario for themselves, and become the popular component of a new coalition (“Peronism without Peron”). This was particularly likely in a party where unions have been the main sources for the survival of the organization and the principal seedbed of party officers. These speculations made even more sense in an environment of uncertainty about the game’s development, the regime, and also Peron’s personal strategies.²

The strategies of both the peronist sector as well as their opponents thus depended on balances of power and context. On the peronist side, strategic considerations conspired against the adoption of a unified strategy. On the non-peronist side, party fragmentation reflected, a plethora of strategies but also of preferences and ideas. From an ideological standpoint, two main currents characterized political divisions in Argentina during this period: liberalism and nationalism. The word “liberal,” as Potash (1996: 210) notes, was usually a term applied to “... more or less conservative individuals who favored monetary stability, private over state enterprise, and close ties to the international economic interests ...” In contrast, nationalists “... favored economic policies that reserved a significant role for state controls and state-owned enterprises, and that sought to reduce Argentine dependence on international economic forces ...” (Potash 1996: 211).

Given these strategic as well as ideological cross-currents, the non-peronist pole found it very hard to stay together. The division of the Radical party in the 1950’s is a case in point. Traditional Radicales, called del Pueblo (UCRP) represented the more recalcitrant position toward peronism, were economically more nationalists, and had closer ties with the most anti-peronist factions of the Armed Forces (O’Donnell 1973). Many members of the party, however, were equally anti-peronists but had a more liberal outlook. A rival faction to the UCRP became a new party, the Intransigent Radicals (UCRI). This party had more moderate views towards the peronist issue, developed a more liberal view, and lied closer to the preferences of the professionalist group of the Armed Forces. Over time, however, internal divisions and the development of factions (or even new parties such as Partido

²As O’Donnell (1988) noted, Peronism was an “amorphous movement made up of Peron’s leadership, the unions, the intermittent Peronist party, and the popular sector (pp. 46); and free riding temptations were crystallized in 1965, when “the Peronist vote was divided between two slates, one backed by union leaders and the other by Peron (pp. 50).

Intransigente) also became the norm in the UCRI, whose heterogeneity hosted neo-marxists, developmentalists, and traditional conservatives (Szusterman 1995, pp. 138-42).

In addition, no attentive observer (including O'Donnell) would affirm that the military were a homogeneous actor, especially giving the explicit division between the legalist Azules and the recalcitrantly anti-peronist Colorados. O'Donnell (1988) points out the depth and the strength of military factionalism, describing the coexistence of extremely dissimilar groups within the legalist side: paternalists (filio-fascist, conservative and religious officers, depoliticized, tied to provincial oligarchies), nationalists (rejecters of liberalism and communism in identical ways, opposed to free market policies, politically ambitious, expecting to lead masses), and liberals (self-reported democrats, pro-capitalist, favoring an open economy and transnational firms, close to economists and intellectuals). Given how different the political and economic projects of each sector was, small shifts in the balance of power within the institution was likely to affect the whole political game in a huge manner, including tolerable solutions. All in all, the realization of the heterogeneity increases the number of possible plays, multiplies the theoretical outcomes, and makes the model much more complex.

The recognition of multiple interests within the two poles reveals a second and third problem with this theory. First, the bimodality assumption seems untenable. Indeed, the historical evidence demonstrates that several actors explicitly reached out to Peron. For example, an agreement between him and Frondizi guaranteed the latter's victory in the 1958 presidential elections. A frustrated Front between these groups was also attempted for the 1963 elections. In addition, military factions tended to endorse or reject different possible outcomes (democratic or not), adding thus another veto point, but also a potential link among dissimilar sectors. This leads to our third objection, centered on the alleged single dimensionality of political alignments. Given the existence of multiple groups and factions with dissimilar interests, there is no reason to suppose that every conflict should be cast as a peronism/anti-peronist issue. Instead, other conflict lines, orthogonal to that schism, add complexity and richness to the game.

Our summary of O'Donnell's characterization of the impossible game make clear that two basic schisms can be recognized in Argentina between 1955 and 1966. First, the issue

of peronism. Second, the divide between nationalism and liberalism. In order to integrate our interpretation of O'Donnell's account with the ideas introduced in section 2, it would be useful to portray his concepts as physical spaces having an extension. The concept-space analogy can be formalized with the help of facet theory. The procedure often followed is to specify: (1) a definitional framework for the universe of observations; (2) an empirical structure for the collection of observations; and (3) a hypothesis about the correspondence between the definitional system and the empirical structure. The key step is to define facets that describe the domain of the study. These facets make up a Cartesian space. Their elements define profiles in that space, and these profiles correspond to the variables usually studied (Borg and Groenen 2005; Hornik et. al. 2009).

We define the facets or components of the impossible game based on O'Donnell's conceptualization discussed above. Next, we establish the relationship between these facets using the following mapping sentence. It contains two facets, the general ideological outlook, and the attitudes toward peronism ("Do you like peronism?" (affective), "Do you know how to integrate peronism?" (cognitive), "How would you implement such a plan?" (instrumental)):

Every relevant actor in the impossible game, in addition to being $\left\{ \begin{array}{l} \textit{liberal} \\ \textit{nationalistic} \end{array} \right\}$
possessed a well-defined $\left\{ \begin{array}{l} \textit{affective} \\ \textit{cognitive} \\ \textit{instrumental} \end{array} \right\}$ view regarding peronism, which affected
his/her predisposition to $\left\{ \begin{array}{l} \textit{support} \\ \textit{oppose} \end{array} \right\}$ its integration into the political process.

Through a mapping sentence, the abstract and analytic theoretical concepts are shaped into a more suitable concepts for empirical observations (Shye, 1989).³ Therefore, in the following section, we use our mapping sentence to characterize the structure of political conflict in Argentina under the impossible game.

³We refer readers seeking further explanation of this approach to the excellent overviews provided in Borg and Shye (1995); Canter (1985); Shye et al. (1994), and Shye (1998, 2004).

4 Empirical Analysis

We evaluate the impossible game through the analysis of roll call votes. For that purpose, we created an original dataset of votes recorded in the Argentine Chamber of Deputies during the period of conditioned democracy (1958-1962, 1963-1966). These congressional periods correspond to the Frondizi and Illia presidencies. In both cases, legislative (as well as presidential) terms were shortened by military coups. As Table 1 shows, 129 roll call votes were cast in these four periods. These votes are nicely balanced across the periods. In addition, almost the whole sample of votes shows substantive variation in their vote distribution (more than 5% on the losing side), which prevents observations from being dropped. Only eight votes do not fulfill this requirement.

< Table 1 Here >

As documented in Jones (2002) and Jones and Hwang (2005), and raised by Rosas and Shomer (2008), abstentions and exits from the floor are likely to be non-random events that occur at a frequent rate in the contemporary Argentine Congress. After a careful analysis, we noticed that absences in votes by legislators that were checked as present in the House have also been frequent in the period under analysis. The third column in Table 1 reveals that strategic exits from the floor have ranged between 13% and 18% of the whole individual decisions cast in each period. We believe that these absences reflect legislators' position taking with regard to the floor median, the majority party, public opinion, and also (basically) their own party leaders. Following Jones and Hwang, every time that a legislator is present and decides to leave the floor, we code it contrary to the decision of the majority of the bloc. In those cases where a whole party decides to abandon their seats, we code these votes contrary to the most frequent decision by the majority or plurality party. This strategy not only improved the identification process, but also helped us recover several lopsided votes for the analysis, by increasing the number of decisions that opposed the majoritarian outcome, and thus reaching the threshold of variation of 5%. Our final sample of votes, then, equals 127, and was casted by 539 legislators.

In order to transform the abstract concepts discussed in the previous section into physically viable entities, a suitable data-analytic procedure is needed (Shy et. al. 1994). We analyzed the roll-call data using Optimal Classification (OC), a scaling procedure that performs non-parametric unfolding of binary choice data (Poole 2005). Given a matrix of binary choices by individuals (for example, aye or nay) over a series of legislative votes, OC produces a configuration of legislators and cutting lines/planes that maximize the correct classification of the choices. The main advantage of using this method is that no assumptions are made about the parametric form of the legislators’ true preference functions, other than they are symmetric and single-peaked (Rosenthal and Voeten 2004; Poole 2005). The unfolding solution to the roll call voting problem provided by OC is characterized by two sets of parameters. The first is the set of legislators’ ideal points. Second, for each roll call, there is an associated separating line L , that partitions the space into two half spaces. Legislators with ideal points to either side of L are predicted to vote “aye and “nay, respectively.

Finally, to recover the patterns of behavior of the whole period dynamically, we make use of a natural advantage of the Argentine electoral rules (a half the Chamber is renewed every two years, for which at least a 50% of each Congress has been maintained period after period), and create a common spatial scale throughout the four analyzed periods. To do so, we utilize bridging techniques (Poole 2005; Shor, Berry and McCarty 2010, Shor and McCarty 2012), which let us compute ideal points of all four Congresses together, and therefore locate individuals’ spatial locations in a reliable and comparable manner. Empirically speaking, this technique provides the additional advantage of locating every actor’s position with respect to the peronist and neo-peronist deputies, who only won representation after 1962. Consequently, we can reliably verify whether the mentioned polarization and unidimensionality have been the norm in the whole period, rather than (maybe) just a temporary event in a specific Congress.

4.1 Main Results

The MDS analysis supports a two-dimensional *radex* representation of the data: the space resembles a dart board, composed of a set of concentric circles with radii of those circles. The

recovered structure thus validates our main theoretical suppositions. First, undimensionality, as originally hypothesized by O'Donnell seems to be more an intuition than a revealed fact; instead, at least two dimensions (that we theoretically identified) have been dividing actors in the period under study. Second, there was no real bimodality at the elites' side; rather, individual and collective actors are spread out across the political space. Third, as depicted by O'Donnell, the center seems to be empty, but this does not seem to be the main reason for the lack of stable outcomes. Rather, the fourth finding reflects the key explanation for the chaos of the "impossible game": the radex structure of these congresses.

The most general structural feature of a conceptual space is dimensionality. Tests measuring how well our models fit the roll call data indicate that a multidimensional configuration is preferred to a unidimensional one: while the latter correctly classifies 84% of the votes, the former improves the classification to 92%. Another important feature of a conceptual space is its topological structure or its shape. The recovered configuration indicates that legislators' ideal points are elements of both a circumplex and a simplex, with lowest density in the center and increasing density towards the boundary.

In two dimensions, a minimum configuration often arranges points on a set of concentric circles. Therefore, we need to make sure that the circular shape is not just a consequence of the null structure of the MDS solution. The problem of indifferentiation, a form of null data, arises when dissimilarity data cluster around a positive constant. Such clustering is easily diagnosed with a histogram of dissimilarities. The tighter a histogram of dissimilarities clusters around a non-zero value, the more the data suffer from indifferentiation (Buja et. al. 1994; Buja and Swayne 2001; Bezembindera and Jeurissen 2003). Figure 3 presents a histogram of dissimilarities obtained from the legislators' agreement scores.

< Figure 3 Here >

The histogram is quite flat: the dissimilarities are not clustered around a positive constant. The only evidence of clustering is just an artifact of how the agreement scores were calculated. Recall that, in order to estimate a common map for the different legislatures, we combined them all together. As such, many members of these legislatures did not actually overlap, and thus no agreement score can be computed. In these cases, following Poole (2005),

we assumed that the agreement score is .5. Since agreement scores were transformed into squared distances, this is the explanation of why a clustering around .25 exists. We also calculated a histogram of dissimilarities obtained from the legislators’ agreement scores in a single legislature (1963-1966) to address the problem of excessive missing data. The results are almost identical, and thus give us confidence that we should reject that the MDS solution corresponds to a null structure in the data.

As an additional diagnostic, we performed an eigenvalue-eigenvector decomposition of a doubled-centered legislator-by-legislator agreement score matrix using the 1963-1966 data. These are the estimates used as starting values for legislator’s ideal points by the Optimal Classification algorithm (Poole 2005). As such, they can be used to assess the structure of the data before a *complete Coombs mesh* is estimated. Figure 4 shows a plot of the starting coordinates for the 1963-1966 legislative session.⁴

< Figure 4 Here >

To analyze the structure within and between subsets of objects we labeled the coordinates according to a legislator’s political party. The “R” tokens represent the UCRP Radicals; the “I” tokens depict the UCRI Radicals; the “P” tokens are the Peronists; and the “U” tokens are the members of UDELPA. The four political parties are quite distinct in the plot indicating that, despite the missing dissimilarities, the recovered MDS solution is not the result of a null structure in the input data.

One final concern regarding our radex representation is whether the recovered ideal points are actually ordered in a circular fashion, but rather seem to be shaped like that because they are arranged in a double “horseshoe” pattern. Quadratic curves (horseshoes) routinely show up in multidimensional scaling. For example, both Diaconis et. al (2008) and De Leeuw and Mair (2009) apply multidimensional scaling to roll-call votes in the US House and Senate and find that a three-dimensional solution consisting of two disjoint horseshoes (one for democrats and one for republicans) exists. Therefore if our data separate into “twin horseshoes,” and their four extremes meet, then the recovered circular pattern may

⁴The estimates were multiplied by positive constant to ensure that the legislator who is furthest from the origin lies on the rim of the unit hypersphere. See Poole (2005) for more details.

be masking a simpler, two-dimensional structure (such as the one identified by Poole and Rosenthal (2007) for the three-political-party period in the US between 1937 and 1980).

In contrast to Diaconis et. al (2008) and De Leeuw and Mair (2009), who only use legislator-by-legislator agreement scores, the placement of the points in the spatial diagram is only part of the information provided by the OC analysis. Additional information is supplied by roll call votes' cutting-line angles. As Poole and Rosenthal (1997) note, purely first-dimension votes have cutting lines at an angle of 90° to the horizontal axis of the space (i.e. vertical cutting lines). In contrast, votes that involve only the second dimension have angles of 0° (or equivalently, 180°). A double "horseshoe" pattern implies that most votes should have angles that vary from 35° to 55° (or equivalently, from 125° to 145°). Figure 5 presents a histogram of cutting-line angles. The histogram clearly shows that the roll call cutting lines are not clustered at angles of $35^\circ - 55^\circ$ ($125^\circ - 145^\circ$) to the horizontal axis. Indeed, the angle distribution is quite dispersed with a modal category in the 80 bar, corresponding to votes with cutting lines between 80° and 90° .

< Figure 5 Here >

It could be argued that the higher frequency of vertical cutting lines is evidence of unidimensionality, and that the noise component, working through the *horseshoe effect* is forcing the configuration into the approximate shape of circle. The tests of the overall fit of the multidimensional model as well as the histogram of dissimilarities presented above, however, suggest that lack of validity of such an argument. Therefore, taken together, the evidence indicates that we can safely reject the idea that the recovered MDS solution consists of two contiguous horseshoes.

4.2 Interpretation

We have already discussed the dimensionality and topological structure of the data. A more specific structural feature of a conceptual space is the one which makes reference to subuniverses of its items. The partitioning of the space into regions indicates that parties and groups were a source of cohesion/unity of individual legislators. There is, however, a significant amount of dispersion in legislators' ideal points within the *polar* as well as the

modular partitionings. This is especially true for the two biggest Radical delegations of the period, the Intransigente and the Radicales del Pueblo. For example, despite their anti-peronist sentiments, several UCRI and UCRP members are closer, in ideological terms to the peronists than to some other of their party comrades.

Figure 6 presents the spatial map obtained using Optimal Classification. In addition to the parties identified above, we use “C” tokens to represent legislators from the Center/Conservative parties; “d” tokens for the Christian Democrats; “D” tokens for the Progressive Democrats (PDP); “S” for the members of the Partido Socialista Argentino (PSA); and “s” tokens for the Socialistas Democraticos (PSD). For interpretation purposed, we also include in the graph a few meaningful cutting lines.

< Figure 6 Here >

The radex structure of the obtained solution is clearly evident. The *polar* facet cuts the space into subspaces that correspond to legislators’ positions regarding the integration of Peronism. Legislators located closer to the circle’s periphery are more likely to have less intense views (positive or negative) toward peronism than those closer to the origin. Regarding the *modular* facet, the main political parties fall in a circle in the following order (in clockwise direction): UCRI, Peronism, UCRP, UDELPA. This representation accurately captures the fact that the UCRI had a stronger positive association with the Peronists than with the UCRP. The strength of association of the latter with the UCRI increases, though, as one moves clockwise toward the position of UDELPA. But, legislators located in the upper-left quadrant of the circle are still negatively associated with the UCRI. And, as expected, this negative association is strongest between them, and the Peronist legislators. The nature of the relationship among parties is similar in the “upper half” of the circle: legislators falling between 45° and 90° should display decreasing negative associations. And, the association between UCRI and UDELPA should be at its weakest point at 90°. Moving toward the UCRI’s location, the associations become positive, and their magnitude increases as one approaches 360°.

The modular partitioning captures the liberal/nationalistic divide and reveals that the whole gamut of ideological positions were represented in the Argentine Congress: the “lower

half” of the circle is populated by legislators with a predominantly nationalistic outlook. This is clearly the case of the Peronist legislators located in the lower-right quadrant of the circle. In contrast, legislators who held a more liberal outlook tend to be concentrated in the circle’s “upper-half.”

It also evident from Figure 6 that legislators’ ideal points are elements of both a circumplex and a simplex. Variation in the intensity of the peronist/anti-peronist schism, with ideological outlook kept constant, corresponds to movement along one of the radial paths in the radex. Variation in ideological outlook, with feelings toward peronism kept constant, corresponds to movement around one of the concentric circular paths. Notice that when the differences regarding the problem of peronism become sufficiently small, the ideological differences lose their distinguishability. However, even though some legislators with moderate views did exist, most legislators held more intense and thus more distant views.

As noted above, in addition to legislators’ ideal points, the cutting lines recovered by the MDS solution also contain important information at our disposal. We can thus further interpret our radex representation by focusing on some key votes that were taken during the 1958-1966 period, and that explicitly required legislators to take a position according to the mapping sentence defined above. In other words, we can use the recovered cutting lines to link content facets to regions of the empirical MDS space.

The evidence in Figure 6 indicates that our regional hypothesis is supported by the data. All legislators’ ideal points within a particular region are associated with the same facet element, and ideal points in different regions are associated with different facet elements. For example, the vertical blue line shows the division created by a critical vote regarding labor legislation taken on July 24, 1958. The vote took place only a few months after Frondizi’s inauguration, and was part of the commitment he assumed in his electoral pact with Peron. The alignment of legislators on this particular issue should thus reflect their positions regarding the role of the labor movement. Figure 6 reveals how this particular vote, strongly linked to the issue of whether Peronists should be allowed to participate in national politics, but focused more narrowly on the role of labor unions created two separate camps with the UCRI legislators on one side and the UCRP legislators on the other. Notice

also, that because the vote took place during the 1958-1960 session, there were no Peronist deputies. They only appear in Figure 6 because they were scaled jointly for the whole 1958-1966 period. Still, it is interesting to see – in a counterfactual fashion – how they would have behaved if they had been part of that legislature.

The black line in Figure 6 shows the division created by the vote on Frondizi’s proposal to allow private investments in the oil industry. This was clearly a landmark piece of legislation, and a policy issue that exacerbated some the differences between the UCRP and UCRI members beyond the electoral participation of Peronism. Notice how to one side of the cutting line are located the more liberal members of the UCRP along with the UCRI legislators. On this side, we can also locate those legislators from Center-Right parties, such as UDELPA and the PDP. In contrast, a coalition of nationalist UCRP members and Peronists (again, given their counterfactual presence) lies in opposition to Frondizi’s proposal.

Moving onto Illia’s presidency, the red line in Figure 6 shows the recovered division created by the vote taken in the Chamber of Deputies on May 8, 1965 condemning the United States’ occupation of the Dominican Republic. As Potash (1996) points out, although nonintervention in the domestic affairs of other countries was a traditional stance of the UCRP, the government felt that it was better to have the OAS involved in promoting a solution to the crisis than issuing denunciations. This position, though, put a strain on the members of the UCRP. As Figure 6 shows, in order to support the administration, they joined forces with the most “liberal” sectors in the legislature. In contrast, the UCRI legislators alongside the Peronists, the Progressive Democrats and the Christian Democrats formed a coalition to condemn *Yankee* imperialism. The final vote under examination took place a couple of months before the military coup that ousted Illia from the presidency. It involved labor legislation, so it provides a nice parallel to the first vote that we analyzed in more detail. In this case, the green line in Figure 6 shows how the recovered cutting plane divides the space along the “horizontal” axis. Notice that in this case, a coalition between the Peronist legislators and the “nationalist” members of both the UCRP and the UCRI exists. The Center/Conservative Parties, UDELPA, and the “liberal” sectors of the UCRP and UCRI compose the other coalition.

4.3 Discussion

What are the implications of the analysis presented in Figure 6 for the impossible game? First, the representation reveals that a simple “peronista/anti-peronista” interpretation would fail to account for the complexities of the recovered political structure. Second, the overlapping coalitions indicate that the main obstacle for stability was not the impossibility of a unique equilibrium, but the plethora of feasible ones.

With a little extrapolation, assuming that legislators’ recovered ideal points are representative of the positions of “extra-institutional” actors (such as Peron and the Military), Argentina’s most relevant political leaders during the 1955-1966 period can be located in the periphery of a circle with the following order: Frondizi (0°), Alsogaray (45°), Aramburu (90°), Balbin (135°), Illia (180°), Cantoni (225°), Peron (270°), and Serú Garcia (315°). With such a characterization, one could easily identify the golpista coalitions that toppled presidents Frondizi and Illia. In the case of the former, the intersection of the red and black lines create an easily identifiable pair of quadrants in the right side of the circle showing Frondizi’s core following after losing the support of the liberal and Peronist “wings” of his government coalition. Therefore, the remaining 6 quadrants can be seen as the civilian support for a military coup. Likewise, the very same lines create an pair of quadrants in the left side of the circle showing Illia’s core following after losing the support of the liberal “wing” of his government coalition. In addition to the Peronist opposition to the UCRP government, the remaining 6 quadrants can be interpreted as the political coalition that explicitly (or implicitly in the case of many members of the UCRP) supported Juan Carlos Onganía.

So, could have been possible to achieve a stable solution to the problem of Peronism? In Figure 7, we present the location of the median legislator of the UCRP, UCRI, Peronism, and UDELPA (using the “R” , “I” , “P” , and “U” tokens, respectively). We also plot the location of a few prominent legislators with close ties to the aforementioned political leaders. So, for example, UCRI’s Horacio Domingorena was closely linked to President Arturo Frondizi, while UCRP deputy Raúl Alfonsín had strong ties to President Arturo Illia. Likewise, UCRP’s Antonio Troccoli was quite close to his party’s leader Ricardo Balbin, whereas UDELPA deputy Eduardo Gutierrez was linked to the Alsogaray brothers (Julio and Alvaro).

A comparison between the hypothetical examples depicted in Figure 2 and the recovered locations presented in Figure 7 highlights the disequilibrating consequences of Argentine politics between 1958 and 1966. The position of Horacio Thedy, a prominent politician from the Progressive Democratic Party approximates best the location of the “median” in all directions. And indeed, Thedy played a critical role in trying to craft a strategy to avoid the 1966 coup against President Illia. The absence of radial symmetry, however, conspired against his *equilibrating* efforts.

5 Conclusions

In this paper, we proposed a two-dimensional, circular model of political conflict. To illustrate the validity of our proposed model, we evaluated O’Donnell’s “impossible game” through the analysis of roll call votes using a radex representation of the data. Multidimensional Scaling (MDS) analysis supported our view: the structure, resembling a dart board, derived from the combination of a one-dimensional simplex (with radial lines capturing stands on peronism) and a one-dimensional circumplex (with concentric circles corresponding to ideological outlook). We found that Argentina’s main political leaders during the 1955-1966 period were located in the periphery of the circle, indicating that they held intense and highly contested views on the integration of peronism. Our results also suggest that multidimensionality, rather than structural constraints, inhibited the attainment of stable political outcomes in this era.

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Tables and Figures

Table 1
Description of Roll Call Vote Data

Period	N	Lopsided	% PNV.	Lopsided after Recode
1958-1959	30	4	16	0
1960-1961	36	0	14	0
1963-1964	31	3	13	1
1965-1966	32	1	18	1

Figure 1: Hypothetical circumplex representation for eight voters

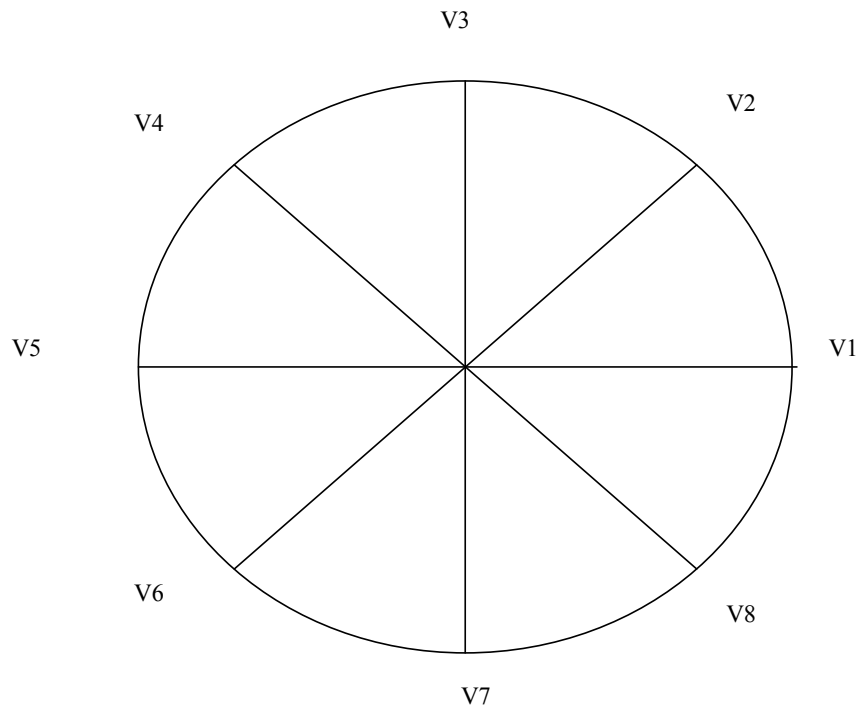


Figure 2: Hypothetical distribution of preferences for nine voters

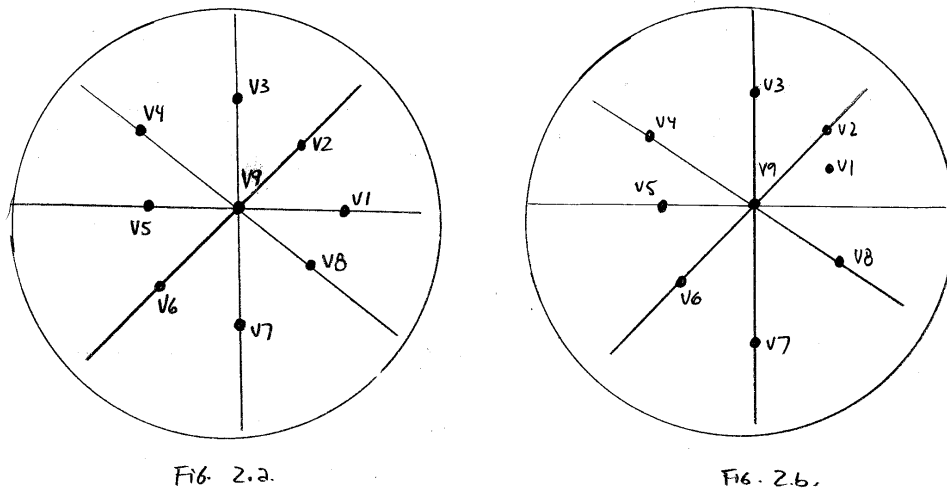


Figure 3: Dissimilarities obtained from the legislators' agreement scores

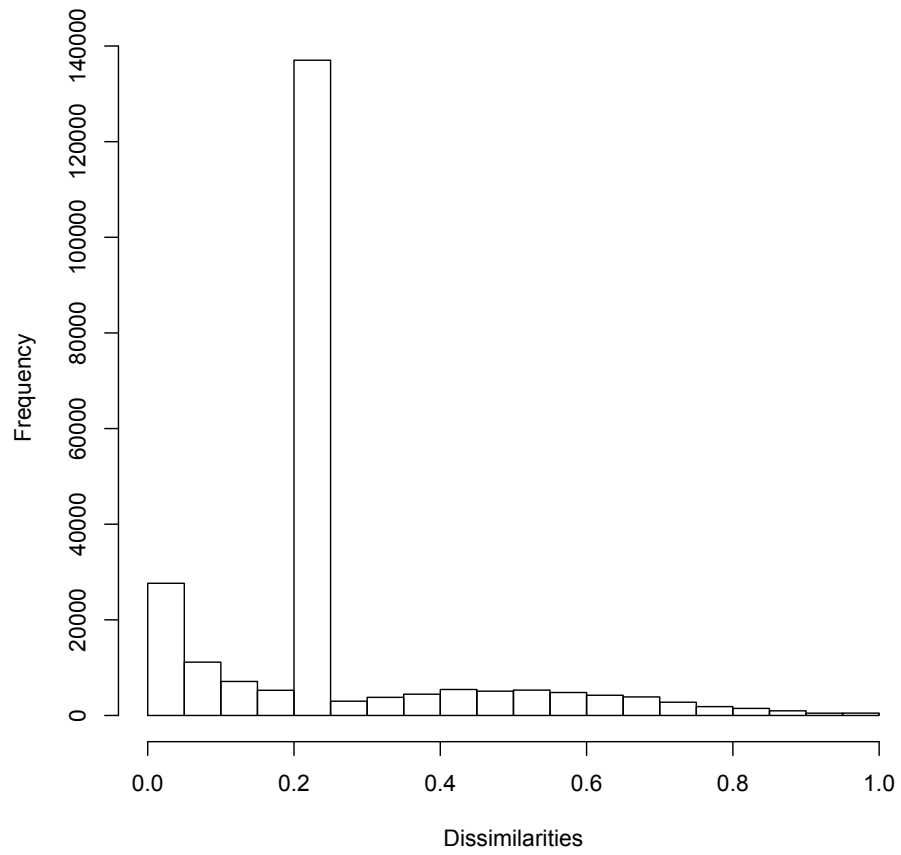


Figure 4: Legislators' ideal points: starting values

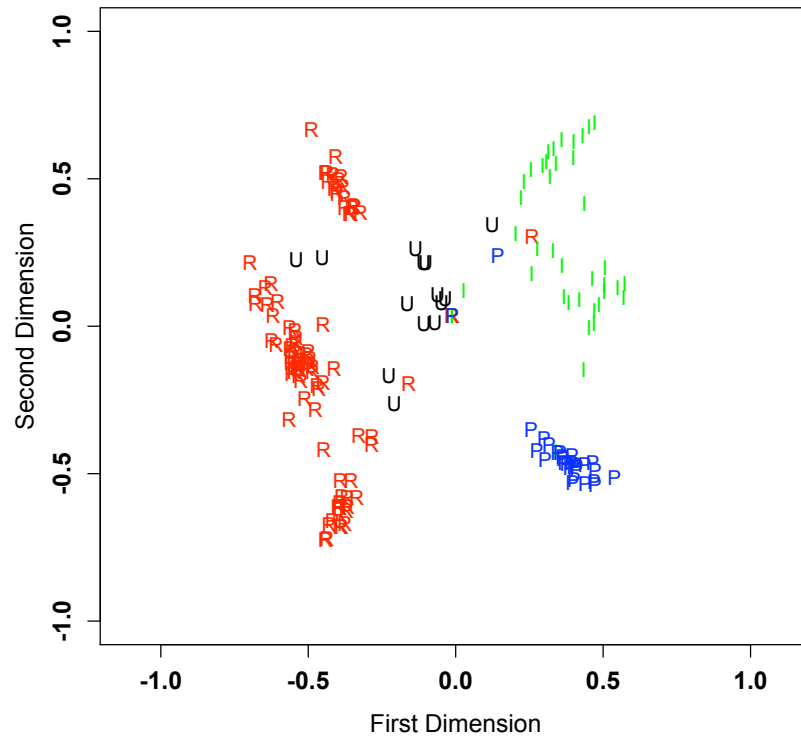


Figure 5: Angles of recovered cutting lines

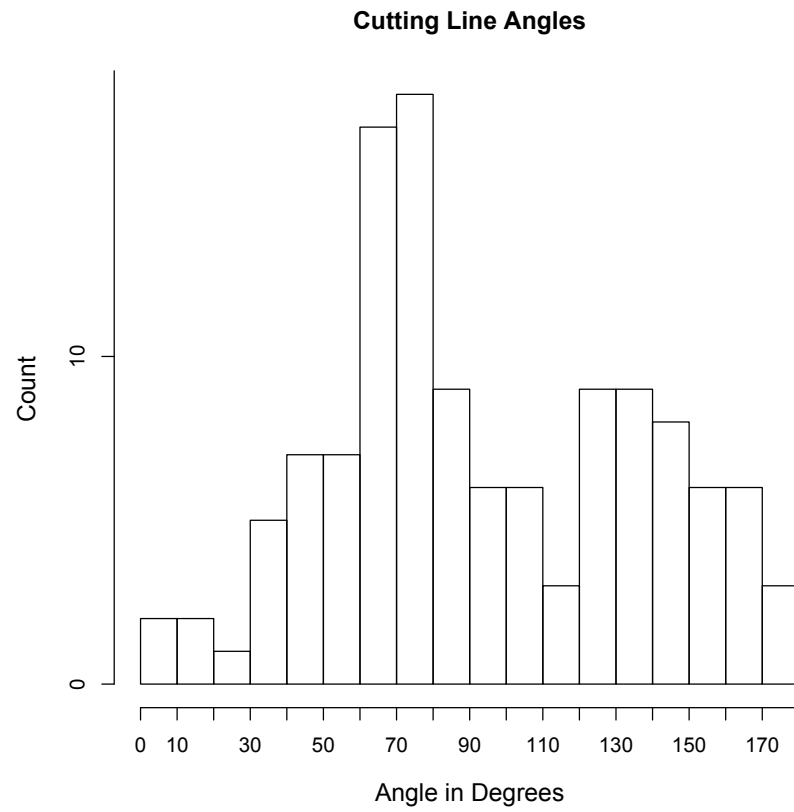


Figure 6: Argentina, 1958-1966: two-dimensional *radex* representation

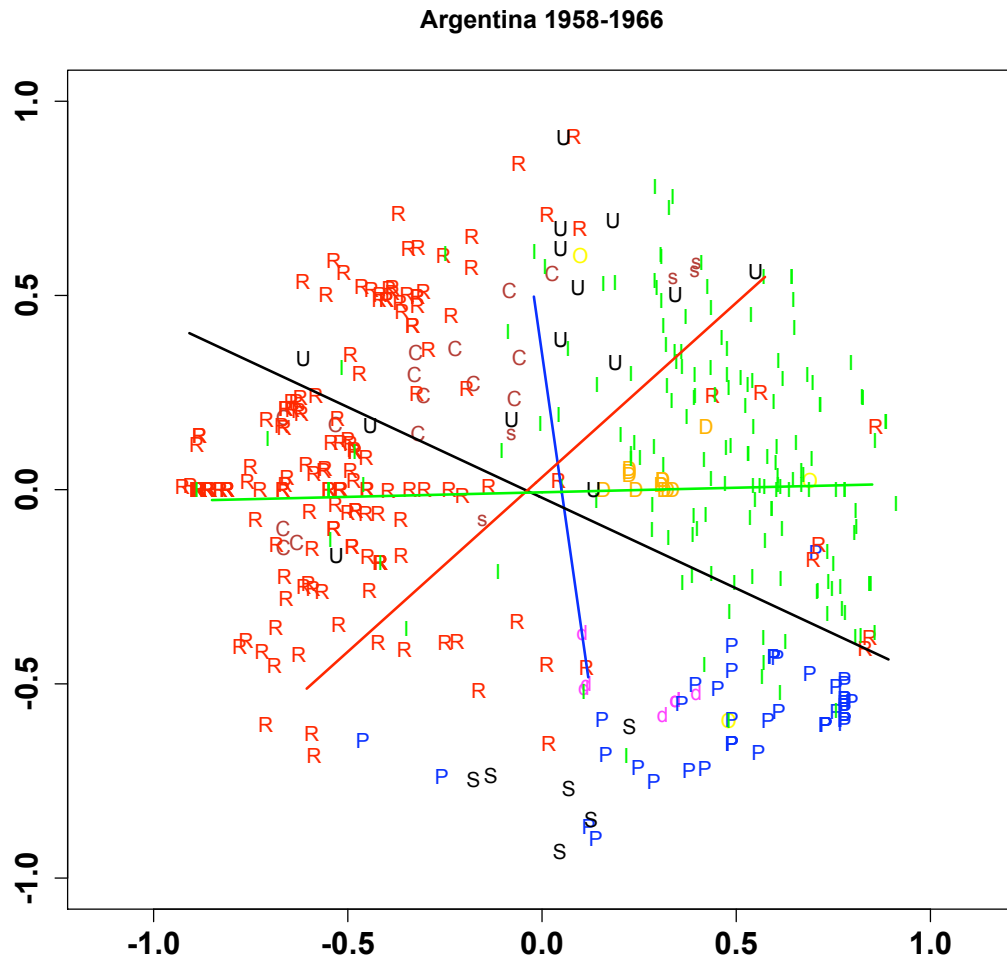


Figure 7: Argentina, 1958-1966: key players' recovered locations

