

CREA
Discussion
Paper
2010-05

Center for Research in Economic Analysis
University of Luxembourg

**Pillars and electoral behavior in Belgium:
The neighborhood effect revisited**

available online : http://www.fr.uni.lu/recherche/fdef/crea/publications2/discussion_papers/2010

Quentin David, University of Luxembourg
Gilles Van Hamme, Université Libre de Bruxelles

August, 2010



For editorial correspondence, please contact : elisa.ferreira@uni.lu

University of Luxembourg
Faculty of Law, Economics and Finance
162A, avenue de la Faiencerie
L-1511 Luxembourg

Pillars and electoral behavior in Belgium: The neighborhood effect revisited

Quentin David (CREA, Université du Luxembourg, 162a, avenue de la Faiencerie, L-1511 Luxembourg; CKE and ECARES, Université Libre de Bruxelles, 50 avenue F.D. Roosevelt, CP 139, 1050 Bruxelles, Belgium)

Gilles Van Hamme (IGEAT, Université Libre de Bruxelles, Batiment S, Boulevard du Triomphe, 1050 Bruxelles, Belgium)

Abstract

This paper explores the processes behind the neighborhood effect in electoral geography. Studies on neighborhood effect have largely ignored the local institutions and cultural milieu within which people are socialized. By taking into account the spatially differentiated social supervision of individuals, we are able to highlight the impact of local institutions on electoral behavior and restore the temporal dimension that has shaped the political specificities of places. In the case of Belgium, we show that social supervision (which took the very accomplished form of pillars) affects voting behavior through two different channels: a direct effect, coming from the family transmission of pillar values, and a contextual effect captured by a measure of the local embeddedness of the pillar.

Keywords: electoral geography, neighborhood effect, social supervision, pillar, Belgium.

1. INTRODUCTION

Spatial polarization lies at the heart of electoral geography: Spatial voting patterns are characterized by a strong polarization between different homogenous areas. In addition, this spatial polarization has been shown to be relatively stable over time, whether we consider local or regional scales (Agnew, 1987; Bussi and Badariotti, 2004; Vandermotten and Vandenburgie, 2005; Marissal et al., 2007).

This process of spatial polarization/homogenization of electoral behaviors is often explained by the so-called neighborhood effect (Cox, 1969; Butler and Stokes, 1969; MacAllister et al., 2001). Indeed, at the local scale, we often observe greater homogeneity in electoral behaviors than what is expected from the social composition of the population (Tingsten, 1937; Foladare, 1968; Miller, 1977; Johnston, 1985; Johnston et al., 2004). As early as the 1930s, Tingsten (1937) noticed that, while studying Swedish elections in Stockholm, people living in areas with a higher proportion of lower class people were more likely to vote for the Socialist party, regardless of their class. In England, where the class cleavage is by far the most significant, this effect has been demonstrated by the fact that “people are more likely to vote with their class nationally if they live in a place where that class is politically dominant locally” (Johnston, 1990, p. 125). According to Miller (1977), the same observation is true in the Northern Irish context, albeit along the religious rather than the class cleavage (see also Foladare, 1968). Since then, the existence of such a neighborhood effect has been demonstrated in various contexts and many studies.

In very general terms, a neighborhood effect can thus be defined as the territorial component of social behaviors—here, the electoral results. It supposes that territories cannot be reduced to the sum of their social components. However, the existence of such an effect is still under debate. Tingsten (1937) already pointed to the fact that the characteristics of the working class living in middle class areas could be rather different from those living among their social class relatives. Following the same line, King (1996)—in his debate with Agnew—argued that the contextual effects are indeed related to the inadequacy or lack of information about social characteristics of individuals in the district. We accept this point but still believe that strong empirical evidence exists pointing to the existence of a neighborhood effect as far as electoral behaviors are concerned.

However, the processes behind this neighborhood effect are diverse and complex. This effect can be decomposed into two major mechanisms (Huckfeldt, 1983). First, social networks are spatially structured and dependent on distance. Second, the density of interactions between individuals impacts their social and political behavior. Considering both assumptions, neighborhood interactions through spatially structured networks impact social behaviors, specifically electoral behaviors. We refer to this process of homogenization by social interactions, limited by the distance, as the neighborhood interaction process. Such a result can be explained by the “conversion by conversation” effect, which is of course not strictly limited by distance, but depends on whether social networks are spatially structured (Huckfeldt et al., 1995; Pattie and Johnston, 2000, 2001). Several demonstrations of this process have been produced, mainly in the British and American contexts. For example, in the UK context, Pattie and Johnston (2001) have shown that those who had conversations with their non-relatives in political terms were more likely to change their votes between 1992 and 1997. Huckfeldt et al. (1995) used in-depth local surveys to reach similar conclusions. Meanwhile, Johnston et al. (2005b) considered the spatial dimension of interactions to demonstrate that the more intense the social neighborhood capital (defined as the intensity of interactions with neighbors), the higher the neighborhood effects on voting behavior in the UK’s 1997 general election. Thus, in broad terms, we can argue that the intensity of the social interactions in a district explains the neighborhood effect at least to some extent. However, more indirect processes should also be considered. De Vos (1998, p. 45) explains that “the perception-mediated processes concern continual exposure to the norms and values of the environment...Over a period of time, they can absorb a great deal from their environment.” Johnston and Pattie (2001) demonstrated such a mechanism by showing that the perception of local economic performances impacts voting behaviors.

Of course, this spatial polarization might be explained by processes other than direct or indirect neighborhood interactions. According to the selective migration process, the choice of residence could also be determined by cultural or ideological acquaintances with future neighbors (Bussi and Badariotti, 2004). The incumbency effect argues that well-known and “already in place” leaders have better chances of being reelected. Michel Bussi (1998) demonstrated such an effect in Western France in the post-war period for several types of elections. In addition, the “friends and neighbors” effect states that people prefer candidates from their own neighborhood (Johnson, 1989, shows this process in the Dublin case). However, in the current paper, we will focus on

neighborhood effects explained by social interactions limited by distance (i.e., neighborhood interaction processes).

Understanding neighborhood interaction processes has often come up against two major obstacles: the scale of the processes and the time dimension. First, the geographical level of the processes behind the neighborhood effect is very difficult to identify (Johnston et al., 2001). For example, “conversion by conversation” is not necessarily a neighborhood effect as social interactions may occur far from the residence (e.g., at the workplace). Although some interesting improvements have been achieved to deal with this important question of scale (Johnston et al., 2001; Johnston et al., 2005), the difficulty lies in the fact that the several previously described processes might have an impact at different geographical levels. Second, the neighborhood effect does not really take into account the temporal dimension. As noted by Johnston (1985), “neighborhood effect, because of its ahistorical representation of social processes, ignores the local institutions and cultural milieu within which people are socialized” (quoted by Eagles, 1990). This raises the question of socialization in place, which supposes that the processes of political socialization highlighted by the Michigan school (Campbell et al., 1960) are spatially structured.

Analyzed as a social interaction process distinct from the historical contexts within which these relations occur, the neighborhood effect does not account for the (relative) historical stability of the spatial polarization of electoral behaviors in most Western European countries. This is precisely because most of the empirical analyses from a spatial perspective have neglected the role of parties and other institutions (e.g., churches, trade unions, associations) embedded in the territories. These institutions impact both the intensity and the content of social interactions. Although some attempts have been made to address this issue, they focus on the parties rather than the whole set of local institutions embedded in the territories (Johnston, 1986; Huckfeldt and Sprague, 1995). Yet Cox (1969a) highlights that the members of local formal networks are more likely to be influenced in their voting behavior. Johnston (1986, p. 49) explains why this is the case: “Parties depend very much on local social networks for the transmission of information and the winning of support.” Nevertheless, few empirical studies have followed this path.

This entire network of institutions, which plays a major role in the process of political socialization in place, can be referred to as *social supervision* (based on the translation of the

French concept of “*encadrement social*”). As such, social supervision includes all kinds of associations and networks within which individuals are embedded: trade unions, churches, schools, political parties, etc. Taking into account the spatially differentiated social supervision enables us to restore the temporal dimension that has shaped the social and political specificities of places (Agnew, 1987). Social supervision can take specific forms in each place, but tends to favor the homogeneity of electoral behaviors and hand it down across generations. In this process, political socialization within the family certainly plays a role that is only partly independent from the social supervision because the family might act as an interface between local institutions and descendants (Verba et al., 2005; Percheron, 1993). These processes of political socialization within and outside the family thus reinforce one another—an issue that we will address during our empirical analysis.

It is important to note that this approach is not contradictory with studies on the neighborhood effect, but rather provides a historical dimension by considering the presence of schools, parishes, or associations in the environment. This type of analysis also refers to the French tradition of electoral geography, which explains electoral behaviors in a long-term perspective by taking into account social networks within places (Siegfried, 1913; Goguel, 1970; Bussi, 1992). Of course, considering the impact of local social supervision on political behaviors raises theoretical and empirical difficulties, primarily the endogeneity problem. It is not easy to disentangle cause and effect in such a process: Church attendance is a signal of a whole way of thinking but—as a socialization process—it is also a cause of this way of thinking. We will also address this delicate issue in the empirical analysis. In addition, empirical data on social supervision are very parsimonious. In many countries, it is possible to get data on church attendance and political parties at best at the local scale. However, in Belgium, it is possible to gather data on social supervision at the local scale for a much broader set of institutions that might play a role in the process of socialization in place. Thus, focusing on the Belgian case offers not only the advantage of enlarging the spatial extent of the studies on neighborhood effects in elections (which have mainly focused on British and American cases), but also the possibility of testing neighborhood interactions’ processes through local institutions. Thus, the general objective of this paper is to demonstrate the impact of social supervision—namely, the whole set of institutions embedded in places—on electoral behaviors in Belgium and to identify the channels through which it takes place.

The paper is divided into three major sections. The next section (Section 2) will provide fundamental information about the Belgian political specificities. We will insist on the very coherent form of social supervision that has taken place in Belgium: the pillar. Combined with the theoretical introduction, it will enable us to address three major hypotheses. Section 3 will show the relationship between the electoral results and the presence of the pillars at the cantonal scale for the 2003 elections. To achieve this objective, we built three indicators of social supervision (related to the pillars) according to their ideological acquaintances (Socialist, Liberal, or Catholic) at the cantonal level in 2003. We then regressed the electoral outcomes of the three major political families on these measures of the social supervision, controlling for classic explanatory factors. At this stage, correlations observed between pillars and electoral outcomes did not imply any causal relationship; they only constituted two different faces of the historical making of political places. Section 4 will evaluate the impacts of the different forms of social supervision on individuals' electoral behaviors as well as disentangle the influence of individuals' social characteristics and of the geographical context within which these individuals live. Through these logit regressions, we will show that—even when controlled by individuals' social characteristics—the contextual weight of the pillar still impacts individual electoral behaviors. Finally, Section 5 will provide concluding remarks.

2. THE BELGIAN POLITICAL CONTEXT AND THE PILLAR CONCEPT

Since gaining independence in 1830, Belgium has been dominated by three major political families. In the nineteenth century, during the censal suffrage period, the political landscape was dominated by Catholicⁱ and Liberal parties, which represented two sides of the ruling classes who were predominantly opposed on the church/state cleavage (Craeybeckx and Witte, 1987). The Belgian Labour Party (POB) emerged only in 1885 and had to wait until 1893 to find its way onto the political landscape as a consequence of the introduction of the male universal suffrage with plural voting (Liebman, 1986). Belgian politics were subsequently structured primarily around the Catholic/Socialist opposition that overlaps church/state and class cleavages. Meanwhile (after 1893), the Liberal Party saw its electoral support reduced to its sociological core electorate of the intellectual bourgeoisie in the big cities. This decline was further accelerated by the introduction of the pure male universal suffrage just after World War I.

Around 1950, the bipolarization of Belgian politics between Catholics and Socialists reached its peak, as the two parties combined accounted for approximately 85% of the valid votes while the Liberal Party accounted for only about 11%. In subsequent years, the Liberal Party regained strength, and we observed the emergence of new political forces (regional parties in the 1970s, green and extreme-right parties since the 1980s). As a result, the political landscape is presently much more broken up than it was 50 years ago. Moreover, the three main political parties split during the 1970s into Flemish and French-speaking branches that ultimately became completely autonomous. The Catholic Party is now CDH in the French-speaking part and CD&V on the Flemish side, the Socialist Party is named PS and SP.A and the Liberal Party, MR and VLD. But still, the three traditional political families -- Liberal, Socialist and Catholic -- account for around three quarters of the votes in the years 2000.

Another feature of this electoral evolution is the geographical stability of the three major political parties. By “electoral stability” we do not claim that the electoral outcomes of the different parties remained stable over times, but rather that the geographical distribution of these outcomes remains stable; today, parties still obtain their best scores in places where they have been traditionally located. Indeed, the dramatic changes in the electoral support of the different parties have not resulted in major geographical evolutions of their local embeddedness. As an illustration of this statement, we computed the partial correlation coefficient for each party between the elections of 1921, 1936, 1950, 1965, 1981, and 2003 with dummies for the election year and the region (to control for the evolution of the party at the country level and the difference between the two regions, respectively). We found that the partial correlation of an election at time t (one of these elections) with respect of the one at $t-1$ (the previous considered election) reached 85.5%, 77.3%, and 58% for the Catholics, Socialists, and Liberals, respectively. All were significant at 99%.

Looking at the geographical dispersion, it appears that the Catholic Party still dominates peripheral areas, with higher scores in Flanders than Wallonia. After World War II, the electoral decline of the Catholic Party further reinforced the peripheral character of its geography. Meanwhile, the Socialist Party has obtained higher results in the Walloon industrial axis and, to a lesser extent, in a triangle between Antwerp, Brussels, and Gent since its emergence at the end of the nineteenth century. While very stable in Wallonia, this geography went through major

changes in Flanders after World War II, where the industrialization of peripheral areas (Limburg and Western Flanders) favored the increase of the electoral scores of the Socialist Party. Finally, the geography of the Liberal Party has evolved in a much more significant way than the other traditional parties. Restricted to some bastions of rural Middle Belgium, Ghent, and Brussels in 1950, it subsequently experienced considerable electoral development in suburban areas (mainly around Ghent and Brussels) and in low dense areas of Southern Wallonia. In the former areas, this evolution can be explained by the suburbanization of the middle classes whereas in the latter, this electoral progress has been made possible by the abandonment of the anticlerical discourse.

To a certain extent, this relative stability of the electoral geography may be explained by one of the most striking features of Belgian politics, which relates to the existence of specific forms of social supervision: the pillar. In Belgium, traditional parties (Socialists, Catholics, and Liberals) are associated with dense networks of institutions strongly embedded in territories. These institutions include trade unions, health insurance companies, associations, schools, etc. Together, parties and associated institutions constitute a pillar. For example, the Socialist pillar includes the Socialist parties together with Socialist health insurance companies, trade unions, youth movements, etc. At their height, in the first half of the twentieth century (and even to a certain extent today) the pillars enabled individuals to remain within a coherent ideological framework—whether Liberal, Socialist, or Catholic—from birth to death (Lorwin, 1971; Marissal et al., 2007). For example Lorwin reports that the Labour Party, through its leader Emile Vandervelde, intended “to take the whole man at every age of his life and in all manifestations of its existence” (Vandervelde, 1935 quoted by Lorwin, 1971). The pillars are also characterized by a strong spatial polarization. The hegemony of the Catholic pillar in peripheral Flanders contrasts the Socialist network’s dominance in the Walloon industrial axis. Consequently, individuals’ political socialization is strongly related to their place of residence.

The emergence of the pillars in their current form should be understood as the result of a long and complex historical process (Billiet, 1982). At the end of the nineteenth century, an entire set of autonomous institutions progressively merged according to their ideological content to constitute the current pillars. Initially, the pillars were strongly related to the socio-economic structure at the local scale, but they survived the changing economic environment. For example, coal mines in the Walloon industrial axis favored a powerful Socialist pillar, which has survived

until today despite the closure of mines and the economic tertiarization. Thus, the parties themselves did not necessarily play the dominant role in the creation of these sets of institutions, which is largely a bottom-up process.

Considering the theoretical assessments of the first section and the specific forms of the social supervision in Belgium, we can raise three major hypotheses. As discussed in the first section, social supervision ensured by the local institutions is spatially differentiated and is likely to affect electoral geography. In the Belgian context, our first hypothesis can thus be expressed as follows:

Hypothesis 1. Electoral geography is correlated with the geography of the pillar.

We proposed ecological analysis at the scale of the cantons to test this hypothesis. The correlations observed between pillars and electoral outcomes do not imply any causal relationship; rather, they only constitute two different faces of the historical making of political places. We thus need to disentangle—at the individual level—the influence of direct membership to the pillar and of the geographical context within which these individuals live. Direct membership is partly exogenous to the individual through the inheritance process, but might be endogenous when the individual actively decides to join a component of the pillar. This can be expressed with the two following hypotheses:

Hypothesis 2. Individuals' membership in a pillar has a direct effect on their electoral behavior. More precisely, the family embeddedness in the pillar and its inheritance process significantly impact the likelihood of individuals to vote for the corresponding political party. This is an element of the explanation of hypothesis 1.

Hypothesis 3. The pillar's strength in the local context impacts the electoral behavior of individuals regardless of the individual membership of the pillar. This contextual effect also explains hypothesis 1.

Hypothesis 2 and 3 are investigated in Section 4 through an analysis at the individual scale.

According to Lorwin, countries like Netherlands, Austria, and Switzerland are all characterized by what he calls segmented pluralism, which supposes a strong pillarization of the society (Lorwin, 1971). In other European countries, the social supervision could take on forms other

than pillarization. However, we can find intermediary strata between the state and the individual in all European countries. The causal effects that we intend to demonstrate for Belgium are thus probably similar in other European countries. However, we can assume that the pillar form—because it gives an ideological coherence to these intermediate strata—has a stronger potential impact on political behavior.

3. PILLAR AND ELECTORAL OUTCOMES AT THE CANTONAL LEVEL

A correlation between the presence of the different pillars and the electoral outcomes at the cantonal level should be considered necessary, but certainly not sufficient to test the hypothesis of a strong impact of social supervision (pillars) on the electoral behavior at the local level. In this section, we first present the data used to conduct this analysis. Second, we describe how we build our pillarization indexes. Third, we use these indexes—together with the standard control variables—to assess the relationship between the pillars and the electoral outcomes at the cantonal level.

3.1. Data and pillarization indexes

To conduct the analysis of the relationship between the presence of the pillars and the electoral outcomes at the cantonal level, we use the official electoral outcomes of the 2003 parliamentary election for the 208 cantons published by the Homeland Ministry. The cantonal scale is the most precise measurement for which we can get electoral results for general elections. It is constituted of one to several municipalities that form the smallest administrative unit in Belgium. However, it is important to note that cantons have no other functions than counting the votes in the electoral system since seats are affected at the level of constituencies, which are indeed much bigger and correspond to the 11 provinces (with one exception).

The socioeconomic data from the Socio-Economic Survey of 2001 published by the Institut National de Statistique (INS) were used to control for the characteristics of the population. We added sectorial information on employment from the Office National de Sécurité Sociale (ONSS) and the Institut National d'Assurances Sociales pour Travailleurs Indépendants (INASTI) for 2002.

The variables used to build our pillarization indexes come from various sources. It is important to remember that most socialization institutions (trade unions, health insurance companies, etc.) are pillarized—namely, most can be unambiguously associated with Socialist, Catholic, or Liberal organizations. The statistics we use to build our pillarization index come from the organizations themselves (health insurance companies, school networks, scouting associations, social elections between trade unions), although two of them (church attendance and trade union membership) have been recalculated based on the post-election surveys of 1999 and 2003.

To produce an index of the pillarization at the cantonal level, we run a Principal Component Analysis (PCA) on the different pillar variables and separately for each pillar. This method allows us to capture the common spatial configurations of the different organizations composing the pillars. For the three indexes, the initial variables include trade union membership, social elections results, youth organizations, and health insurance membership. For the Catholic pillar, we also added church attendance and education networks. This is summarized in Table 1. Some data are from the *arrondissement* level (43 *arrondissements* exist in Belgium) due to the smaller sample, which is intermediate between municipalities and provinces. In those cases, we had to affect the same value for each municipality (or canton) located in the same *arrondissement*, which resulted in an artificial homogenizing of the pillar index used and might produce underestimations of the neighborhood effect in our analyses.

[Insert Table 1 here]

For each pillar, we decided to keep only the first component of the different PCAs, which were run at different scales (see Table 1). Therefore, the Catholic pillar indicator is obtained from the first component of our PCA, which takes into account 65% of the variance of the six initial variables. These initial variables are taken into account in a similar proportion by this first component, which means that they are correlated with one another. The first component of the Socialist pillar (based on 4 variables) captures approximately 60% of the initial information, which represents a lower share than the Catholic pillar when considering the lower number of initial variables. Finally, the first component for the Liberal pillar captures 55% of the total

variance. Thus, we tried to use the second component in our estimations, but it never appeared to be significant and decided not to present these results. The eigenvalues (displayed in Table 1) of the first component of each analysis are significant for the geographical coherence of the pillars, which indicates that the different elements of the pillar have a similar geography. From this perspective, the Catholic pillar appears to be the most homogenous from a geographical point of view. It is also the most powerful in the sense that it concerns a higher share of individuals: According to the post-electoral survey of 2003, 32.5% of individuals were associated with the Catholic pillars through a means other than the mandatory health insurance company. In other words, almost one third of the population either goes to church at least once per month or belongs to some type of Catholic association. This figure reaches 14.1% for Socialists but only 2.3% for Liberals.

Figure 1: Geographical distribution of the pillars and of the electoral outcomes in 2003

[Insert Figure 1 here]

Sources: Authors' computations to measure pillars; Homeland Ministry for electoral outcomes

3.2. Ecological Relationship Between Pillars and Electoral Outcomes

We can now tackle the central question we address in this section: the relationship between pillars' geography and electoral results at the cantonal level. To address this question, two issues need to be addressed. First, the combined electoral score of the three traditional parties in 2003 account for approximately 75% of the votes; we cannot consider these scores to be independent of one another. Second, as stressed by several authors (Bussi, 1998; Beck et al., 2006), electoral outcomes are characterized by spatial autocorrelation. We address these two issues simultaneously by using spatial lagged, seemingly unrelated estimations (spatial SUR estimations) developed by Anselin (1988). Technical details related to this method can be found in the appendix. The general idea is to regress the electoral results simultaneously for the three main political parties in 2003 and correct for the spatial autocorrelation of the electoral outcomes (taking both issues into consideration). We control for the socioeconomic variables usually associated with different patterns of voting across space (Dunleavy, 1979; Van Hamme, 2007;

Marissal et al., 2007; Frogner and De Winter, 2007)—namely, the social classes' composition of the canton, the unemployment rate, the share of public employment, per capita incomes, and population densities. Considering the differences between Flanders and Wallonia, we use a dummy equal to one for cantons located in Flanders. For each regression, we use two specifications: one with the associated measure of the pillar only and the second with all our pillarization indexes.

[Insert Table 2 here]

For each party, when considering the pillar context and the social composition of the cantons, the explanatory power of the model is high (see the squared correlations) and the spatial autocorrelation strong (ρ , the spatial autoregressive parameter is very significant and quite high). The electoral geography is explained by the distribution of social classes and of social supervision, but in different combinations according to the party.

The geography of Catholic voting is strongly related to the pillar context but weakly influenced by the local class composition. It is positively correlated with the Catholic pillar, regardless of the class composition of the canton, and negatively correlated to the two others. This opposition overlaps the church/state cleavage, which has always played a major role in Belgian politics. Indeed, non-religious pillars have only broken through in areas where the de-Christianization process was precocious: in the major cities, in Middle Belgium, and on the Walloon industrial axis.

The geography of Liberal voting is highly correlated with the social classes' compositions—mainly, the presence of medium and upper classes and the self-employed—as well as with the local presence of the Liberal pillar. We must underscore here that the R^2 is lower than for the two other parties, which may be explained by the fact that the Liberal pillar is weaker. It must also be noted that the strong presence of the two other pillars is an obstacle to Liberal voting. We are inclined to believe that the Liberal party has broken through where the pillarization—whether Socialist or Catholic—was globally weak; this includes suburban areas in which the renewal of

the population has considerably weakened the processes of socialization in place. In southern rural Wallonia, the Liberal party has also been able to develop further on more Catholic grounds, which dates back to the 1960s, when the party abandoned its anti-clerical discourse.

Finally, the geography of the Socialist vote is also correlated with the social classes' compositions (high presence of workers) and the local intensity of the Socialist pillar. The socioeconomic context also has a strong impact on the level of Socialist voting, especially the unemployment rate and the share of public employees. However, as illustrated by the maps, we observe weaker correlations between the Socialist pillar and Socialist voting in Flanders. In this region, the Socialist pillar was initially limited to the first industrialization poles—primarily, the major cities of Ghent and Antwerp. Together with the process of peripheral industrialization in Flanders (Western Flanders, Limburg) starting in the 1950s, Socialist voting subsequently made some progress in the strong areas of the Catholic pillar. In other words, today's worker areas of Flanders no longer correspond to the first bastions of the Socialist pillar.

The results presented in this section do not yet allow a causal interpretation of the impact of pillars on local electoral behavior. We prefer a historical interpretation, which emphasizes the progressive elaboration of pillarization, including political parties, during the second half of the nineteenth century. However, the important point is that—despite the major transformations of the Belgian socioeconomic space—the local embeddedness of the pillars is still correlated with local electoral behavior.

4. SOCIAL SUPERVISION AND ELECTORAL BEHAVIOR ON THE INDIVIDUAL LEVEL

Thus far, we have shown a strong correlation between the geography of the pillars and the electoral outcomes of the three main political parties. Even if this does not imply any causal relationship, some clues exist suggesting that pillarization impacts electoral behavior. Obviously, it could also hide other mechanisms. Indeed, from a historical point of view, the emergence of the pillars and the local embeddedness of political parties are contemporary processes that occurred at the end of the nineteenth century (Billiet, 1982). However, the pillars suppose a stable and continuous supervision of the population that can be considered autonomous from the

act of voting, which is independent from the direct membership to a pillar. In addition, this independence has certainly increased across time since the organization of the pillars does not influence the electoral behavior of the members as actively as it did in the past. For example, trade unions no longer give voting instructions and the Catholic Church, while still expressing opinions on ethical issues, no longer puts pressure on the faithful.

In this section, we intend to identify the impact of pillarization on individual electoral behavior. To achieve this goal, we will assess the direct and indirect influences of the pillars on voting choice. Indeed, the effect of the pillar may come from two different channels: one direct and one contextual. On the one hand, the contextual effect is related to the fact that the local pillar's embeddedness impacts individuals' behaviors whether they are members of the pillar or not. This suggests a true neighborhood effect even if possibly, as is usual for those types of analyses, other variables or insufficient precision in the measurement used might explain a part of the observed effect (King, 1996). On the other hand, the direct effect combines different transmission mechanisms that include, to some extent, a neighborhood effect. In particular, the familial inheritance process is affected by what Johnston (1986) calls "socialization in place" because the parents have themselves been socialized in specific contexts. Consequently, familial inheritance is very likely to capture a share of the contextual effect that we try to identify. Thus, we consider that the results assessing the contextual effect presented here must be seen as a lower bound for the neighborhood effect.

The direct effect could be seen as a compositional effect; if more individuals belong to a specific pillar, more will vote for the corresponding political party. We must be very cautious about this aspect, and the direct effect should be disentangled from the two origins: the familial inheritance of the connection to the pillar that is predetermined (thus, econometrically exogenous from the voting) and the positive choice of an individual to become a member of the pillar. This second effect is probably endogenous to the voting behavior of the individual; thus, we will have to find some kind of strategy to deal with it.

The existence of such a direct effect would confirm our second hypothesis whereas the existence of the contextual effect would confirm our third hypothesis. The confirmation of both hypotheses at the individual level would allow a causal interpretation of the ecological relationship between pillars and voting. To analyze the effect of pillarization on the individual probability to vote for

the Catholics (CD&V and CDH), Socialists (SP.A-Spirit or PS), or Liberals (VLD or MR), we will present, in turn, the identification strategy, the main results, and some tests of robustness.

4.1. Identification Strategy

The results presented in this section are based on individual data from the 2003 post-electoral survey conducted by the PIOP/ISPO, to which we added contextual data on pillarization at the municipal level; this is a more refined scale than the cantons and thus potentially better captures the local context within which individuals live. Regressions using pillar measures at the cantonal scale give similar results (we do not present these tables). We use the same procedures to build the pillar index at the municipal level as the one used at the cantonal level (note that 589 municipalities and 208 *cantons* exist in Belgium). The PCA and the choice of components have already been presented in the previous section, and only the first component is kept for every pillar. To run the analyses, we used classical control variables (Frognier and De Winter, 2007; Nieuwbeerta and Ultee, 1999; Franklin et al., 1992): age, sex, unemployment, sector of activity (public versus private), and socio-professional classes.

We used logit estimators and corrected the standard errors to consider the possible correlation of the errors within municipalities (we present the robust clustered standard errors herein). For several reasons, we decided to use a multinomial analysis as a robustness check instead of using it as our central model. Two main factors affected this choice. First, using a multinomial analysis would have required choosing one of the following strategies: putting all other political parties into one category, running the analysis on too many different political parties, or reducing our sample to the individuals voting for one of the three considered parties. In any case, we found the strategy to be less relevant. Second, due to their collinearity, we preferred not using the different measures of the pillars together in the individual regressions because the interpretation is less obvious and their significance can be strongly affected.

Our main target is to identify the effect that the pillars are likely to have on individuals through the contextual and direct effects. As previously stated, two main channels exist for the direct effect to affect the individual vote: familial embeddedness, which is predetermined and partly related to the context, and the positive choice to join one of the components of the pillar, which

is possibly endogenous to the vote. The contextual effect is captured through our indexes of the presence of the pillars at the municipal level (as previously described).

We use the health insurance company of the individual as a proxy of his/her familial inheritance. We believe that the membership of an individual to a particular health insurance company is predetermined, thus exogenous, to the individual. Indeed, the choice has usually been made in the past by his ascendants. We provide a justification in favor of this claim organized around three arguments.

First, a historical explanation is useful for strengthening this claim. After World War II, pillars acquired a decisive role in state functions, particularly through the setting up of the welfare state system (Billiet, 1982, for a general perspective on the growing role of pillars in the state functions; Gerard and Wynants, 1994, regarding the Social-Christian movement in Belgium). Trade unions became payment funds for unemployment allocations whereas health insurance companies acquired the same function for health refunds. However, while trade unions as institutions still include “activists,” the same can no longer be said of health insurance companies. Furthermore, it is almost mandatory to belong to a health insurance company, but this is not the case for trade unions.

Second, as health insurance companies are reluctant to provide numbers, we found some clues to support our claim. We determined that members switch between health insurance companies at a rate that must be much lower than 3% per year on average among all companies.ⁱⁱ Furthermore, we have partial evidence to indicate that this number is likely significantly lower. Private studies carried out by the Socialist health insurance company located in Wallonia indicated that the switching rate from their company to another one was lower than 1% per year in both 2006 and 2008. The same studies showed that, when children leave their parents’ health insurance protection (generally when forming a new household), 88% of children remain in the same insurance company as their parents. Given that households are supposed to belong to the same health insurance company (in order to reduce certain costs), this number (88%) suggests that most young adults choosing a health insurance company either choose the same company as their parents or change in order to belong to the same company as the person with whom they are living.

Third, another point could be raised to argue in favor of the exogeneity of the choice of a health insurance company to voting behavior. Since the beginning of the 2000s, health insurance companies have started to compete actively with each other through advertising campaigns highlighting the services they provide rather than their ideological positioning. Thus, if the choice of a health insurance company used to have a political connotation, it does not anymore. Nowadays, this choice mainly comes from a familial inheritance process. Therefore, we considered the health insurance company to be a good proxy for capturing the pillarization of the family ascendancy of an individual.

Finally, we needed to control for the positive choice to become a member of the pillar. We used a dummy whose value is one if the individual is a member of an element of the pillar that is not the health insurance company (i.e., membership in a union, an association connected to the party, or if he goes to Church at least once a month, for Catholics only). As previously discussed, this choice might be endogenous to the electoral choice, which is why we used the following steps in our estimations.

For the three sets of regressions (i.e., Catholics, Socialists, and Liberals) presented in Tables 3 to 5, the “standard” results are presented in the first column (without using our measures of the pillarization). In the second column, we added our measures of the presence of the pillars, which provided an overall picture of hypotheses 2 and 3 as well as insights into the strength of the relationship between the pillars at the local level and the individual electoral behavior. We added the dummies for the three main health insurance companies in the third column, thereby leading to a direct effect (captured by the dummies for the health insurance companies) and a contextual effect. We needed to go further in the analysis to disentangle the direct effect, which is why we added a dummy whose value is one if the individual belongs to another element of the pillar in the fourth column.

Even if it seems reasonable to control for the direct relationship of the individual to the pillar, we may have to deal with endogeneity issues. Consequently, the estimated coefficients are potentially biased. The best way to deal with endogeneity issues is to run instrumental variable estimations, instrumenting the membership of individuals to the pillar. Unfortunately, few natural instruments exist for membership at the individual level, and we did not have access to such information (instruments could have been information on how individuals joined the pillar,

etc.). Therefore, we decided to run an estimation on a sample restricted to those individuals who did not belong to the considered pillar (except through their health insurance company). These results are presented in the fifth column of the tables. We also checked the robustness of this last result by running a final estimation on individuals who were a member of neither the pillar nor the associated health insurance company (last column of the tables) to confirm our estimated contextual effect in case a doubt remained regarding the exogeneity of the choice of the health insurance company. These two last regressions ensure that the estimated coefficients are not subject to any possible endogeneity bias. However, our estimated coefficients hold for these considered subsamples only; if we extrapolate this result to the whole population, a selection bias may appear.

Comparing the different estimations provides useful information on the size of a possible bias. As can be seen from the fifth columns of the tables, the contextual effect and the inheritance process are not affected by the exclusion of individuals belonging to an association. This suggests that—even if some endogeneity is present—it does not affect our main results and we can identify the exogenous direct effect (hypothesis 2) and the contextual effect (hypothesis 3) of the pillar on individual electoral behavior separately.

4.2. Results

A general result that emerged is that the affiliation to a health insurance company related to one of the pillars very significantly increases the likelihood for an individual to vote for this party (confirmation of hypothesis 2). This suggests that familial inheritance has an important impact on the individual electoral choice, regardless of the party. Since the familial embeddedness in the pillars is unequally distributed across space today, it may explain a part of the stability of the electoral geography. In addition, the contextual effect (hypothesis 3) is generally less obvious than at the aggregate level and has a different intensity according to the party. Before turning to the presentation of the main results for the individual parties, it must be stressed that—even if the quality of the fit of the basic model (without indexes for the pillars) is relatively poor—the use of our contextual and individual measures of pillarization significantly increases its explanatory power, as shown by the level of the pseudo- R^2 displayed in the tables. Furthermore, our pseudo- R^2 are consistent with those obtained in similar analyses—at least when such analyses do not include variables on political attitudes or party identification.

[Insert table 3 here]

The probability of voting for the Catholic Party (Table 3) is significantly influenced by the intensity of the Catholic pillar at the municipal level. This means that, in a Catholic environment, individuals have a higher probability of voting for the Catholic party regardless of their personal membership in the Catholic pillar. In other words, where neighborhood interactions and socialization institutions are very “Catholic-oriented,” the voting for the Catholic Party is significantly higher than where the Catholic pillar is globally less powerful. Consequently, Catholic voting still appears mainly as pillar voting that is strongly affected by the familial inheritance as well as the presence of the Catholic pillar in the municipality. However, when controlling for the direct and indirect impacts of the pillar, the social class membership has a significant impact on the Catholic voting.

[Insert table 4 here]

The probability of voting for the Socialist Party (Table 4) increases significantly with the presence of the Socialist pillar in the municipality even when controlling for the familial inheritance of individuals. However, when introducing individual membership to the pillar (column 4), this effect is no longer significant. This suggests that the transmission mechanism of this pillar occurs through a direct, intra-familial connection. The contextual effect—while not absent—seems to be less powerful here than for the Catholic pillar. Taken together, the Socialist vote still appears as a class vote, notably structured around the self-employed/salaried employee cleavage.

[Insert table 5 here]

The relative presence of the Liberal pillar in the environment also significantly affects the probability that an individual will vote for the Liberal Party, even when controlling for individual inheritance and membership to the pillar (Table 5). This result should be interpreted carefully as the model is less powerful than for the two other parties, as indicated by a lower pseudo- R^2 , and because the Liberal pillar is weaker than the other ones. However, it still demonstrates that, after controlling for all social characteristics of individuals, contextual effects—captured by the local intensity of the liberal pillar—are still significant. As with the Socialist vote, the Liberal vote is significantly influenced by the individual’s social status and is higher for the upper social classes and the self-employed.

4.3. Robustness Check

In Table 6, we propose a multinomial analysis as a first robustness check using four categories: voting for the Catholics, Socialists, Liberals, or any other party (which is the reference). The two first sets of columns correspond to columns two and three of the individual regressions presented in the previous section. As already mentioned, the collinearity between the Catholic and the Socialist pillars might be problematic when we use them together at the individual scale. Therefore, we also present the same regressions using an indicator summarizing the relative presence of the Socialist and the Catholic pillars (columns 3 and 4). This indicator is obtained using a PCA on all the measures to build the Catholic and Socialist pillarization indexes used in the previous sections together. It takes high values where the Catholic pillar is strong and the Socialist pillar is weak and vice versa. The first component captures 54% of the 10 original variables (6 for Catholics and 4 for Socialists). The results are not contradictory to the previous results. The general effect of the presence of the pillar is significant for all parties (at least when using this indicator for the relative presence of Catholic and Socialist pillars), but when controlling for the health insurance company, it remains significant for the Catholics, is weakly significant for the Socialists, and is not significant for the Liberals.

[Insert table 6 here]

Another robustness check performed consisted of using alternative measures for the pillars. First, we built an alternative measure of the Catholic pillar, using the same variables for the Socialists and the Liberals (i.e., excluding the additional measures used to build this pillar—namely, church attendance and the presence of Catholic schools). Second, we built alternative pillarization indexes excluding the two variables obtained in the electoral survey. In this case, we maintained the following variables to build our pillarization indexes: the percentage of scouts from each federation, the share of the population for each health insurance company, the electoral outcomes at the social elections, and the percentage of pupils in Catholic schools (these tables are available upon request). The results are very similar, although sometimes marginally less significant.

5. CONCLUSIONS

This paper sought to explore the processes behind the neighborhood effect in electoral geography. Existing analyses have tended to focus on the intensity of individual interactions according to distance, often ignoring local institutions that shape individuals' interactions and give them specific ideological content. We have presented evidence to support the hypothesis of the impact of social supervision on electoral geography in the case of Belgium. Indeed, we demonstrated that the aggregate correlation between the geographies of the pillars and of electoral behavior can be broken down into a direct and a contextual effect at the individual level. The former was shown by a very significant effect of the individual connection to the pillar on the voting behavior. More precisely, we showed that this direct effect is partly related to the familial inheritance and, thus, exogenous to the individual choice of belonging to a specific pillar. The latter appears to be significant for all three parties, although primarily so for the Catholic Party. Putting both processes (familial inheritance and contextual effects) together required adopting a historical perspective. Parents are socialized within a specific local context, and their subsequent political behavior is transmitted to their children—probably more efficiently when the children are socialized in the same context. By considering the entire set of institutions embedded in place, our analysis was able to account for the relative historical stability of electoral geography.

Indeed, pillarization is a historical process dating back to the second half of the nineteenth century. Despite this long history, the inheritance processes we described herein (inside and outside the family) are not totally inertial because the local pillar permanently confronts the changing local social structures. Three major historical steps can be identified in the relationship among social structure, pillarization, and electoral behavior. First, between the end of the nineteenth and the beginning of the twentieth centuries, the socioeconomic differentiation of Belgian areas explains the simultaneous emergence of different forms of social supervision by the pillars, which competed with each other for the establishment of their associated political parties. Second, after World War I, spatial inertia of the electoral geography was observed, partly in relation to the powerful social supervision of the pillars. Consequently, today's electoral geography is the result of both inheritance processes, notably transmitted through competing spatially polarized pillars, and present social structures resulting from transformations across time. Third, the impact of the pillars on electoral behavior is often considered to be a waning process (Lorwin, 1971; Marissal, et al., 2007). Theories on individualization suppose that social supervision of individuals is weakening and that the growing individual autonomy results in increasingly independent electoral choices from social constraints (Dalton, 1984; Fanklin et al., 1992; Lipset et al., 1993; Pakulski, 2005). A complete discussion of this question is beyond the scope of this paper. However, we have shown that the simultaneous consideration of the social supervision by the pillars and the present socio-economic structures allows for a significant explanatory power on electoral geography as well as on individual electoral behavior in Belgium—at least when considering the three traditional political families, which still represent around 75% of the voters in the 2000s.

Although the Belgian context is certainly specific because of the very accomplished and coherent form of social supervision through pillars, we do believe that the processes we have demonstrated here are similar to those in other Western European countries. This similarity is not only limited to other pillarized societies (e.g., the Netherlands, Switzerland, Austria), but also to all other Western European societies as, in all of them, we can identify spatially differentiated intermediate strata between the individuals and the state.

6. REFERENCES

Agnew, J.A. (1987). *Place and Politics: The geographical mediation of state and society*. Boston: Allen and Unwin.

Agnew, J.A. (1996). Mapping politics: How context counts in electoral geography, *Political geography*, 15, 129-146.

Anselin, L. (1988). *Spatial Econometrics: Methods and Models*. Dordrecht: Kluwer Academic.

Beck, N., Gleditsch, K.S., Beardsley, K. (2006). Space is more than geography: Using spatial econometrics in the study of political economy. *International Studies Quarterly*, 50, 27-44.

Billiet, J. (1982). Verzuiling en politiek, theoretische beschouwingen over België na 1945, *Belgisch Tijdschrift voor nieuwste geschiedenis*, 13, 84-118

Blom, J.C.H (2000). Pillarisation in perspective, *West European Politics*, 23, 153-164.

Bussi, M. (1992). Fondements des comportements électoraux dans le Grand Ouest : une tentative de relecture spatialisée des tableaux de Seignobos, Siegfried, De Brandt, *Norois*, 156, 389-405

Bussi, M. (1998). *Éléments de géographie électorale à travers l'exemple de la France de l'ouest*. Rouen : Publication de l'Université de Rouen.

Bussi, M., Badariotti, D. (2004). *Pour une nouvelle géographie politique. Territoire, Démocratie, Elections*. Paris: Anthropos, Economica.

Butler, D., Stokes, D. (1969). *Political change in Britain*. London: MacMillan.

Campbell, A., Converse, P., Miller, W., Stokes, D. (1960). *The American voter*. Chicago: The University of Chicago Press

Cox, K.R. (1969a). The spatial structuring of information flow and partisan attitudes. In M. Dogan et S. Rokkan (Eds.), *Quantitative Ecological Analysis in the Social Sciences*. MIT Press.

Cox, K.R. (1969b). The voting decision in a spatial context. *Progress in Geography*, 1, 81-118.

Craeybeckx, J., Witte, E. (1987). *La Belgique politique de 1830 à nos jours : les tensions d'une démocratie bourgeoise*. Bruxelles : Labor.

Dalton, R.J. (1984). Cognitive mobilization and partizan dealignment in advanced industrial democracies. *The journal of politics*, 46, 264-284.

De Vos, S (1998). The analysis of compositional effects as exemplified by the study of elections. *GeoJournal*, 44, 43-49

Dunleavy, P. (1979). The urban basis of political alignment: social classes, domestic property ownership, and state intervention in consumption processes. *British Journal of Political Science*, 9, 409-443.

Eagles, M. (1990). An ecological perspective on working class political behaviour: neighbourhood and class formation in Sheffield. In R.J. Johnston, M. Shelley, P.J. Taylor (Eds.), *Developments in electoral geography*. London: Routledge.

Foladare, I. (1968). The Effect of Neighborhood on Voting Behavior. *Political Science Quarterly*, 83, 516-529

Franklin M., Mackie T., Valen H. (Eds.) (1992). *Electoral change: response to evolving social and attitudinal structure in Western countries*. Cambridge: Cambridge University press.

Frogner, A-P., De Winter, L. (2007). Les déterminants du vote (1999-2003). In A-P. Frogner, L. De Winter, P. Baudewyns (Eds), *Elections : le reflux*. Bruxelles : de Boeck.

Gérard, E., Wynants, P. (Eds) (1994). *Histoire du mouvement ouvrier chrétien*. Leuven: Leuven University Press.

Goguel, F. (1970). *Géographie des élections françaises sous la Troisième et la Quatrième République*. Paris : A. Colin.

Huckfeldt, R. (1983). Social Contexts, Social Networks, and Urban Neighborhoods: Environmental Constraints on Friendship Choice. *The American Journal of Sociology*, 89, 651-669.

Huckfeldt, R., Beck, P.A., Dalton, R.J., Levine, J. (1995). Political environments, cohesive social groups and the communication of public opinion. *American Journal of Political Science*, 39, 1025-1054.

- Huckfeldt, R., Sprague, J. (1995), *Citizens, Politics, and Social Communication: Information and Influence in an Election Campaign*. New York: Cambridge University Press.
- Johnson, N.C. (1989). An analysis of the « friends and neighbours effect in an Irish urban constituency. *Irish geography*, 22, 93-105.
- Johnston, R.J. (1985). Class and geography of voting in England: towards measurement and understanding. *Transactions of the institute of the British geographers*, 10, 245-255.
- Johnston, R.J. (1986). The neighbourhood effect revisited: spatial science or political regionalism. *Environment and Planning D*, 4, 41-55.
- Johnston, R.J. (1990). Lipset and Rokkan revisited: electoral cleavages, electoral geography, and electoral strategy in Great Britain. In R.J. Johnston, F. Shelley, P.J. Taylor (Eds.), *Developments in electoral geography*. London: Routledge.
- Johnston, R.J., Pattie, C.J. (1999). Context, conversation and conviction: social networks and voting at the 1992 British general election. *Political studies*, 47, 877-889.
- Johnston, R.J., Pattie, C.J. (2001). It's the economy, stupid' -- but which economy? Geographical scales, retrospective economic evaluations, and voting at the British 1997 general election. *Regional Studies*, 35, 39-54
- Johnston, R.J., Pattie, C.J., Dorling, D.F.L., MacAllister, I., Tunstall, H, Rossiter, D.J., (2001). Housing tenure, local context, scale and voting in England and Wales, 1997. *Electoral studies*, 20, 195-216.
- Johnston, R.J., Jones, K., Sarker R., Propper C., Burgess, S., Bolster, A. (2004). Party support and the neighborhood effect: spatial polarization of the British electorate, 1991-2001. *Political geography*, 23, 367-402.
- Johnston, R.J., Propper, C., Jones, K., Sarker, R., Bolster, A., Burgess, S. (2005). Spatial scale and the neighbourhood effect: multinomial models of voting at two recent British general elections. *British Journal of Political Science*, 35, 487-514

- Johnston, R.J., Propper, C., Sarker, R., Jones, K., Bolster, A., Burgess, S., (2005b). Neighbourhood social capital and neighbourhood effects. *Environment and Planning A*, 37, 1443-1459
- King, G. (1996). Why context should not count?. *Political geography*, 15, 159-164.
- Liebman, M. (1986). *Les socialistes belges 1885-1914 : la révolte et l'organisation*. Bruxelles : Vie ouvrière.
- Lipset, S., Clark, T., Rempel, M. (1993). The declining political significance of social class. *International Sociology*, 8, 293-316
- Lorwin, V.R. (1971). Segmented Pluralism. Ideological Cleavages and Political Cohesion in the Smaller European Democracies. *Comparative Politics*, 3, 141-175
- Macallister, I., Johnston, R.J., Pattie, C.J., Tunstall, H., Dorling, F.L., Rossiter, D.J. (2001). Class dealignment and the neighborhood effect: Miller revisited. *British Journal of Political Science*, 31, 41-59.
- Marissal, P., Medina Lockhart, P., Vandermotten, C., Van Hamme, G. (2007), *Atlas de Belgique, Géographie politique*. Bruxelles: SPFC.
- Miller, W. (1977). Social Class and Party choice in England: A New Analysis. *British Journal of Political Science*, 8, 257-284.
- Nieuwbeerta, P., Ultee, W. (1999). Class voting in Western industrialized countries, 1945-1990: systematizing and testing explanations. *European Journal of Political Research*, 35, 123-160.
- Pakulski, J. (2005). Foundations of a post-class analysis. In E.O. Wright (Ed.), *Approaches to class analysis*. Cambridge, New York: Cambridge University Press.
- Pattie, C.J., Johnston, R.J. (2000). People who talk together vote together, an exploration of the neighborhood effect in Great Britain. *Annals of the association of American geographers*, 89, 41-66.
- Pattie, C.J., Johnston, R.J. (2001). Talk as a political context: conversation and electoral change in British elections. *Electoral studies*, 20, 17-40.

Percheron, A. (1993). *La socialisation politique*. Paris : A.Collin.

Siegfried, A. (1913). *Tableau politique de la France de l'Ouest sous la Troisième République*. Paris : Armand Colin

Tingsten, H. (1937). *Political behavior: studies in election statistics*. London: P.S. King.

Vandermotten, C., Vandenburg, J. (2005). *Territorialités et politique*. Bruxelles : Editions de l'Université de Bruxelles.

Van Hamme G. (2007). La géographie du vote et les cultures politiques régionales. In A-P. Frogner, L. De Winter, P. Baudewyns (Eds.), *Elections : le reflux*, Bruxelles : de Boeck.

Verba, S., Lehman Scholzman, K., Burns, N. (2005). Family ties: Understanding the Intergenerational Transmission of Political Participation. In A.S. Zuckerman (Ed.), *The Social Logic of Politics*, Philadelphia: Temple University Press.

7. APPENDIX: the Spatial SUR Estimation

In section 3, we estimated a spatial SUR model with spatially lagged dependent variables. As stated in the text, we used the methodology developed by Anselin (1988) in *Spatial Econometrics*.

Assume that the matrix Y_i is the matrix of the dependant variable (the electoral outcome) of party

i and $Y = \begin{bmatrix} Y_1 \\ Y_2 \\ Y_3 \end{bmatrix}$. The matrix X_i contains the explanatory variables for the electoral outcome of

party i and X is a block-diagonal matrix: $X = \begin{bmatrix} X_1 & 0 & 0 \\ 0 & X_2 & 0 \\ 0 & 0 & X_3 \end{bmatrix}$. In our case, $i=1, 2, 3$ for,

respectively, Catholics, Socialists, and Liberals. A is the block-diagonal weighting matrix:

$A = I(3) \otimes W$ where W is the row normalized spatial weighting matrix obtained based on a matrix of contiguity among the cantons. Therefore, the estimated equation is:

$$Y = \gamma AY + X\beta + \epsilon$$

ⁱ We use the appellation Catholic Party throughout the text for simplicity, although the Catholic Party became the Social-Christian Party after World War II. In the French-speaking side, the party eliminated its reference to Christianity in 2001.

ⁱⁱ This value comes from the information available from various health insurance companies—namely, that 95% of the individuals belonging to a particular health insurance company either at the beginning or end of 2002 also belonged to this health insurance company at the beginning of 2002. Therefore, an upper bound for switching individuals is 5%. However, we must consider other flows as well. First, it is mandatory for foreign students to choose one health insurance company; second, migrations are likely to explain roughly 2 percentage points of this number. Up to this point, less than 3% of the switches between health insurance companies can be explained by people who changed their health insurance company.



Number	Date	Title	Author
2010-01	January 2010	Selective Reductions in Labor Taxation Labour Market Adjustments and Macroeconomic Performance	Anna Batyra, Henri Sneessens
2010-02	March 4, 2010	Catching-up with the "locomotive": a simple theory	Raouf Boucekine, Benteng Zou
2010-03	June 9, 2010	Imitation and Efficient Contagion	Tristan Boyer, Nicolas Jonard
2010-04	June 16, 2010	The International Wealth Channel: A Global Error-Correcting Analysis	Robert Vermeulen, Nils Holinski
2010-05	August 2010	Pillars and electoral behavior in Belgium: The neighborhood effect revisited	Quentin David, Gilles Van Hamme
2010-06	January 2010	The impact of migration on origin countries: a numerical analysis	Luca Marchori, Patrice Pieretti, Benteng Zou
2010-07	March, 2010	Transboundary Pollution and abatement	Luisito Bertinelli, Benteng Zou
2010-08	August 31, 2010	On zero and asymmetric trade flows	Toshihiro Okubo, Pierre M. Picard, Jacques-François Thisse