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# An empirical stochastic model of Argentina's Impossible Game (1955–1966)

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## Abstract

Argentine politics from 1955 to 1966 was characterized by the conflict between the Peronists and the anti-Peronists. While each camp could veto the other's project, neither could advance their own agenda. In his canonical interpretation, O'Donnell (*Modernization and Bureaucratic-Authoritarianism*. Berkeley, CA: Institute of International Studies, University of California, 1973) concluded that party democracy during this era was tantamount to an 'impossible game.' While we recognize the significance of O'Donnell's analysis, we believe that it presents a number of problems. To address its main shortcomings we consider a spatial model that emphasizes the importance of voters' judgments about the characteristics of party leaders. We recover the positions of Argentine parties using a mixed logit stochastic model and an original dataset of recorded votes in the Argentine Chamber of Deputies during this era. Our results suggest that the electoral logic forced the Peronist party to adopt relatively radical positions away from the center in order to maximize its support. In turn, non-Peronist parties had little incentive to seek the support of moderate, and thus 'unrepresented,' Peronist voters by locating themselves at the electoral mean. In particular, valence differences associated with Peronism prevented larger parties from converging toward the center. We thus conjecture that the rules of the *impossible game* were a constraint imposed by the populace on Argentine political elites rather than a choice made by the latter behind the people's back.

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## 1. Introduction

In his seminal book, *Modernization and Authoritarianism*, Guillermo O'Donnell (1973) presents a game-theoretical model of Argentine politics between 1955 and 1966. The period was characterized by the conflict between the Peronist and anti-Peronist camps. After president Juan D Perón was forced from office in 1955, each side would refuse to recognize the legitimacy of the other. In addition, while each side could veto the other's project, neither could advance their own agenda. In a canonical interpretation of regime instability in Argentina, O'Donnell thus concluded that party democracy during this era was tantamount to an 'impossible game.'

While we recognize the significance of O'Donnell's analysis, we believe that it presents a number of problems. Firstly, he adopts a *Downsian* view of political competition; namely he assumes that, in order to win, parties would converge to the electoral median. There was hardly any policy convergence by parties, however, during the 1955–1966 period. Secondly, his analysis ignores the emotional, or *valence*, dimension of Peronism. Thirdly, O'Donnell fails to acknowledge the complexity of the policy space. He focuses on the division between the Peronists and the anti-Peronists; yet, two ideological currents (liberalism and nationalism) also characterized political divisions among the latter during this period. Finally, he fails to use empirical indicators of policy preferences to evaluate his model's implications; rather, he relies on 'an intuitive approximation and not a precise measure' of the Peronism versus anti-Peronism cleavage (O'Donnell, 1973: 171).

To address these shortcomings, this paper considers a spatial model that emphasizes the importance of voters' judgments about the characteristics of party leaders (Schofield, 2006, 2007, 2008a). The model is an extension of the multiparty stochastic model of McKelvey and Patty (2006), modified by introducing asymmetries in terms of the non-policy aspects of the competition. Schofield (2007) shows that, once the valence asymmetries are accounted for, even if parties seek to maximize popular support, policy convergence need not occur. Therefore, in contrast to the *Downsian* approach, the stochastic electoral model with valence seems to be a more appropriate model to characterize the 'impossible game.'

We recover political parties' positions in Argentina using a mixed logit stochastic model (Schofield, 2008b; Schofield and Zakharov, 2010; Schofield et al., 2011a, 2011b, 2011c, 2011d, 2011e, 2011f, 2012). In the standard empirical estimation, party valences are assumed to be the constant terms of the voter utility functions. The available survey data for the 1958–1966 period, however, are not rich enough to allow us to assess voters' policy preferences. Therefore, we estimate the model using legislators' ideal points, which we recover using an original dataset of recorded votes in the Argentine Chamber of Deputies during this era. Examination of survey data from 1965 and the electoral results in the legislative contests of 1963

and 1965 indicates that the distribution of voter preferences can be approximated by the distribution of legislator preferences. As such, our departure from the standard use of the model proposed by Norman Schofield and his colleagues seems to be warranted.

The results indicate that a convergent vote maximizing equilibrium failed to exist. Specifically, we find that the Peronist party faced strong incentives to adopt a position at the electoral periphery. In addition, the rest of the parties did not have an incentive to move to the electoral mean. These findings suggest that O'Donnell correctly posited the existence of an *impossible game*, but not for the reasons he indicated. Instead, our results indicate that the main obstacle for political stability was not the impossibility of a unique equilibrium, but rather the plethora of feasible ones.

Our analysis of Argentine politics from 1955 to 1966 bears important implications for our understanding of competition in partial democracies. In this respect, this paper is closely related to Schofield et al. (2012), who demonstrate that it is possible for relatively autocratic regimes to persist, even when there are democratic elections and viable opposition parties. In addition, the examination of the Argentine case nicely aligns with the recent analyses of the role of valence in explaining the country's politics (Galiani et al., 2014; Schofield and Cataife, 2007; Schofield and Levinson, 2008).

The remainder of this paper proceeds as follows. In Section 2, we describe Argentina's impossible game. In Section 3, Schofield's model of political competition is presented. In Section 4, we present our main findings. A final section concludes.

## 2. Argentina's Impossible Game (1955–1966)

Juan Domingo Perón became president of Argentina in April of 1946, and stayed in office until the military ousted him in September 1955. One of the main legacies of his regime was the division of the country between Peronists and anti-Peronists. Perón's pro-labor reforms earned him strong support among workers and equally strong opposition from traditional elites as well as the middle class. For Peronists, the period from 1946 to 1955 represented the triumph of the common people over the *oligarchy*. Perón's opponents, on the other hand, viewed him as a demagogic leader who built a totalitarian regime on the basis of his appeal to the gullible and uneducated (McGuire, 1997).

The decades following Perón's overthrow were marked by bitter conflicts over his political heritage. The armed forces regarded the 1955 coup, the so-called *Revolucion Libertadora*, as a steppingstone to the country's democratization. The majority of the anti-Peronist politicians, who considered Peronism the antithesis of freedom and democracy, shared this view. The acceptance of Peronism as a legitimate contender within a pluralistic electoral system, however, turned out to be a thorny issue. At one extreme, there were those who wished to dismantle the Peronist political apparatus, reduce unions' power, and reconstruct Argentine political life on the basis of the anti-Peronist political parties. The other extreme

comprised those individuals hoping to attract Perón's supporters by maintaining the structure of the Peronist Party and by negotiating with union leaders (Potash, 1980).

Both groups, however, had to contend with a distinctive characteristic of Peronism throughout the 1955–1966 period: the persistence, despite every effort to redirect it, of a mass of Argentine voters who remained loyal to Perón and responsive to his directives. This was, as John William Cooke put it, the *hecho maldito* (curse) of Argentine society. Therefore, after 1955, every attempt to 'democratize' the country involved a key issue: how to assimilate the Peronist voters into the electoral arena.

Guillermo O'Donnell (1973) offers an analytic depiction of this phenomenon by developing a game-theoretic model of Argentine politics during this era. The players include forbidden actors (Perón and Peronism), tolerated actors (other political parties), and the military (ultimate veto players). According to O'Donnell, the players' preferences can be represented in a single dimension characterized by a bimodal pattern reflecting the polarization between Peronists and non-Peronists. Figure 1 reproduces O'Donnell's representation.

The Argentine electoral system stipulated that the party obtaining the plurality of votes would win executive office. Therefore, in a *Downsian* equilibrium, if all the non-Peronist forces remain unified against the Peronists, both sides should converge to the position of the median voter: each side would win with equal probability. If the non-Peronist forces compete with two separate candidates, then the inevitable entry of a successful *Peronist* third candidate would eliminate the existence of two-candidate equilibria in which both non-Peronist candidates converge to the electoral median. Neither of these outcomes was acceptable for the military, so the Peronist party was effectively banned from the competition. Therefore, in a two-party competition between the non-Peronist forces, only these parties would converge to the position of the median voter, and win with equal probability.

Although the Peronist party was banned from electoral competition, their supporters could still exercise their right to vote. Their choices were usually restricted to casting blank ballots or supporting a *covert* Peronist candidate. This suggests
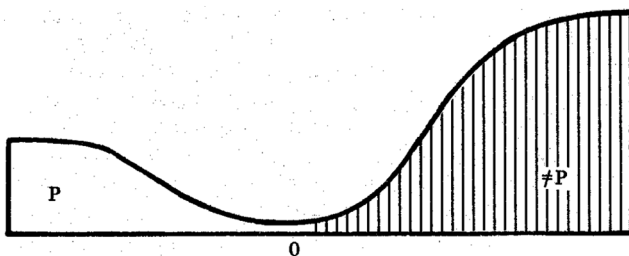


**Figure 1.** Figurative representation of distribution of political opinions (Peronists versus anti-Peronists) in Argentina: 1955–1966.
Source: O'Donnell (1973: 169).

that a three-candidate equilibrium under plurality rule could exist. Indeed, O'Donnell seems to be thinking of a three-candidate equilibrium, where one of the non-Peronist parties seeks the Peronist vote. His logic, however, is imprecise and vague. A three-candidate equilibrium would take one of the following forms: (a) each candidate adopts a distinct position and obtains one-third of the votes; (b) each candidate adopts a different position, with two candidates obtaining the same fraction of votes, and the remaining one obtaining fewer votes and losing for sure (Osborne and Slivinsky, 1996). This second form, according to the distribution of preferences represented in Figure 1, would correspond to a situation where the two candidates that obtain the same fraction of the votes belong to the Peronist and non-Peronist camps; the third, the *moderate* non-Peronist candidate, would lose for sure. Note that, by this logic, the moderate non-Peronists would enter solely because they prefer the equal-probability lottery over their two rivals' positions to a certain victory by the most distant Peronist candidate if they decide not to compete. In both situations, the Peronists would still have a positive probability of winning. Therefore, neither of them would be suitable options for the military.

Nonetheless, despite his *Downsian* view of political competition, O'Donnell insists that the non-Peronist parties did not have an incentive to converge to the position of the median voter. His focus on parties' ability to govern rather than winning elections seems to be the source of this apparent contradiction. Elected governments found it beneficial to cater to Perón's supporters not only for their electoral strength, but also because of their hold on the unions. In other words, while the support of the median voter could be enough to win elections, it was not sufficient to keep the social peace.

The necessity to accommodate the Peronists, however, entailed a commitment problem: the non-Peronist parties could not credibly commit to compensate the Peronists for giving up their organized labor strength, and the Peronists could not credibly commit not to take advantage of their potential non-Peronist allies if they gained more freedom of action. Therefore, as the electoral 'winners' of this game, non-Peronist parties would be likely to face a military coup, the brunt of betrayed Peronists, or both.

While we recognize the significance of O'Donnell's analysis, several concerns arise from his perspective. Firstly, as discussed above, his *Downsian* approach does not accurately characterize political competition in Argentina during the 1955–1966 period. As O'Donnell himself admits, this era was characterized by polarization rather than by policy convergence between the parties. Moreover, his conclusion that party democracy was tantamount to an 'impossible game' does not come out of his model of electoral competition.

Secondly, O'Donnell's model fails to account for the emotional, or *valence*, dimension of Peronism. The notion of valence, first proposed by Stokes (1963), is typically linked to the revealed ability of a party to govern in the past or the predicted ability of a party to govern well in the future. It can also refer to voters' judgments of a leader's quality or competence that is independent of his/her location in the policy space. So, for example, the masses may blindly support a popular leader because of his/her intrinsic valence, or charisma, irrespective of their

ideological beliefs. In the Argentine case, policy differences lurked behind the division between Peronists and anti-Peronists. As James (1988) notes, however, the conflict was not class based. Instead, given its overlapping cultural, political, and economic antagonisms, the schism reflected affective evaluations of Perón and his wife, Eva Duarte de Perón.

Thirdly, O'Donnell's simple characterization presented in Figure 1 fails to acknowledge the complexity of the policy space. Among the non-Peronists, party fragmentation reflected a plethora of strategies, preferences, and ideas. Ideologically, two main currents characterized political divisions in Argentina: liberalism and nationalism. The word 'liberal,' as Potash (1996: 210) describes, was typically 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 crosscurrents, the non-Peronist parties found it very hard to appeal to the same set of voters. The division of the Radical party in the 1950s is a case in point. Traditional Radicals, known as *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 party members, however, were equally anti-Peronists but had a more liberal outlook. A rival faction to the UCRP transformed itself into the Intransigent Radicals (UCRI). This party had more moderate views toward 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 Intransigente) also became the norm in the UCRI, whose heterogeneity hosted neo-Marxists, developmentalists, and traditional conservatives (Szusterman, 1995).

On the Peronist side, strategic considerations also conspired against the adoption of a unified strategy. Despite being in exile, Perón remained the main actor of this camp. Other players of the Peronist movement, however, faced incentives and temptations to capitalize the scenario for themselves, and become the popular component of a new coalition ('Peronism without Perón'). This was particularly likely in a party where unions were the main sources for organizational survival and the principal seedbed of party officers. These speculations were understandable in an environment of uncertainty about the game's development, the regime, and also Perón's personal strategies.[1]

In addition, no attentive observer (including O'Donnell) would characterize the military as a homogeneous actor, especially given the explicit division between the legalist *Azules* and the anti-Peronist *Colorados*.[2] 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 (quasi-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 the difference in the political and economic projects of each sector, small shifts in the balance of power within the institution was likely to affect the whole political game in a significant manner, including tolerable solutions.

Finally, much of O'Donnell's argument is built around his characterization of the policy preferences held by the relevant political actors in Argentina during the 1955–1966 period. Yet, the bimodal pattern reflecting the polarization between Peronists and non-Peronists reproduced in Figure 1 is not based on any empirical indicators (such as election results or public opinion data). Instead, O'Donnell relies on 'an intuitive approximation and not a precise measure' of this cleavage (O'Donnell, 1973: 171).

## 3. The stochastic model with valence

Models of electoral competition usually assume that parties or candidates adopt positions to maximize expected vote shares (or, in two-party contests, the plurality). These assumptions lead to the inference that parties will converge to the electoral median under deterministic voting in one dimension (Downs, 1957; Riker and Ordeshook, 1973) or to the electoral mean in stochastic models (Lin et al., 1999; McKelvey and Patty, 2006).

Given the dynamics of Argentine politics between 1955 and 1966, what would more accurately characterize the 'impossible game' is a model that combines elements of valence and policy distance (Schofield, 2006, 2007, 2008a). Such a model is an extension of the multiparty stochastic model developed by McKelvey and Patty (2006) with asymmetries in terms of the non-policy aspects of the competition. Schofield (2007) shows that, once the valence asymmetries are accounted for, even parties seeking to maximize popular support may not converge to the electoral mean.

In particular, the results in Schofield (2007) give the necessary and sufficient conditions under which a *local pure strategy Nash equilibrium* (LNE) of this model at the *joint electoral mean* exists (i.e. where each party converges to the mean of the electoral distribution). A necessary condition for such an equilibrium is that a 'convergence coefficient', $c$, defined in terms of valence and policy distance, is bounded above by the dimension of the policy space. When the policy space is two-dimensional, a sufficient condition for convergent equilibrium is that this coefficient be less than one (Schofield, 2007).[3]

If the necessary condition fails, then parties will adopt divergent positions. When this is the case, a party whose leader possesses the lowest valence will have the greatest electoral incentive to move away from the electoral mean. Other parties will follow suit, and the LNE will be one in which parties are located on the one-dimensional subspace where the distribution of voter ideal points' variance is maximum. More generally, a convergent LNE can only be guaranteed when, ceteris paribus, policy distances are relatively small. In contrast, divergence from the electoral

mean becomes more likely the greater the policy distances, the valence differences, and the variance of the electoral distribution (Schofield, 2007).

## 4. Empirical analysis

We consider an empirical model where a stochastic component is associated with the weight given by each voter to the average perceived quality or valence of each party (Schofield 2006, 2007, 2008a). The model, denoted by $M(\lambda, \beta)$, is characterized by a vector of party valences, $\lambda$, and a spatial parameter $\beta$ that captures a voter's distance from each party in the policy space. The valence coefficients for each party are generated under the assumption that the stochastic errors have a 'Type I extreme value or Gumbel distribution,' which parallels multinomial logit estimation (MNL) in empirical estimation (Schofield, 2008b).[4]

Ideally, we would like to analyze the 1958 and 1963 presidential elections using data on voters' policy preferences. Unfortunately, the Peronist party could not officially participate in these contests, thereby making it impossible to ascertain its effective support from election results. Secondly, to the best of our knowledge, no reliable public opinion surveys prior to 1965 exist. Even those that were conducted in the mid-1960s lack enough information to estimate voters' policy preferences. Therefore, the empirical model is based on legislators' ideal points. As we demonstrate below, the distribution of preferences of Argentine voters in the 1960s can be approximated by the distribution of their representatives' preferences. As such, this departure from the standard use of the model proposed by Norman Schofield and his colleagues seems to be warranted.

### 4.1. Legislators' ideal points

To estimate legislators' ideal points, we assembled an original dataset of recorded votes in the Argentine Chamber of Deputies during the Frondizi and Illia presidencies. In both of these cases, legislative (as well as presidential) terms were disrupted by military coups. Our sample thus covers four two-year legislative periods (1958–1959, 1960–1961, 1963–1964, 1965–1966). We obtained the roll call data from the *Diario de Sesiones* (Journal) of the Argentine Chamber of Deputies. As Table 1 indicates, 129 roll call votes were cast in these four periods. These votes are nicely balanced across the periods. In addition, nearly the entire sample of votes shows

**Table 1.** Description of roll call vote data.

| Period | N | Lopsided | % Present not voting | 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 |

substantive variation in the vote distribution (more that 5% on the losing side), which prevents observations from being dropped. Only eight votes do not fulfill this requirement.

As documented by Jones and Hwang (2005), abstentions and exits from the floor are likely to be non-random events that occur at a frequent rate in the contemporary Argentine Congress.[5] Our analysis indicates that absences in votes by legislators that were denoted as being 'present' in the House were frequent in the period under analysis. The third column in Table 1 reveals that strategic exits from the floor ranged between 13% and 18% of the 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 (essentially) their own party leaders. Following Jones and Hwang (2005), 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 an entire 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 at 5%.

We exploit the staggered terms in the legislature to analyze all four legislative sessions simultaneously. In each legislative period, at least 50% of the deputies overlap with legislators who serve a different term. Moreover, our sample of 418 deputies includes 31 legislators who were in office during the entire period under analysis (including 22 legislators who served full terms in the 1958–1962 and 1963–1967 legislatures). We combine the roll call matrices using these legislators to estimate a common map (Poole, 2005; Shor and McCarty, 2011; Shor et al., 2010). Substantively, the common map provides the advantage of locating Peronist deputies, who only won representation after 1962, vis-à-vis other legislators who served at some point during the whole period.

To estimate the legislators' latent preferences, we use 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 (Poole, 2005; Rosenthal and Voeten, 2004). 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. Secondly, 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.[6]

The normalized eigenvalues of the double-centered legislator-by-legislator agreement score matrix fall off smoothly from the third to the 10th value. This is a clear indication that the data are most likely to be two-dimensional (Poole, 2005).
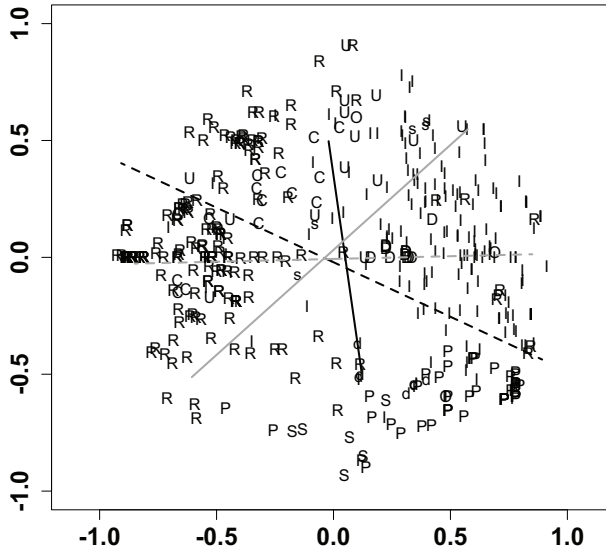
**Figure 2.** Argentina 1958–1966: two-dimensional representation. (Color online only.)

Another way to evaluate the models' fit is to focus on classification percentages using the roll calls' aggregate proportional reduction in error (APRE) measure (Poole and Rosenthal, 1997). The APRE for the one- and two-dimensional models indicates 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%.

Figure 2 presents the spatial map obtained using OC. 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.[7] The recovered estimates indicate that both the issue of Peronism (horizontal axis) and the ideological divide between liberalism and nationalism (vertical axis) were the basic schisms in Argentina during the 1955–1966 period. Indeed, a 45° line running through the origin would separate the Peronist and anti-Peronist camps. Legislators to the 'right' of the 45° line are supportive of the integration of Peronism, while legislators in the 'lower half' of the spatial map tend to have a predominantly nationalistic outlook. This is the case of the Peronist legislators located in the lower-right quadrant of the map. In contrast, legislators with a more liberal outlook tend to be concentrated in the map's 'upper-half.' It should also be noted that the covariance between the two dimensions is null (0.001), which implies that ideological positions cannot be reduced to the attitudes toward Peronism.

In addition to legislators' ideal points, the recovered cutting lines also contain important information at our disposal. We can thus further interpret our representation by focusing on some key votes that were taken during the 1958–1966 period.

The vertical solid black 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 Perón. The bill under consideration (Law of Professional Associations) allowed for the recognition of only one bargaining unit in any one industry. It also abolished minority representation in union leadership and authorized the retention of union dues on behalf of the unions by employers (James, 1988). The alignment of legislators should thus reflect their positions regarding the influence of Peronists' over the labor movement. Figure 2 reveals how the vote created two separate camps with the UCRI legislators on one side and the UCRP legislators on the other. The dashed black line in Figure 2 shows the division created by the vote on Frondizi's proposal to allow private investments in the oil industry taken on October 31, 1958. This was clearly a landmark piece of legislation, and a policy issue that exacerbated some of 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 (given their counterfactual presence) lies in opposition to Frondizi's proposal.

Moving onto Illia's presidency, the solid grey line in Figure 2 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. 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 Organization of American States (OAS) involved in promoting a solution to the crisis than issuing denunciations (Potash, 1996). This position, though, put a strain on the members of the UCRP. As Figure 2 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 involved labor legislation and took place on April 29, 1966. Unlike the July 24, 1958, vote discussed above, the proposal's aim was to appeal directly to the workers (by, for example, raising severance payments), rather than the unions' Peronist leadership. In this case, the dashed grey line in Figure 2 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.

## 4.2. Party valence: identifying assumptions

In the standard empirical estimation of the stochastic spatial voting model, party valences are assumed to be the constant terms of the voter utility functions. Given that the available survey data for the 1958–1966 period are not rich enough to allow

**Figure 3.** Preferences, votes, and seats in Argentina, 1963–1965.

us to assess voters' policy preferences, we estimate the model assuming that (a) the distribution of voter preferences can be approximated by the distribution of legislator preferences and (b) a legislator's partisan affiliation can be treated as a survey respondent's choice of political party.

The study ARCIMS 1965-0005, archived at the Roper Center for Public Opinion Research, is a national survey of Argentina's adult population conducted in 1965 by Centro de Investigaciones Motivacionales y Sociales (CIMS). Despite its limitations, we can use the survey to evaluate the plausibility of our first assumption. In particular, we can examine the respondents' vote choice vis-à-vis the actual electoral results.

Figure 3(a) demonstrates the correspondence between respondents' voting intentions and the electoral results in the legislative contests of 1963 and 1965.[8] The solid line presents the predicted vote share for each party as a function of respondents' vote intentions, while the shaded areas denote the 95% confidence intervals around these estimates. The evidence indicates that the actual electoral results closely mirrored voters' partisan preferences.

Figure 3(b) shows the relationship between the distribution of seats and the distribution of votes for the same two elections. With the intention of legitimizing Argentine politics – and diluting the legislative weight of a possible Peronist plurality victory – a closed-list proportional representation (CLPR) electoral system was introduced in 1962. In addition to providing a moderate representation of Peronists in legislature, the adoption of the D'Hondt method ensured that seats would be allocated to parties in proportion to the number of votes they received. The solid line presents the predicted seat share for each party as a function of their proportion of votes, while the shaded areas denote the 95% confidence intervals around these estimates. As the data clearly shows, the electoral system was highly proportional during this period.

**Table 2.** Party cohesion of Argentine parties, 1963–1966.

| Party | Agreement Index (Average) | Standard deviation of index |
|---|---|---|
| PDP | 0.98 | 0.05 |
| Peronist | 0.92 | 0.17 |
| UCRP | 0.94 | 0.10 |
| UCRI | 0.90 | 0.19 |
| UDELPA | 0.79 | 0.24 |

Taken together, Figures 3(a) and (b) provide significant evidence regarding the plausibility of our first assumption. At least, during the partially contested legislative elections that took place after 1962, its seems reasonable to approximate voters' policy preferences by examining the preferences held by their representatives.

With regard to our second assumption (treating legislators as voters who vote for their own parties), we need to make sure that its plausibility is not compromised by party cohesion. If legislators do not vote along party lines, then their partisan affiliations would not be a very good indicator of their policy preferences. Table 2 shows the mean 'Agreement Index' (AI) of the main legislative parties in the 63 roll call votes taken between 1963 and 1966. Proposed by Hix et al. (2005), the index is calculated as follows:

$$AI_i = \frac{\max\{Y_i, N_i, A_i\} - \frac{1}{2}[(Y_i + N_i + A_i) - \max\{Y_i, N_i, A_i\}]}{(Y_i + N_i + A_i)},$$

where $Y_i$ denotes the number of *Yes* votes expressed by the members of party $i$ on a given vote, $N_i$ the number of *No* votes, and $A_i$ the number of *Abstain* votes. The index equals 1 when all the members of a party vote together and equals 0 when they are equally divided between all three of these voting options (Hix et al., 2005).

The results indicate that the leading political forces in the Argentine Chamber of Deputies were remarkably cohesive party organizations: with an average score of 0.79 and 0.98 between them. As such, our second identifying assumption seems to be warranted.

### 4.3. Main results

We can now use the mixed logit stochastic model to recover the political parties' positions. In keeping with the empirical evidence supporting our identifying assumptions, we will restrict our attention to the last two legislative periods in our sample (1963–1964 and 1965–1966).[9]

Figure 4 presents a smoothed distribution of the legislators' ideal points for the period between 1963 and 1966. It also shows the position of the parties in the two dimensions. Following Schofield et al. (2011a, 2011b, 2011c, 2011d, 2011e, 2011f), these positions are estimated by taking the average of the positions of the legislators for each party.
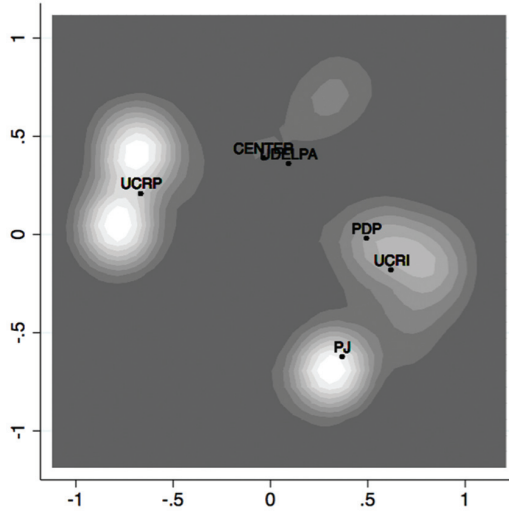
**Figure 4.** Argentina, 1963–1966: two-dimensional representation.

The covariance matrix is

$$\nabla = \begin{bmatrix} 0.341 & -0.114 \\ -0.114 & 0.205 \end{bmatrix}$$

with trace $\nabla = 0.546$.

To estimate the relationship between parties' ideological location, valence, and electoral success, we use the model $M(\lambda, \beta)$ described above. The valence terms are calculated with respect to the lowest valence party, the Progressive Democrats. Both spatial coefficients, $\beta_1$ and $\beta_2$, are statistically significant.[10] The results are summarized in Table 3.

Therefore, according to the model, the probability $\rho_{PJ}$ that a voter chooses the Peronist party when all parties are at the joint origin is

$$\rho_{PJ} = \frac{\exp(1.029)}{1 + \exp(2.144) + \exp(1.029) + \exp(3.758) + \exp(0.460) + \exp(1.611)}$$
$$= 0.045$$

The standard error of the valence term for the Peronist party is 0.424. Therefore, the 95% confidence interval for $\lambda_{PJ}$ is $[0.197, 1.861]$, and the 95% confidence interval for $\rho_{PJ}$ is $[0.020, 0.098]$.

We can now compute the convergence coefficient, $c$. For the model with separate $\beta$-coefficients presented in Table 3, $c$ is given by

**Table 3.** 1963–1966 model (base PDP).

| Variable | Coefficient |
| --- | --- |
| | (Std. err.) |
| Spatial distance | |
| $\beta_1$ | 7.584*** |
| | (1.271) |
| $\beta_2$ | 4.196*** |
| | (0.781) |
| Valence terms | |
| CENTER | 2.144*** |
| | (0.650) |
| PJ | 1.029*** |
| | (0.425) |
| UCRP | 3.758*** |
| | (0.752) |
| UCRI | 0.460 |
| | (0.428) |
| UDELPA | 1.611*** |
| | (0.606) |
| N | 150 |
| Log-likelihood | −90.382 |
| $\chi^2_{(2)}$ | 61.022 |

Significance levels: * 10%; ** 5%; *** 1%.

$$c(\boldsymbol{\lambda}, \boldsymbol{\beta}) = \frac{2(1 - 2\rho_{PJ})\mathrm{trace}(\boldsymbol{\beta}\nabla_0\boldsymbol{\beta})}{\frac{1}{2}(\beta_1 + \beta_2)}$$

$$= \frac{1.818}{5.891}\mathrm{trace}\begin{bmatrix} (7.584)^2 0.341 & -0.114 \\ -0.114 & (4.196)^2 0.205 \end{bmatrix}$$

$$= 7.184.$$

To determine if the convergence condition $c(\boldsymbol{\lambda}, \boldsymbol{\beta}) \leq 2$ is violated, it is important to estimate the 95% upper and lower bounds on $c$. Following Schofield (2008b), we calculate these confidence intervals using the upper bound of the $\beta$ coefficients and the lower bound of $\lambda_{PJ}$ and vice versa. The upper bound of the 95% confidence interval is 10.058 and, therefore, it fails to satisfy the necessary condition for the electoral mean to be a LNE. The lower bound is 4.275, indicating that the confidence interval does not satisfy the sufficient condition either. Moreover, the characteristic matrix of the Peronist party has positive eigenvalues. Therefore, the joint mean is not a good candidate for a pure strategy Nash equilibrium.

We can also verify that the electoral mean is not a LNE by simulation. When all the parties are located at the electoral mean their predicted vote shares can be calculated to be

$$\boldsymbol{\rho^{z_0}} = (\rho_{CENTER}^{z_0}, \rho_{PDP}^{z_0}, \rho_{PJ}^{z_0}, \rho_{UCRP}^{z_0}, \rho_{UCRI}^{z_0}, \rho_{UDELPA}^{z_0})$$
$$= (0.138, 0.016, 0.045, 0.693, 0.025, 0.081).$$

We can compare these figures to the votes shares presented in Figure 3:

$$\mathbf{s} = (s_{CENTER}, s_{PDP}, s_{PJ}, s_{UCRP}, s_{UCRI}, s_{UDELPA})$$
$$= (0.121, 0.046, 0.260, 0.291, 0.142, 0.050).$$

The comparison allows us to determine whether the mean voter position is a best response for the Peronist party when all other parties are at the mean. As Schofield et al. (2011c) point out, if the lower bound of the 95% confidence interval of a party's predicted vote share at the electoral mean is higher than its actual vote share, then it would be attractive for the party to move in that direction. In this case, the 95% lower bound on $\rho_{PJ} = 0.02$, and the actual vote share is $s_{PJ} = 0.26$. Therefore, the results suggest that in order to maximize its vote share, the Peronist party needed to diverge from the electoral origin.

These findings square well with the historical record. When the Peronist party contested legislative elections after 1963, the military still exerted undue influence over the electoral process. In addition, to gain representation in the legislature, most *Neo-Peronist* candidates sought to adopt a moderate stand. Their party's constituency, however, did not completely support this approach. Indeed, this was the plight of the trade-union leadership, the backbone of the Peronist party. As James (1988) aptly describes, they faced a tradeoff between *resistance* and *integration*. In the electoral arena, the logic of integrationism demanded that they appeal to more centrist voters. This strategy, however, would enhance the prospect of a non-Peronist party's victory and give credibility to an illegitimate democratic facade. In contrast, resistance to integrationism rested on the view that Peronism's return to power could only be achieved through organized strikes and social unrest. Perón himself was keenly aware of this dilemma and, as the main beneficiary of this two-pronged strategy, tolerated the appearance of neo-Peronist candidates; yet, he consistently sought to move his party away from the electoral center (James, 1988).

The results also suggest that, in contrast, to the Peronist party, the UCRP would benefit at the LNE. The lower bound of the 95% confidence interval of the party's predicted vote share at the electoral mean, however, is only slightly higher than its actual vote share.[11] In addition, no other party has an incentive to move to the electoral mean. Intuitively, it is clear that once the Peronist party vacates the origin, the rest of the parties will not re-position themselves at the origin in order to obtain a small gain of few, 'unrepresented,' less radicalized Peronist voters.

## 5. Concluding remarks

In this paper, we considered Schofield's empirical stochastic electoral model that includes 'valence' to examine regime instability in Argentina between 1955 and

1966. Using recorded votes in the Argentine Chamber of Deputies during the period of conditioned democracy (1958–1962, 1963–1966), we analyzed the location of the country's main political parties.
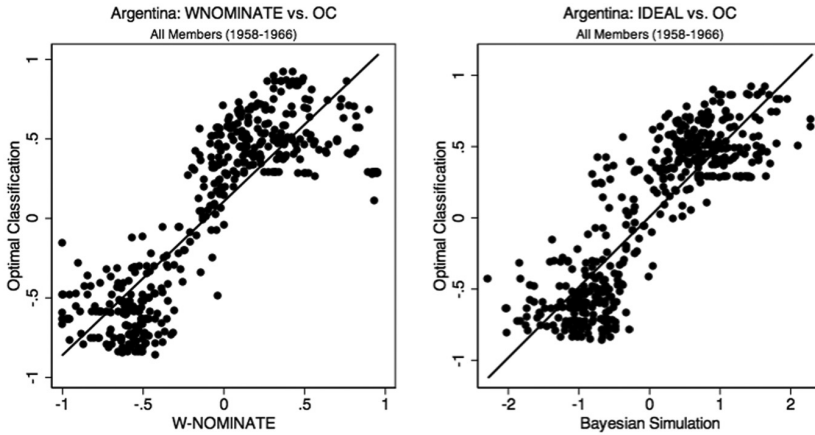
What are the implications of our empirical analysis for the impossible game? Firstly, our findings reveal that a simple *Downsian* unidimensional interpretation would fail to account for the complexities of the political situation in Argentina between 1955 and 1966. Secondly, in terms of policy outcomes, our results indicate that the main obstacle for political stability was not the impossibility of a unique equilibrium, but rather the plethora of feasible ones.

In a multidimensional spatial setting, preferences must be distributed in a very special way to support a non-empty core (Austen-Smith and Banks, 1999; McKelvey and Schofield, 1987; Plott, 1967; Saari, 1997). This was clearly not the case in Argentina during this era. The spatial map presented in Figure 2 highlights that parties' preferred policies did not satisfy the well-known Plott conditions.[12]

If party positions were different, however, a core could exist. One way to see this is to use the notion of 'median lines.' A median line through two positions cuts the policy space in two, so that coalition majorities lie on either side of the line (Shofield and Sened, 2006). The core can be 'structurally' stable, but only if all the median lines pass through the ideal point of the strongest (usually the largest) party (Schofield, 1995). Italian politics during the period from 1947 to 1987, which centered on a structurally stable core dominated by the Christian Democratic Party (DC) is a case in point (Giannetti and Sened, 2004; Schofield and Sened, 2006).

This begs the question of why larger parties did not change positions in the policy space to 'chase' the core. A possible answer to this question lies, again, in the valence differences associated with Peronism's political participation. As Schofield (2004) and Schofield et al. (2011f) note, in presidential regimes with proportional representation, the pure electoral motive is sufficient to pull parties away from the center. Ironically, the introduction of proportional representation in 1962 had the intention of legitimizing Argentine politics by providing a moderate representation of Peronists in legislature. A plausible conjecture then is that the rules of the *impossible game* were a constraint imposed by the populace on Argentine political elites rather than a choice made by the latter behind the people's back.

# Appendix 1. Comparison between OC, NOMINATE and IDEAL



Argentina: WNOMINATE vs. OC
All Members (1958-1966)

Argentina: IDEAL vs. OC
All Members (1958-1966)

Notes: This graph shows a comparison between the estimates obtained using OC and those calculated using two alternative estimation procedures: (1) the NOMINATE (Normal-Normal) approach; and (2) the method based on *Markov chain Monte Carlo* (MCMC) simulation within a Bayesian framework. The findings indicate that the estimates recovered using these alternative approaches are very similar.

## Appendix 2

**Argentina 1958–1966.** The party positions, calculated by taking the average of their members' positions, are given by the following matrix:

$$\mathbf{z}^* = \begin{bmatrix} Party & Center & PDP & Peronist & UCRP & UCRI & UDELPA \\ Dim.1 & -.075 & .501 & .379 & -.535 & .439 & .044 \\ Dim.2 & .297 & -.021 & -.612 & -.024 & .148 & .376 \end{bmatrix}$$

The probability $\rho_{PJ}$ that a voter chooses the Peronist party when all parties are at the joint origin is

$$\rho_{PJ} = \frac{1}{\exp(-0.59) + \exp(-1.17) + 1 + \exp(1.51) + \exp(1.43) + \exp(-0.96)}$$
$$= 0.09$$

The standard error of the valence term for the Peronist party (calculated with respect to the lowest valence party, the Progressive Democrats) is 0.366. Therefore, the 95% confidence interval for $\lambda_{PJ}$ is $[0.444, 1.908]$, and the 95% confidence interval for $\rho_{PJ}$ is $[0.045, 0.172]$.

**Table 4.** 1958–1966 Model (base Peronist Party).

| Variable | Coefficient |
| --- | --- |
| | (Std. err.) |
| Spatial distance | |
| $\beta_1$ | 3.154*** |
| | (0.272) |
| $\beta_2$ | 4.550*** |
| | (0.510) |
| Valence terms | |
| CENTER | −0.595* |
| | (0.343) |
| PDP | −1.177*** |
| | (0.366) |
| UCRP | 1.514*** |
| | (0.297) |
| UCRI | 1.433*** |
| | (0.268) |
| UDELPA | −0.960*** |
| | (0.366) |
| N | 451 |
| Log-likelihood | −306.066 |
| $\chi^2_{(2)}$ | 219.015 |

Significance levels: * 10%; ** 5%; *** 1%.

The convergence coefficient, $c$, is given by

$$c(\boldsymbol{\lambda}, \boldsymbol{\beta}) = \frac{2(1 - 2\rho_{PJ})\text{trace}(\boldsymbol{\beta}\nabla_0\boldsymbol{\beta})}{\frac{1}{2}(\beta_1 + \beta_2)}$$

$$= \frac{1.63}{3.85}\text{trace}\begin{bmatrix} (3.153)^2 0.308 & -0.032 \\ -0.032 & (4.551)^2 0.131 \end{bmatrix}$$

$$= 2.903.$$

The upper bound of the 95% confidence interval of $c$ is 3.87, and therefore it fails to satisfy the necessary condition for the electoral mean to be a LNE. The lower bound is 1.86, indicating that the confidence interval does not satisfy the sufficient condition either. Moreover, the characteristic matrix of the Peronist party has positive eigenvalues. Therefore, the joint mean is not a good candidate for a pure strategy Nash equilibrium.

## Notes

1. As O'Donnell (1988) noted, Peronism was an 'amorphous movement made up of Perón's leadership, the unions, the intermittent Peronist party, and the popular sector' (pp. 46); 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 Perón' (pp. 50).

2. After the coup that deposed president Arturo Frondizi, the armed forces split into opposing sectors named Azules and Colorados ('blue' and 'red' teams). The former were open to the integration of some Peronist leaders into the politics, while the latter advocated the complete eradication of Peronism from Argentina's political life. The internal strife would end in 1962 with military clashes and the defeat of the Colorados.

3. A pure strategy Nash equilibrium (PNE) must be a LNE, but not conversely. A necessary condition for a LNE is thus a necessary condition for a PNE. However, a sufficient condition for a LNE is not a sufficient condition for a PNE (Schofield, 2007).

4. Those readers interested in the technical details behind the estimation technique should consult Schofield (2008b).

5. See also Rosas and Shomer (2008).

6. A significant literature on other approaches to estimate ideal points exists (see Chapter 4 in Poole (2005) for a good discussion). We considered two alternative estimation procedures: the NOMINATE (Normal-Normal) Model (Poole and Rosenthal, 1997) and the method based on *Markov chain Monte Carlo* (MCMC) simulation within a Bayesian framework championed by Simon Jackman (cf. Clinton et al., 2004). The estimates recovered using these alternative approaches are very similar to the ones obtained using OC. Appendix 1 displays the correlations between the recovered estimates using these alternative methods.

7. We also 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 Democráticos (PSD).

8. The survey is available at http://www.ropercenter.uconn.edu. The exact wording on the question regarding the 1963 elections is: 'Can you remember how you voted in the elections for the House of Deputies in July of 1963?;' whereas for the 1965 election, the question reads 'For what party or list of deputies are you planning to vote?'

9. Our results are substantively similar when we use the information for all the legislators in our sample (see Table 4 in Appendix 2). Nonetheless, we decided to exclude from the analysis the first two legislative periods (1958–1959 and 1960–1961) to avoid an overrepresentation of UCRI legislators.

10. Our second identifying assumption implies that low-valence parties may have to allow their candidates to pander to the voters in their constituency, while high-valence parties may have the luxury of having all of their candidates campaign using identical rhetoric and vote identically after being elected. An examination of the standard deviation of the index presented in Table 2 indicates that the party with the highest estimated valence, the UCRP, is more cohesive than the other two main parties (the PJ and the UCRI). We thank an anonymous reviewer for bringing this point to our attention.

11. The 95% confidence interval for $\lambda_{UCRP}$ is $[1.294, 4.163]$; hence, the 95% confidence interval for $\rho_{UCRP}$ is $[0.35, 0.90]$.

12. The *core* of a voting game is the set of un-dominated outcomes, that is, those that once in place, cannot be overturned.

## References

Austen-Smith D and Banks JS (1999) *Positive Political Theory I*. Ann Arbor, MI: University of Michigan Press.

Downs A (1957) An Economic Theory of Democracy. *New York: Harper Collins Publishers*.

Clinton J, Jackman S and Rivers D (2004) The statistical analysis of roll call data. *American Political Science Review* 98(2): 355–370.

Galiani S, Schofield N and Torrens G (2014) Factor endowments, democracy and trade policy divergence. *Journal of Public Economic Theory* 16(1): 119–156.

Giannetti D and Sened I (2004) Party competition and coalition formation: Italy 1994–1996. *Journal of Theoretical Politics* 16(4): 483–515.

Hix S, Noury A and Roland G (2005) Power to the parties: cohesion and competition in the European parliament, 1979–2001. *British Journal of Political Science* 35(2): 209–234.

James D (1988) *Resistance and Integration: Peronism and the Argentine Working Class, 1946–1976*. Cambridge and New York: Cambridge University Press.

Jones MP and Hwang W (2005) Party government in presidential democracies: extending cartel theory beyond the U.S. Congress. *American Journal of Political Science* 49(2): 267–282.

Lin T-m, Enelow JM and Dorussen H (1999) Equilibrium in multicandidate probabilistic spatial voting. *Public Choice* 98(1–2): 59–82.

McGuire JW (1997) *Peronism without Perón: Unions, Parties, and Democracy in Argentina*. Stanford, CA: Stanford University Press.

McKelvey R and Patty J (2006) A theory of voting in large elections. *Games and Economic Behavior* 57(1): 155–180.

McKelvey R and Schofield N (1987) Generalized symmetry conditions at a core point. *Econometrica* 55(4): 923–33.

O'Donnell G (1973) *Modernization and Bureaucratic-Authoritarianism*. Berkeley, CA: Institute of International Studies, University of California.

O'Donnell G (1988) *Bureaucratic Authoritarianism: Argentina, 1966–1973 in Comparative Perspective*. Berkeley, CA: University of California Press.

Osborne MJ and Slivinski A (1996) A model of political competition with citizen-candidates. *The Quarterly Journal of Economics* 111(1): 65–96.

Plott C (1967) A notion of equilibrium and its possibility under majority rule. *American Economic Review* 57(4): 787–806.

Poole KT (2005) *Spatial Models of Parliamentary Voting*. New York: Cambridge University Press.

Poole KT and Rosenthal H (1997) *Congress, a Political-Economic History of Roll Call Voting*. New York: Oxford University Press.

Potash R (1980) *The Army and Politics in Argentina, 1945–1962: Peron to Frondizi*. Stanford, CA: Stanford University Press.

Potash R (1996) *The Army and Politics in Argentina, 1962–1973: From Frondizi's Fall to the Peronist Restoration*. Stanford, CA: Stanford University Press.

Riker, WH and Ordeshook PC (1973) *An introduction to positive political theory*. New Jersey: Prentice Hall.

Rosas G and Shomer Y (2008) Models of nonresponse in legislative politics. *Legislative Studies Quarterly* 33(4): 573–601.

Rosenthal H and Voeten E (2004) Analyzing roll calls with perfect spatial voting: France 1946–1958. *American Journal of Political Science* 48(3): 620–632.

Saari D (1997) The generic existence of a core for q-rules. *Economic Theory* 9(1): 219–260.

Schofield N (1995) Coalition politics: a formal model and empirical analysis. *Journal of Theoretical Politics* 7(3): 245–281.

Schofield N (2004) Equilibrium in the spatial 'valence' model of politics. *Journal of Theoretical Politics*, 16(4), 447–481.

Schofield N (2006) Equilibria in the spatial stochastic model with party activists. *Review of Economic Design* 10(3): 183–203.

Schofield N (2007) The mean voter theorem: necessary and sufficient conditions for convergent equilibrium. *Review of Economic Studies* 74(3): 965–980.

Schofield N (2008a) *The Spatial Model of Politics*. New York: Routledge.

Schofield N (2008b) Divergence in the spatial stochastic model of voting. In: Braham M and Steffen F (eds) *Power, Freedom, and Voting*. Berlin: Springer.

Schofield N and Cataife G (2007) A model of political competition with activists applied to elections in Argentina, 1985–1995. *Mathematical Social Science* 53(3): 213–231.

Schofield N, Claassen C, Gallego M, et al. (2011a) Empirical and formal models of the United States presidential elections in 2000 and 2004. In: Schofield N and Caballero G (eds) *The Political Economy of Institutions, Democracy and Voting*. New York: Springer, pp. 217–258.

Schofield N, Claassen C, Ozdemir U, et al. (2011b) Estimating the effects of activists in two-party and multi-party systems: comparing the United States and Israel. *Social Choice and Welfare* 36(3–4): 483–518.

Schofield N, Gallego M and Jeon J (2011c) Leaders, voters and activists in the elections in Great Britain 2005 and 2010. *Electoral Studies* 30(3): 484–496.

Schofield N, Gallego M, Jeon J, et al. (2011d) Modelling elections in Canada. Working paper, Washington University, Saint Louis.

Schofield N, Gallego M, Jeon J, et al. (2012) Modelling elections in the Caucasus. *Journal of Elections, Public Opinion and Politics* 22(2): 187–214.

Schofield N, Gallego M, Ozdemir U, et al. (2011e) Competition for popular support: a valence model of elections in Turkey. *Social Choice and Welfare* 36(3–4): 451–482.

Schofield N, Jeon J, Muskhelishvili M, et al. (2011f) Modelling elections in post-communist regimes: voter perceptions, political leaders and activists. In: Schofield N and Caballero G (eds) *The Political Economy of Institutions, Democracy and Voting*. New York: Springer, pp. 259–301.

Schofield N and Levinson M (2008) Modeling authoritarian regimes. *Politics, Philosophy, and Economics* 7(3): 243–283.

Schofield N and Sened I (2006) *Multiparty Democracy: Elections and Legislative Politics*. New York: Cambridge University Press.

Schofield N and Zakharov A (2010) A stochastic model of the 2007 Russian Duma election. *Public Choice* 142(1–2): 177–194.

Shor B, Berry C and McCarty N (2010) A bridge to somewhere: mapping state and congressional ideology on a cross-institutional common space. *Legislative Studies Quarterly* 35(3): 417–448.

Shor B and McCarty N (2011) The ideological mapping of American legislatures. *American Political Science Review* 105(3): 530–151.

Stokes D (1963) Spatial models of party competition. *American Political Science Review* 57(2): 368–377.

Szusterman C (1995) *Frondizi and the Politics of Developmentalism in Argentina, 1955–62*. London: Macmillan.