How Many Clients does it take to win and election? Estimating the Size and Structure of Political Networks in Argentina and Chile

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Abstract: Critical for our understanding of clientelism is to measure the size and structure of political networks. That is, to measure whether parties have a large enough supply of patrons, bureaucrats, activists, and volunteers, which would allow party leaders to properly invest particularistic resources among adequately chosen voters. In this article we take advantage of new developments in network analysis to measure the size of hard to count populations and to explore network structure in survey data. Using information about the ideological and physical proximity of voters to political networks, we estimate individual level vote choices in Argentina and Chile.

1. Introduction

Recent literature on political parties in Latin America, Eastern Europe, and Africa has emphasized their increasing reliance on public resources for both organizational and electoral reasons. The distribution of particularistic goods by political patrons endowed with significant public resources has become, arguably, one of the most significant barriers to accountable and responsible politicians in newly democratized countries (Dixit and Londregan, 1996; Stokes, 2005; Kitschelt and Wilkinson, 2007). Research efforts devoted to understand the nature of the clientelistic exchange in newly democratized countries emphasize that physical proximity between patrons and clients is a critical component of the clientelistic relationship, given that voters need to recognize who delivers the goods and parties needed to distinguish between *good* and *bad* types of clients (Cox and McCubbins, 1986; Diaz-Cayeros et.al. 2007, Dixit and Londregan, 1996; Medina and Stokes 2007). However, there is very little comparative research investigating the nature of political networks and measuring the degree to which the physical proximity between parties and voters shapes the voters' choices.

In investigating the nature of political networks, we focus on three crucial questions that have not been addressed by the comparative literature on clientelism: (i) what is the number of people involved in political networks; (ii) what type of linkages connect voters to different party categories such as candidates, activists, volunteers, etc; and (iii) to what degree political networks shape the electoral preferences of voters. Addressing the first question requires us to measure the *size* of political networks, rather than explaining the individual level link connecting patrons and clients. The second question inquires about the mechanisms that integrate parties and individual voters into these political networks e.g. how closely connected are individual voters to patrons, activists, candidates, etc. Finally, the third question asks the degree to which access to

networks crucial for the distribution of particularistic goods affects the citizen's voting decision. In this paper, we provide answers to these three questions by measuring the size of political networks in Argentina and Chile, analyzing their group composition and structure, and estimating a vote choice model which incorporates the proximity of voters to political networks, the ideological proximity of voter's to parties, and the degree to which voters weight the probability that different parties will supply them with material benefits.

To measure the size and structure of political networks we take advantage of recent developments in network analysis that use indirect survey questions of the form "how many X's do you know"[1] to estimate the size of hard-to-count populations and to uncover social structure in individual level data (McCarthy et.al. 2000; Zheng, Salganik, and Gelman, 2006). The survey design, as it will be shown in the third section, allows us to both measure the size of each respondent's personal network and, then, to estimate the relative prevalence of different types of political networks in the population. In the later part of this paper, we use this information to measure the level of association among groups in the general population and its effect on vote choice.

To measure the size of political networks we conducted large national surveys in two Latin American countries, Argentina and Chile, characterized by different types of party systems. We selected Argentina and Chile because previous literature has shown that the former is characterized by programmatically weak political parties that rely heavily on the distribution of particularistic goods; whereas the later has a political party system characterized by stable and programmatic (ideological) parties that lack the will or capacity to distribute such particularistic goods. Consequently, we will show that voters in these two countries weight differently their

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[1] Where the relationship between the respondent *i* and all xЄX is reciprocal and, therefore, the respondent *i* is also known to all X's.

ideological proximity to parties as well as their proximity to political networks in making their electoral decisions. That is, Chilean voters weight more heavily the revealed ideology of party leaders when casting their vote. By contrast, the majority of Argentine voters choosing between the two main catch-all parties give less weight to ideology and more weight to their physical proximity to political networks.

We assume that political parties can substitute ideology for political networks to muster voters' support, which affect the type of linkages between parties and constituencies. As we will show, for example, in Chile political networks are small, relatively homogenous, horizontally integrated, and structured around two main ideological coalitions rather than exclusively around political parties. That is, Chilean parties have a relatively small number of members, they recruit similar numbers of activists, voters that are proximate to a particular category –i.e. candidates, volunteers, activists— know individuals from the same category in the coalition partners of that party, and parties cultivate voters from ideological niches. Argentina's political networks, by contrast, are large, heterogeneous, vertically integrated, and ideologically diffuse. That is, they have a larger number of members, the size of their political networks varies significantly, voters close to a party know individuals in all political categories from the same party–volunteers, candidates, activists--, and parties do not cultivate voters from particular ideological niches.

After describing the size and structure of political networks, we use a multinomial choice design to measure the effect that the proximity to these networks has on the respondents' vote behavior. We also assess the effect of ideological proximity and the expectation that receiving private goods from each party has on vote choice.

In selecting Chile and Argentina we control for possible confounding factors that may affect the size and structure of political networks. Chile and Argentina are neighboring countries

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with similar levels of development, ethnic composition, and a common cultural history. Both are middle-income countries with presidential systems, which had established their democracies at the start of the twentieth century and consolidated their party systems in the postwar period. Both countries suffered repressive dictatorships established after military coups against presidents of labor-based parties in the 1970s. Argentina re-established democracy in 1983 and Chile in 1990.

This paper is organized as follows. The second section describes the expectations derived from the literature on clientelism. Section three explains our survey design and the estimation strategy used to measure political networks in Argentina and Chile. Sections four and five provide descriptive information about the prevalence of different types of political groups in Argentina and Chile, as well as the structure of political networks in both countries. In the sixth section, we estimate a multinomial logit model to explain vote choice as a function of the voter's proximity to the parties political networks, their ideological proximity to parties, and their propensity to receive particularistic goods. We conclude by proposing further research on the nature and effect of political networks.

2. Partisan Clients and Political Networks

The literature on Latin American political parties has always emphasized their non-ideological character and weak institutionalization (Chalmers 1977, Mainwaring and Scully 1995, Conniff 1999, Foewaker et al 2003). After the return of democracy and its coincidence with dramatic shifts in models of economic development, recent contributions have focused on the increasing reliance of Latin American political parties on clientelism and patronage for electoral gain. Throughout the 1990s, the combination of intense electoral competition and tighter fiscal budgets made political parties increasingly dependent on the distribution of

handouts—clientelism— and public jobs—patronage. According to this literature, the convergence toward market reforms in the 1990s limited the ability of political parties to legislate more universal redistributive policies, thereby increasing the pressure to deliver private goods to particular constituencies in order to muster political support (Roberts 1995, Levitsky 2003). In a context of increasing electoral volatility, populist parties became ever more reliant on the access and distribution of particularistic benefits and thereby eroded policy accountability to voters despite democratization (O'Donnell 1994, Stokes 2005).

The salience of clientelism and patronage in new democracies—besides those of Latin America—generated a growing body of comparative research.[2] Most of the literature on patron-client relationship, though, presupposes "knowing their constituencies" (Dixit and Londregan, 1996), "discerning individual's likely votes" (Stokes, 2005), and having "accurate ideas about how [voters] will react" (Cox and McCubbins, 1986). That is, this literature assumes that political networks are necessary for distributing the goods, targeting the right voters, and monitoring their behavior. However, we are aware of no research that systematically tests for the effect of these networks.[3] Thus, to explore whether parties have the capacity to discriminate between *good* and *bad* types of clients; the capacity to redistribute resources using individuals that will be recognized as party members; and the capacity to monitor clients after they receive handouts, jobs, and/or any other type of private or club goods, we need to investigate political networks.

Political networks define the operational capacity of political parties to implement clientelistic policies. This operational capacity includes the supply of patrons, bureaucrats,

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[2] While Stokes (2007) provides an excellent overview of the state of the literature on clientelism and patronage, the recent volumes edited by Kitschelt and Wilkinson (2007) and Schaffer (2007) show the cross-regional scope of these issues and their impact on how electoral democracies work.
[3] There are excellent ethnographies on the nature of these networks, such as Auyero (2001).

activists, and sympathizers, which allow party leaders to invest the sufficient proportion of particularistic resources among adequately chosen voters. Therefore, investigating the relative size and structure of partisan networks is critical for understanding the viability of particularistic redistribution as an electoral strategy—especially if we assume economies of scale in the access and deployment of private goods (Stokes and Medina, 2007; Calvo and Murillo, 2004).

In our investigation of political linkages defined by partisan networks, we build on the distinction between the ideological and political proximity between voters and political parties. The former describes the ideological distance between the voters' policy preferences and the revealed policy preferences of party leaders, while the latter describes the physical proximity between voters and partisan individuals with the capacity to deliver material or symbolic benefits. While almost all the literature on clientelism discusses how parties select voters based on their presumed ideological proximity (core, weakly predisposed, swing voters) [4], in this paper we also estimate what is the effect of proximity between voters and the actual individuals that constitute the party machines. Such proximity affects the capacity of political parties both to *get the message across* and to *deliver the goods*, but its effect is crucial when political parties rely on electoral strategies based on the distribution of particularistic resources. That is, policy messages can be publicized through the media and universal redistributive policies can appeal to all voters, but the proximity of voters to the political network is crucial when the delivery of material benefits requires the selection and monitoring of particular types of clients (Stokes 2005).

In our investigation of political networks, we link the literature on clientelism with that on the electoral role of partisan networks, which focuses on how parties design and execute

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[4] For example, while Dixit and Londregan (1996) show that parties with strong prior linkages to particular groups of voters should target their core constituencies; Stokes (2005) argues that in a repeated game with limited information and limited monitoring capacity, parties should invest in weakly predisposed voters.

mobilization strategies to maximize their electoral returns. Political networks are important for get-out-the-vote rallies trying to mobilize core voters for a particular election while strengthening prior linkages between activists and voters. They are also useful, in highly volatile political environments, for shaping voters' opinion and the overall public mood (Baker, Ames, and Renno, 2005). And they foster the mobilization capacity of activists, which has been incorporated into formal equilibrium voting models, showing that prior linkages to particular groups of voters induces policy divergence among parties (Schofield and Sened, 2006; Adams, Merrill, and Groffman, 2006).

We contribute to these literatures by providing measures of how many individuals are involved in political networks as well as the structure of those networks and their effect on electoral behavior. As we will show, significant differences in the size of the political networks among parties, also lead to core constituencies with heterogeneous policy weight preferences. That is, they are associated to constituencies who attach different value to the type of material and symbolic goods distributed by political parties. Hence, in assessing political networks, we focus on their size, structure, and electoral impact. First, the size of partisan networks is associated with constituencies who attach different value to the type of material and symbolic goods distributed by political parties and with the diverse electoral strategies of political parties. That is, electoral strategies based on the distribution of private goods require more extensive networks than those relying on ideological cues or the distribution of public goods. Second, the structure of political networks is crucial to understand the nature of partisan linkages with voters. That is, whether these linkages are established by candidates on the election trail or whether they are sustained by activists in the daily routine of voters. Thirdly, the proximity of voters to

political networks affects their electoral preferences vis-à-vis those derived from their ideological distance to those parties.

We measure political networks in Chile and Argentina because their party systems differ in the hypothesized nature of linkages between politicians and citizens. The Chilean party system is highly institutionalized and organized around two ideologically defined poles. Since 1990, the main political parties have formed two political coalitions, which originated in the plebiscite for the transition to democracy but were reinforced by the binomial electoral system (Carey 2002, Alcantara 2003, Valenzuela 1995, Siavelis 2002, Navia 2006). The center-left coalition called "Concertacion de Partidos por la Democracia" (Coalition of Parties for Democracy), which won four successive presidential elections since 1990, includes three main parties: Socialist Party (PS), the Christian Democratic Party (DC), and the Party for Democracy (PPD)—which split from the Socialist Party. The center-right coalition, called Alianza por Chile (Alliance for Chile), includes two parties: National Renovation (RN), which is the heir of the traditional conservative party, and Independent Democratic Union (UDI), which emerged from the personnel of the military regime (Huneeus 2000). Although RN and UDI presented different presidential candidates in the 2005 election, they have run a joint presidential candidate since 1990.

Moreover, the Chilean party system has remained stable and electoral volatility has been fairly small since democratization in 1990. In the five legislative elections since 1990, the two coalitions gathered between 86% and 92% of the vote, helped by relatively majoritarian binomial electoral rules. In all four presidential elections, the combined share of votes for these coalitions ranged from 82% in 1993 to 95% in the first round of 1999 (www.elecciones.gov.cl).

In contrast to Chile, the two main Argentine political parties are not well defined ideologically. The Radical Civic Union (UCR) born at the turn of the twentieth century and the

Partido Justicialista created by Juan Peron in the 1940s; are both catch-all parties with poorly defined ideological niches —even though the later has more extensive labor-based roots (Rock 1985, Cavarozzi 2006). Both parties are sustained by broad alliances that include policy driven metropolitan voters and peripheral voters from the less developed provinces, who are more dependent on the redistribution of public resources (Gibson 1997, Calvo and Murillo 2005). The Peronist (PJ) won three presidential elections and the Radicals (UCR), two since the 1983 transition to democracy. Until 1995, the party system had a relatively low effective number of political parties (Cabrera 1998, Jones 1997) and until the 1999 presidential election, the joint vote of the two main parties ranged from 88.5% in 1983 to 67.6% in 1995.[5]

Since the collapse of the UCR-led coalition government in 2001, the Peronists have become the dominant party in Argentina. In the 2003 presidential election, the UCR won fewer than 3% of the presidential vote and three different Peronists presidential candidates collected two thirds of the vote (Levitsky and Murillo 2005, Torre 2005). In the 2005 legislative election, a fragmented political field allowed President Kirchner to gain comfortable control of Congress while defeating a range of Peronist and non-Peronist candidates. However, the UCR remains as the most significant alternative party at the province level, controlling seven governorships and commanding a substantive legislative vote share in a majority of the provinces. Additionally, their legislative delegation is larger than that of the two most significant third parties, the Alliance for a Republic of Equality (ARI) and Republican Proposal (PRO), which have more defined ideological programs catered to voters on the center-left and center-right respectively.

Based on party system differences, we expect larger political networks in Argentina than in Chile because in the former parties cannot rely on ideological cues and are more dependent on

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[5] In 1999, the UCR obtained 48.5% of presidential votes but in a coalition with a center-left party that had run its own presidential candidate in 1995.

the distribution of particularistic goods that require extensive networks. That is, we expect that ideology and political networks are substitute partisan tools for reaching to voters. We also expect that the long-term coalitional politics of Chile should result in a different network structure than that of Argentina where electoral competition was organized mostly around parties. Finally, we expect that voters will assign different weigh to ideological proximity, network proximity, and expectation about the distribution of private goods in each country. That is, we expect Chilean voters and Argentine voters of small ideological parties to assign a stronger weigh to ideological proximity than to network proximity or to the expectation of private good distribution. The next sections describe the measurement techniques and our empirical results.

3. A Statistical Model to Measure Political Networks

In a recent article, McCarthy et.al. (2000) propose a new survey design to estimate the size of hard to count populations indirectly by, first, measuring the number of individuals in each respondent's personal network and, second, measuring the prevalence of hard to count populations as a share of the respondents' personal networks. To measure the size of the personal network, the survey asks respondents to indicate "how many X do you know"[6] from different group categories whose frequencies in the population are known. For example, "How many individuals do you know whose name is *Veronica*?" or "How many women do you know who gave birth within the last year?" We can use a battery of questions about the relative frequencies of populations that we know to estimate each respondent's personal network.

A different battery of questions asks the respondents about the populations whose frequencies we are interested in retrieving, such as the number of activists, candidates, or

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[6] The respondents were provided with a definition for "knowing" someone. Following McCarthy, et.al.(2005:4), " 'Knowing' someone is defined as follows: '…you know the person and they know you by sight or by name; you can contact them in person, by telephone or by mail; and you have had contact with the person in the past two years.' "

volunteers from each relevant political party. We can then use this information both to estimate the prevalence of these groups in the population and to also estimate how closely connected are voters to these different groups.

The advantage of this survey strategy is being able to retrieve valid samples from populations that are poorly represented among adult voters. For example, as we will show ahead, the percent of broadly defined activists among adult voters in Argentina and Chile is slightly larger than 1% of the population. In a survey of 2800 adult voters, therefore, we should expect to collect a small sample of around 30 activists, making it very hard to project national figures of the number of activists and even harder to disaggregate such numbers by party. By contrast, once we estimate the personal network of our 2800 respondents, we can ask "how many activists do you know who belong to the Socialist Party" to measure the share of Socialist Party activists within the respondent's personal network.

Zheng, Salganik & Gelman (2006) propose an overdispersed Poisson model to estimate both the size of the personal network and to estimate social structure in the population. The proposed overdispersed model can be written as:

$$y_{ik} \sim Poisson(e^{\alpha_i + \beta_k + \delta_{ik}}) \tag{1.1}$$

where α_i indicates the size of the personal network of respondent i, β_k indicates the expected prevalence of group k in the population, and the overdispersion parameter δ_{ik} estimates a multiplicative factor with the individual and group level deviations from the personal network α_i and group prevalence β_k (Zheng et.al. 2006: 8).

Using as Offset the Prevalence of Groups whose Frequencies are Known

To retrieve the proper quantities of interest we need to run two different specifications of the overdispersed Poisson model: (i) the first model estimates the size of personal networks using as offset the log of the frequencies of the known populations, $O_k \equiv \{o_1, \ldots, o_k\}$.

$$y_{ik} \sim Poisson(O_k e^{\alpha_i + \beta_k + \gamma_{ik}}), \quad where \quad O_k \equiv \{o_1, \ldots, o_k\} \tag{1.2}$$

The posterior median of the individual respondent's parameter $\hat{\alpha}_i$ provides us with a vector, $A_k \equiv \{\hat{\alpha}_1, \ldots, \hat{\alpha}_i\}$, describing the log of the total number of people in each respondent's personal network. This vector $A_k \equiv \{\hat{\alpha}_1, \ldots, \hat{\alpha}_i\}$ will be used as offset for the second model estimated in (1.3). The posterior of the β_k and γ_{ik} parameters obtained from equation (1.2) can be used for descriptive purposes but at this stage they are not of any substantive theoretical interest.

Using as Offset the estimated size of the Respondent's Personal Network

To retrieve the frequencies of the unknown groups, we then use as offset the estimated log of the size of the personal networks from equation (1.2):

$$y_{ik} \sim Poisson(A_i e^{\alpha_i' + \beta_k' + \gamma_{ik}'}), \quad where \quad A_k \equiv \{\hat{\alpha}_1, \ldots, \hat{\alpha}_i\} \tag{1.3}$$

The estimated frequencies of the group prevalence in the total voting population are described by the vector of parameters $B_k \equiv \{\beta_1', \ldots, \beta_k'\}$. We can also use the matrix of overdispersion parameters, $H_{ik} \equiv \{\gamma_{11}', \ldots, \gamma_{ik}'\}$, for each individual i and group k, to estimate social structure in the data.

To estimate the models in (1.2) and (1.3), we use both a frequentists strategy, running the described specifications using the multi-level library LME4 in R 2.5 with a quasi-poisson

distribution, and a fully bayesian specification using WinBugs 1.4.1. The code to run both the frequentist and the bayesian alternatives can be requested from the authors.

The Survey Design

In order to measure the size of political networks in Argentina and Chile we conducted two representative national level surveys with 2800 cases each, including a sample of cities with populations over 10,000 in Argentina and 40,000 in Chile. The survey was structured with three modules with questions designed to measure the (i) size of political networks, the (ii) political behavior of voters, and the (iii) socio-demographic status of each respondents.[7]

The first module was subdivided into two different parts, the first one asking respondents to indicate "How many X's do you know" from various populations with known frequencies i.e. names, professions, life events. The selection of the known populations had to satisfy two criteria: they had to be easily and unambiguously identified by voters,[8] and had to have prevalence ranges between 0.1% and 2% in the overall population. Both McCarthy et. al. (2000, 2005) and Zheng et.al. (2005), note that respondents tend to under-recall categories that are very common in the population and over-recall group categories that are very uncommon. Different names, therefore, where chosen for Argentina (Silvia, Patricia, Antonio, Francisco, Angel) and Chile (Gladys, Veronica, Marta, Sergio, Jaime, Ricardo, Eduardo).[9] Around fifteen different

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[7] The full questionnaire of the Survey can be downloaded from www.____.edu.

[8] Many composed names, for example, could lead to problematic frequency estimates. We had to discard all names that in Spanish are usually combined with Maria (for women) or Jose (for men), such as Maria Laura or Jose Raul, because such individuals could be commonly known by their first or their second name. For a list of the selected names and their frequencies see the Appendix A.

[9] The other reference categories were, for Argentina: number of individuals the respondent knows who work for the *police, work as a teacher, medical doctors, people in work programs, had a son within the last year, married within the last year, have discapacidad motora*. And for Chile: number of individuals the respondent knows who work as a *professor, military, medical doctors, empleada domestica, receive Chile Solidario, had a son within the last year, died within the last year, married within the last year, took their PSU to attend college*.

questions were in all used to measure the size of the personal network as described by equation (1.2).

The second part of the first module asked counts for populations with unknown frequencies, such as the number of political activists from the most important parties, campaign volunteers, candidates, number of individuals receiving economic incentives from each party, number of family members in the public sector, individuals that voted in primaries (*internas*), etc.

4. The Size of Political Networks in Argentina and Chile

As explained above, the first model we estimated measures the size of the respondents' personal networks in Argentina and Chile, $\hat{\alpha}_i$, in equation (1.2). The distribution of these personal networks is displayed in Figure 1, which shows networks in both countries to be very close in size. The respondent's median personal network in Chile has 146 individuals while the median personal network in Argentina has 149 individuals. The mean number of individuals, on the other hand, is slightly larger in Chile, 204 individuals, compared to Argentina, 195, reflecting higher dispersion among Chilean respondents.

INSERT FIGURE 1

The estimated size of the respondents' personal networks in our survey is very close to the average size found by prior studies in developed countries (Hill and Dumbar, 2003; Stiller and Dumbar, 2007),[10] and provides reassurance on both the quality of the survey and the

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[10] Citing Hill and Dumbar (2003), Stiller and Dumbar explain that "at the larger scale in an individual's social network (that corresponding to all the people who are known individually and with whom one has a personal

properties of the statistical estimates. As described in the previous section, we collected 5600 parameters measuring the size of the personal networks of the Argentine and Chilean respondents to be used as offset for the overdispersed model described in equation (1.3).

Table 1 reports the median estimates of group prevalence in Argentina and Chile, $e^{\beta'}$. As it is possible to observe, categories that are readily comparable across countries, such as the number of individuals the respondent knew that had a child, died, or got married during the last year, provides very similar estimates in both countries. More problematic are the estimates of groups with very large personal networks (such as doctors) or very small personal networks (such as maids).[11]

As it is possible to observe, the prevalence of municipal public employees is in Argentina close to 23% larger than in Chile (1.128% of the population in Argentina compared to 0.916% in Chile). Even more dramatic are the differences in provincial public employees, which in Argentina are twice as many as those of Chile, which is expected, as the former country is federal and provinces have more functions delegated to them than regions in a unitary country like Chile. It is important to note that respondents do not count as public employees some groups that are in the public sector payroll, such as teachers, police, firemen, medical personnel from public hospitals, etc. The actual number of individuals in the federal and provincial payroll in Argentina is, therefore, considerably larger than the conservative estimates we provide, which include mostly administrative personal.

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relationship), the mean size consistently averages about 150, but individual values can range between 100 and 300."
Stiller and Dumbar (2007): pg. 94.

[11] The estimated number of doctors is more than three times its true frequency in the population, while maids are estimated to be half their observed frequency in the population. People with disabilities and people receiving work subsidies are also underestimated both in Argentina and in Chile. Again, such estimation problems result from groups whose members have consistently smaller personal networks than the average respondent. Future research should correct this problem by incorporating weights that reflect the differences not only in the prevalence of different groups but also in the relative propensity of members of these groups to have personal networks that are consistently larger/smaller from those of the average respondent.

INSERT TABLE 1

Table 2 displays the percent of individuals in different political categories, $e^{\beta'}$, while Table 3 shows the total number of individual in those categories. We have asked people whether they know candidates, activists, volunteers or people who had been invited to party activities.[12] The crucial category for assessing the operational capacity of political parties is that of party activists, who work for the party continuously rather than collaborate with it only during electoral campaigns. Because patrons need continuous knowledge of clients for targeting or monitoring, activists and volunteers should be more important for sustaining clientelistic strategies than candidates who only meet people on the campaign trail.

The most interesting result displayed in Tables 2 and 3 is that whereas political parties in Chile have relatively similar numbers of political activists, in Argentina there are very significant difference between the size of the Peronist networks (reflecting its operational capacity) and that of the other parties. In effect, the number of Peronists activists in Argentina is two thirds larger than its closest follower, the Radicals. While 0.766% of the population is loosely recognized as an activist from the Peronism, only 0.42% is recognized as an activist of the UCR. The PRO, ARI and other provincial parties together make up only 0.2% of the population. All political activists in Argentina add up to 1.4% of the population while in Chile the most important political parties combine for 1.2%. However, in contrast to the very dramatic differences in the

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[12] The questions were: How many people do you know (and they know you) that have invited you to participate in any political activity of the PARTY in the last year (demonstrations, political meetings, cultural activities)? How many people do you know (and they know you) that have been, or are now, candidates of the PARTY for any national, provincial, or municipal office? **.** How many people do you know (and they know you) that actively collaborate on the PARTY's campaign? How many people do you know (and they know you) that are PARTY's activists?

share of activists held by each Argentine political party, the Chilean political parties have relatively equal shares of activists, with the Socialist Party concentrating 0.356%, closely followed by the Christian Democrats with 0.299%, the PPD with 0.2%, the UDI with 0.199, and the smaller RN with 0.147%.

More dramatic differences are apparent when reporting the total numbers of activists in Table 3, to some extent because Argentina has more than twice the population of Chile. The estimated Peronist core of 290,930 activists is almost six times larger than the 53,880 activists of the Chilean Socialist Party.[13] It is important to note, however, that Argentina's federal constitution provides for a considerably larger number of elective posts, including not only seats distributed in multiple municipal, provincial, and federal elections but also a large number of candidates running in the primaries for each party in those different categories.[14] Considering that the political crisis of 2001 practically halved the UCR vote, it is remarkable that the size of the UCR network of activists is larger than that of any party in Chile even when controlling for the differences in population.

INSERT TABLE 2

INSERT TABLE 3

It is also important to notice the differences in the number of individuals reported to receive some type of material incentive by the political parties in each country. While the number of individuals that received money, private, or club goods in Chile and Argentine is not

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[13] A recent survey of over 28,000 respondents in the City of Buenos Aires places the number of activists around 1.3%, not far from our own estimates.

[14] In the province of Santa Fe, for example, the number of candidates competing in the Peronist and UCR primaries was over 10,000. Most of these candidates were seeking nomination to the municipal councils and the provincial legislature.

all that different (34% higher in Argentina), the number of individuals covered by the Peronist network is considerably higher than those covered by the rests of the parties. However, given that Peronists also command a considerable advantage in votes and have larger political networks, a more appropriate measure is to compare the rate of Peronist clients to activists (63%) to the rate of UCR clients to activists (42%).[15] If measured in relative vote terms, the numbers would be reversed, as the ratio of clients to votes is considerably larger for the UCR.[16]

5. The Social Structure of Political Networks in Argentina and Chile

As described by Gelman and Hill (2006), we can further investigate social structure on the data using the residuals of the estimated model or, in our case, the matrix of the overdispersion parameters, $H_{ik} \equiv \{\gamma'_{11}, \ldots, \gamma'_{ik}\}$.[17] Each parameter, γ'_{ik}, provides information about the degree to which a respondent knows more individuals from a particular group k than what would be expected given her personal network size and the overall group prevalence in the population. To analyze social structure in the data we may ask, for example, whether people that are more likely to know Peronist activists are also more likely to know Peronist candidates, $CORRELATION(\gamma'_{iPJ\_Activists}, \gamma'_{iPJ\_Candidates})$. Analyzing the inter-group correlation between all 39 categories in Argentina and all 41 group categories in Chile, we can then explore the structure of

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[15] The rate of clients to activists for the Peronism is RCA= 0.487/0.766, and for the UCR, RCA= 0.191/0.42.

[16] This result is consistent with the PJ specializing in clientelism as reported by the literature (Bruzco et al. 2004, Auyero 2001, Levitsky 2003) and with its having a poorer clientele than Radicals that allows them to serve more people with the same budget (Calvo and Murillo 2004).

[17] Hill and Gelman propose to measure the absolute difference between the predicted y_{ik} and estimated $\hat{y}_{ik}$, $residual: r_{ik} = \sqrt{y_{ik}} - \sqrt{a_i + b_k}$, because their beta binomial specification does not estimate each γ'_{ik}. In our case, given that we estimate the full set of overdispersion parameters, we can just estimate the inter-group correlation using $H_{ik} \equiv \{\gamma'_{11}, \ldots, \gamma'_{ik}\}$. Both strategies yield substantively similar correlation matrices.

political networks in both countries. To provide a more intuitive description of the relationship between the group estimates we graph the inter-group correlations using an agglomerative algorithm that constructs a hierarchy of clusters by minimizing the differences among group categories (Kaufman and Rousseeuw, 1990).[18]

As shown by the dendogram[19] in Figure 2, political networks in Argentina are vertically integrated, with individuals who know more Peronist activists also being more likely to know Peronist volunteers and Peronist candidates. In contrast with Argentina, political networks in Chile are horizontally integrated, a reflection of the coalitional character of its political system. As shown below, the political networks are grouped by political category and coalition, with respondents who know more activists from the PS also knowing more activists from the DC, and PPD; while respondents that know more activists from UDI also know more activists from RN. Respondents that knew more activists from each coalition, however, were not much more likely to know also more candidates from that coalition.[20]

INSERT FIGURE 2

INSERT FIGURE 3

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[18] We run the clustering algorithm using "a*gnes*" in R 2.5, library(cluster).

[19] Dendograms provide information about the inter-group correlations hierarchically organized by the clustering algorithm, *agnes*.

[20] In the 2006 election in Chile, the alliance between the PS, DC, and PPD had primaries to define their candidates, while the rightist UDI and RN decided to compete with each other in the general election. As shown in the dendogram, therefore, knowing individuals that voted in the primary elections is closely associated with knowing more activists and volunteers from the PS and the DC, but it is not associated with knowing more activists, volunteers, or candidates from the other political parties. In the case of Argentina, knowing more Peronist activists and volunteers was associated with knowing a larger number of Peronist candidates and, in a second navigation level, knowing more individuals who participated from the parties' primaries. While the UCR political networks have a very similar structure, individuals that were proximate to the UCR networks had a more limited association with individual's who voted in the parties' primaries.

Figures 2 and 3 show that, in both countries, the distributive networks of the different political parties are connected to each other—although in Chile they are more connected within each coalition and in Argentina between the two main parties. That is, a higher probability of knowing individuals who receive goods from one political party increased the probability of knowing individuals who received goods from the other political parties. This result suggests that parties are giving to voters who are likely to know each other because they are in the same demographic pool. [21]

The inter-group correlations presented in Figures 4 and 5 (Zheng et.al. 2006) provide further details on the relationships between different group categories, with dark squares indicating a large and positive correlation between groups and white squares indicating a negative correlation between groups. Individuals who received goods from the Peronism are strongly correlated with individuals receiving goods from the UCR and from other provincial parties (PPP). There is also a positive but weaker association between knowing individuals who receive goods from the Peronism and from the center-left ARI and rightist PRO. Furthermore, knowing people that receive goods from Peronists is also associated with knowing people invited to PJ activities, as well as Peronist activists and, volunteers reinforcing our earlier results about the vertical nature of Peronist networks.[22] Similarly, knowing individuals receiving goods from the UCR is strongly correlated with knowing Radical volunteers, and more moderately with knowing people invited to party activities, activists and candidates. Following a similar pattern,

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[21] It is also worth noticing that in Chile both the Municipal Employment Program and the Clubes Deportivos are connected as both are known to be channels of political redistribution and recruitment. This result confirms the association of networks of municipal temporary employment programs and those of sport clubs in the Chilean scholarship on clientelism (Emmanuel Barozet, personal communication, Luna 2006).

[22] Knowing individuals that receive goods from both the Peronism and from the UCR is also associated with knowing individuals receiving benefits from the work program *Jefes y Jefas*. It is worth to emphasize that, both in Argentina and Chile, knowing people receiving goods from the political parties is not correlated with knowing individuals in the municipal or provincial public sector, thereby suggesting different clientelistic and patronage networks.

knowing individuals receiving goods from the ARI or the PRO is associated with knowing people in the network of these parties.

Figures 4 and 5 also reinforce the distinction between the vertical integration of the party system in Argentina and the horizontal integration of parties in Chile. As we observe in Figure 4, the strongest correlations in Argentina are within other categories of the same party: knowing Peronist activists is highly correlated with knowing Peronists candidates, and Peronist volunteers. By contrast, in Chile, knowing a larger number of PS candidates is strongly associated with knowing DC candidates, to a larger degree than knowing PS activists. Similarly, knowing activists from the PS is highly correlated with knowing activists from the DC and the PPD, to a larger degree than knowing volunteers from the PS. The same holds true for the UDI and the RN, where relationships within category and across party tend to be stronger than across category within each party. Moreover, knowing people receiving goods from a party is correlated with knowing people in the party network for the DC, PPD and RN whereas this correlation is weaker for the UDI and PS. Indeed, knowing people receiving goods from the three Concertacion parties and the UDI is also correlated with knowing people in the political networks of political parties outside of the party coalition.[23]

INSERT FIGURE 4

INSERT FIGURE 5

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[23] In fact, both the PS and the UDI seem to target voters of each others' coalition. Knowing people receiving goods from the UDI is strongly correlated with knowing a PS candidate and knowing people receiving goods from the PS with knowing activists and having been invited to RN activities.

The structure of political networks in Chile, thus, follows coalitional patterns that are consistent with current studies of the Chilean party system; with two levels of political integration: a peripheral network associated with potential voters who are invited into party activities and, another set of core networks, associated with party membership and competition in the primaries. The described network pattern suggests that coalitions are horizontally integrated, reaching out to different pools of citizens with closer proximity to the center-left (Concertación) or the center-right (UDI-RN)—and perhaps even beyond their own coalition for the cases of private good distribution.

To conclude, Chile's political networks are small, relatively homogenous, horizontally integrated, and structured around two main ideological coalitions rather than exclusively around political parties. The structure of political networks in Chile, therefore, is consistent with a party system organized around two ideological poles. Argentina's political networks, by contrast, are large, heterogeneous, vertically integrated, and ideologically diffuse. That is, they have a large number of members, parties have very different numbers of activists, voters close to a party know individuals in all party categories, and parties do not cultivate voters from particular ideological niches. These results are in line with our expectations from the two different party systems and the substitutive nature of ideology and political networks. We, thus, need now to address what are the implications of different network size and structure for voting behavior in each country.

6. Partisan Networks, Ideology, and the Vote

To assess the effect of proximity to partisan networks on citizen's voting decisions, we estimate a multinomial choice model that incorporates both the standard ideological proximity

component and our measure of proximity to the different networks captured by the matrix of overdispersion parameters $H_{ik} \equiv \{\gamma'_{11}, \ldots, \gamma'_{ik}\}$. This model will allow us to show the different calculus of Chilean and Argentine voters in association with the structure and strategies of parties in these countries.

Before discussing the model specification choice, however, we provide some descriptive information about the ideological distribution of current voting preferences in Argentina and Chile, which supports the expectations derived from the literature. Chilean voters recognize the two ideological poles clearly, as shown in Figure 6, which displays the reported ideological placement of parties collected by our survey. As shown in the graph below, Chileans readily recognized the PS as left-wing party, with a mode of 1 on a 1 to 10 scale, with two thirds of respondents reporting scores from 1 to 4 (40.3% classified it as left and 30% as center-left). The DC displayed a mode of 5, with 40% of respondents classifying it as center, 24.5% as center-left and 11.3% as center-right party. Respondents placed the PPD in between these two parties, with 33.1% identifying the party as center-left, 15.9% as left, and 25.3% in the center. The contrast with the opposition parties in the right is telling, with both parties scoring 9.5: the UDI classified as a right-wing party by 55.5% of respondents and as center-right by 19.3%, while the RN was classified as a right-wing party by 46.6% of respondents and as center-right by 24.8%. Thus, Chilean political parties provide clear ideological cues to voters in defining their choices at the ballot box.

INSERT FIGURE 6

By contrast, as shown in Figure 6, the identification of parties with clear ideological programs in Argentina is not as easy as in Chile. Whereas in Chile the ideological location of the main parties is clearly identified by respondents, the two main Argentine political parties have no clear ideologically niche. Moreover, 36% and 40% of respondents failed to give an ideological placement to the PJ and the UCR respectively, a difficulty that is not restricted to uninformed voters. Although voters have fewer difficulties to report the ideological location of the ARI and PRO —the former on the center-left, and the latter on the right—, non-responses are still high due to the heavy concentration of these parties vote in the metropolitan areas near Buenos Aires and their lack of political structure in the hinterland. Hence, in Argentina, ideological cues provide much less information to voters.

Considering voters' information on partisan ideology, political networks, and private good distribution, we assess here the effect of each of these factors in defining their electoral choices in each country using a multinomial logit specification. We expand standard models of vote choice in two different ways: firstly, by including not only the ideological proximity of voters to parties but also by including variables measuring the physical proximity of voters to the political networks of the different political parties. Secondly, by allowing voters to attach party-specific weights to the ideological and non-ideological components of their vote choice. In effect, we show not only that there are systematic differences in how the Argentine and Chilean respondents vote but, more importantly, we also show that voters for different political parties attach different importance to the ideological and non-ideological components of their vote choice.

The Statistical Model

Following recent research by Adams, Merrill, and Grofman (2005), we model the voter decision using a random utility choice model where each voter's probability of voting for party p has both ideological proximity and non-ideological components:

$$U_{ip} = -\alpha_p (x_i - S_p)^2 + \beta_{1p} T_{ip} + \beta_2 C_{ip} + \varepsilon_i \qquad (1.4)$$

In (1.4) x_i describes the self-reported ideological placement of voter i, S_p describes the ideological location of each party p, α describes the weight or salience of the voter's ideological preferences, and $-(x_i - S_p)^2$ is a quadratic term measuring the ideological proximity of voter i to party k. The non-ideological parameter β_{1p} describes the weight or salience that a voter attaches to her proximity to different partisan networks, T_{ip}. In our model we also incorporate a parameter measuring the weight or salience that a voter attaches to receiving goods from a party, β_2. Finally, ε_i describes a stochastic error term. The choice model maximizes the random utility function in (1.4) to estimate the probability that voter i will select party p. As it can be observed in equation (1.4), we allow all three relevant parameters to vary by party in order to be able to distinguish the differences in the weight that voters from different parties attach to the ideological and non-ideological components of their choice.

We estimated[24] this model assuming a discrete multinomial distribution with probabilities given by:

$$P(V_{ip}) = \frac{e^{U_{ip}}}{\sum_{p=1}^{P} e^{U_{ip}}} \; \forall \; i, p \qquad (1.5)$$

where U_{ip} replaces the random utility function defined in (1.4).

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[24] The code to estimate this model is in Appendix C.

There are a number of alternative specifications for U_{ip} that may be used instead of the random utility model defined in (1.4), including a valence model (Schofield and Sened 2006), a policy preference model (Kedar 2005), and a discount model (Adams et al. 2005). In our case, we are interested in exploring how ideology, proximity to partisan networks, and the perceived likelihood of receiving material benefits, influences the respondents' vote choice.

We run separate models for each country, estimating the choice model using as the dependent variable the self-reported party vote for the five most important political parties in Argentina (PJ, UCR, ARI, PRO, and a residual category collecting other provincial parties) and Chile (PS, DC, PPD, UDI, and RN). We use as independent variables the self-reported ideological location of the voter, x_i, the reported location of each party $s_{ip} \subset S$, the respondent's perceived likelihood of receiving goods if the candidate from their party wins the election, and the parameters describing the proximity of respondents to the political network of activists of each party, γ'_{ik}.

Results

The results of the models provide strong support for a positive effect of political networks on vote choice. As we can observe in Table 4, the physical proximity of voters to the activists' network of any political party is positively associated to voting for that party. The effect is large and significant in Argentina and Chile, and it is more pronounced in the case of Argentina once we factor in the larger prevalence of these activists networks. In Argentina, knowing one more Peronist activists leads to substantive and statistically significant declines in the log-odds ratio of the vote for the UCR (-.888), the ARI (-.358), the PRO (-.472), and the PPP (-.318) vis-à-vis the base category, the Peronists. The effect of the networks is particularly pronounced for the

Peronists and the UCR while it has a lesser impact in shaping the vote for the ARI, the PRO, and the PPP. This is consistent with the expectations described in the previous section, given that the smaller ARI and PRO parties have small political networks and have more clearly defined ideological locations on the center left and right respectively. For example, setting all non-Peronist network variables to zero and the remaining variables to their means, an increase of one unit in the number of Peronists activist voters over the prevalence rate in the population would increase the likelihood of a Peronist vote from 37% to 50.5%. By contrast, the likelihood of an UCR vote would decline from 23.9% to 13.2%.

INSERT TABLE 4

The weight given to knowing more activists by Chilean voters is also large and statistically significant. Knowing one more PS activists than the prevalence rate in the population leads to declines in the log-odds ratio of voting for the DC (-.594), the PPD (-.467), the UDI (-.629), and the RN (-.680) vis-à-vis the base category, the PS. Networks weight less heavily for all Chilean parties than for the Peronists and the UCR, but are still more relevant than for the smaller Argentine parties.

The parameter describing the weight given to ideology both in Argentina and Chile is not directly comparable to those of the political networks, given that the variable measuring the square distance from voters to parties has a range of 0 to 100 while the network's variables range approximately from -5 to 5. Therefore, while the parameter describing the weight attached to ideology seems smaller, its actual predicted effect on the vote is not all that different from that of the weights attached to networks. Also, because more ideological distance to the party is

associated with a declining probability of voting for that party, negative coefficients indicate an increase probability of voting for the party while positive coefficients indicate a declining probability of voting for the party.

As we can observe in Table 4, therefore, more ideological distance from the Peronists leads to an increase probability of voting for the other parties in Argentina. The most dramatic effect of ideology is captured by the ARI and to the PRO coefficients. For example, setting all network variables to zero and the remainder variables to their means, a voter who is relatively distant from the PRO (average ideological distance to the PRO) will have a 37% chance of voting for the Peronists. As the voter gets closer to the PRO (ideological distance to that party approaches zero) the likelihood of voting Peronist falls to 32%. A similar exercise changing the voter's ideological proximity to the UCR, however, would only lead to a reduction of 1% in the likelihood of a Peronist vote.

Ideological distance from the PS has a more dramatic effect in Chile. Ideological proximity is particularly relevant for the UDI and the DC, and is less relevant for RN voters. Voters for all Chilean parties attach more weight to ideology than voters for the Peronists and the UCR in Argentina. However, ideology is less relevant for Chilean voters than for those of the smaller PRO and ARI in Argentina. For example, setting all network variables to zero and the remainder variables to their means, a voter with an average ideological distance to the UDI will have only a 6.7% chance of voting for that party. Closer ideological proximity to the UDI, setting the ideological distance to zero, would increase the likelihood of voting for UDI to 29%. Finally, as shown in Table 4, the expectation of receiving private goods from a political party has a stronger weigh on the decision to vote in Argentina than in Chile.

INSERT FIGURE 7

A more intuitive interpretation of the results is depicted in Figure 7 which describes the change in the probability of voting for each party as voters know an increasing number of Peronist activists in Argentina and Socialist activists in Chile. A value of zero in the horizontal axes indicates that the respondent knows the exact number of activists that we would expect given the size of her personal network and the prevalence of activists in the population. Negative numbers indicate that the respondent knows fewer than expected activists while positive numbers indicate that the respondent knows more activists than expected.

Figure 7 shows that when a respondent knows one fewer peronist activist than what we should expect given the prevalence of this group in the population, the likelihood of voting for legislative candidates from the Peronists is 40%, setting all other network variables to 0. When the respondent knows one more activist than what we should expect given the prevalence of this group in the population, the likelihood of voting for the Peronism increases to 55%. By contrast, the likelihood of an UCR vote declines from around 10% to less than 5% as the number of Peronist activists know by the respondent moves from 1 below the prevalence ratio to 1 above the prevalence ratio. Interestingly enough, the proximity to the Peronist network does not affect the PPP vote to the same extent.

In the case of Chile, proximity to the political network of a party also has a substantive and statistically significant effect on the likelihood that the respondent will vote for that party. However, as we pointed out before, political networks in Chile are considerably smaller than those of the PJ and the UCR, although they are still larger than those of the Argentine ARI and the PRO. The smaller weight attached to political networks in Chile vis-à-vis the Peronists or

UCR is therefore intensified by the differences in the relative size of those networks. It is noteworthy that the negative effect of a larger PS political network on the other parties vote is relatively similar for all parties. Proximity to the network of activists of the Socialist party mildly increases the probability of voters switching to any of the other three largest parties: the UDI, the DC, or the RN.

The most dramatic network effect affects voters of the RN and the PS, which fits well our expectations, while ideology leads to more substantive vote switches between the PS and the UDI. That is, whereas voters who attach more weight to networks are more likely to switch between the PS and the RN as the number of Socialist activists increases, voters who grant more importance to ideology are more likely to switch from the PS to the UDI as voters move ideologically to the right.[25]

In contrast, knowing an increasing number of activists from the PS is also associated with knowing an increasing number of activists from the DC and leads to a more moderate decline in the vote of the DC. Within coalition switching, therefore, is not as dramatic if we take into consideration that much of the effect is moderated by the high level of integration among coalition's partners.

INSERT FIGURE 8

Figure 8 shows the decline in the vote share for the UCR, the ARI, and the PRO in Argentina; and the DC, the RN, and UDI in Chile. As it is possible to observe, the decline in

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[25] Notice that the full effect of the change in ideology includes not only the larger distance from the PS, which affects equally the UDI and the RN, but also the larger effect of ideological proximity to the parties in the right, which benefits the UDI significantly more than RN.

votes as ideological proximity increases is more dramatic for the PRO, and the ARI in Argentina. The effect is substantively weaker for the UCR. By contrast, all three of the Chilean parties depicted in Figure 8 are affected to similar degree. As it was also the case with the effect of networks on the parties vote, it is important to highlight how similar is the effect of the ideological proximity parameters for the different Chilean parties. In contrast to the Argentine case, where voters of the smaller ARI and PRO parties weight more heavily their ideological preferences, voters for all Chilean parties care about the ideological positions of their parties to a relatively similar degree.

7. Concluding Remarks:

To conclude we want to summarize the nature of our findings and how do they fit in our larger research project. First, this paper seeks to explore the effect of political networks on electoral behavior as a first step in assessing the effect of a crucial component of the clientelistic exchange. In so doing, we rely on evidence collected in two national surveys in Chile and Argentina in order to assess the effect of two different party systems in the size, structure, and electoral effect of political networks. We found that in Chile, where parties can rely on ideological cues associated with different distributive policy preferences, political networks are smaller whereas in Argentina, where ideology is not useful to distinguish the main parties, political networks are larger. We interpret this difference in size as an expression of how much do party rely on political networks for distributing private goods necessary to sustain electoral loyalties in the absence of ideological ties. Moreover, we found that the structure of networks is also consistent with different in party systems across both countries. In Chile, political networks are relatively homogenous and horizontally integrated within each of the two coalitions that

dominate electoral politics. In Argentina, where electoral competition is organized around political parties, political networks are heterogeneous, vertically integrated, and ideologically diffuse. That is, they have a large number of members, parties have very different numbers of activists, voters close to a party know individuals in all party categories, and the two main catch-all parties do not cultivate voters from particular ideological niches—but two smaller parties do. Additionally, we found distance to political networks and ideology matters in predicting vote choices. Yet, voters assign a heavier weight to proximity to political networks in Argentina than in Chile—with the exception of the two small ideological Argentine parties. By contrast, Chilean voters to all five major parties ponder heavily their ideological proximity to parties in defining their vote. These results confirm our expectations regarding the organization of political parties in two different context of electoral competition.

Second, in establishing the comparison of political networks across Chile and Argentina, we want to emphasize the value of the methodology we are proposing for measuring political networks and advance the comparative research on distributive politics in general and clientelism in particular. Our methodology can travel to other cases and can be repeated over time to assess longitudinal variation in the structure of party organizations—crucial for a better assessment of the evolution of party structure beyond electoral results.

Finally, we want to point to future avenues of research. We plan to continue exploring the nature of political networks in two areas. First, how closely associated are political networks with networks of clientelistic reception of private goods—we have initial findings suggesting that knowing activists of a party is associated in both countries with the expectation of receiving private goods from that party. By exploring the linkages between the operational capacity of political parties and private good distribution, we will illuminate the mechanisms behind this

electoral strategy. Second, we will explore whether political parties in each country have different targeting strategies in the distribution of private goods based on the availability of ideological cues sustaining electoral loyalty. The assumption is that because such distribution sustains loyalties in Argentina, which are based on ideology in Chile, they can target different types of voters. That is, the Argentine catch-all parties should keep distributing to core voters in order to sustain their loyalty whereas the Chilean ideological parties can use the distribution of private goods to win swing or weakly predisposed voters because ideological loyalty sustains their linkages to core supporters.

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Table 1: Prevalence of group *k* as a share of the respondent's personal network, Argentina and Chile. Estimates $B_k \equiv \{\beta_1', \ldots, \beta_k'\}$ from Equation (1.3)

GENERAL NETWORK			
Share of the Respondent's Network			
CHILE		**ARGENTINA**	
Eduardo	0.778	Angel	0.368
Teacher	1.582	Teacher	1.394
Military	1.047	Police	0.920
MD-Doctor	0.781	Lawyer	0.913
Maid	0.800	MD-Doctor	1.166
Solidary Chile	0.276	Plan JyJ	1.055
Birth	0.499	Birth	0.678
Deceased	0.528	Deceased	0.585
Married	0.257	Married	0.253
PSU	0.763	Disability	0.314
Municipal Employee	0.916	Municipal Employee	1.128
Regional Employee	0.350	Provincial Employee	0.706
Public Employee Family	0.164	Public Employee Family	0.236
Sports Club	1.678		
Family Municipal Employment Plan	0.153		

Table 2: Prevalence of political groups *k* as a share of the respondent's personal network, Argentina and Chile. Estimates $B_k \equiv \{\beta'_1, \ldots, \beta'_k\}$ from Equation (1.3)

POLTICAL NETWORK			
Share of the Respondent's Network			
CHILE		**ARGENTINA**	
Approached PS	0.155	Approached PJ	0.314
Candidate PS	0.177	Candidate PJ	0.330
Volunteer PS	0.195	Volunteer PJ	0.640
Activist PS	0.356	Activist PJ	0.766
Approached DC	0.115	Approached UCR	0.146
Candidate DC	0.139	Candidate UCR	0.183
Volunteer DC	0.167	Volunteer UCR	0.311
Activist DC	0.299	Activist UCR	0.420
Approached PPD	0.080	Approached ARI	0.022
Candidate PPD	0.100	Candidate ARI	0.026
Volunteer PPD	0.126	Volunteer ARI	0.037
Activist PPD	0.200	Activist ARI	0.056
Approached UDI	0.074	Approached PRO	0.014
Candidate UDI	0.106	Candidate PRO	0.011
Volunteer UDI	0.117	Volunteer PRO	0.019
Activist UDI	0.199	Activist PRO	0.029
Approached RN	0.071	Approached PPP	0.035
Candidate RN	0.087	Candidate PPP	0.048
Volunteer RN	0.124	Volunteer PPP	0.098
Activist RN	0.147	Activist PPP	0.108
Primaries	0.370	Primaries	0.569
Goods PS	0.114	Goods PJ	0.487
Goods DC	0.129	Goods UCR	0.191
Goods PPD	0.077	Goods ARI	0.027
Goods UDI	0.155	Goods PRO	0.017
Goods RN	0.109	Goods PPP	0.063

Table 3: Estimated size of political groups in Argentina and Chile. Estimates
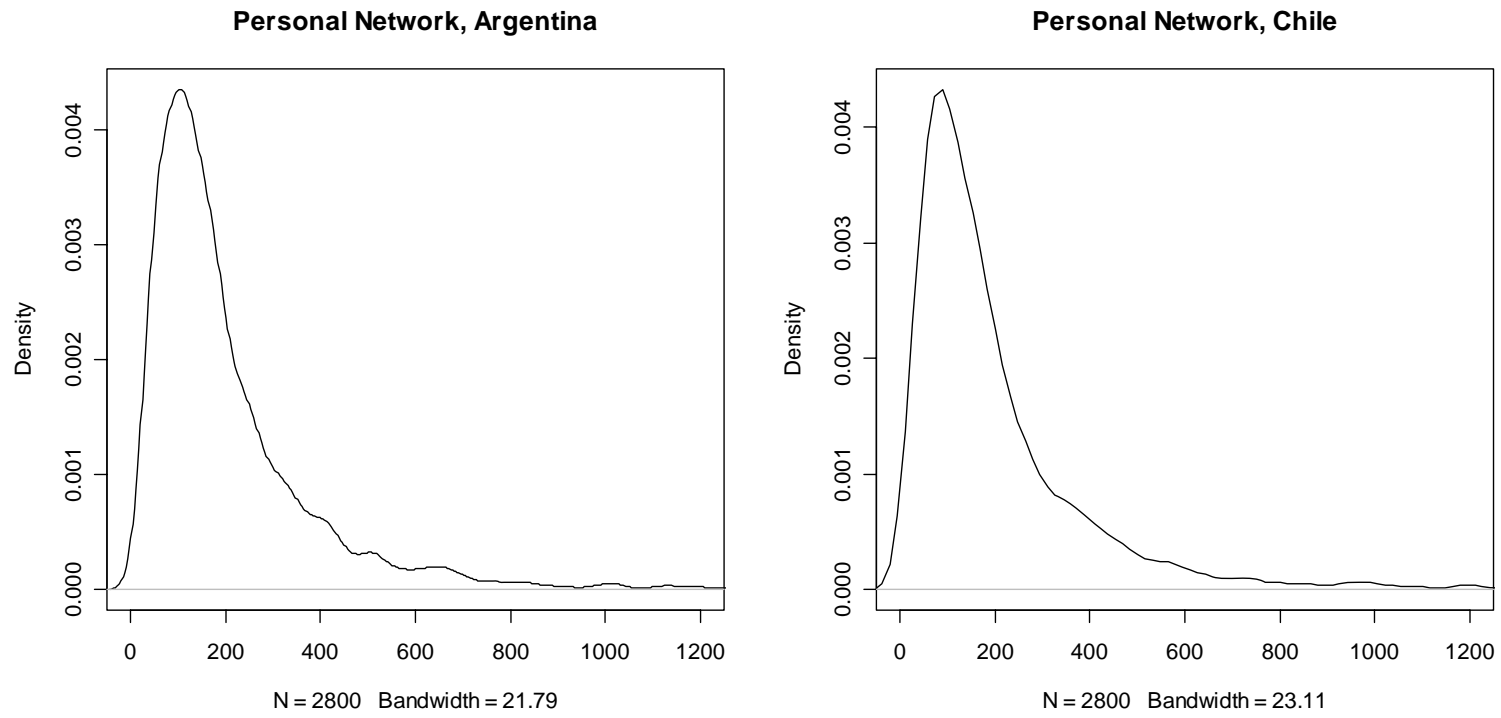$B_k \equiv \{\beta_1' * P, \ldots, \beta_k' * P\}$ **from Equation (1.3), where P=Total Population**

POLTICAL NETWORK			
Total Number of Members			
CHILE		**ARGENTINA**	
Approached PS	23,495	Approached PJ	119,363
Candidate PS	26,711	Candidate PJ	125,376
Volunteer PS	29,417	Volunteer PJ	243,262
Activist PS	53,880	Activist PJ	290,930
Approached DC	17,396	Approached UCR	55,299
Candidate DC	21,074	Candidate UCR	69,532
Volunteer DC	25,250	Volunteer UCR	118,016
Activist DC	45,221	Activist UCR	159,684
Approached PPD	12,117	Approached ARI	8,416
Candidate PPD	15,077	Candidate ARI	9,908
Volunteer PPD	18,987	Volunteer ARI	13,986
Activist PPD	30,257	Activist ARI	21,463
Approached UDI	11,127	Approached PRO	5,484
Candidate UDI	16,022	Candidate PRO	4,257
Volunteer UDI	17,621	Volunteer PRO	7,262
Activist UDI	30,031	Activist PRO	10,853
Approached RN	10,660	Approached PPP	13,277
Candidate RN	13,130	Candidate PPP	18,060
Volunteer RN	18,748	Volunteer PPP	37,232
Activist RN	22,283	Activist PPP	41,079
Primaries	55,862	Primaries	216,177
Goods PS	17,249	Goods PJ	185,052
Goods DC	19,485	Goods UCR	72,472
Goods PPD	11,614	Goods ARI	10,074
Goods UDI	23,377	Goods PRO	6,535
Goods RN	16,479	Goods PPP	23,893

Table 4: Determinants of vote choice in Argentina and Chile.
Multinomial logit model measuring the effect of partisan networks, ideology, and the voter's expectations to receive goods on the legislative party choice. PJ (Argentina) and PS (Chile) selected as the base categories. Standard errors in parenthesis. Estimated from equations (1.4) and (1.5).
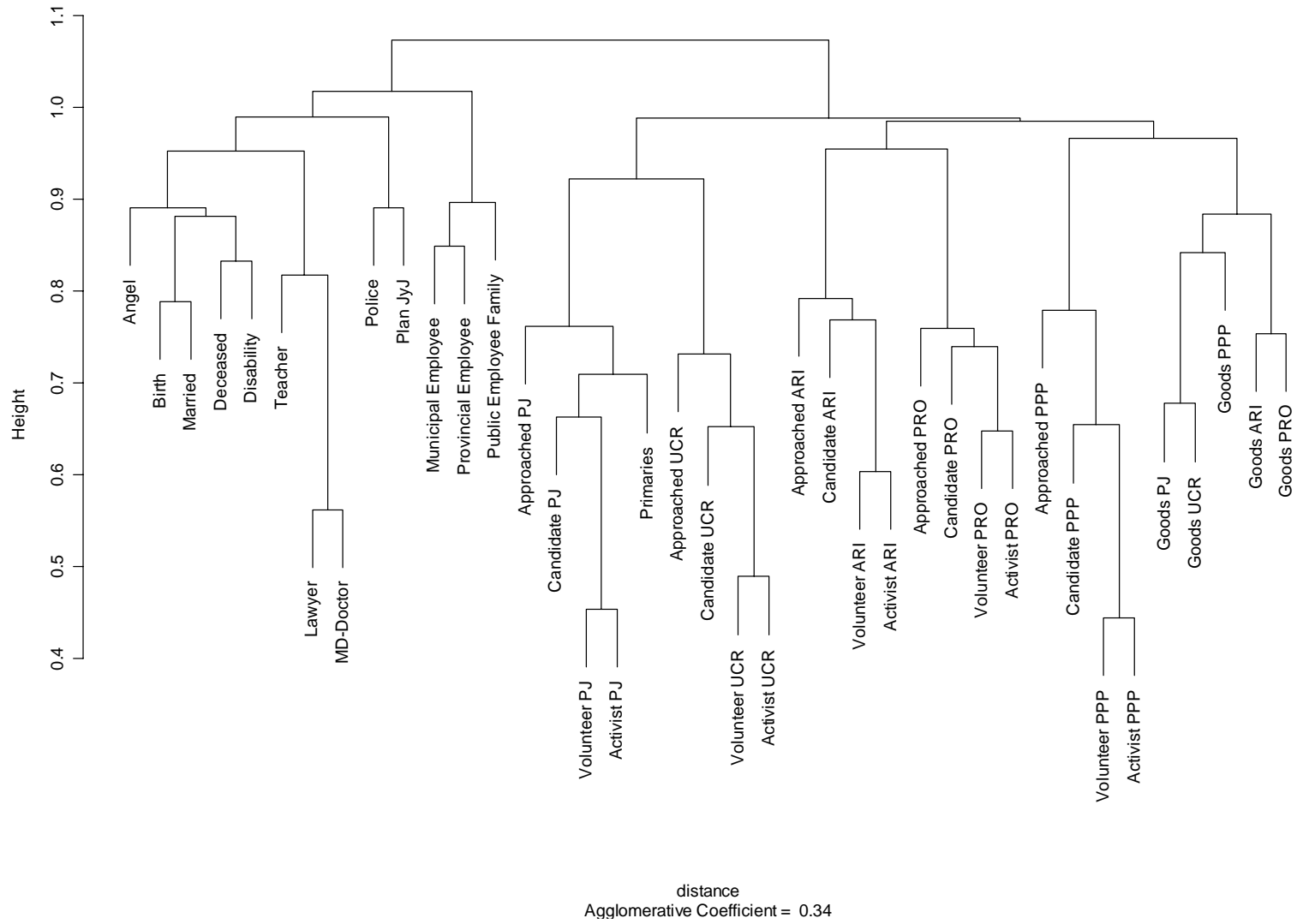
CHILE

		$\ln\dfrac{P(y_i=DC)}{P(y_i=PS)}$	$\ln\dfrac{P(y_i=PPD)}{P(y_i=PS)}$	$\ln\dfrac{P(y_i=UDI)}{P(y_i=PS)}$	$\ln\dfrac{P(y_i=RN)}{P(y_i=PS)}$
Network Weight	PS	-0.711 (0.1253)	-0.521 (0.1203)	-0.644 (0.159)	-0.725 (0.150)
	DC	**0.741 (0.1267)**	0.035 (0.1468)	0.116 (0.178)	0.364 (0.141)
	PPD	-0.234 (0.149)	**0.224 (0.1352)**	-0.486 (0.2046)	-0.230 (0.169)
	UDI	0.195 (0.172)	-0.007 (0.1898)	**0.796 (0.1598)**	0.076 (0.1723)
	RN	0.057 (0.2297)	0.641 (0.2041)	0.330 (0.2048)	**0.912 (0.187)**
Ideology		-0.052 (0.0094)	-0.035 (0.0079)	-0.076 (0.0079)	-0.071 (0.007)
Goods		0.106 (0.0293)	0.069 (0.0309)	0.128 (0.0338)	0.122 (0.029)
Constant		-0.62837 (0.2242)	-0.5181 (0.1913)	-0.2658 (0.2365)	0.1626 (0.209)

ARGENTINA

|		$\ln\dfrac{P(y_i=UCR)}{P(y_i=PJ)}$	$\ln\dfrac{P(y_i=ARI)}{P(y_i=PJ)}$	$\ln\dfrac{P(y_i=PRO)}{P(y_i=PJ)}$	$\ln\dfrac{P(y_i=PPP)}{P(y_i=PJ)}$
Network Weight	PJ	-0.905 (0.1230)	-0.365 (0.140)	-0.429 (0.153)	-0.335 (0.076)
	UCR	**1.084 (0.1180)**	0.235 (0.151)	0.301 (0.180)	0.177 (0.098)
	ARI	0.294 (0.2460)	**0.888 (0.249)**	-0.409 (0.399)	0.659 (0.205)
	PRO	-1.670 (0.600)	-0.386 (0.403)	**1.007 (0.276)**	-0.568 (0.312)
	PPP	-0.013 (0.1411)	-0.153 (0.1935)	-0.084 (0.220)	**0.480 (0.098)**
Ideology		-0.014 (0.007)	-0.057 (0.014)	-0.078 (0.017)	-0.016 (0.005)
Goods		0.233 (0.035)	0.249 (0.047)	0.315 (0.042)	0.043 (0.0283)
Constant		-3.63 (0.417)	-2.659 (0.4052)	-2.962 (0.387)	-0.868 (0.209)

Figure 1: Size of the Respondent's Personal Networks in Argentina and Chile, $A_k \equiv \{\hat{\alpha}_1, \ldots, \hat{\alpha}_i\}$ **, from Equation (1.2)**

Personal Network, Argentina

N = 2800   Bandwidth = 21.79

**Personal Network, Chile**

N = 2800   Bandwidth = 23.11

Figure 2: Dendogram describing the Structure of Networks in Argentina, Clustering Algorithm on $H_{ik} \equiv \{\gamma'_{11}, \ldots, \gamma'_{ik}\}$


distance
Agglomerative Coefficient = 0.34

Figure 3: Dendogram describing the Structure of Networks in Chile, Clustering Algorithm on $H_{ik} \equiv \{\gamma'_{11}, \ldots, \gamma'_{ik}\}$


distance
Agglomerative Coefficient = 0.31
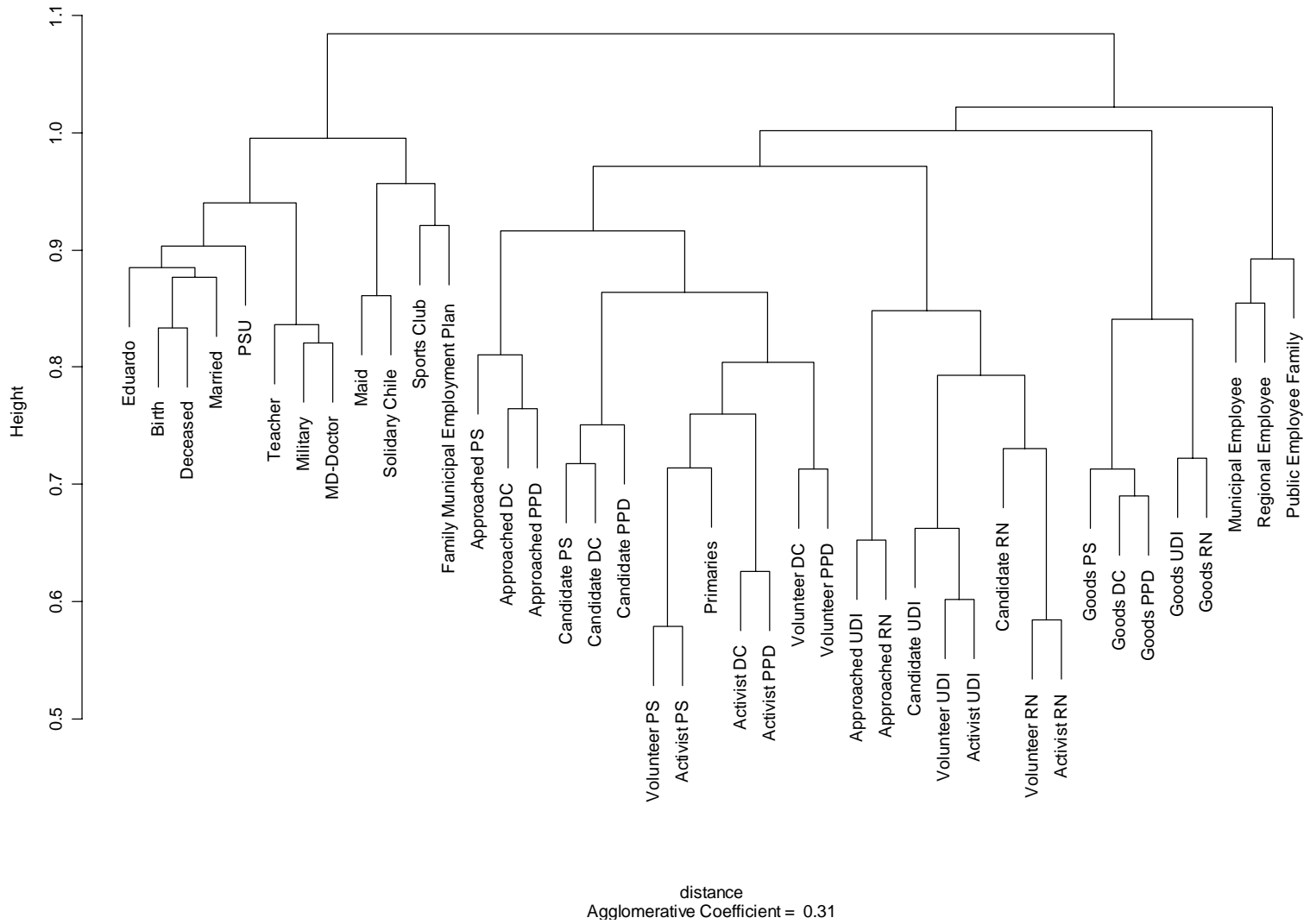
Figure 4: Plot of Inter-Group Correlations in Argentina, Inter-group Correlation using $H_{ik} \equiv \{\gamma'_{11}, \ldots, \gamma'_{ik}\}$
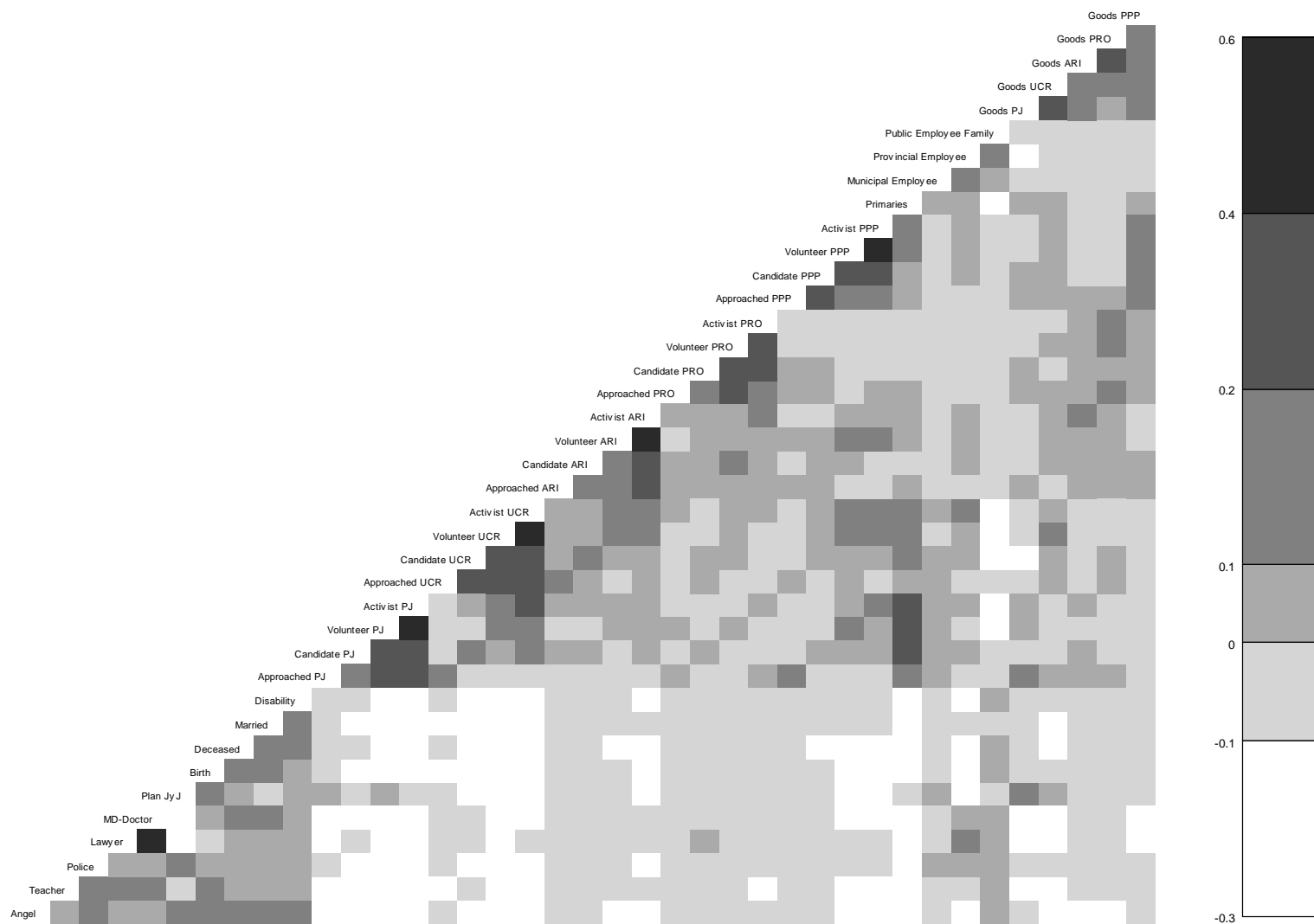
Figure 5: Plot of Inter-Group Correlations in Chile, Inter-group Correlation using $H_{ik} \equiv \left\{ \gamma'_{11}, \ldots, \gamma'_{ik} \right\}$
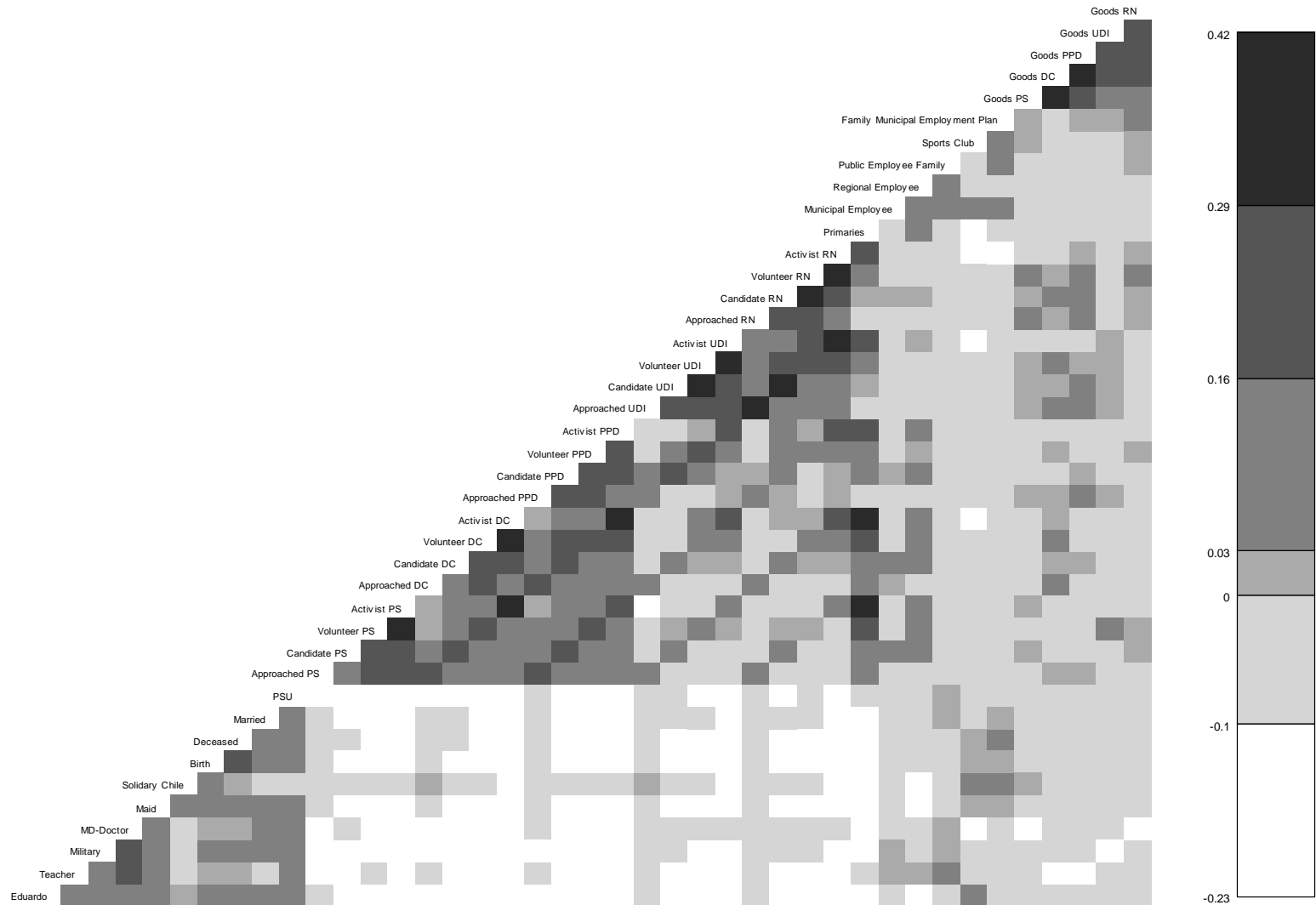
Figure 6: Reported Ideological Location of Largest Political Parties in Argentina and Chile

Ideological Placement of Argentine Parties

Ideological Placement of Chilean Parties
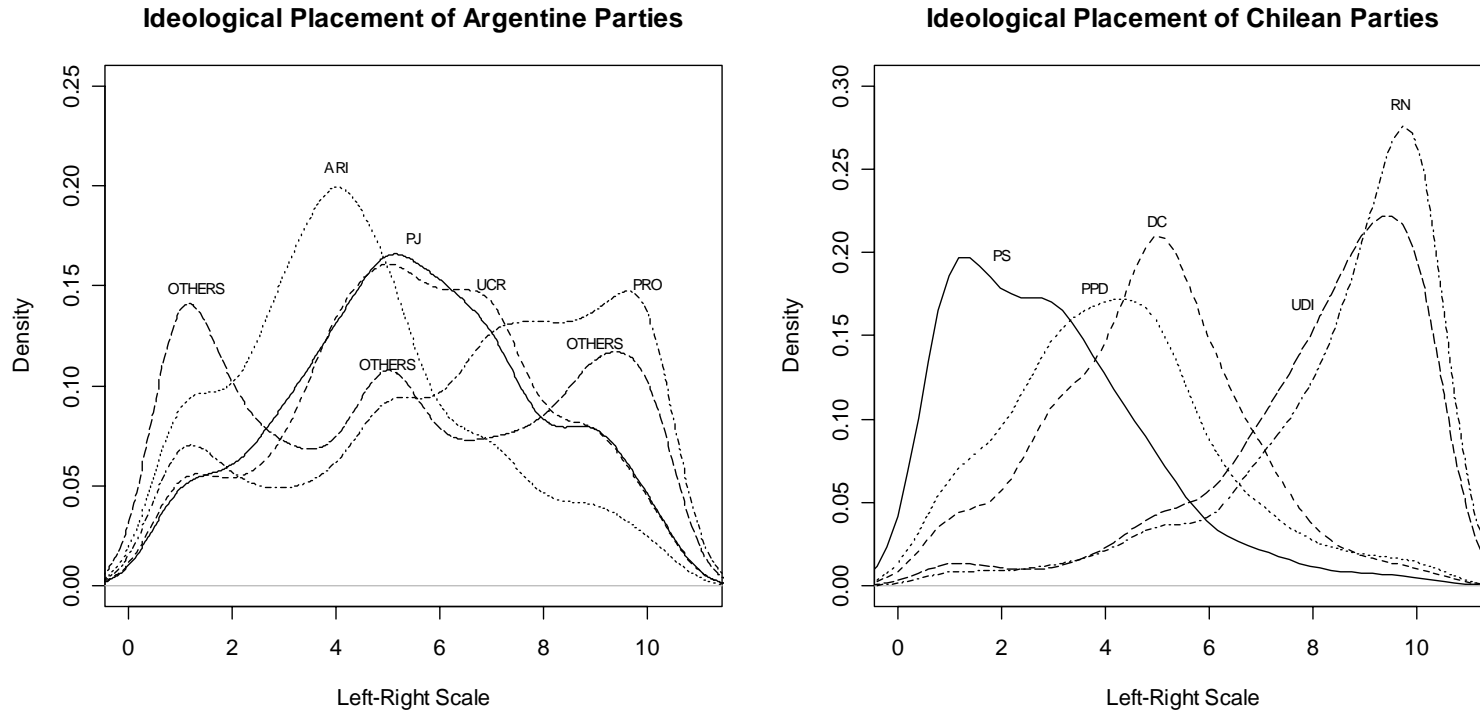
Figure 7: Change in the Parties Vote Share and Proximity to the Peronist network (Left) or Socialist network (Right) of Political Activists. Predicted Probabilities estimated from the Multinomial Logit Models Reported in Table 4.
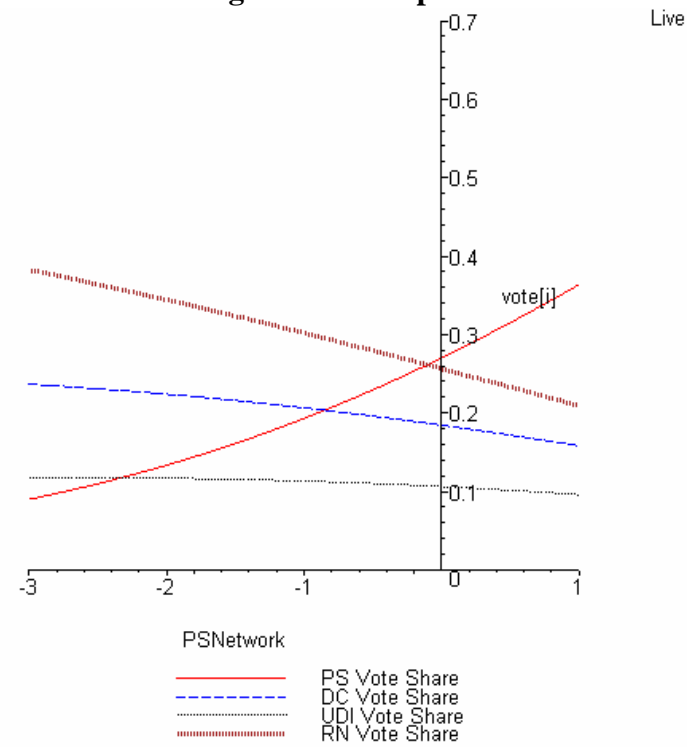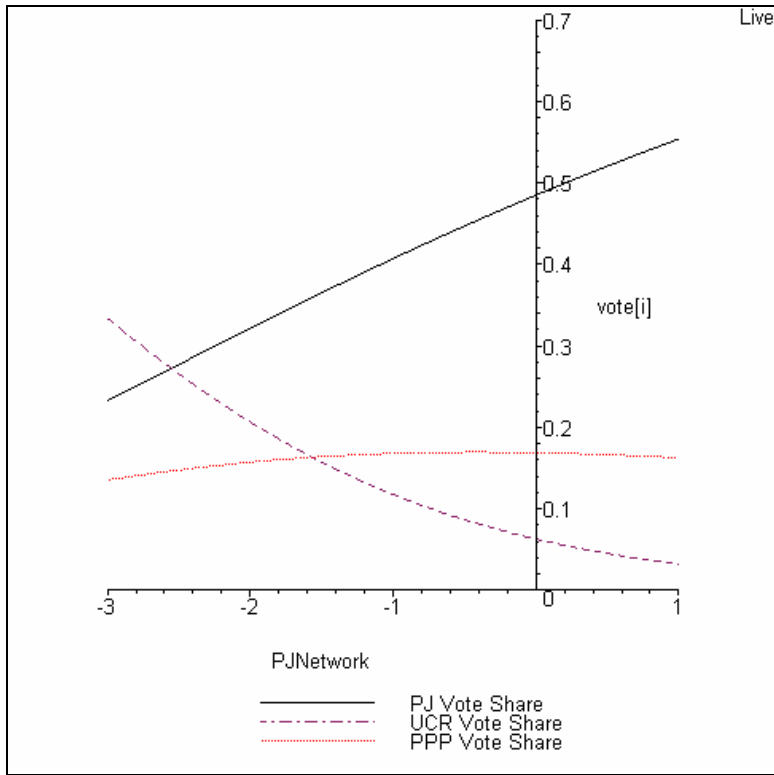
Figure 7: Change in the Parties Vote Share and Ideological Proximity to the Peronists (Left) or Socialists (Right). Predicted Probabilities estimated from the Multinomial Logit Models Reported in Table 4.