Geography, not Socio-Demographics: Explaining the PDS (Party of Democratic Socialism) Vote in Berlin, 1999 and 2001.*

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ABSTRACT

The PDS (*Partei Demokratische Sozialismus* – Party of Democratic Socialism*)* continues to gain electoral support in the pos-unification elections in the former German Democratic Republic (East Germany). Its core area of strength is in East Berlin where the party now wins more votes than the other major parties combined. While the East-West divide in Berlin in terms of electoral trends is well-marked, its micro-geography in the form of district-level analysis has been hampered by a lack of detailed information about the electorate of the PDS. Using two methods of ecological inference, King's and entropy maximization, we show that the explanation of the PDS support in Berlin elections in 1999 and 2001 can be attributed to the "Mauer in den Köpfen" (wall in people's heads) that is coincident with the division of the city along the former Berlin Wall. This geographic division far exceeds any socio-demographic explanation of the PDS vote.

The process of the unification of Germany seemed to have finally ended when the successors to the East German Communist party, the SED (*Sozialistische Einheitspartei Deutschlands* – Socialist Unity Party of Germany), joined a coalition government with the Social Democrats, SPD (*Sozialdemokratische Partei Deutschland*) after the elections in the city-state of Berlin in October 2001. With 22.6% of the party vote, up from 17.7% in 1999, the PDS (*Partei Demokratische Sozialismus*) became the second largest party in the re-unified city and with 47.6% of the vote, dominated the eastern sector of the city, the former East Berlin. Berlin was the second state (*Land*) where the PDS joined the governing coalition. (Mecklenburg-Vorpommern was the first.) By their accession to power in the German capital, a party that was widely viewed as finished at the time of unification in 1990 had completed their rehabilitation. As happened before in Germany (the SPD and Greens formed an early coalition in Hesse), the governing coalitions of *Länder* are seen as tests of how well parties can cooperate and as predictors of a possible federal government coalition. But, though the Berlin SPD-PDS coalition governs the entire city-state, the geographic bases of support of the coalition partners are clearly divided into two halves along the line of the former Berlin Wall. The

1

German capital, though politically united, still shows a powerful wedge between the two parts – "die Mauer in den Köpfen" (the wall in people's heads) - as seen in electoral statistics and public opinion polls.

In this paper, we examine the PDS support in two recent elections, those for the *Landtag* (state parliament) in 1999 and 2001 using detailed data for the electoral districts of Berlin. While it is well-known that the PDS dominated in the districts of the former East Berlin, the availability of a large representative sample allows a matching of survey and aggregate data to probe the geographic contexts of the votes. We ask if the PDS support from specific groups (e.g., the ratio of people over 60 who choose the party) varied according the overall trends or if there are special circumstances that can account for the relative success in certain districts. Though the survey sample was large (a sample of 15,936 in 1999), the respondents are not adequately distributed across all 78 electoral districts (*Wahlkreise*) to allow analysis by district. Instead, we must infer the district-level estimates using aggregate data. Recent developments in ecological inference enable such inferences and in this paper, we compare the results from EzI (Ecological Inference – King, 1997) and EMax (entropy maximizing – Johnston and Pattie, 2000). While the results are similar, the results presented in this paper offer another check on the consistency of the two methods and an evaluation of the comparative advantages of each. The district estimates are then used to gain insights into the variation of the kinds of support of the PDS across socio-demographic groups.

The growing electoral successes of the PDS in Berlin and their accession to power in January 2002 comes at a time of financial difficulties in the German capital. The previous governing centrist coalition of the SPD and the conservative CDU (Christian Democratic Union) collapsed after a bank scandal revealed the depth of the crisis in the city, including a public debt of about 78 billion marks ($36bn) and unemployment of 16%. The PDS approved the coalition agreement with the SPD by a wide majority with only 17 of the 131 delegates of the Berlin PDS voting against the agreement.. The PDS gained four ministers (called senators in Berlin) - culture, science, health and the key economics ministry under Gregor Gysi , the PDS leader. The SPD received five cabinet posts as well as the mayoralty. A statement included in the official coalition declaration in Berlin by the PDS apologized for the abuses committed by its predecessor, the SED. By moving away from its Communist origins and by successfully advocating a regional perspective on behalf of

the people of the former German Democratic Republic (East Germany), the party is now poised to gather further support and to become a major player on the national scene as it is already in the states of the former GDR (German Democratic Republic). PDS legitimacy as a coalition partner in the Eastern *Länder* shows that, at the local level, the PDS is much less an ideological protest party than a pragmatic one (Hough, 2000a). PDS legitimacy as a democratic party has been achieved, in the eyes of the electorate and, albeit grudgingly, in the eyes of the other parties on the German political scene. Filling a role as a credible governing partner has been accepted by a growing number of independent and self-confident East German political leaders, a sure step to ensuring further integration of Eastern concerns within the political agenda.

The October 21, 2001 Berlin *Landtag* election took place against a background of the U.S. war on the Taliban in Afghanistan in the aftermath of the September 11, 2001 terrorist attacks. The 2001 election outcome certified the splintering of the Berlin electorate as, for the first time in post-war elections, none of the parties got over 30% of the vote. The PDS was the only major German party to oppose the U.S. attacks in Afghanistan, profiling itself as a peace party (Kulick, 2001). The other "alternative" party, the Greens, was part of the federal coalition with the SPD. The PDS gained from opposition to the Afghan war; 70% of their voters said that it was a decisive factor in their electoral choice (Bolzen, 2001). Moreover, the party crossed the 5% threshold in all the 12 districts in the city, thus gaining representation on every district council (up from half of them in 1999). In the eastern part of the city, the PDS gained more than the combined vote of the other four major parties. The dramatic increase in the PDS vote (from 17.7% to 22.6%) between 1999 and 2001, especially in the eastern districts (from 39.5% to 47.6%) was matched by an increase in the liberals' vote (FDP) while the CDU vote collapsed (see Tables 1 and 2). Besides its stand on the war in Afghanistan, the PDS benefited from the popularity of its leader, Gregor Gysi and the fact that most neighborhoods in East Berlin had not seen any change in the past 10 years, despite a boom in the central business districts (Deggerich, 2001).   Only the SPD was able to bridge the "wall" with 34% in the western part of the city and 23% in the east.   Despite pressure from the federal SPD party and from leading business interests to develop a "traffic-light coalition" (red-green-yellow) of the SPD, the Greens and the FDP, lengthy talks failed to

generate one and in January 2002, the SPD and the PDS became the second "red-red" state governing

coalition in the former GDR (Weber, 2001).

Table 1. Percent Vote by Party Berlin 1999 and 2001

	1999		2001	
	1st vote	2nd vote	1st vote	2nd vote
CDU	42.6	40.8	27.0	23.8
SPD	24.9	22.4	34.0	29.7
PDS	18.5	17.7	20.3	22.6
Green	9.0	9.9	8.5	9.1
Rep	0.1	2.7	0.0	1.3
FDP	1.8	2.2	8.9	9.9
Other	3.1	4.3	1.3	3.6

Table 2. Percent Vote for PDS Berlin 1999 and 2001

	1999		2001	
	1st vote	2nd vote	1st vote	2nd vote
Berlin	18.5	17.7	20.3	22.6
West Berlin	4.0	1.2	5.1	6.9
East Berlin	42.0	39.5	44.7	47.6

Berlin: From Division to Re-Unification

The ideological divisions that had permeated post-war politics in the city were made chillingly clear with the

construction of the Berlin Wall in August 1961 (Zimmer, 1997; Elkins and Hofmeister, 1988). Although an

armed boundary between East and West Germany had been in place since 1952, the construction of the

Berlin Wall finalized the divide and was a physical challenge to the legitimacy of the Western powers within

Berlin. The Four Power Agreement of 1971 assured the future of West Berlin, despite the efforts of the

GDR government to isolate it and make its continued existence impossible. The GDR worked to create a

model socialist city in East Berlin in close juxtaposition to the democratic West Berlin. The similarity in how

the Berlin cities were treated by their respective governments is a direct consequence of Berlin's location on

the ideological fault line of the Cold War. Both cities were promoted by specific entitlements to represent the success of their political ideological models. West Berlin represented the western capitalist, consumer driven society (despite the reality of huge government intervention), while East Berlin became a showcase for state socialism (White and Gutting, 1998).

In hindsight, the reunification of Berlin began in earnest two years before the collapse of the Wall. The 750th anniversary of Berlin in 1987 was an elaborate affair, with each half-city using it to stress their differences. However, by trying to exemplify their different histories, both sides may have rekindled an identity based upon pre-war history. Read and Fisher (1994, 298), offer some evidence of this, explaining how architectural developments on both sides of the Wall reflected a "hankering for the cozy days of the Wilhelmine era" (late nineteenth-century). In the East, the East German authorities relaxed certain strict controls on commercial development and attempted to turn the clock back by producing urban reconstruction zones with an emphasis on petty commerce and small-scale craft activities (White and Gutting, 1998).

On 3 October 1990, German unification was solemnized at an official ceremony in Berlin. By acceding to the Federal Republic's Basic Law (*Grundgesetz*) and political system, East Germany ceased to exist. While the rapid reunification certainly assured assimilation into the legal and political institutions of West Germany, recent history has shown that social and economic integration did not follow the same fast track (Bauer-Kaase and Kaase, 1996; Leiby, 1999). This is true in all of Germany, but arguably, the effects of 40 years of separation are starker in Berlin. Only in Berlin did a Western administration assume control of an East German city overnight, and only there, did West Germans undergo almost as many transformations in their lives as East Germans (Cooper, 1998).   Since the fall of the Wall, change has buffeted Berlin from all sides. In its politics, its economy, its social relationships, Berlin is a city in transition as it struggles to adjust to the often harsh realities of unification.

Former German Chancellor Willy Brandt's famous prediction, as the Berlin Wall fell, that "what belongs together will now grow together" (quoted in Leiby, 1999, 109) shows the degree of political naivéte that permeated Berlin in the initial euphoria of reunification. This was understood by most West Germans to

mean East Germans would become just like them, and at the time, few East Germans had the confidence or the desire to insist on a separate identity (Cooper, 1998). But over time, Germans on both sides of the former Iron Curtain divide have slowly come to realize that years of divergent experience have indeed created a separate East German "identity" that is not going to disappear quickly (Staab, 1998; Langguth, 1995; Borneman, 1992).

Direct federal subsidies to West Berlin began to be phased out after unification, and they ceased entirely in 1994 (Langguth, 1995). Unlike the Cold War decades, the Western sector of the city now receives far less from the federal government than it returns in revenues (Cooper, 1998). In effect, the economy of West Berlin was harshly reintroduced to an economic climate that would not allow for a return to its dominant economic position prior to the Cold War (Krätke, 2001). This reversal of status was further aggravated by the juxtaposition of the former East Germany, which lured capital investment there after 1990 through generous subsidies, tax breaks, and weaker controls on building (Parkes, 1997). This has led to the *Ossies* (slang term for former East Germans) being stereotyped as dependent and inefficient by their Western counterparts (Baylis, 1999; Becker-Cantarino, 1996). Ironically until 1989, West Berlin was as completely dependent on government handouts as its Eastern twin. The Cold War relocation of many of Berlin's former financial and economic functions to other western cities such as Hamburg and Frankfurt and the city's historical dependence on federal subsidies have in part been responsible for creating a climate conducive to anti-systemic movements and protest parties like the Greens and the PDS. While the 1990 reunification ensured that East Germany accepted the Basic Law and Constitution of the Federal Republic of Germany (West Germany), it is worth recalling the GDR political system prior to 1989. The most significant event in its development in the GDR was the fusion of the Communist and Social Democratic parties to form the SED, effectively removing the SPD as the Communist's chief competitor for working-class support (Read and Fisher, 1994).

The German electoral system has been termed a "personalized proportional law", with half of the parliamentary deputies elected by a plurality vote in single member districts (*Erststimmen*) and half by proportional representation from land lists (*Zweistimmen*) (Conradt, 1996, 155). The first vote is given to

individual candidates, while the second is a party vote. The second (party) vote is usually deemed most important because it is used to determine the final percentage of parliamentary mandates a party will receive. In order to ensure equal proportionality, the number of seats won in the district elections are deducted from this total; thus the more district mandates (first votes) a party wins, the fewer party (second vote) seats it will receive. This electoral process can lead to a situation where there will be more district votes (candidates) than the parliamentary mandate a party receives through proportional representation (Edwards, 1998). This is known as the *Überhangmandate* (excess mandate), and was an important electoral loophole in the party strategy of the PDS in the federal elections of 1994 and 1998. In addition to its personalized proportional law and its two vote system, the Federal Republic also incorporated a 5% Clause into its electoral process, as a further effort to ensure stable government outcomes in elections and to constrain the number of extreme and splinter parties in parliament by discouraging people from wasting their votes on smaller parties.

The PDS: The Regional-Alternative Party

Since the reunification of Berlin, elections have changed from a stable two party system in the West of the city, dominated by the Christian Democratic Union (CDU) and the Social Democratic Party (SPD), with a one-party Communist system in East Berlin. In effect, a multi-party system has emerged since 1990, as reunification has had a deep impact on the structure of politics within Berlin and in Germany. However, instead of Berlin becoming a symbol of unity, divisions remain as the result of forty years of separation (Staab, 1998; Larres, 1998; McKay, 2000). The representation of Berlin as a global center of unity and prosperity is less reality than rhetoric. Support for Party of Democratic Socialism (PDS) remains almost exclusive to the eastern districts of the city, despite valiant attempts by the party leaders to portray the PDS as a modern socialist party for both East and West Germans (McKay, 2000). Much of its political platform has been based upon a criticism of "fast track, capitalist transition" at the cost of East Germans and East Berliners (Duke and Grime, 1997). According to Eith (2000), the Eastern electorate is less satisfied with the current state of German democracy, usually correlating with a negative assessment of the country's economic

situation and its perceived lack of social justice. This kind of alienation maintains a profound impact on the legitimization of post-Communist transitional political systems (Pammett and DeBardeleben, 1996).

The purpose of this paper is to understand why the PDS as a post-Communist political party continues to hold such strong regional appeal and to evaluate the possible diffusion of its support. Among the multiple explanations proffered, a key idea equates the success of the PDS with its appeal as a regionalist-protest party. Its success has surprised many political commentators, who had assumed that it would not outlive the immediate post-unification period in Germany (McKay, 2000). The PDS not only survived its formative years but it has consolidated its support base within the East of the country and has offered sustained ideological opposition to the Western parties on the national level. This success is based in large part on the support stronghold of East Berlin (Hough 2000a, Patton 2000, McKay 2000). In the 1999 *Land* election, the PDS increased its overall vote by 0.7% and passed the 5% hurdle in the city as a whole to sit in the Berlin *Landtag* as a *Fraktion* (Phillips, 1999). In the latest *Land* election of October 2001, the PDS secured 48% of the East Berlin vote.

Unlike many other former Communist parties, the PDS confronted the challenge in 1990 of being immediately inserted as a marginal actor into an externally directed, fully established functioning political system (Phillips, 1999). While the founding elections around 1990 were largely electoral disasters for ex-Communist parties, the PDS made it to the Bundestag, by utilizing the constitutional loophole afforded by the *Überhangmandate*. This electoral success is even more impressive since the party received no funding from the West German government prior to the election. In contrast, all three establishment West German parties, (CDU, SPD and FDP) contributed direct financial support to their Eastern counterparts (Neugebauer and Stöss, 1996). The PDS consolidated their success in the second round of national elections in 1994 by gaining a total of 30 seats. This reflects their continued use of the *Überhangmandate*, but also an increase of 2.4% of the national vote from 1990 to 4.4% (Kleinfeld, 1995). This was seen as strengthening the party's role as a reformed party and as further proof that they were a resilient political force (Ziblatt, 1998). This resilience is further confirmed by the party's performance in the 1998 Federal election. For the first time in its history, it cleared the electoral hurdle by polling 5.1% in the Federal Republic as a whole (McKay, 2000).

The consolidation of the PDS as a legitimate political party is not uniformly accepted by the German political establishment, despite a growing academic consensus that ex-Communist parties can have a stabilizing influence in the transition to a consolidated democracy. Post-Communist successor parties can re-socialize an otherwise excluded and alienated segment of the electorate and enable a more responsive party system (Mahr and Nagle 1995; Higley *et al.*, 1996). McKay (2000), however, asserts that the persistence of an elite from Communist times threatens democratic processes because these cadres are not interested in reform, but rather in consolidating their elite position. Waller (1995) believes that the organizational skills and resources of ex-Communist parties give them a political advantage that is not necessarily democratic. Morueau (1998, 283) is even harsher in his assessment of the PDS, defining them as a leftwing extremist, anti-system party that promotes societal change through radical democratization as camouflage. This view is also the one most often taken by the centrist CDU party in Germany, who view the historical ties of the PDS to the SED as good reason to isolate them from mainstream politics (McKay, 2000). Indeed, the CDU wants to put the PDS under the surveillance of the *Verfassungschutz,* the agency in charge of protecting the constitution (Patton, 2000).

Ishiyama (1999c) takes an optimistic view of the PDS, viewing "electoral demand" - issues relating to economic conditions, traditional identities, uncertainty caused by transitions and the related nostalgia for the Communist era - as important in explaining the success of former Communist parties. Ishiyama (1999b) makes further distinction between a successor party and an adaptive party. The former claims their successor status and retains members from the old Communist party, while adaptive parties repudiate their Communist ideology and accept democratic norms. It is clear that the PDS falls into the adaptive category more clearly than the successor camp. Its critics argue the impossibility of this, given the continued role of former SED members in the PDS and the continued presence of a hard-line Stalinist faction (Patton, 2000). The SED had tried to position itself on the left of the political spectrum as a contrast to the Kohl government coalition. It soon realized that this electoral strategy would not ensure its survival, due in a large part to plummeting support and internal disagreements about the direction the party should take (Barker, 1998; Hough, 2000b). By June 1990, the SED membership of 2.8 million in 1989 had plummeted to 350,000 members (Kleinfeld,

1999). Recent membership figures of the PDS estimate the figure is approximately 100,000, or less than 5%
of the SED membership before the end of East Germany (Kleinfeld, 1999). This trend is also true in East
Berlin. Unlike its electoral support, membership has consistently declined during the 1990's. In March 1991,
the PDS had over 42,000 members in Berlin but by the end of 1998, membership stood at under 17,000
(McKay, 2000).

The Electorate of the PDS

A dramatic contrast in age profile exists between the membership of the PDS and those who support the
party in elections. PDS members tend to be over 50 years of age and overwhelmingly former SED members.
PDS voters in former East Germany, on the other hand, tend to be younger; about 25% of voters between
the ages of 18 and 24 voted for the PDS in the 1994 Bundestag election(Krisch, 1996). Despite an
increasingly ageing membership, the party has been able to register support equally from across all age
categories, with the over 60 age group being slightly the weakest (Hough, 2000a).   This age distribution is
important in terms of the survival and future growth of the PDS as a small party within the German electoral
system. As party membership ages, the appeal of the party to younger voters is extremely important for
ensuring the reproduction of its support (Kleinfeld, 1995). However, this is not a simple undertaking. In the
Eastern *Länder* in general, party membership appears to have little appeal for young people and the moderate
parties in particular look decidedly middle-aged (McKay, 2000). It is here that the historical ties of the party
may enable its continued success in the East. The PDS funds 23 *Arbeitgemeinsaften* (AGs: workgroups), to deal
with different interest groups within their constituencies. These local level organizations within the party, a
throwback to the importance of party-organized civil society in the GDR, are run independently from the
party's central structure (McFalls, 1998; Kleinfeld, 1995; Brie, 1995). It seems plausible that this strategy can
play a dual role of attracting new members and voters for the party, and consolidating the party's objective of
nurturing a more 'bottom-up' approach to democracy (Neugebauer and Stöss, 1996; Ziblatt, 1998).

Unemployment was the most important issue motivating voters to choose the PDS in the 1994 elections (Dalton and Bürklin 1996, Gibowski 1995, Krisch, 1996). Support for the party continues to be strongest in the outer areas of East Berlin where the economic benefits of the redevelopment of the old city center and the transfer to the federal seat of government from Bonn to Berlin have not yet created new employment opportunities. The PDS cannot be defined as merely the party of the unemployed; in fact, the PDS is certainly not exclusively a working-class party, nor does it appeal only to those on the lower rungs of the social ladder. It attracts intellectuals and individuals with above-average interest in politics (McKay, 2000). In effect, the PDS is becoming the party of those employed who are concerned about unemployment, a new worry for citizens of the former East Germany. As such, the party also benefits from *Ostalgie,* or East German memories of the good elements of life in the former German Democratic Republic, among which was guaranteed employment (Roth, 1999; Wiesentha, 1997; Zelle, 1998).

Three sets of explanations are usually suggested to explain the post-1990 electoral success of the PDS. First, the PDS vote is characterized as "catch-all" in nature, made up of support of government officials, civil servants, university students, workers and the unemployed of the former GDR. The appeal of the PDS to university-educated voters also holds true in the West, where the PDS did best in districts with a high percentage of the population with a University or *Hauptschule* qualification, and a lower percentage of technical school graduates (Gibowski, 1995). In general, the Eastern electorate is more secular and liberal on social issues (Roesler, 1998; Krisch, 1996; Dalton and Bürklin, 1996; Schmitt, 1995; Kleinfeld, 1995;Gibowski, 1995; Bauer-Kaase, 1994; Rattinger, 1994). As a "catch-all protest party," the PDS poses a challenge to the Western political system by representing dissatisfaction and frustration with the liberal democratic norms shaping contemporary German society (Strom and Mayer, 1998; Oswald, 1996; Roesler, 1998). Established Western parties such as the CDU, who initially had the support of many GDR citizens, are no longer seen as legitimate representatives serving the needs of the Eastern electorate. Protest voting is not the expression of a wish to return to the GDR, but rather an expression of distaste with the harsh realities and uncertainties of capitalist life (Hough, 2000b).

The national election of 1998 set a historic precedent since it was the first time in Germany's history that five parties achieved more than 5% of the *Zweistimmen* and entered the Bundestag. In the campaign, the CDU helped to determine the protest vote niche for the PDS by not only ignoring the geographical dimension to contemporary German politics, but further polarized the electorate by attempting to link the PDS with the negative aspects of Berlin's history such as the building of the Wall (McKay, 2000). The CDU strategy was to mobilize the more conservative voters to vote against the PDS in the belief that a higher voter turnout would weaken the PDS (Krisch, 1996; Dalton and Bürklin, 1996; Kleinfeld, 1995). Instead, the 1998 election demonstrated a solid and expanding appeal of the PDS to the Eastern electorate, reaching 19.5% (Rattinger and Kraemer, 1998). To sweeten the victory, the PDS breakthrough came in a year of the highest voter turnout (82%) since unification (Phillips, 1999).

Since unification, the PDS has seen its support in regional elections in the five Eastern states go steadily upward, highlighting the electoral disunity of the country. A second explanation for the PDS success, political culture, claims that forty years of Communist rule led to different social and cultural norms in the former Eastern state. The socialization process under the Communist regime created a different political culture because, within East Germany, national ideology and identity were closely bound with Communist principles of egalitarianism and a working class culture (Segert, 1998; Mushaben, 1997; Langguth, 1995). Citizens of the former GDR are now searching for a new German identity, having been socialized in that part of Germany where identities were framed in anti-West German sentiment. Howard (1995) argues that East Germans constitute a separate ethnic group, characterized as a self-perpetuating and territorially bounded group, with a shared historical identity and political representation (i.e. the PDS). The identity is often typified by *Ostalgie*, where the past is increasingly romanticized by Easterners as a critique of the *Other*, West Germans. Segert (1998) characterstic this *Ostalgie* as "problematic normalization", where one's sense of identity is tied to a deviant sense of *Other* in order to rationalize the former Eastern identity.

The utilization of regional rhetoric gained a firm foothold in the party ideology of the PDS by 1994, centered on the idea that the mainstream West German parties were ignoring East German 'interests'. Reflecting widespread East German dissatisfaction with the process of German reunification, it also asserted

that the PDS stands as the most authentic representative for East Germans as a regionally distinct culture (Ziblatt, 1998). The PDS used a blend of charisma, personified in its leader Gregor Gysi, and language, that emphasized territorial identity, shared regional history and the social, cultural and economic differences that exist between East and West Germany to appeal to an increasing number of alienated Eastern voters. Importantly, the PDS had more organizational resilience than a typical protest party and its electoral tactics involved more than assuming the mantle of an Eastern protectorate. Preceding the 1990 *Bundestag* election, the constitutional court ruled that the 5% threshold should apply separately to East and West Germany. In response, the PDS focused its campaign solely on the Eastern region, resulting in seventeen PDS representatives in the united German Parliament (Ziblatt, 1998, 18). In 1994, thirty delegates were sent to the *Bundestag* in Bonn, though the PDS got only 4 per cent of the vote but up to 40 per cent of the vote in some Eastern Berlin districts and 20 per cent in Eastern Germany overall (Ziblatt, 1998). In addition, it highlighted the fact that the PDS had established itself as the third strongest party in Eastern Germany (Wittich, 1995).

Prior to the self-identification of PDS party leaders as regional guardians of East German interests (McFalls, 1998), the party was overtly concerned with the notion of "renewed socialism" (Ziblatt 1998). The PDS adoption of its role as defender of Eastern interests had its roots in a "grassroots" organization called "the committee for social justice," of which the PDS chairman Gregor Gysi was a cofounder. As this "committee" lost its political relevance in the years between 1990 and 1994, many of its ideas were co-opted by the PDS to ensure their appeal to the Eastern electorate (Lang *et al.*, 1995). Furthermore, it was only eight months before the 1994 Federal election when "Eastern interests" became the rallying call of the PDS leadership. In effect, the public shift of attitude towards viewing the unification process as colonization (or *Kohl-inization,* after the former German Chancellor Helmut Kohl) by the *Wessies* and the *Treuhandshalt* (the privatization organization that sold off East German state assets) molded the party's new role and purpose as a regional defender by its perceived harsh actions (Ziblatt, 1998).

Since the 1998 federal election, there has been a further shift in the self-definition of the PDS as a regional party. The official party line now claims that they are a legitimate social-democratic party that will appeal to the entire German electorate. However, their electoral adversaries continue to pigeonhole the PDS

as a party with questionable roots, not at all interested in embracing the ideals of the West. However, it is exactly this type of attitude that is seen in the East as Western chauvinism and will continue to define the PDS as the only party able and willing to represent the eastern electorate. By continuing to serve a sizeable group of people within an imperfect democratic system, the PDS is an alternative to voters who would either abstain or support more radical and politically-questionable right-wing parties. The PDS will continue to offer a crucial stabilizing and integrating factor in the East (Ertman, 2000).

A third possible explanation for the role of the PDS is dissatisfaction with the democratic system of government that is increasingly linked to economic performance in post-Communist societies (Bauer-Kaase, 1994). This connection is also seen in East Germany, especially because East Germans place far more importance on social policy and social justice than do West Germans (Eith, 2000). The syndrome of post-unification dissatisfaction for many East Germans resulted from adjustments to the social, economic and cultural challenges of West Germany. Overall, East Germans have experienced an increase in affluence, highlighted by rises in income, retirement pensions and access to goods and services (Segert, 1998). However, income levels in Eastern Germany are still only 73% of those in the West and pensions are approximately four-fifths of a typical West German pension. Economic restructuring has led to a complete transformation of the job market in East Germany, with those who were dependent on labor-intensive, heavy industry suffering most. Productivity in the East still lags behind the West and, with unemployment in the East at 25% overall (it reaches 70% in some areas), a generation of Easterners are "the losers" of German unification. In addition to these tangible disparities, an attitude of peripheralization has developed among a certain sector of the Eastern German constituency. This is not only the outcome of feelings of relative deprivation vis-a-vis the West, but is also due to economic disparities in the East (Segert, 1998). The result is a coalition of people who lost their faith in the old system but have not found their place in the new one. They do not want a return to Stalinist-type party system, but rather mourn together because they have lost their previously-esteemed and secure lifestyles (Von Ditfurth, 1998). Their qualifications and roles as productive members of society have been undermined and they feel like *Bürger zweiter Klasse*, (second-class citizens) and strangers in their own land (Hough, 2000a, 2000b).

Kitschelt's "winners–losers" hypothesis (1992, 1994, 1995) holds that individuals in the former Communist East pay close attention to their personal economic situation when deciding about their vote (See also O'Loughlin *et al.*, 1997 and Rattinger and Kramer, 1998). According to Kitschelt, voting choice in post-Communist societies is driven by prospective and egotistic considerations, while in consolidated democracies, there is a greater level of retrospective voting. Increasing economic development and affluence in former Communist countries induces a general shift of voter preferences toward libertarian, participatory systems. These claims were initially validated by the general acceptance in the former GDR of the liberal democratic model in Germany's first national election of 1990. However, when the expectations did not match reality, a retrenchment towards traditional values and disillusionment with the liberal economic system of West Germany led to an increase in support for the PDS.   The PDS appealed to the losers of market reforms and harnessed the political backlash against economic change, arguing instead for the stability and predictability associated with the past (Ishiyama, 1999a).

A related hypothesis to the "winners-losers" model focuses upon the importance of system performance in determining voter choice; in the East, voters take a more pragmatic approach to democracy, judging it in terms of the comparative performance of a socialist system (Conradt, 1997). Citizens expect to convert their individual resources into economic benefits in the market economy and they look at their location in the market economy in occupational terms to see if it is comparable to their previous employment. This relative status is modified by their general ideological disposition to liberal democracy and their evaluation of the incumbent government (Kitschelt, 1992, 1994; Kitschelt, Dimitrov and Kanev, 1995). The more difficult a population perceives the process of economic transition,, the greater the electoral success of an ex-Communist party (Evans and Whitefield, 1995). The attitudes of East Germans are more closely related to the perceived output of the political system than is the case in Western Germany (Zelle, 1997, 19-21).   In essence, the support of the PDS is "symbolic of the failure of the federal government's dream of reunification"(Gregor Gysi at the Berlin PDS party convention, November 22, 1997, quoted in McKay, 2000, 7). It is those East Germans who lack confidence and trust in the new political institutions who are most likely to vote for the PDS (McFalls, 1998)

Prior to the 1994 national German elections, 84% of PDS supporters felt more like GDR citizens than Germans (Neugebauer and Stöss, 1996). While this can overlap with the idea of economic losers of unification, it could also be that there are distinct strands of support within the PDS support base, one based on the loss of identity, the other on economic loss. From this perspective, the appeal of the PDS is not merely to the "old guard" who are nostalgic for Communism, but equally its defense of the old way of life that offers some stability to those most affected by the complexities of post-unification society. This approach allows conceptual space for both the regional and protest aspects of the PDS party, which cannot be treated as clearly separate definitions. It also offers an explanation of the geographic differences that exist not only between East and West; but also within the East itself.

Data and Methods

Berlin was divided into 23 *Bezirke* (districts) until the municipal reform of 2000 that combined some of the smaller districts. Each of the *Bezirke* has its own council and though the Berlin Wall is now removed, its line marks a sharp contrast between the richer (west) and poorer (east) districts (Figure 1). In the October 2001 election, the conservative party, the CDU, was dominant in the wealthiest neighborhoods (electoral districts in Reinickendorf, Wilmersdorf, Neukölln, Tempelhof and the extreme south –west corner of the city). The Greens were first only in a few electoral districts in the middle of the city (in Kreuzberg), while the SPD dominated most of West Berlin and won a few dozen electoral precincts scattered throughout the eastern districts of Köpenick, Weißensee and Pankow). The PDS was the largest party in almost all of the eastern districts but only a couple west of the former Wall, in the central *Bezirk* of Wedding. See the electoral maps at **http://wahl.ivu.de:8080/hochrechnung/aktuell/nav**.
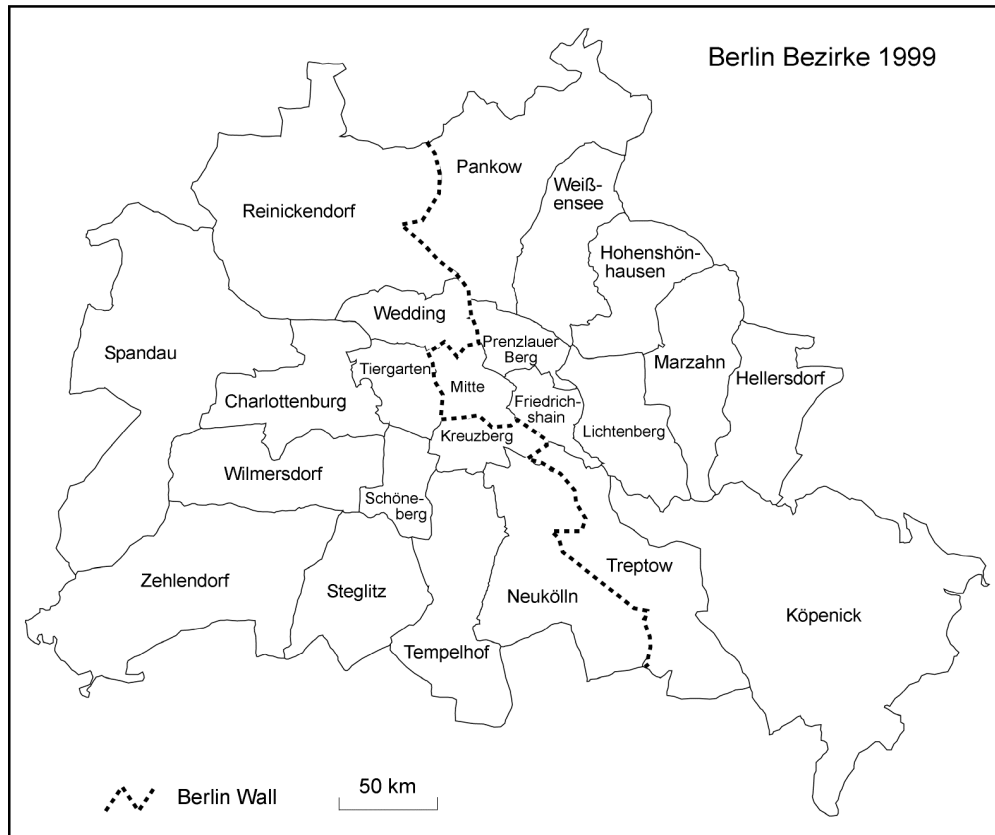
Figure 1 - Locations of the 23 *Bezirke* (districts) of Berlin prior to the redistricting in 2000 that reduced the number to 12 by combining Friedrichshain and Kreuzberg; Charlottenburg and Wilmersdorf; Steglitz and Zehlendorf; Tempelhof and Schöneberg; Treptow and Köpenick; Marzahn and Zellersdorf; Mitte, Tiergarten and Wedding; Hohenschönhausen and Lichtenberg; Pankow, Prenzlauer Berg and Weißensee while Spandau, Neukölln and Reinickendorf remained as single districts.

The 23 *Bezirke* are divided into 78 *Wahlkreise* (electoral regions) and the results for these regions provided the basic data for this paper. We concentrate on the party vote (*Zweistimmen*) rather than the candidate races in the individual 78 regions. As can be seen from Table 1, these two vote percentages are typically very close and though some candidates, like the party leaders, receive a personal vote in excess of the usual party support in a region, the second vote is a better representative index of party preferences. The second major data source for the paper consists of demographic data for the electoral regions but unfortunately, these data are only available for age and gender categories. The third source consists of a large

mail survey (a total of 15936 respondents) at the time of the 1999 election from which we generate regional

level estimates of the support of age and gender groups for the PDS (Bömmerman, 1999).

A comparison of the distribution of the PDS first and second votes in 1999 and 2001 in the four

maps in Figure 2 shows both strong correlations and a diffusion of the PDS zone of dominance. The biggest

difference in the maps is the relative size of the regions of the two votes. In 1999, the number of *Wahlkreise*

with over 40.6% support for the PDS was similar for the first and second votes; by 2001, the number of

Wahlkreise with more than 40.6% for the PDS second (party) vote was dramatically larger than the first vote,

though both showed gains over 1999.   These trends, though only for a two year period, match wider

developments in the PDS diffusion. Early successes came in the form of individual candidates winning in the

single-member constituencies (first votes). Over time, the party as a whole is gaining new adherents, while

continuing to maintain their individual seats and even increase them. In the 2001 second vote distribution,

the PDS gained more than 40.6% in every one of the 32 *Wahlkreise* in former East Berlin and won a further

20-30% of the vote in the older, central districts of the unified capital, the heartland of the Green party

support in the 1990s (Doud, 1995; Lawson, 1998; Ledwith, 2000). More general comparison of the four

maps shows a classic diffusion pattern; the key question after 2001 is whether the PDS can continue to spread

their success to the traditional SPD areas of working-class West Berlin and thus becoming a city-wide party

like their SPD coalition partners.

To estimate the composition of the PDS vote across the 78 *Wahlkreise*, we turned to two procedures

that have been developed to infer individual voter behavior from aggregate statistics and which can generate

small area estimates for the variables of interest. While the voter exit polls are valuable in providing "global"

or city-wide values (e.g., the percentage of women who voted for the PDS), these are not available in a

reliable manner for the individual *Wahlkreise*.   Survey data have only been published for the 1999 election, the

focus of the remainder of this paper.   A total of 116,646 voters were sent a mail survey questionnaire in 124

Stimmbezirke (electoral precincts) across Berlin for a sample of 4.77%. This poll was remarkably reliable as
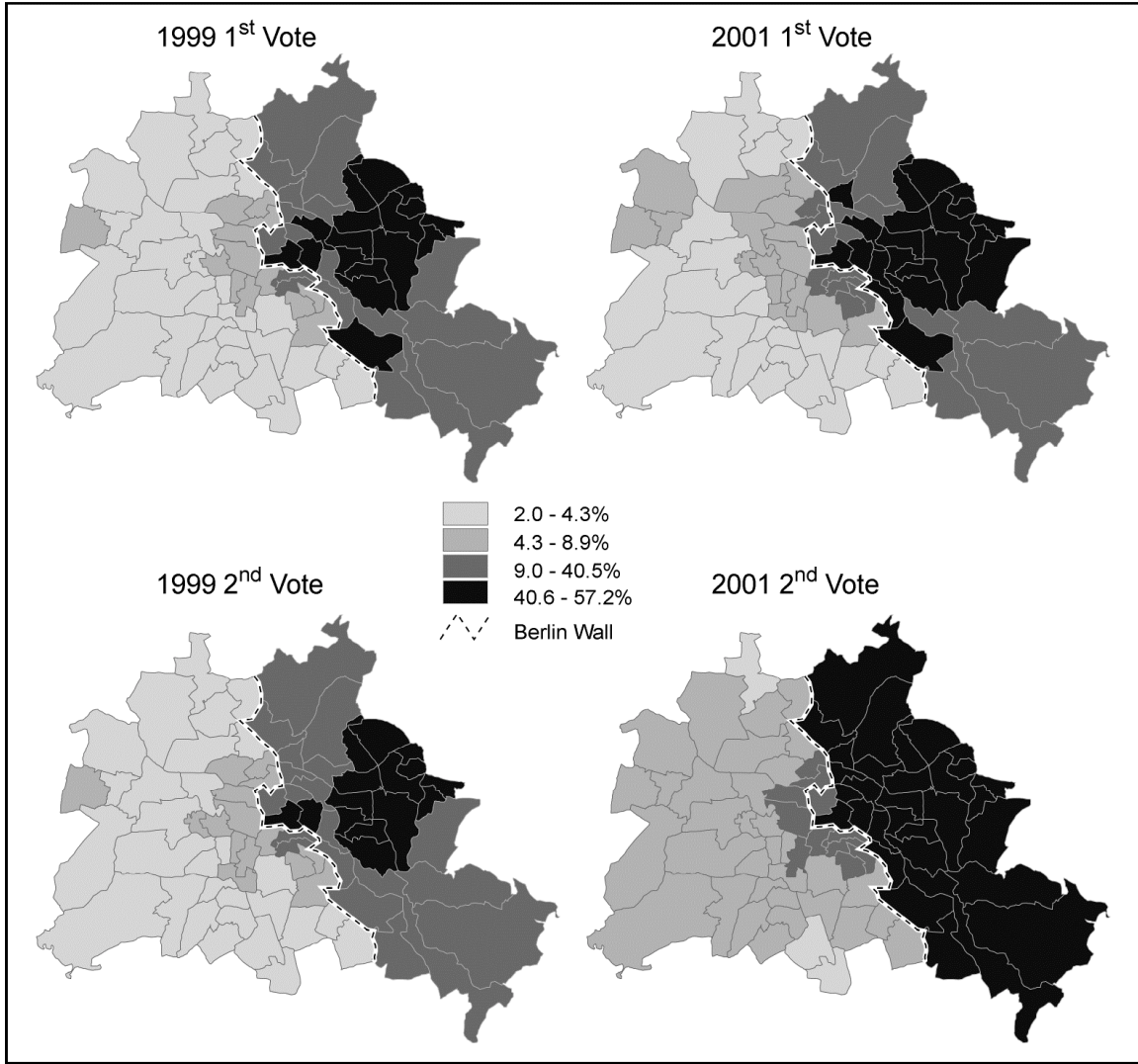
Figure 2 - Distribution of the First and Second Votes for the PDS in the Berlin Landtag elections of 1999 and 2001 by the 78 *Wahlkreise* (election districts).

indicated by the close fit of the polling data and the actual numbers. For example, survey results indicated that 38% of East Berliners voted for the PDS (the actual proportion was 40%) and the respective values for West Berlin were 4.5% and 4.4% (Bömermann, 2001). Since the EMax method used for small-area estimates uses the global survey data, it is imperative that these values stand as an accurate reflection of the electoral preferences.

The first procedure used to generate the *Wahlkreis* estimates is the ecological inference model from King (1997). EzI (ecological inference) has been widely used in political science to estimate vote-splitting, racial bloc-voting, and electoral choices for socio-demographic groups. In geography, the procedure offers great prospects for revitalizing the discipline of electoral geography to allow individual-aggregate analyses and it has been the subject of favorable review by geographers (Johnston, 1998; Fotheringham, 2000; Davies-Withers, 2001) and used to understand the variation of the vote in Weimar Germany (O'Loughlin, 2000, 2002) and Ukraine (O'Loughlin, 2001). Because of this growing familiarity, the method is only briefly summarized here – further details are available in King (1997).

In order to calculate the PDS support in Berlin among older voters (aged 60 and over), we use the proportion of the population over 60 (X_i) and the PDS percentage (T_i) for each geographic unit, in this case, the 78 *Wahlkreise* geographic units of Berlin in 1999. Using King's notation, in the current example, the independent variable, X, is the aged 60 population and the dependent variable is PDS support, T. An identity is used for combinations of the district values for T_i (PDS) and X_i (over 60), $T_i = \beta_i^b X_i + \beta_i^w (1 - X_i)$. The purpose of the EzI modeling is to estimate β^b (the aggregate rate of the PDS vote among the over 60 population for the whole city) as well as the estimates for the individual *Wahlkreise* (78 units in all), β_i^b. Combined with information about the bounds for each district, found by projecting the regression line onto the horizontal (β_i^b, the PDS vote) and the vertical (β_i^w, the non-PDS vote) axes, the EzI method combines two earlier inference methods (King, 1997; see also Figure 4 in this paper). When the bounds on the axes are narrow, the stronger are the chances of a plausible and accurate solution. Reliable estimates for the turnout rate of Kuchma voters in Ukraine were presented by O'Loughlin (2001) using this methodology.

The second procedure, termed EMax, differs from King's in two main ways (Johnston and Pattie, 2000). First, EMax uses the mathematical entropy-maximizing approach rather than a statistical approach. Second, EMax requires additional data that describe global patterns to constrain the estimates further. These additional data are usually obtained from sample surveys. This latter requirement means, in effect, that EMax can be used in fewer circumstances then EzI since public opinion surveys became commonplace only in the

past half-century. Historical studies, such as the composition of the support for the 1930s Nazi party, must rely on EzI for estimates (O'Loughlin, 2002).

The entropy-maximizing procedure produces maximum-likelihood estimates given a set of initial constraints. The EMax procedure is best explained by example. For a fictional district of Berlin with 9 voters, consider the following gender and PDS vote row and column sum constraints:

	PDS	not PDS	
Female	?	?	5
Male	?	?	4
	3	6	

In this example, we are interested in finding the most likely allocation of votes for the PDS, which requires calculating the value of each cell denoted by the question marks. This initial state is referred to as the *macrostate*, where row and column totals are known but the internal cell values are unknown.

The EMax procedure starts from the macrostate and calculates all possible values for each question mark that do not violate the given row and column constraints. In our example, there are four such possible matrices known as *mesostates*:

	PDS	not PDS	PDS	not PDS	PDS	not PDS	PDS	not PDS
Female	0	5	1	4	2	3	3	2
Male	3	1	2	2	1	3	0	4

Since these four combinations are the only possible solutions that satisfy the given constraints, one of them must reflect the actual breakdown of votes for this district. EMax selects the mesostate based on the number of associated *microstates*, where each microstate represents a different distribution of voters. For instance, in the first mesostate, the five female voters can only be allocated one way: all voted for a party other than the PDS. Each one of the four males, however, could have voted for a non-PDS party. Therefore, there are a total of four microstates associated with the first mesostate. For the second mesostate, any of the five females could have cast the one vote for the PDS, yielding five microstates. For the males, any of the four could have cast the first PDS vote, leaving only three to cast the other PDS vote. This yields 12 possible combinations, but since order is not important, these are reduced to six microstates for the males. Assigning

letters to each male voter – *a*, *b*, *c*, and *d* – the PDS and non-PDS voters may be enumerated: (1) *ab*, *cd* (2) *ac*, *bd* (3) *ad*, *bc* (4) *bc*, *ad* (5) *bd*, *ac* and (6) *cd*, *ab*. Combining the five female allocations with the six male allocations produces a total of 30 microstates for the second mesostate. There are 40 microstates associated with the third mesostate (ten ways to allocate the five females and four for the males) and ten associated with the fourth (ten for the females and one for the males). Since the third mesostate has the most possible microstates, the EMax procedure chooses it is the maximum likelihood solution. A more detailed description of the EMax procedure is found in Chapter 5 and Appendix 3 of Johnston (1985)

This example above, however, only uses two constraints, the row and column sums as in King's EzI method. To increase the accuracy of the results, EMax requires an additional sum over all districts in the study area to obtain its estimates; it generates these numbers from the survey data, in this case, the ratio of men (and women) who voted for the PDS. EMax applies the same maximum likelihood procedure as in the example, but ensures that none of the mesostates violates the added global constraints. Since we are interested in who voted for the PDS not just in one district, but for each of the 78 *Wahlkreise* of Berlin, the above example can be extended by including row and column sums for each district, and global sums from Berlin-wide survey data. The three sums required are thus (i) the votes for the PDS and for all other parties within each of the 78 *Wahlkreise*, (ii) the voter turnout by gender for each *Wahlkreis*, and (iii) the *Wahlkreis* totals of PDS and non-PDS votes by gender for all of Berlin. Note again that items (ii) and (iii) require additional information not used by King's method. Item (iii) can be derived directly from Berlin survey data but item (ii) must be estimated by performing an additional EMax calculation since no such turnout data by gender are available for each district. The sums for this additional EMax procedure are (i) the voter turnout for each district, (ii) the number of registered voters by gender, and (iii) the citywide turnout by gender. Again, item (iii) is available from the survey data. The estimated results from this EMax calculation were then used as input to the second estimation. The implementation of the EMax procedure uses an iterative process to estimate the results. It terminates after the maximum number of iterations are complete or when the threshold parameters are met.

The same double EMax technique was also used to determine the spatial distribution of PDS support by age. Citywide polling data (Bömermann, 2001) provided total turnout by age group (18-34, 35-59, 60+) for the first EMax calculation, and *Statistisches Landesamt Berlin* (1999) provided total PDS votes by age for all of Berlin. Though this double EMax technique introduces additional error, the aggregate results of the procedure are very similar to the survey results, with EMax estimates within two percent of survey results (Table 3). In order to get the global input indexes for the EMax, the values from the postal survey were recalculated by weighting the disaggregated group values by the number of voters in each age group. This weighting produced estimates of turnout for the 18-35 age group of 52.32%, for 35-60 years of 67.23%, and for over 60 of 75.10%. Similar weighting adjustments were made for the PDS vote for the same age groups which yielded city-wide estimates of 19.2% support for the party among 18-35 year olds, 19.9% for the 35-60 year olds, and 15.6% for those over 60 (Table 3).

Table 3. EzI and EMax Estimates of Percent Vote for PDS and Percent Turnout -- by Age and Gender

Source	Vote	Age 18-34	Age 35-59	Age 60+	Female
EzI 1999	1st vote	8.3	30.8	5.5	3.9
	2nd vote	11.5	4.4	5.4	4.1
	2nd vote East	21.6	62.9	38.2	61.1
	2nd vote West	14.0	4.0	2.8	7.2
EzI 2001	1st vote	12.2	33.1	6.8	7.2
	2nd vote	18.4	34.9	11.1	34.7
EMax 1999	2nd vote	19.5	19.5	15.9	17.7
	2nd vote East	37.8	43.2	37.8	39.7
	2nd vote West	4.3	5.0	3.7	4.2
Exit Poll[a] 1999	1st vote	21.8 [b]	21.9 [c]	16.1	18.0
	2nd vote	19.2 [b]	19.9 [c]	15.6	17.6
	2nd vote East	33.4 [b]	40.8 [c]	39.0	37.8
	2nd vote West	5.7 [b]	5.7 [c]	2.4	3.5
Turnout by Age groups (survey)		52.3	67.2	75.1	66.2

[a]Source: Statistische Landesamt Berlin exit poll results 1999
[b]Weighted average of 18-24 and 25-34
[c]Weighted average of 35-44 and 45-59

Ecological Inferences of Turnout and PDS Vote in Berlin, 1999

One of the major drawbacks to the widespread use of the entropy maximizing methods is the limited availability of the kinds of polling data that are needed to "drive" the method (Johnston and Pattie, 2000). Berlin is a good test of the respective values of the two ecological inference methods. We can compare the EzI estimates to the survey estimates for the whole city (global estimates) and we can correlate and compare the individual estimates of the two methods for the 78 *Wahlkreise*. We are thus making a double comparison - of the similarity of the estimates of the two methods and of the methods to the survey data. Of course, this latter comparison is valid only if the survey data are accurate and this appears to be the case as the close correspondence with the actual voting statistics indicates (Bömermann, 2001).

The summary ecological estimates are presented in Table 3, with the survey data also presented for comparison. Since the survey data are only available for 1999, the EMax estimates can only be presented for that year and similarly, the EzI estimates for 2001 cannot be verified by survey data. It is clear that EMax provides a much better global estimate for the 1999 election than EzI, as might be expected from the fact that the global survey results are used to constrain the EMax values. The EzI values are worrying, however, since the estimates are off by more than 10% for the groups of interest. By contrast, the EMax values are within 2-3% of the survey results. While no check can be made on the estimates of the turnout of the PDS supporters from the survey data (it is impossible to calculate a reliable value using the turnout estimate which are only available for age groups, gender, and location in East or West Berlin), the PDS turnout support is lower than the citywide average (65.6%). However, McKay (2000, 7) notes that there tends to be a high correlation between strong support for the PDS and a higher than average turnout.

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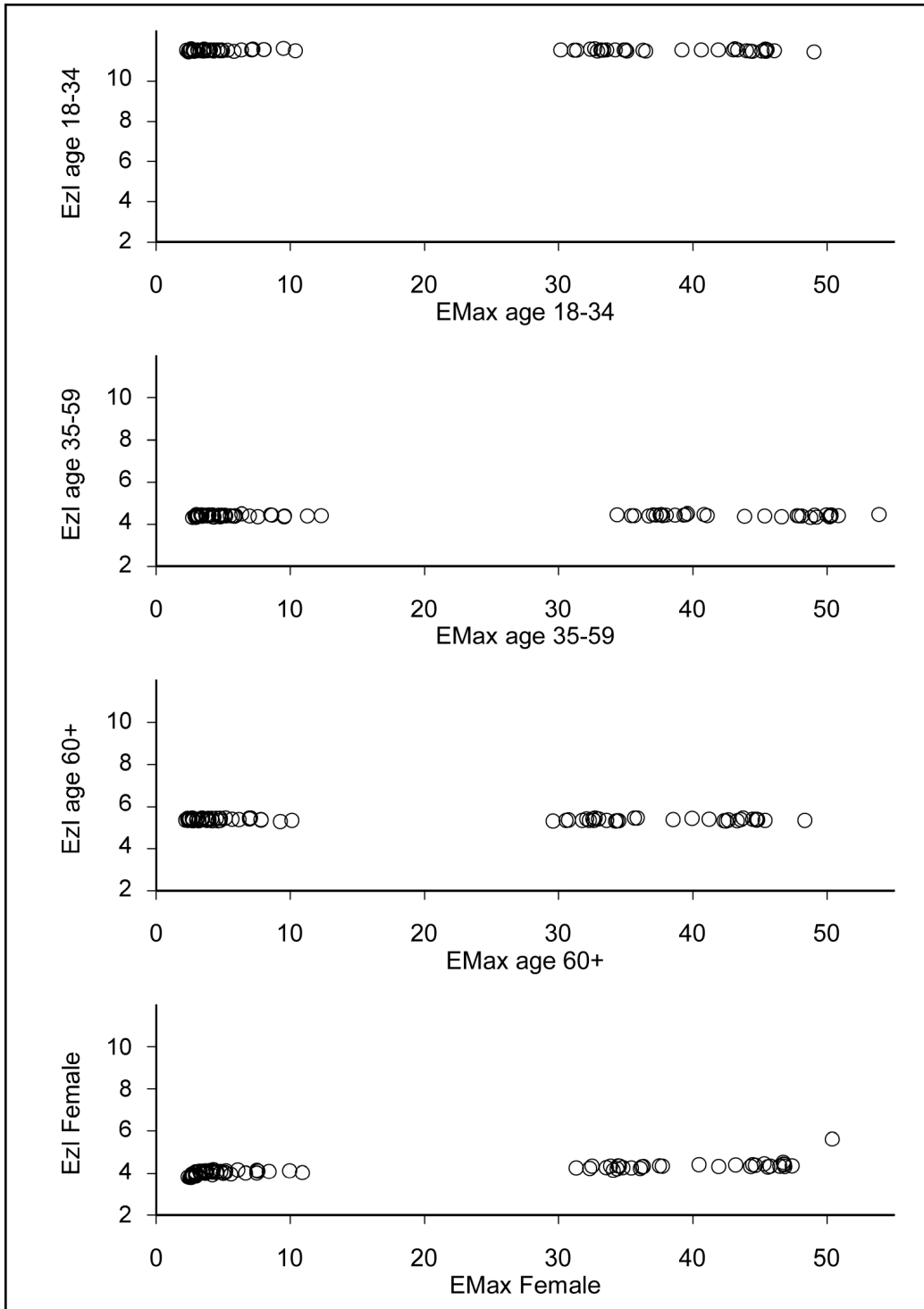
Figure 3 – Comparisons of the initial ecological inferences of the PDS support (%) among different demographic groups in the 78 *Wahlkreise* (election districts) of Berlin, using entropy maximizing (EMax) and King's ecological inference method (EzI).

To try to understand why the EzI estimates are so far off the EMax values and the survey results, we probed their distributional properties. Simple plots of the two sets of ecological estimates (Figure 3) indicates the nature of the problem. In all four of the plots, while the EMax estimates show a dramatic range (from 2% to over 50%) reflecting the actual performance of the PDS in the 78 *Wahlkreise* of Berlin, the EzI estimates are essentially invariant across the city, showing only a few percentage points difference between East and West Berlin. This result is clearly inaccurate since the maps in Figure 2 show a huge geographic spread of values, with the former Wall marking a severe electoral break in the city.

Clearly, EzI does not provide reliable estimates for either the global values or the values for the electoral sub-units in Berlin. To try to understand why this is the case, we examined the graphical plots that are part of the optional output from the EzI program. Figure 4 displays the key indicators; a close examination of the graphs shows both the inadequacies and benefits of King's ecological inference method. The basic distribution of the data used to make the inferences is shown in Figure 4a. In this case, the aim is to estimate the ratio of voters age 60 and over that supported the PDS. The size of the circle is proportional to the number of voters in each *Wahlkreis* and clearly, the difference between the districts in East and West Berlin is seen in the two separate clusters of high and low PDS support. By contrast, the variation in the distribution of the old population in the two parts of the city is not nearly so great. The problem for the EzI estimation can be seen in the lines on the graph, indicating the maximum likelihood estimates (for the relationship of age over 60 and the PDS support). The middle line is the expected value of PDS vote percentage given the ratio of the over 60 population and the other two lines represent the 80% confidence intervals (King, 1997, 206). Only a small number of values fall within the confidence bands as the maximum likelihood estimation procedure fails to pick up the bi-modal (east and west Berlin) nature of the distribution.
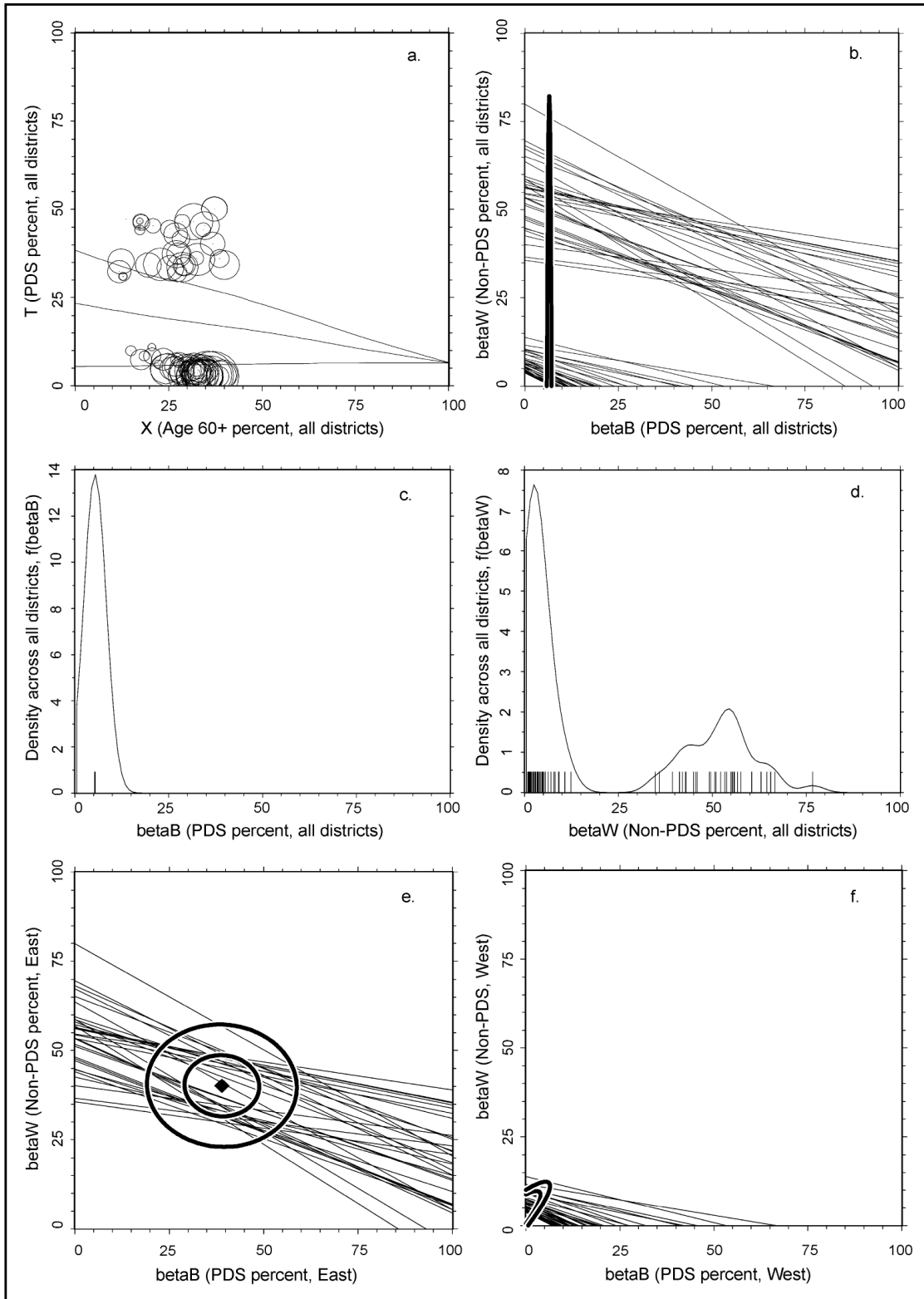
Figure 4 – Distributional Properties and Estimates of the Ecological Inferences of the PDS Vote in Berlin 1999. All the graphs are generated in the EzI program (King, 1997).

In Figure 4b, all possible combinations (tomography lines) of each pair of values (for PDS and non-PDS support of the over 60 population) are plotted; the posterior distribution of the quantity of interest is also shown. It is clear that aggregation bias is present (the correlation between the district parameters and the independent variable, age over 60). The bounds (where the tomography lines cross the axes) are very wide, making accurate inferences difficult. Further evidence of the binary nature of the Berlin data is provided in Figures 4c and 4d that show the density plots of the estimated (inferred) district values for the PDS and the non-PDS votes. While the PDS distribution is peaked and narrowly bounded around a mean of 5.4% (Figure 4c), the bi-modal nature of the non-PDS vote shows that this distribution (Figure 4d) is not the antithesis of the PDS vote, as it should be. The peaks of this distribution at 5% and 55% show that this EzI modeling is flawed and that alternative procedures are needed to generate reliable estimates for the city as a whole and for its 78 constituent districts. King (1997, Chapters 9 and 16) offers procedures to deal with such distributional issues, including non-parametric estimation. In the case of Berlin, however, it is obvious that the distributional problems are the result of the bifurcated electorate in the city and it is evident that this key piece of information should be used to derive the ecological inferences.

Figures 4e and 4f present the results of the EzI modeling using separate models for the two parts of Berlin. Of course, the division of the city for this modeling reduces significantly the number of cases available – 32 for East Berlin and 46 for West Berlin. The tomography plots with the contour lines contain the points with the highest probability of containing the true estimates for each part of the city. The black diamond shows the locations of the most likely values. The respective estimates of the support of the over 60 population for the PDS are 38.2% for East Berlin and 2.8% in West Berlin, which are a lot closer to the "true values" (from the survey data of 39% and 2.4% respectively) than the initial pooled citywide estimates. The Berlin example has clearly shown the importance of careful consideration of the distributional qualities of the data and the requirement that the researcher using EzI be familiar with the characteristics of the data, as King repeatedly stresses in his book.

A final check on the validity of the EzI estimates is a plot of the values for the 78 *Wahlkreise* against the estimates generated by the EMax procedure; the plot is presented for East and West Berlin separately in Figure 5. Johnston and Pattie (2001) have shown how a comparison of the two sets of estimates, one derived from a statistical simulation and the other from mathematical assignment, can offer creditability to both methods if they correspond closely. As can be seen in Figure 5, the correlation is very close for West Berlin (all values very close to the diagonal) with a r^2 value of .99. In East Berlin, also, with a wider spread of values, the correlation is high ($r^2 = .81$) though there is more scatter around the diagonal. We conclude that the bifurcation of the Berlin data set, suggested by the distribution plots of the initial EzI model and the evident indications of aggregation bias, was the correct modeling option since the second set of estimates match closely both the global city estimates (from the survey data) and the local estimates (from the EMax proportions). Like any estimate, there is clear variation around the EzI numbers and though these are maximum likelihood estimates, they are not infallible. As King (1997) notes, it is always valuable to check the EzI estimates to "true" values if they are available. While absolute truth is an elusive quality in survey data, the size and representativeness of the October 2001 mail sample in Berlin suggests a close fit to the actual numbers. The recalculated EzI values match the survey data very well. Unfortunately, such survey results are not available for the smaller geographic unit of the *Wahlkreis* and so, the only check available at this scale is against the EMax values.
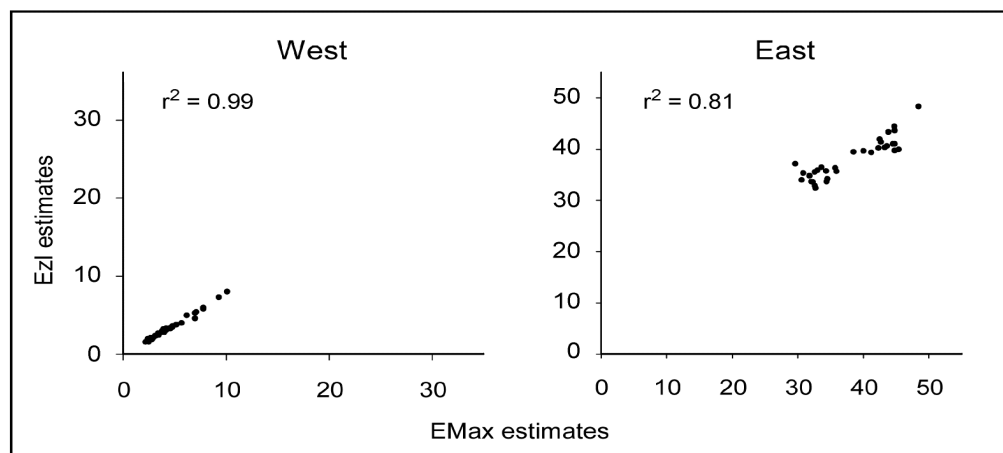
Figure 5 - The Relationship between the EzI and EMax Estimates of the PDS Vote among Voters aged 60 and Over, Berlin 1999.

The Geographic Distribution of the PDS Support in Berlin

Having demonstrated the reliability of the EzI and the EMax estimates for Berlin in 1999, we turn now to the distribution of these values across Berlin's districts, paying close attention to the effects of the division of the city along the Wall and to the clustering of values in certain parts of the city. While both sets of ecological estimates could be used in this exercise, we used the EMax values, except in the case of the turnout estimates which could only be derived using EzI.

In examining the political geography of the PDS vote, we turn to three standard tools of spatial analysis – cartographic displays, Morans I index and the G_i^* statistic. Recourse to these tools is growing quickly and with the integration of statistical models with computer mapping packages, it is expected to grow even faster (O'Loughlin, 2002). The global clustering of the estimates are summarized by the Morans I values and the associated Z-values in Table 4.[1] It is evident that the PDS vote is strongly clustered in Berlin in both 1999 and 2001 and that there is very little difference in the levels of concentration of the first and second vote. The distributions of the votes in Figure 2 anticipated this result, especially since the former Berlin Wall still acts as a major dividing line in the political culture of the city.

**Table 4.** Row Standardized Moran's I for PDS Vote and Turnout

	PDS vote	Moran's I	Z-Value
1999	1st vote	0.8060	11.7428
	2nd vote	0.8052	11.7307
2001	1st vote	0.8292	12.0759
	2nd vote	0.8319	12.1134
2nd vote 1999	Age 18-34 EMax	0.8043	11.7189
	Age 35-59 EMax	0.8068	11.7540
	Age 60+ EMax	0.8040	11.7133
Turnout of PDS Voters		0.471	6.937

The ancillary question to the clustering of the PDS vote is whether there is a similar trend in the estimates of the ratios of the various age groups that supported for the PDS. Based on the EMax estimates, it is clear from the Morans I values in Table 4 that the level of clustering is very similar or stated another way, the geographic clustering of the age components of the PDS vote are consistent. It appears to make little difference which socio-demographic component of the PDS support is examined. All show a strong concentration of high values in the same region of East Berlin and low values in the west of the city. In this Berlin example, geography clearly outshines any socio-demographic explanation for the variation in the support of the PDS.

While Morans I provides an effective summary of the overall level of clustering, it is not capable of distinguishing the nature of clustering. Is the high value of the index the result of one large concentration or multiple smaller ones? In order to distinguish between these possibilities, we use an index of local association, the G_i^* statistic.[2] Mapping these G_i^* values for each of the 78 geographic units in Berlin clearly shows the core of the PDS support and the changes that occurred between 1999 and 2001 (Figure 6). The most significant positive values (associated with similar values in contiguous *Wahlkreise*) are found in the same districts in 1999 and 2001, predominantly in the *Bezirke* of Marzahn, Lichtenberg and Hohenschönhausen. These districts were predominantly working-class districts in the Communist years and have not yet seen the kind of improvements that have characterized the central parts of the former East German capital (Cochrane and Jonas, 1996; Cochrane and Passmore, 2001). Around this core of highest support, most of the other voting districts in East Berlin also show highly significant values. Only in the extreme northern district of Pankow and in the neighborhoods along the former Wall are there zones of non-significant G_i^* values. It is in these regions that gentrification and re-development is proceeding fast, transforming not only the streetscape but also, changing the population composition of the increasingly-richer zones (Krätke, 2001; MacDonagh, 1998; White and Gutting, 1998). In West Berlin, the G_i^* significance values are defined by the similarity of low PDS percentages to similar values in the surrounding districts. Between the two zones of significance is central Berlin, the districts along the former Wall and the historic center of the city that was

built-up by the mid nineteenth-century. These are among the most dynamic in terms of population change and mixed in demographic composition (Cochrane and Passmore, 2001). If the PDS is going to expand and grow beyond its East Berlin core, it is these neighborhoods that offer the best possibilities where the PDS will be competing for voters with the SPD and the Green party in future elections.
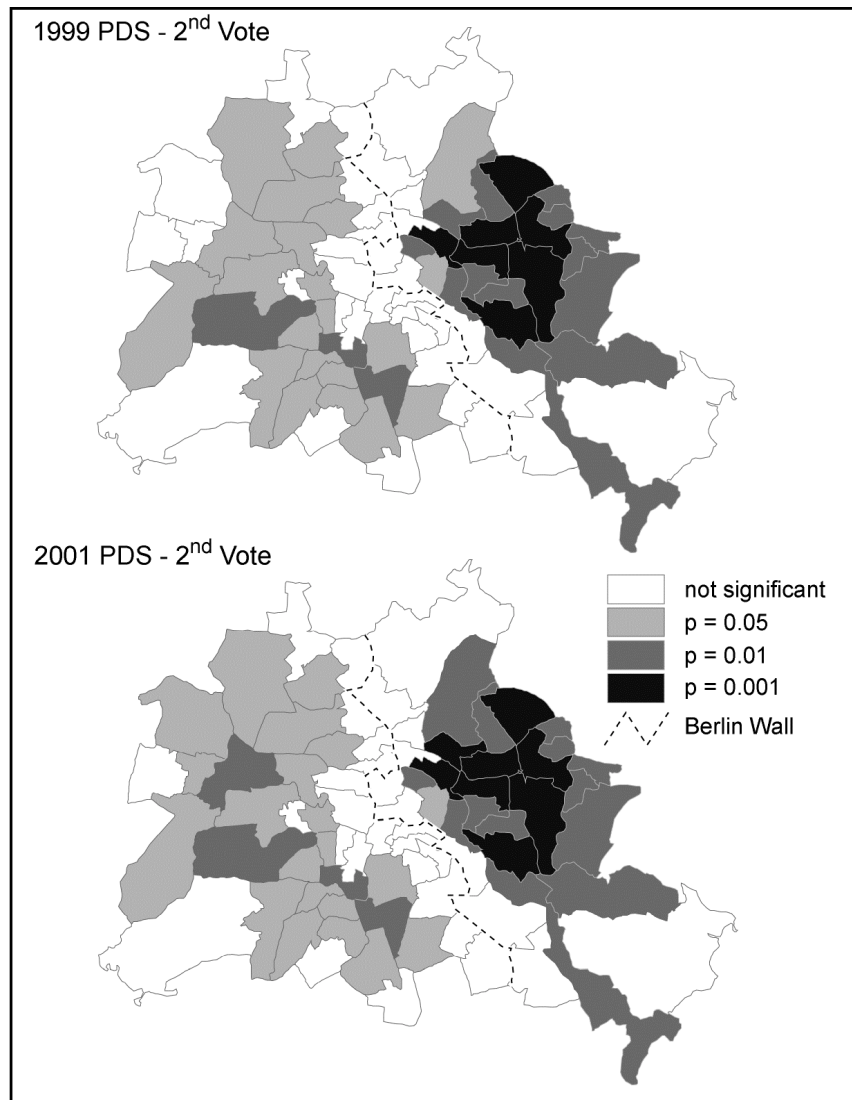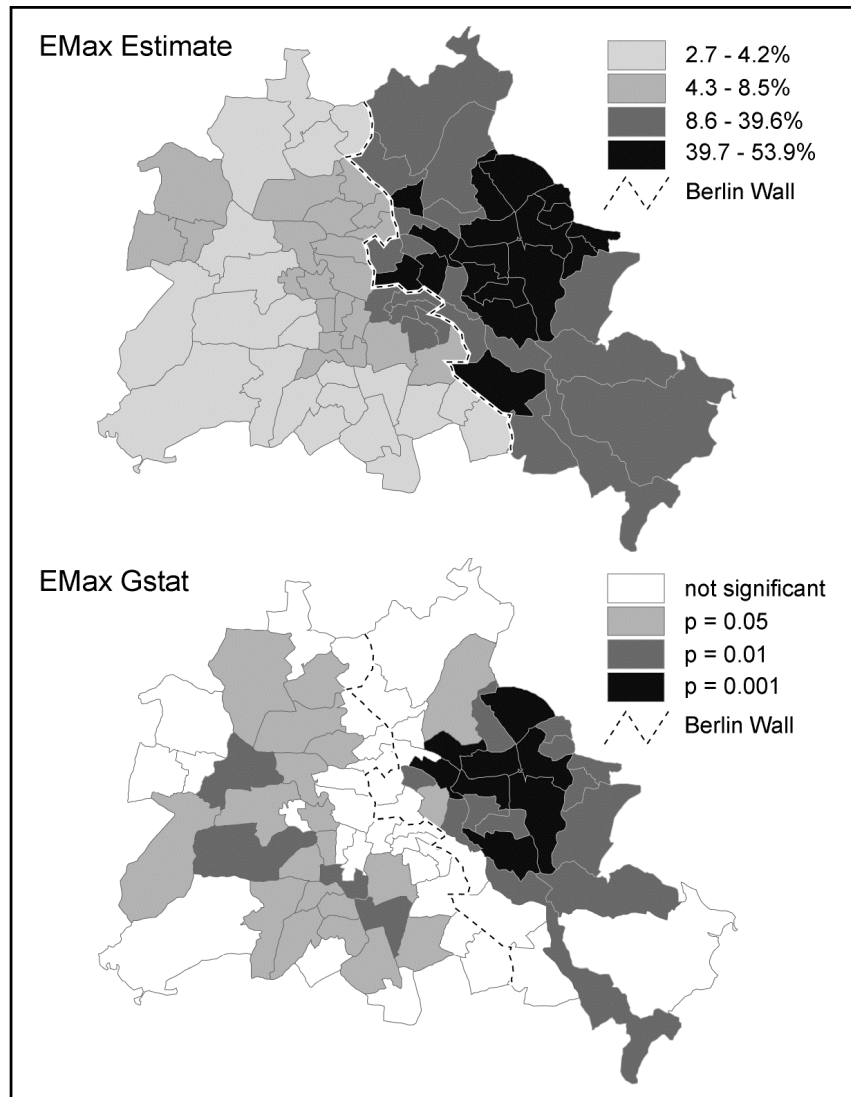

Figure 6 - Distribution of the G_i^* Indexes of the PDS Vote Percentages by *Wahlkreis* in Berlin, 1999 and 2001.

The composition of the PDS vote can be examined using the EMax estimates of the level of support by age group. The survey results in Berlin showed that the PDS gained more support from older voters in

East Berlin (31.6% of those aged 25 to 34 compared to 39% for those age 60 and more) and from younger voters in West Berlin (6.0% for 25 to 34 year olds and 2.4% for those 60 and older) (Bömermann, 2001). Gender differences were tiny (they are not examined further) and were dwarfed by the geographic difference across the former Wall. In the East, younger women were more supportive of the PDS but after age 45, men gave slightly more support to the party. As in most democracies, turnout increased with age for both genders in both parts of the divided Berlin.

Mapping both the estimates and the G_i^* statistics for the estimates allows a consideration of the differential character of the PDS appeal across the city. While Figure 7 shows the estimates for the 35-59 age group (the largest age-defined voting block in the city), the maps for the other age groups are very similar and are not shown here. In approximately half of the *Wahlkreise* in East Berlin in the 1999 election, the PDS received more than 39.7% of the vote of the middle-aged population, significantly higher than their overall ratio in the city (17.7%). It is clear from the maps in Figure 7 that the more economically-deprived regions of the East are where the party does best. Not only is the PDS a regional-protest party, claiming to represent all Easterners, but it also gains added support from the poorer segments of the East German population, attracted by its leftist ideology and its historical claim to voice the interests of the working-class (McKay, 2000; Segert, 1998). In contrast to the core support in the East is the very weak support in the richest parts of West Berlin where the party received less than 5% of the vote in many voting districts. The G_i^* map in Figure 7 is very similar to those of Figure 2 and indicates again that the PDS vote does not vary as much within the socio-demographic categories (by age group, by gender, by education, by income) as it does across the former Berlin Wall.

The dramatic importance of the geographic divide in Berlin compared to the small differences between the usual socio-economic categories is further illustrated in Figure 8. Unfortunately, socio-economic data are not available for the 78 *Wahlkreise* and we had to turn to the income data from the micro-census that was conducted in Berlin in 1995 (*Statistisches Landesamt Berlin*, 1996) and social welfare data collected yearly by

Figure 7 - Distribution of the EMax Estimates of PDS Support among 35-59 Year Old Voters and G_i^* Indexes by

Wahlkreis in Berlin, 1999.

the *Statistisches Landesamt*. These data were reported for the 23 *Bezirke* of the city (before the municipal

reform) and by matching the *Wahlkreise* EMax estimates of the young voters (18-34 years old) to the *Bezirke*,

e were able to develop the trellis plots of Figure 8. (Trellis graphs are conditioning plots with one or both

axes further divided to illustrate key data relationships; see Chambers *et al.*, 1983). On these graphs, the small

circles indicate the respective values for the 23 Bezirke (see Figure 1 for their locations and boundaries) and

the line indicates the loess curve. (Loess is a technique that uses non-parametric regression procedures and is

widely used in graphics visualizations. It fits a function of the predictor variables in a moving fashion that is analogous to a moving average in a time series. We used the S-Plus statistical package for the modeling; see Cleveland, 1993 and Venables and Ripley, 1997). Loess modeling has the advantage of summarizing non-linear relationships to highlight general trends. The income and welfare categories chosen here are for illustration and do not cover all possibilities but their display clarifies the divisions of the city.

In the highest income category (monthly household net income of more than 3000 marks (approximately $2000), it is evident that West Berlin has more richer neighborhoods (bottom graph of Figure 8). In these areas, where about 40% of households have such high incomes, the PDS gained less than 5% of young peoples' support. Since there are no comparable rich neighborhoods in the East, a direct comparison cannot be made. However, for the districts with less than 20% of the households in the high income category, the PDS gained 5-10% of the vote among young people in the West and 35%-50% of the vote in the East. In the middle income category (1800-2000 German Marks), the two parts of Berlin can be readily compared. In a typical district in the West with 20% of households in this income class, the PDS gained about 7% of the young voters support; in the East, the respective ratio was about 45%. Of course, we cannot contribute direct causality in this case to income since we are dealing here with aggregate categories and cannot infer to individual voters. For the plots for PDS support against "Sozialhilfeempfänger" (social welfare recipients), data were collected by *Bezirk* (www.statistik-berlin.de/ pms/2b5/pms-2b5.htm). The trellis plots show a clear trend for West Berlin - as the ratio of social welfare households in a district increases, the support of young voters for the PDS increases. (See the top left graph). In this sense, this relationship is similar to the expected pattern for a democratic Western society. In East Berlin, by contrast, where the ratio of welfare recipients is lower, the support of young voters for the PDS is not related to the ratio of welfare households in the district population. It remains 5-10 times higher than in comparable districts in West Berlin.
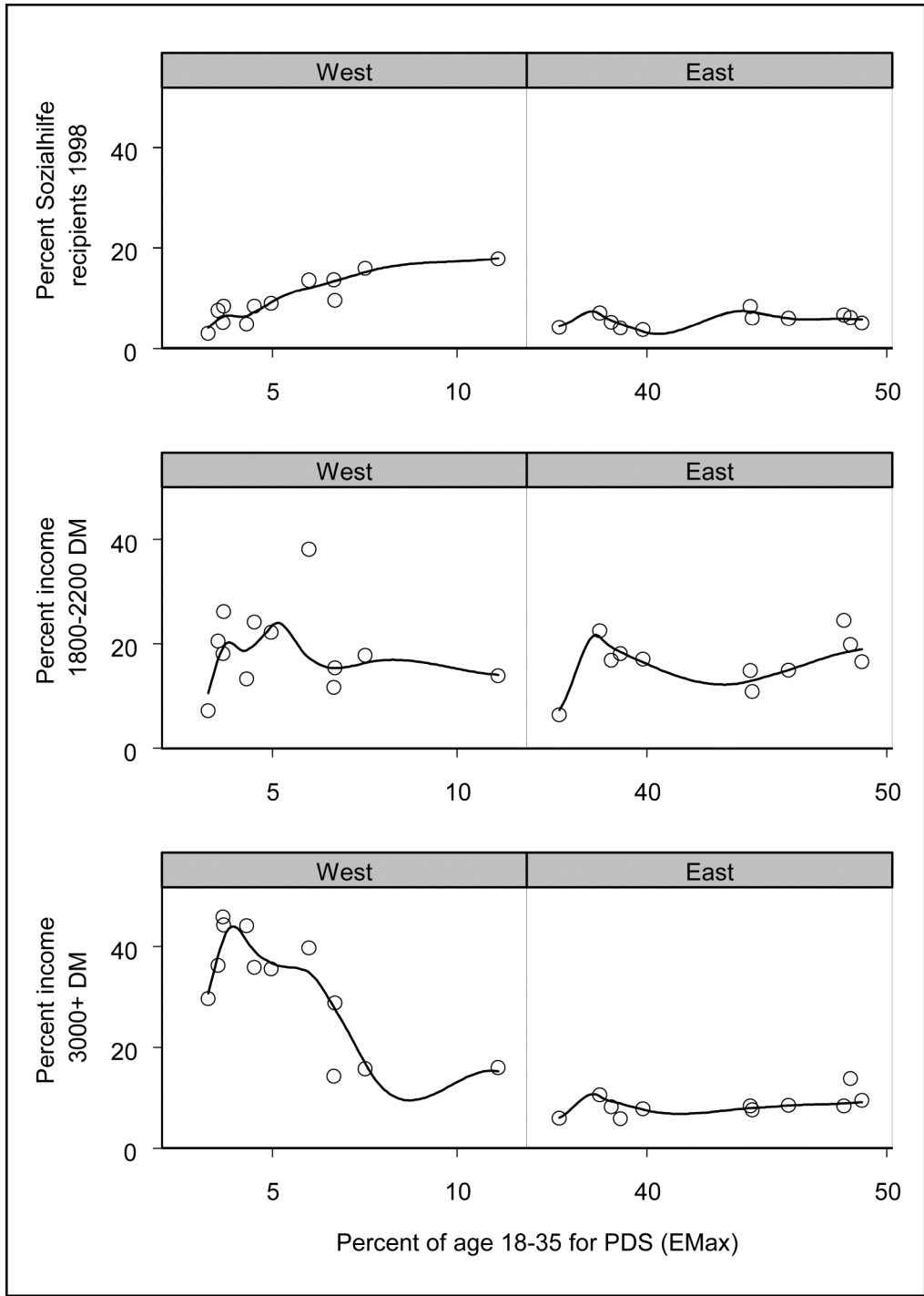
Figure 8 – Trellis Plots of the EMax Estimates of PDS Support among 18-35 Year Olds by *Bezirk* in Berlin, 1999.

These trellis plots for Berlin are highly unusual for a Western democratic election. They demonstrate

clearly that party support is not related to neighborhood income levels but, instead, is determined by the

location of the household, either west or east of the former Wall. Though geographers have claimed for decades that a voter's location in the urban fabric is a small but important part of the explanation of the electoral choice, the example of contemporary Berlin clearly shows that it can be the most significant factor - far exceeding any of the usual socio-demographic explanations. While we are not arguing that Berlin represents any kind of typical scenario for the future, it is perfectly clear that the legacy in the city emanating from the Cold War division is still dominant in the electoral landscape of the PDS, and by extension, to the other parties. As German electoral politics adapts to the conditions of the post-Wall world, the speed with which this electoral canyon is filled will be a good indicator of the resumption of normal Western-style electoral politics.

The final analysis reports the result of the EzI estimation of the turnout of the PDS voters. In this modeling, the T variable (the ratio we wish to calculate) is turnout while the X variable (used to make the calculation) is the PDS 1999 and 2001 second vote. We had to resort to EzI because no citywide estimates are available from census data for the relative turnout of PDS supporters and non-PDS voters. For the city as a whole, we estimated that the turnout of PDS supporters was 54.1% in 1999 and 55.5% in 2001, compared to citywide averages of 65.6% and 68.2% respectively. Turnout since the unification of Berlin has been consistently lower in the eastern half of the city, the location of the PDS core supporters. The lower turnout partly reflects a disillusionment in the former GDR with the nature of the German political system (Segert, 19989). It has the effect of reducing the potential PDS membership of the state parliaments and the Bundestag and suggests that a larger pool of PDS voters might be mobilized to go to the polls.

The geographic distribution of the turnout of PDS voters in Berlin is shown for 1999 and 2001 in Figure 9. Some voters in core PDS areas will not vote because they think that the party is mobilizing its voters; in areas with few PDS voters, their supporters might be more mobilized to vote than the average voter in these neighborhoods. In Figure 9, parts of East Berlin showed more than 60% turnout in 1999 but other *Wahlbezirke* had PDS voter turnout as low as 50%. By 2001, the turnout of PDS supporters increased in most districts and nine *Wahlkreise* in West Berlin showed significantly more than average PDS turnout. It is in the older and poorer parts of East Berlin and the richest parts of West Berlin that the PDS voter turnout

remains lowest. Like most turnout displays, the maps in Figure 9 correspond to income for East Berlin (lower income neighborhoods have lower turnout) but the relationship becomes more complex for West Berlin where the special character of the PDS party supporter defies the usual expectations.
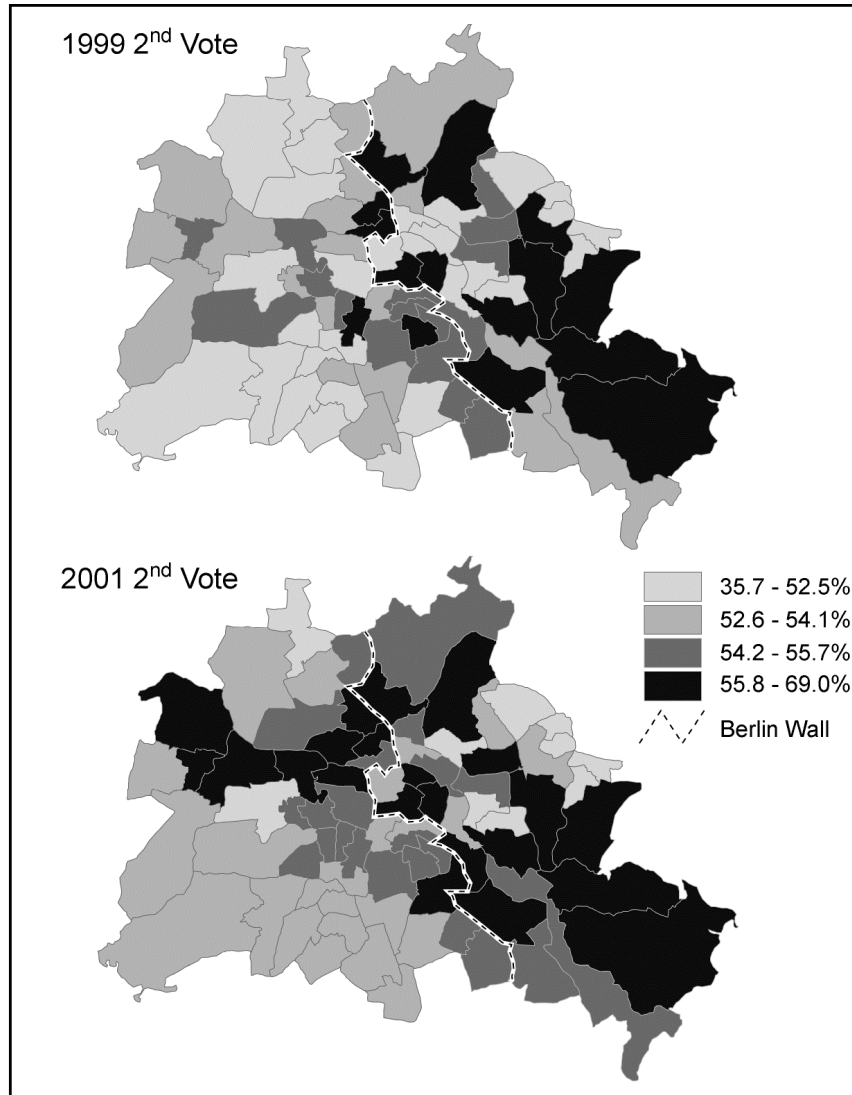
Figure 9 - Distribution of EzI Estimates of the Turnout of the PDS Supporters by *Wahlkreis* in Berlin, 1999 and 2001.

Data limitations prevent a more complete analysis of the socio-demographic components of the PDS vote in Berlin. The lack of adequate census data for the small areal units is especially discouraging since it precludes the fitting of ecological inferential models for groups defined by educational attainment, housing status, and occupation. Nevertheless, within the limitations of existing data, we have shown clearly that the

division of the city into its eastern and western sectors along the line of the former Berlin Wall far surpasses any compositional explanation of the vote for the PDS. Depending on which side of the geographic divide they sit, different groups come together to vote in approximately the same proportion for the party. Old and young voters in West Berlin are much more alike than their age counterparts on the other side of the former Wall. After a decade of elections to state and federal parliaments, this divide is not easing and is strengthening in some ways as the dominance of the PDS in the eastern half of the city grows.

Conclusions

This geography of the PDS vote in Berlin shows that "die Mauer in den Köpfen" is still a reality in German elections. In his 1991 poem, "Die Mauer" (The Wall), Reiner Kunze (1998) anticipated this development - "Als wir sie schleiften, ahnten wir nicht, wie hoch sie ist in uns" ("When we tore it down, we did not guess, how high it is in us"). At the national level, the growing support of the PDS is challenging the two main parties, the Christian Democrats and the Social Democrats, to try to hold onto the eastern support that they worked assiduously to cultivate in the aftermath of the unification in 1990. If either party loses its relative standing in the east to the PDS, its claim to be a national party will be hollow. After a decade of unification, there is little sign that the large electoral and ideological differences between East and West are ebbing. In fact, one could argue that they are magnifying as the PDS goes from strength to strength on the basis of an appeal that remains partly ideological (left-wing) and partly regional identification. In its September 2002 electoral campaign, the party is using slogans such as "That no one loses is the aim", "New jobs – the basis for social equality and readiness for the future", and " From Germany's edge to Europe's middle – East Germany needs a new beginning", mixing a left-wing appeal with a regional advocacy. It is running candidates in 13 single-member constituencies in the former West Germany, as well as 38 in the former GDR; the party is expected to get party-list seats by exceeding the 5% national hurdle and will almost certainly increase its current representation of 37 in the Bundestag. On the basis of public opinion polls, the

PDS is predicted to gain about 6% of the German-wide vote in the September 2002 federal elections (*Die Welt*, 26 June, 2002).

Berlin is a city undergoing dramatic change, in its economic profile, in its streetscapes, in its international linkages, and as a new national center of globalization in Germany. Unlike other east European countries, where former Communist parties were devastatingly tainted by their behavior during the Cold War division of the continent, the PDS has managed to re-create itself as a protector of regional interests and as the voice of those who have been negatively affected by the incorporation of the socialist East into the capitalist West. No other former Communist country disappeared like the GDR so there cannot be any certainty that a similar party could not have arisen elsewhere. Perhaps the closest parallel to the PDS is the Lega Nord in Italy which has advocated the economic interests of the North of the country in the aftermath of the shake-up of Italian politics in 1992. But Italy has not undergone the massive economic and political shifts that have characterized the former GDR. In Berlin, the post-Communist changes have been dramatic and the contrasts greater than elsewhere because of the proximity of the Western part of the city and the huge redevelopment projects in the center.

Using new methodologies of inferring individual behavior from aggregate data, we have shown in this paper that the usual compositional factors that political scientists rely on to understand electoral behavior are severely limited for the PDS experience in contemporary Berlin. The party's appeal is highly focused on one part of the city and cuts across all demographic groups in that region. By contrast, its appeal in the West is tiny, though it is showing signs of penetrating previously-strong areas of support for the Greens and for the Social Democrats in the older and poorer parts of the West. To break out of its eastern bailiwicks, the PDS will have to make further inroads into the poorer Western neighborhoods where unemployment remains high. To accomplish this, it will have to take votes away from its partner in the Berlin coalition government, the SPD. Much depends on the perception of the PDS' performance while in power in the city. Berlin is thus a test case of the future profile of the German electoral scene and an intriguing example of the ability of a party to move from a regional to the national stage.

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Notes

[1] The formula for Morans I is Morans I is derived from $I = (N/S_o) \sum_i \sum_j w_{ij} x_i x_j / \sum_i x_i^2$ where w_{ij} is an element of a spatial weights matrix W that indicates whether or not i and j are contiguous; the spatial weights matrix is row-standardized such that its elements sum to 1; x_i is an observation at location i (expressed as the deviations from the observation mean); and S_o is a normalizing factor equal to the sum of all weights ($\sum_i \sum_j$

w$_{ij}$). The significance of Moran's I is assessed by a standardized z-score that follows a normal distribution and is computed by subtracting the theoretical mean from I and dividing the remainder by the standard deviation.

2 The statistic is derived from $G_i^* = {}_i w_{ij}(d) \, y_j \, / \, {}_j \, y_j$ where $w_{ij}(d)$ is an element in a binary contiguity matrix (not row-standardized) and y_j is an observation at location j. The G_i^* statistics should be interpreted as a measure of like values around a particular observation. The significance of the index can be assessed by standard z-scores. A positive z-value for the G_i^* statistic at a particular location implies spatial clustering of high values around that location; a negative value indicates a spatial grouping of low values.