# Individual and contextual determinants in cross-cleavage relationships

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#### Abstract

In electoral research the main focus lies on the individual effect a certain characteristic or issue has on the voting behaviour. Studies analyzing social cleavages are no exception to this. Sometimes these studies conclude that certain characteristics play a less important role in a specific social context, but mostly the latter is based on individual factors or not operationalized at all. The purpose of this paper is to examine the coexisting effect or dependency of individual and contextual effects out of two different cleavages. Regarding the religious and social class cleavage, data from the 2011 Selects study is used to tackle the existence of this cross-level cross-cleavage relationship in Switzerland. The statistical results can partly prove such relationships. However, contrary to the expectations, the cross-cleavage links work not only in terms of the strengthening/weakening of individual effects, but sometimes the context rather influences the direction of individual effects.

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# Introduction

In electoral research the concept of cleavages plays an important role to explain the individual voting behaviour. During the 1960s and 70s the traditional cleavages according to Lipset and Rokkan (1967) have been in the centre of scholarly interest. Whereas in those days the scholarly focus was especially on the traditional cleavages like religion, social class or rural-urban interests, more recent studies claim that new cleavages or rather divisions (e.g. linked to post-materialism or globalization) are weakening or even replacing the former influential cleavages (e.g. Bornschier 2010; Brunner and Sciarini 2002; Inglehart 1977, 1989; Kriesi et al. 2006). Independent of the argument between scholars in how far the concept of cleavage still plays the formerly strong role to explain voting behaviour, the majority of studies have one thing in common: the concentration on individual explanatory variables. This is especially surprising, since the foundation for many of the earlier mentioned studies, the sociostructural approach, also known as Columbia School (Lazarsfeld et al. 1944), emphasizes the importance of the social environment (Bornschier and Helbling 2005; Carmines and Huckfeldt 1998). The authors of the Columbia School (see Lazarsfeld et al. 1944; Berelson et al. 1954) already considered how much the individual behaviour depends on the social context. However, most of the studies since then concentrate on the analysis of individual characteristics. Only in a few cases contextual factors are regarded as well (e.g. Bühlmann and Freitag 2006; Geissbühler 1999; Pappi 1985).

The main aim of the paper at hand is thus to analyse the effect of the context in more detail. This will be done not only in terms of just adding another (contextual) variable to explain the individual voting behaviour, but also by analysing a possible change of the individual effect due to certain characteristics of the environment. When included in an analysis, the (sociodemographic) context exerts significant influence on its own and also leads to a changing effect of the related individual factors (e.g. for the religious cleavage Goldberg 2012). Besides the interrelation between individual and contextual factors out of the same cleavage, there might be also relationships between individual and contextual variables from two different cleavages. An example could be for instance a very religious environment, where the political and electoral competition is dominated by religious issues. In such a context (strong) individual differences on other dimensions, like social class, might not show the same importance for the voting decision compared to more secular environments. In contrast, in the latter contexts the individual religious differences should play a minor role. The focus lies on the interplay between the contextual strength or importance of a certain cleavage and its influence on the presence and strength of an individual effect representing another cleavage. My hypothesis is that the contextual composition determines the possibility for individual factors to exert influence. To explore the existence of such cross-level cross-cleavage relationships, data from the national elections 2011 in Switzerland is regarded.

The remainder of the paper is structured as follows. In the next section, the theory of

cleavages is considered. This includes a definition of the concept, the existence of cleavages in Switzerland and a discussion about the individual, contextual and a possible joint effect on the voting behaviour. Afterwards, the data and method used to test the expected relationships is presented. The statistical results are shown in the subsequent analytical part. To conclude, the main findings and shortcomings of the paper are summarized.

# Theory of cleavages

Today the concept of cleavage is sometimes used in inappropriate ways. It is therefore important to exactly define the meaning of the concept when analysing its concrete impact.

## Definition

In the political science literature, the term "cleavage" is widely used, however often with different meanings. A very detailed discussion of the concept is provided by Zuckerman (1975). He especially emphasizes the necessary distinction between a cleavage and the more general concept of division. Often the notion of cleavage is still used to describe any form of political division, although its actual definition is much more restrictive. One specific characteristic of a cleavage is the persistence over a certain period of time (e.g. Dahl 1966). For Pappi (1983: 185) a cleavage (*Konfliktlinie*) is a lasting potential of conflict, which is rooted in social-structural groups of a society and expresses itself at elections and votes due to its politicization. That definition already contains the empirical element out of the common conceptualisation by Bartolini and Mair (1990), yet the normative and organisational element is missing. This three-part concept is the only one really defining the notion of cleavage and has become widely accepted in the scholarly literature (e.g. Bornschier 2007; Enyedi 2008; Hug and Sciarini 2002; Kriesi 1998; Lachat 2007).

The first element is the *empirical* one, defined in social-structural terms. A division between opposing social groups may be based on class, religion, status, etc. These groups hold a common set of values and beliefs through which they develop a sense of collective identity, the *normative* element. The last component is an *organisational/behavioural* element. It comprises the articulation of the group's interest through institutions or organizations, such as political parties (Bartolini and Mair 1990: 199; Bornschier 2007: 5; Lachat 2007: 27).

In recent years the conceptualization by Bartolini and Mair (1990) received some criticism. Some authors argue that modern cleavages in post-industrial societies fit less and less with the narrow definition, particularly as the organizational element has weakened (cf. Henjak 2010; Oesch 2006). The new value-based cleavages<sup>1</sup> are especially hard to link to general structural

<sup>&</sup>lt;sup>1</sup>If one can label them "cleavage", as many of them apparently do not fulfil all three elements, in particular

concepts and show less organizational closure compared to the classic cleavages of class or religion. Consequently, some scholars conclude that "cleavage" becomes a less powerful concept and former structures of political divisions are replaced by increasing volatility in voting behaviour (e.g. Franklin et al. 1992). As the cleavages regarded in the present analysis both belong to the classic cleavages, the above presented definition should be still valid.

## **Cleavages in Switzerland**

Till the late 1960s Switzerland was a classic example of the "freezing hypothesis", as the party system remained unchanged since the 1920s (Kriesi et al. 2005: 3). Like in most other European countries, the confessional and the class cleavage were highly important during this time. They continue to show considerable effects nowadays, even if for both a certain decline could be observed since the 1970s (Liphart 1979; Linder and Steffen 2006; Trechsel 1995). For a first test of a possible cross-cleavage relation a logical choice is thus to analyze the religious and the social class cleavage. In the religious cleavage the Christian Democratic Party (CVP) is the most salient party and was traditionally opposed to the Radical Party (FDP) (Ladner 2006). In terms of confessional differences the CVP is also opposed to a minor protestant party, the Evangelical party (EVP) (Kriesi and Trechsel 2008). The class conflict led to the foundation of the Social Democrat Party (SP), which traditionally represented the working class. However, in the last decades the electorate of the SP changed quite dramatically, so that nowadays it is not the working class or clerks, who typically vote for the party. The electorate became more similar to the one of the FDP including also highly educated people and rather wealthy persons (Ladner 2006). Today, a significant part of the working class, especially the lower-skilled, and the old middle class vote typically for the Swiss People's Party (SVP). This is a former farmer's party, nowadays representing the losers of the new globalization cleavage, to which a big part of the (unskilled) working class belongs.

Due to the comparatively low nationalization of the Swiss party system and the different electoral systems in the 26 cantons, several cantonal party systems coexist. Additionally, the Swiss cantons vary strongly in terms of their socio-structural composition. This results in a varying importance of the cleavages between the cantons. Thus, the case of Switzerland is especially convenient to examine the effects of contextual socio-structural characteristics.

### Individual effects

Many other scholars already theorized and tested the individual effects of religion and social class (e.g. Dalton 1996, 2002; Evans 2000; Hout et al. 1993; Hug and Trechsel 2002; Knutsen

the organizational one.

2004, 2007; Lachat 2007; Lijphart 1979; Norris and Inglehart 2004; Oesch 2008; Rose and Urwin 1969; Trechsel 1995; van der Brug et al. 2009). Therefore, it shall be sufficient to present the main arguments before discussing the contextual level. The effect of religion is based on two dimensions, the confessional difference and the religiosity of a person. In former days especially the difference between Catholics and Protestants or other non-Catholics was at the centre of the cleavage. Nowadays the difference between religious and non-religious people independent of the denomination is becoming more important (Brooks et al. 2006; Trechsel 1995; Wolf 1996). Many people are increasingly less attached to the institution church (e.g. Elff 2007: 279). However, the ones who are and especially those who frequently attend church services differ strongly to atheists or other secularized persons. People who actively participate in the religious life differ in their voting behaviour compared to non-religious people, even though the latter may "on paper" also belong to a church (Geissbühler 1999). The Christian Democrats (CVP) is the traditional party of the Catholic population and nowadays also represents religious people in general, so that both of these groups should be more likely to vote for that party.

The effect of social class is more complicated to analyze since it changed significantly in the last decades. The origin of the cleavage is the division between labour and capital. Workers and employees were traditionally represented by left (social democratic) parties. The effect of the rather simple division of workers and capital is reported to have declined in the last decades, however, sometimes with volatile trends (Hug and Trechsel 2002; Lachat 2007; Rennwald 2006; Trechsel 1995). The reconceptualization of this cleavage led to a more complex and more differentiated way how the social cues work (Dalton 1996: 324).

Oesch and Rennwald (2010a) speak of three possible ways how the class cleavage could have developed. Besides the already mentioned *dealignment*, a second possibility is the so-called *realignment*. An example of such a new alignment is the contemporary division in the new middle-class. Instead of being represented by one single party, in the middle class socio-cultural professionals are opposed to managers and administrators, where the former are linked to the libertarian left and the latter to the liberal right. A third alternative is a *fluctuation* of the impact without a clear tendency, but with a possible stable influence over time (ibid.).

The important changes in and the reformulation of the class cleavage are strongly linked to the current process of globalization. Several social groups could benefit from the process, whereas others experience rather negative effects. Winners of the globalization are members of the new middle-class like socio-cultural professions or self-employed persons, whereas the old middle-class (peasants or craftsmen) and the working class are said to belong to the losers (Giugni and Sciarini 2008). Kriesi et al. (2006) assume that the winners and losers of the globalization and denationalization constitute new political potentials to be articulated by political organizations. Since the main goal of this article is not to explore the detailed differences for the (new) class scheme, but rather how strong such a class effect might be, I will just analyze differences in the

voting behaviour for three social classes. These represent the winners, the losers and a neutral middle category of the (new) class cleavage. As the respondents belonging to either of these groups also still differ in terms of the old cleavage, two different effects are thinkable. In terms of the traditional class cleavage, the "losers" (especially the working class) should be stronger linked to parties on the left. When regarding the new class cleavage they are expected to vote for the Swiss People's Party on the right. For the "winners" (highly educated professionals), in general a stronger affiliation to left parties (especially the Greens) can be expected.

## **Contextual effects**

In comparison to the other two schools of electoral research (the rational-choice (Downs 1957) and the socio-psychological approach, known as Michigan School (Campbell et al. 1960)), the socio-structural approach especially highlights the relevance of the social environment (Born-schier and Helbling 2005; Carmines and Huckfeldt 1998). The authors of the Columbia School (see Lazarsfeld et al. 1944; Berelson et al. 1954) started to use individual instead of aggregate data to draw inferences about social processes and also considered how much the individual behaviour depends on the social context. In doing so they laid the foundation of contextual analysis and the multilevel understanding of politics (Huckfeldt and Sprague 1993). Their famous quote "[...] a person thinks, politically, as he is, socially" (Lazarsfeld et al. 1944: 27) highlights the notion that in addition to individual factors, the social context also affects political behaviour.

When defining a contextual effect, one very important point is the consideration of it as exogenous to the individual. Huckfeldt and Sprague (1993: 286) define a contextual effect to be operating when the behaviour depends on some external factor after all individual level determinants have been considered. Something not intrinsic to the individual is responsible for systematic variations across contexts. Disregarding the problem of possible self-selection into a certain social environment, the context lies beyond the reach of the individual control (Carmines and Huckfeldt 1998: 230). Although a context is not necessarily to be defined in geographical terms, most studies follow this example. In the literature normally characteristics of local geographical areas, ranging from neighbourhoods up to whole countries, are used to explain individual political behaviour (Books and Prysby 1988, 1991). For the Swiss case the cantons will be regarded as the contextual level.

The characteristics of a context can include a wide range of aspects. It can be a "real" external factor or an aggregate of some individual characteristics (Przeworski and Teune 1970: 56). Huckfeldt and Sprague (1993: 293) even argue that in general many individual factors are better conceived as indicators of a collective social characteristic. Religion would be one example of this. In the literature two main explanations exist how the compositional effect influences the individual electoral decision. *Social interaction* is probably the most common one. The argumentation is that the communication with another person influences and modifies

individual attitudes through the transmission of the (political) opinions of the interaction partner (Books and Prysby 1988). The size of the context and the intimacy of the person with whom the interaction takes place should be irrelevant. Huckfeldt and Sprague (1993) argue that voluntary interaction among friends is politically not more relevant than involuntary contact. The same is true for the contextual size, where smaller units do not have to be more important than larger ones (ibid.). A second explanation for contextual effects is the *conformity reaction*. This idea already appears in the early Columbia studies in the concept of a "breakage effect" (Berelson et al. 1954). The mechanism behind this assumes that a person perceives the composition of its environment and reacts according to it. This reaction is normally a desire to conform to one's community and to agree with its dominant political norms. According to Books and Prysby (1991: 63) class and religion belong to the properties of an environment most people are aware of and thus are in some way sensitive to.

The idea of a contextual influence dates back to the researchers of the Columbia School (Lazarsfeld et al. 1944). Nevertheless it took several years until the effects of the social context on individual voting behaviour were modelled explicitly. One of the first studies, on the "search of a curve", is by Przeworski and Soares (1971). They criticized that earlier research dealt with variables related to voting behaviour only in additive and thus linear relationships. In contrast to this, the authors argue that in addition to placing emphasis on the substance of a theory, it is equally important to place emphasis on the form of a relationship to derive valid statements regarding the voting behaviour. Consequently, their formal model includes interaction terms between individual and contextual variables. One successive study, which additionally delivers empirical evidence of these interactive models, is by Huckfeldt (1980). The argument is a change of the individual effects according to the social context.

In figure 1 the idea of a link between the contextual and the individual level is displayed. In addition to analyzing direct effects on the voting behaviour from both socio-demographic factors of the respondents and the environment, a moderating effect of the context on the individual influence is assumed. The context as a moderator should affect "the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable" (Baron and Kenny 1986: 1174).

The relations between individual and contextual variables can occur in the same cleavage, e.g. social class should play a minor role on the individual level in case of a very homogeneous class environment. In contrast, when there is a strong polarisation between several classes, the individual effect should be very important. For the religious cleavage a link between both levels is also realistic, however due to the two different aspects, confession and religiosity, the effects are rather curvilinear. In religiously homogeneous contexts (Catholic or Protestant), the difference between Catholics and Protestants should be less important. Instead the difference in



Figure 1: Moderating effect of socio-demographic context

religiosity should have significant impact. Exactly the opposite would then be true for religiously heterogeneous cantons, where still the confessional difference should play a major role (for more details see Goldberg 2012).

#### Cross-level cross-cleavage relationships

Besides the influence of the contextual factors on the individual variables out of the same cleavage, it might also have an influence on the individual effects of other cleavages. Often the effects of one cleavage vanish as soon as one controls for a second or third cleavage (by including individual measures of the latter). This would imply a certain type of competition between cleavages. In the literature one can find the argument that one cleavage dominates the others, so that the strength of a certain cleavage determines the strength of the others (Lijphart 1979; Sartori 1969). This connection might be observable in terms of cross-cleavage cross-level relationships. The idea is that if the social environment is favourable for the strength of an individual effect of a given cleavage, the individual effects of other cleavages should play a minor role and vice versa. Figure 2 displays such a relationship between the two cleavages of social class and religion. Additional to the moderating effect a context might have on the individual influence on the voting behaviour in the same cleavage, the context is also expected to play a role on the individual effect(s) of a competing cleavage.

Certainly, the idea of an interdependency between cleavages is not new, but so far has not been studied in a systematic way. For religion and social class the expectations are straightforward. In an environment, where the differences between social classes are very salient and important and thus are articulated by the political parties, the role of individual religious differences should be of minor importance. For instance, the basic interest of the working class is rather to ensure the support of their families in economic terms, so that other somewhat "soft" factors, like religious differences, are less relevant. Altermatt (1989: 64) states that the church has a smaller significance for the people, the bigger the impact of the industrial working environment is. A



Figure 2: Cross-level relationships between social class and the religious cleavage

similar reasoning in the other direction can be found by Inglehart (1989), who argues that the decline of class voting and the change from materialist to post materialist issues offers a favourable environment for religious factors to reappear. Translated into my argumentation this would mean that strong differences between classes hinders the importance of religion. In contrast, in socially more homogeneous contexts, other issues and factors should gain in strength, where religion could be one aspect of. If then rather the denominational or the religious difference shows an effect remains to be seen.

For the individual effect of social class a similar dependency on the religious environment seems plausible. Class voting should be especially evident for secular people for whom religious differences do not matter. Consequently, I argue that social class is more important on the individual level, the less religious the population in the canton is. However, in earlier studies it was shown that overall, the impact of social class was ranked lower and only subsidiary to the religious influence (Kerr 1987; Lijphart 1980). This might be still valid today, so that in case of a cross-cutting of both cleavages the religious voters tend to vote for Christian parties, independent of their social class belonging (Knutsen 2007). In such cross-cutting circumstances religious voting could be important despite the presence of a socially heterogeneous context. A strong social class voting, in contrast, definitely requires a rather pacified religious cleavage. As an additional result, the following analysis may also show if such a domination of one cleavage is present.

## Data and Method

Data from the Swiss Electoral Studies (SELECTS) 2011 are used for the analysis. In the survey a cantonal representative sample was drawn for all of the 26 cantons to include at least 100 respondents for each canton<sup>2</sup>. These numbers are sufficiently large to allow the later presented method of multilevel modelling, as for each canton enough respondents are included. Due to some missings on the dependent and the independent variables, the number of interviews finally used for this paper varies between 3823 and 4189 depending on the model. The additional information required for the contextual factors is derived from the Swiss Federal Statistical Office (BfS) and the Swiss federation of trade unions.

## Measurement

#### Dependent variable

#### VOTING PROBABILITY

Traditionally, studies analysing voting behaviour regard the discrete party choice of the electorate as the dependent variable. However, in the 1990s another method that used voting preferences emerged. These improved survey measurements enable more sophisticated analyses of the current electoral behaviour (cf. van der Brug et al. 2009; van der Eijk et al. 2006; Lachat and Selb 2005; Lachat 2010; Tillie 1995). Van der Eijk et al. (2006: 425-426) argue that older studies using nominal scaled dependent variables fail to distinguish between the choice and the attractiveness of a party. This leads to difficulties in analysing the vote choice. According to the authors, the classic works of the social-structural tradition (e.g. Lazarsfeld et al. 1944) are no exception to this. These studies focus on the determinants of utilities for parties and at the same time imply that the electorate selects the party with the highest utility.

Empirical evidence of the strong relationship between the voting probability and the party choice has been provided in the literature. For the Dutch case van der Eijk et al. (2006: 435) show that 93 per cent of the respondents voted for the party they gave the highest utility score. The identical number was found by Lachat (2010: 5) for Switzerland using the SELECTS data from 2007. Sciarini (2010: 122) found for the same data the slightly different number of 88 per cent, which still stands for a very strong link. Therefore, the authors come to the conclusion that the relationship between the voting propensities and the actual choice is almost deterministic.

The concrete operationalization of the voting probability for each party is measured on an 11-point scale. The respondents were asked to indicate the probability that they would ever vote for the party. Answers range from a very low (value of 0) to a very high probability (value

 $<sup>^{2}</sup>$ This number was not achieved in all of the 26 cantons. The absolute smallest number of interviews was conducted in Glarus with 65 respondents. In the other cantons, the number of interviews is closer to the desired 100 and in most cantons even higher.

of 10). To measure the effect of social class the voting propensities for the SP and the SVP are used as dependant variables. The religious model is analyzed using the CVP as the dependant variable. These three parties can be regarded as the main parties for the respective cleavages.

#### Independent variables

## Social class

To keep the model and the interpretation of it simple, the measurement of social class divides the electorate into three groups. As a kind of neutral middle category serve the professional categories of managers and administrators plus liberal professions. The two other groups consist on the one hand of socio-cultural and technical specialists. On the other hand, there are the service and production workers plus the old middle class (clerks and small business owners). This operationalization shall display the more recent differences linked to the new class cleavage, but shall also represent the traditional divide between the working class and the rest. The belonging to either of these classes can thus function in terms of the economic identity (e.g. workers voting for the SP) or the cultural identity (e.g. workers voting for the SVP) (cf. Oesch and Rennwald 2010b). Managers/administrators and liberal professions are the reference category in the following models.

Operationalizing the environment in terms of social class (heterogeneity) is not that clear and easy. There are many possibilities how one could construct such a context. For the time being I decided to look at a rather traditional form of the social class conflict, the union density in each canton. The figures for that measurement are calculated by dividing the members of all unions by the total number of working persons in each canton.<sup>3</sup> This operationalization displays less the real source of possible differences between social classes, but rather in how far these differences are worked on by the unions. For the average population these stronger vertical differences, e.g. between workers and socio-cultural specialists, should be more visible and thus more important for the electoral decision compared to finer-grained horizontal differences linked to more recent developments in the social stratification. The resulting figures for the union density range from 2,6% to 17,3%. Since the distribution is slightly skewed, the natural logarithm is used.

The measurement of the religious characteristics follows the mainstream in electoral research. It is argued that religion consists of two central aspects, the religious denomination and the religious attendance or belief (van der Brug et al. 2009: 1269).<sup>4</sup>

<sup>&</sup>lt;sup>3</sup>Information regarding the working population are based on the census of enterprises in 2008 (BfS) and statistics for the union memberships are retrieved from the dossier "Zur Mitgliederentwicklung der Gewerkschaften im Jahr 2008" (Ackermann and Moser-Brossy 2009) on www.sgb.ch. For the six half-cantons, numbers were not always provided separately for all cantons, so that combined figures are used for Obwalden/Nidwalden and Appenzell Ausserrhoden/Innerrhoden.

 $<sup>^{4}</sup>$ There are also voices critical of that rather simple operationalization. Authors such as Wolf (1996) and Broughton and ten Napel (2000) claim that for the many dimensions of the religious life more specific measurements are necessary (e.g. the subjective rating of the own religiosity, the importance of religion as one area of life

#### RELIGIOUS DENOMINATION

In Switzerland the two main groups are the Catholics and the Protestants. Additionally, there are some minor Christian groups, Jewish people and a growing community of Muslims. Today there is also a big third group, which consists of people who do not belong to any religious community. For the statistical models only the traditionally most important difference between Catholics and non-Catholics is considered. A dummy *(catholic)* is used with the value of 1 for respondents who indicated they belong to the Catholic church. RELIGIOSITY

The second religious variable measures the religiosity in terms of church attendance. Here, the respondents have been asked how often they attend church services or other events of their church. The answers are measured on a 7-point scale ranging from "several times a week" to "never". This scale was reversed, so that high numbers represent regular attendance.<sup>5</sup>

The religious environment is measured by looking at the proportion of Catholic citizens. In comparison to a measurement regarding the people not belonging to any religion, the Catholic proportion could be more useful, since Protestants or other (minor) religious denominations are often said to be rather secular, so that only regarding the overall secular population might lead to blurred results. Data are retrieved from the Federal Statistical Office, indicating the number of people belonging to the Catholic church. The data is based on a sample from 2010 asking all citizens residing in Switzerland older than 15 years.

## Control variables

In addition, four control variables are included in the analysis. On the individual level, two variables control for gender and age and on the contextual level they control for specific issues of the Swiss electoral system and historical developments of the party competition.

## Gender and Age

It's commonly known that women systematically prefer other parties than men and young people differ in their voting behaviour compared to older citizens. Thus, a dummy for women and age (as a continuous variable) are included in the analysis.

#### THRESHOLD OF EXCLUSION

The National Council in Switzerland consists of 200 seats, which are distributed according to proportional representation. The constituencies are considered at the cantonal level and not on the national level, thus in the smaller cantons there is a de facto majoritarian voting

or specific current religious issues, such as abortion or genetic questions).

<sup>&</sup>lt;sup>5</sup>In the original variable, around 1000 respondents have been coded as missings. The majority of them do not belong to any church and therefore have not been asked about the church attendance. If this coding would be maintained, almost a quarter of the overall sample would be lost. Since the lowest category of the religiosity classifies people who "never" attend church services, all missings, which have been coded so due to their prior indication that the respondents do not belong to any church, have been grouped in that category as well.

system<sup>6</sup>. This is due to the distribution of seats to the cantons according to their population. More precisely the number of eligible voters is crucial, with a minimum representation of one seat per (half-)canton (Linder 2009: 574). This fact can have consequences for the individual voter, because several parties do not run in all cantons, so the citizens can sometimes not vote for their real party preference. Additionally, in the smaller cantons there might be strategic voting for the second or third preference in order not to waste the vote. Although the usage of voting propensities should be rather immune against possible strategic voting, especially the non-competition by some parties in specific (small) cantons might lead to a bias in the reported party preferences. Some people are just not able to vote for their favourite party as it does not run in the election. Consequently, respondents might take this fact into consideration when reporting their voting propensities.

The effective threshold of exclusion is derived from Lijphart (1997). It reports the proportion of votes a party can receive without winning a seat. The formula is  $\frac{0.75}{1+m}$  with m as the district magnitude. The resulting values do not represent the highest possible thresholds, but shall be more realistic representing the average between high and low values. As the distribution of the variable is heavily skewed, following Lachat (2010: 8) the natural logarithm of it is used. ROMANDIE

In the context of Swiss referendums or elections, the voting behaviour sometimes differs between the German- and the French-speaking part of the country. These differences are said to be based on cultural issues and became known as the so called "*Röstigraben*". In his analysis comparing the influence of religious, linguistic and class characteristics, Lijphart (1979) found that for instance the support of religious parties is stronger in the German-speaking part controlled for confessional belonging.<sup>7</sup> In the case of existing regional differences in the party preferences independent of the included explanatory variables, the actual effects might be hidden. Consequently, a dummy for the six French-speaking cantons Fribourg, Geneva, Neuchâtel, Jura, Valais and Vaud is included to control for a possible cultural effect.

### Method

In order to analyse the simultaneous impact of individual and contextual variables, hierarchical multilevel models are calculated. As the dependent variable is linear, the regressions are calculated by the method of OLS. This multilevel method enables the estimation of the effects in appropriate statistical ways (Steenbergen and Jones 2002). The random-slope model including interaction terms between the individual and contextual variables (in this example the individual

 $<sup>^{6}</sup>$ Exactly speaking it is a plurality vote, where the candidate with the most votes wins the seat without the requirement of an absolute majority.

<sup>&</sup>lt;sup>7</sup>This result is mainly due to differences for practising Catholics, whereas for Protestants and non-practising Catholics almost no difference between both regions is observable (see Lipphart 1979: 449).

social class depending on the religious environment) has the following form:

$$\begin{split} Y_{ij} &= \beta_0 + \beta_1 \, specialists_{ij} + \beta_2 \, workers/omc_{ij} + \beta_3 \, age_i + \beta_4 \, woman_i + \\ &\gamma_1 \, catholic.population_j + \gamma_2 \, Romandie_j + \gamma_3 \, threshold_j + \\ &\alpha_1 \, specialists_{ij} * catholic.population_j + \alpha_2 \, workers/omc_{ij} * catholic.population_j + \\ &\mu_{1i} \, specialists_{ij} + \mu_{2i} \, workers/omd_{ii} + \mu_{0i} + \varepsilon_{ii} \end{split}$$

The voting probability for a party (Y) of an individual *i* in the canton *j* is explained by the following factors. In the first line of the equation is a global mean for the propensity of voting for the party  $(\beta_0)$  and the two individual variables, the belonging to the specialists  $(\beta_1)$  or the workers plus old middle class  $(\beta_2)$ , which as random slopes are allowed to vary between cantons  $(\mu_{1j} \sim N(0, \tau_1^2) \text{ and } \mu_{2j} \sim N(0, \tau_2^2))$ . Age and woman serve as individual control variables  $(\beta_3 \text{ and } \beta_4)$ . In the second line are the contextual factors, the Catholic population  $(\gamma_1)$  and the two individual factors are interacted with the Catholic context  $(\alpha_1 \text{ and } \alpha_2)$ . Finally, an individual  $(\varepsilon_{ij} \sim N(0, \sigma^2))$  and a cantonal variation  $(\mu_{0j} \sim N(0, \tau_0^2))$  are included.

Coefficients out of multiplicative interaction models are often hard to interpret when only looking at the (separate) values for the interesting variables. Additionally, the significance or insignificance of the coefficients is normally not the crucial point, but the marginal effects (see Brambor et al. 2006). Thus, in the following analysis, the results for the individual social class and religious variables will be always displayed in terms of marginal effects, plotted against the corresponding environment.

## Analysis

Before discussing the results of the cross-cleavage analyses in more detail, some important findings of the individual effects without the contextual influence shall be mentioned. Looking at models 1 and 4 in table 1 suggests that, as expected, the more recent class divisions linked to the globalization matter more than the traditional labour/capital divide. Better educated classes like the socio-cultural and technical specialists prefer much more left parties (in this case the SP) and much less so populist right parties like the SVP. In terms of the working and the old middle class, the new linkage with the populist right is clearly visible, whereas for the old link with the Social Democrats no significant effect can be observed. In the models of religious voting (see table 2) both of the religious factors lead to the expected higher probability of voting for the Christian Democrats (CVP).

In a second step the contextual factors out of the same cleavage have been added to the models to analyse a moderating effect as theorized and displayed in figure 1. Tables 3 and 4 in the appendix show the regression results. A first general finding of these intra-cleavage models is that the social class environment exerts a direct effect only for the voting probabilities of the SP, but not for the SVP (models 10 and 12). More interesting, however, are the interaction models and the resulting marginal effects, which are displayed in figures 3 and 4.

In terms of social class voting, the results suggest the presence of the expected moderating effect of the environment.<sup>8</sup> For both tested parties, the differences in the individual effect on the voting propensities are up to one point when changing from a very homogeneous context (practically no union density) to a more heterogeneous one. What comes as a small surprise is the strong positive link between the effects for specialists and workers. Actually, opposing



Figure 3: Marginal effects for SP preference depending on union density



Figure 4: Marginal effects for SVP preference depending on union density

<sup>&</sup>lt;sup>8</sup>Due to the rather small number of groups (26 cantons) the results are based on, the confidence intervals are quite large, especially at the extremes. Thus, the observed patterns could be theoretically also completely flat or sometimes even pointing in the opposite direction.

effects could be assumed, in the sense of growing (negative or positive) effects for both social groups. In contrast, the SP preference rises for both groups the stronger the union density is, with a slightly steeper curve for the specialists. The pattern for the specialists fits to the theory as a stronger class effect is present the more heterogeneous the context gets. The effect for the workers could be interpreted as an indicator of the recent transformation from left to right voting. A (traditionally) more positive effect is observed in cantons with a high union density, which rather represents the old class conflict. Consequently, in these cantons the old link to the SP still holds, whereas in most of the other contexts a slightly negative effect is to be seen. Hence, instead of a moderating effect in terms of strength, the environment moderates the individual effect in terms of the direction, switching from negative to positive coefficients the more heterogeneous the contexts gets.

Similar patterns are present for the SVP preference. Here, the negative effect for the specialists becomes stronger the more heterogeneous the context gets and at the same time the effect for the workers decreases. The latter can be again a sign of the ongoing realignment from left to right voting, in the sense that the nowadays overall positive preference for the SVP is negatively moderated the more union members are in a canton.

The religious model also partly confirms the expected effects. As displayed in figure 5 the individual Catholic effect shows the expected inverse U-shape. Again, the confidence intervals are rather big, but the pattern still indicates a more important effect of the confessional difference in heterogeneous cantons with a significant number of Catholics and Protestants and a smaller effect for homogeneous contexts (Catholic or non-Catholic). The expected U-shape for the second religious factor, the church attendance, can not be confirmed. The pattern looks rather like a positive linear effect the more Catholic the environment gets.

Turning now to the cross-cleavage models. First, the class voting depending on the religious environment was analysed. The results are displayed in table 1. Similar to the class environment



Figure 5: Marginal effects for CVP preference depending on Catholic environment

	(1)	(2)	(3)	(4)	(5)	(6)
	Probability to vote: SP		Probab	Probability to vote: SVP		
level 1 (individual)						
Specialists	$1.40^{***}$ (0.17)	$1.39^{***}$ (0.15)	$2.03^{***}$ (0.38)	$-1.02^{***}$ (0.17)	$-1.04^{***}$ (0.15)	$-1.65^{***}$ (0.39)
Workers + old middle class	-0.11 (0.14)	-0.12 (0.13)	$\begin{array}{c} 0.33 \ (0.36) \end{array}$	$0.82^{***}$ (0.18)	$0.81^{***}$ (0.17)	$0.29 \\ (0.46)$
Age	$-0.02^{***}$ (0.00)	$-0.02^{***}$ (0.00)	$-0.02^{***}$ (0.00)	$-0.02^{***}$ (0.00)	$-0.02^{***}$ (0.00)	$-0.02^{***}$ (0.00)
Woman	$0.66^{***}$ (0.11)	$0.66^{***}$ (0.11)	$0.66^{***}$ (0.11)	$-0.79^{***}$ (0.11)	$-0.79^{***}$ (0.11)	$-0.79^{***}$ (0.11)
Level 2 (context)						
Catholic population		$-2.57^{***}$ (0.50)	$-1.57^{**}$ (0.71)		$\begin{array}{c} 0.25 \\ (0.58) \end{array}$	-0.67 (0.77)
Threshold (log)	-0.17 (0.13)	0.14 (0.12)	$0.12 \\ (0.12)$	$0.20^{*}$ (0.12)	$0.18 \\ (0.14)$	$0.18 \\ (0.14)$
Romandie	$\begin{array}{c} 0.41 \\ (0.26) \end{array}$	$0.76^{***}$ (0.20)	$0.71^{***}$ (0.20)	$-1.43^{***}$ (0.24)	$-1.42^{***}$ (0.23)	$-1.44^{***}$ (0.24)
Specialists X Catholic population			$-1.50^{*}$ (0.80)			$1.41^{*}$ (0.81)
Workers + old middle class X Catholic population			-1.02 (0.74)			1.19 (0.92)
Constant	$3.79^{***}$ (0.40)	$5.60^{***}$ (0.50)	$5.13^{***}$ (0.55)	$6.18^{***}$ (0.38)	$6.04^{***}$ (0.57)	$\begin{array}{c} 6.44^{***} \\ (0.62) \end{array}$
Random-effects Parameters						
sd (Specialists)	0.36	0.10	0.19	0.33	0.10	0.17
sd (Workers $+$ old middle class)	0.26	0.06	0.24	0.51	0.44	0.55
sd (Constant)	0.33	0.36	0.32	0.42	0.36	0.37
corr (Specialists, workers + omc)	0.99	-1.0	1.0	0.34	-0.09	0.07 -0.68
corr (Workers + omc. Constant)	0.92	-1.0	-0.34	-0.03	-0.94	-0.08
Observations	0.00	3823 (26)	0.01	0.01	3836 (26)	0.00

Table 1: Class voting depending on the religious environment

ref. category for the social class variables are managers/administrators and liberal professions Standard errors in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

in the intra-cleavage models, the religious environment also shows a highly significant direct effect on the voting probability for the SP, but not for the SVP. In very Catholic cantons, the Social Democrats are much less preferred than in less Catholic contexts. The probability to vote the SVP seems to be rather independent of the contextual settings, with the exception of a strong difference between the German- and French-speaking part. The actual interesting models for this paper are models 3 and 6 including the interaction terms of the individual social class variables with the religious environment. As already stated earlier, the interpretation of the single and interaction coefficient is not the main goal, but the weakly significant effect of the specialists' interaction term in both models already points to a strong moderating relationship.

This is confirmed when regarding the marginal effects in figures 6 and 7. The effect of belonging



Figure 6: Marginal effects for SP preference depending on Catholic environment



Figure 7: Marginal effects for SVP preference depending on Catholic environment

to the social class of specialists is heavily influenced by the religious environment. In terms of SP preference, living in an almost non-Catholic canton increases the voting probability of almost two points, whereas this effect is only around 0.7 points in the most Catholic contexts. The opposite effect is present for the SVP preference, where a very negative effect practically diminishes when living in a purely Catholic environment. For the second social category, the workers and the old middle class, there seems to be also a significant dependence on the religious environment. However, the link is less clear to interpret as for both parties a smaller or even no effect at all was expected in increasing religious contexts. In terms of SP voting there is a growing negative effect observable and for the SVP, rather surprisingly, a strongly increasing effect the more Catholics live in the canton. The negative pattern for the SP among workers (and the general weakness of left parties in Catholic cantons) can be explained by the inter-class strategy of the Christian Democrat Party, which in almost purely Catholic cantons specifically aims to represent the Catholic working class (Nicolet and Sciarini 2010). However, if that strategy would really work,

the effect for the SVP should be also decreasing, which is clearly not the case.<sup>9</sup>

The equivalent model(s) have been also calculated for the individual religious effects depending on the class environment. The results are shown in table 2. A first minor result is the statistically significant negative impact of the class environment for the CVP preference. In more socially heterogeneous contexts (higher union density), the Christian Democrats are less probable to be voted for. Regarding the interaction coefficients in model 9, there is absolutely no effect for being Catholic depending on the union density, whereas the church attendance shows a positive effect when interacted with the social context. An easier interpretation is again provided by graphing the marginal effects in figure 8. The first graph shows that the individual effect of being Catholic does not differ at all between the different class environments. In contrast to that, the effect of the church attendance is strongly affected by the union density, however in an unexpected direction. Instead of a weaker religious effect in socially more heterogeneous environments, the individual effect more than doubles. This runs completely counter to the assumption of a smaller effect of religion when the social context is favourable for a significant impact of individual social class differences.

Looking at the patterns for both of the religious variables could be a prove that there is just not a systematic relationship between individual religious factors and the class environment. However, as already discussed in the theoretical part (see Knutsen 2007), it can also be an



Figure 8: Marginal effects for CVP preference depending on union density

<sup>&</sup>lt;sup>9</sup>When comparing the graphs for the individual social class effects once depending on the religious environment with the ones depending on the class environment, one notices that the patterns are almost the mirror of each other. For instance, the groups of specialists have a rising probability to vote SP the higher the union density (figure 3a) and an almost equally decreasing effect for a stronger Catholic environment (figure 6a). The same mirrored pattern can be seen for the SVP preference and for the workers. Although the two contextual variables are rather weakly correlated (r=-0.22) there seems to be something going on which repeats the specific patterns, also the ones speaking against the theory in the intra- and cross-cleavage models. A more detailed look, e.g. using different contextual operationalizations, might help to solve this peculiarity.

	(7) Probak	(8)	(9)
	Frobat	bility to vot	e: UVP
LEVEL 1 (INDIVIDUAL)			
Catholic	$1.04^{***}$ (0.13)	$1.02^{***}$ (0.14)	$1.06 \\ (0.81)$
Church attendance	$\begin{array}{c} 0.36^{***} \\ (0.04) \end{array}$	$\begin{array}{c} 0.37^{***} \\ (0.04) \end{array}$	$0.77^{***}$ (0.21)
Age	$-0.02^{***}$ (0.00)	$-0.02^{***}$ (0.00)	-0.02*** (0.00)
Woman	-0.09 (0.09)	-0.09 (0.09)	-0.09 (0.09)
Level 2 (context)			
Union density (log)		$-0.60^{***}$ (0.13)	$-0.73^{***}$ (0.17)
Threshold (log)	$\begin{array}{c} 0.37^{***} \\ (0.09) \end{array}$	$0.31^{***}$ (0.07)	$0.31^{***}$ (0.07)
Romandie	-0.25 (0.18)	-0.11 (0.13)	-0.11 (0.14)
Catholic X Union density			$\begin{array}{c} 0.01 \\ (0.31) \end{array}$
Church attendance X Union density Constant	5.34***	3.61***	$0.16^{*}$ (0.08) $3.30^{***}$
RANDOM-FEFECTS PARAMETERS	(0.30)	(0.43)	(0.51)
RANDOM-EFFECTS PARAMETERS	0.90	0.49	0.47
sd (Catnonc) sd (Church attendance) sd (Constant)	$0.38 \\ 0.14 \\ 0.25$	$0.43 \\ 0.15 \\ 0.09$	0.47 0.12 0.14
corr (Catholic, Church attendance) corr (Catholic, Constant)	-0.06 0.00	0.03	0.11 -0.96
corr (Onurch attendance, Constant)-0.38-0.030.Observations4189 (26)			0.18

Table 2: Religious voting dependant on the class environment

Standard errors in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

indicator of the fact that even in case of favourable conditions for a strong class-based voting, the latter might be dominated by the religious cleavage. In this sense, religious factors show their effect independent of what the environment in terms of other cleavages looks like and may even be stronger in contexts which should favour rivalling individual effects (social class).

A general finding of the presented analyses is the existence of cross-cleavage relationships between individual and contextual variables. However, the link seems not as easy as expected in the theoretical models. Instead of influencing simply the strength of rivalling individual effects, in several cases it was rather the direction of an effect, which switched depending on the environment. The evidence so far is based on specific models using only three parties, which were assumed to be the most important ones for the respective cleavage. A different type of model or different operationalizations (e.g. using different social categories and/or another reference category) might help to strengthen some of the found results or could reinforce the unexpected patterns which speak against the here proposed theoretical model. Consequently, the analysis is far from being finished and the results can be only regarded as preliminary.

# Conclusion

The purpose of the study was to determine in how far individual effects of one cleavage are affected in strength by the presence of a contextual effect of a second social cleavage. To study this, the most important cleavages in Switzerland, the religion and social class, have been regarded. In a very first step I showed that the individual effects of social cleavages are still significant predictors of party support, even though a realignment in the social class cleavage could be observed (workers switching from left to right voting). Before considering the moderating effect of the context out of a rivalling cleavage, the intra-cleavage relationships between individual and contextual effects were analysed. The resulting models proved the existence of an influence of the class environment (union density) for individual social class differences, although not always in the expected direction. In the religious cleavage the confessional differences are moderated in terms of an inverse U-shape depending on the proportion of Catholic citizens. The second religious factor, church attendance seems to be weakly effected in a positive linear way.

The actual interest of the study was examined in a subsequent step when the individual factors of one cleavage were interacted with the environment of the other cleavage. These models again showed a significant moderating influence of the environment. Especially the religious context seems to matter for the individual class differences. However, the theory of a systematic strengthening (or weakening) in case of a more homogeneous (or heterogeneous) competing cleavage environment does not hold. In some cases the moderation works rather in terms of switching the direction of an effect. A finer-grained analysis testing for different categorisations of social class and also considering other parties might help to get a clearer picture of the cross-cleavage links. The individual religious variables seem to be less influenced by the class environment. Denominational differences have been completely stable over different contexts, whereas the religiosity in terms of church attendance became even stronger the more heterogeneous the class context got. This might be interpreted as a domination of some cleavages over others. In case of significant religious differences, these could be the primary source for the decision which party to support. The heterogeneity of other cleavages does then play no (systematic) role in determining the religious effects.

Since the presented analysis is just a first attempt to analyse the theoretical link between individual and contextual effects across cleavages, further research is needed to provide a definite answer. As already mentioned, different measurements or categorisations for the individual variables are possible. The same is true for the contextual variables, for which also several alternative operationalizations exist (e.g. measuring social class heterogeneity using gini coefficients for income or wealth). Additionally, the effects or relationships could be more complex than assumed and tested here. This could be especially true in terms of considering a more comprehensive framework instead of analysing parties separately. To include another cleavage, it could be also worth to have a look on the third major cleavage in Switzerland, the rural-urban one.

# Appendix

Table 5. Individual and contextual determinants in class voting				
	(10)	(10) (11)		(13)
	Probability to vote: SP		Probability	to vote: SVP
level 1 (individual)				
Specialists	$1.40^{***}$ (0.16)	$2.52^{***}$ (0.90)	$-1.04^{***}$ (0.15)	$-2.11^{**}$ (0.84)
Workers + old middle class	-0.11 (0.14)	$0.83 \\ (0.76)$	$0.81^{***}$ (0.17)	-0.53 (0.86)
Age	$-0.02^{***}$ (0.00)	$-0.02^{***}$ (0.00)	$-0.02^{***}$ (0.00)	$-0.02^{***}$ (0.00)
Woman	$0.66^{***}$ (0.11)	$0.66^{***}$ (0.11)	$-0.79^{***}$ (0.11)	$-0.79^{***}$ (0.11)
Level 2 (context)				
Union density (log)	$0.59^{**}$ (0.26)	$0.42 \\ (0.26)$	-0.19 (0.24)	$0.12 \\ (0.30)$
Threshold (log)	-0.09 (0.13)	-0.09 (0.13)	$0.19 \\ (0.12)$	$0.19 \\ (0.12)$
Romandie	0.21 (0.28)	0.14 (0.26)	$-1.34^{***}$ (0.25)	$-1.33^{***}$ (0.25)
Specialists X Union density		0.44 (0.35)		-0.42 (0.33)
Workers + old middle class X Union density		$0.37 \\ (0.29)$		-0.52 (0.33)
Constant	$5.51^{***}$ (0.85)	$5.14^{***}$ (0.83)	$5.66^{***}$ (0.80)	$6.45^{***}$ (0.93)
RANDOM-EFFECTS PARAMETERS				
sd (Specialists) sd (Workers + old middle class)	$\begin{array}{c} 0.31 \\ 0.24 \end{array}$	$0.35 \\ 0.24$	$\begin{array}{c} 0.13 \\ 0.47 \end{array}$	$\begin{array}{c} 0.15 \\ 0.36 \end{array}$
sd (Constant)	0.33	0.27	0.39	0.38
$\operatorname{corr}$ (Specialists, Workers + omc)	0.96	1.0	0.03	-0.81
corr (Specialists, Constant)	0.77	1.0	-0.98	-0.93
$\operatorname{corr}(\operatorname{Workers} + \operatorname{omc}, \operatorname{Constant})$	0.57	1.0	0.18	0.54
Observations	3823 (26)		3836 (26)	

Table 3: Individual and contextual determinants in class voting

Standard errors in parentheses \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

	(14) Probability	(15) to vote: CVP
	11050511105	
level 1 (individual)		
Catholic	$1.00^{***}$ (0.14)	$0.52 \\ (1.03)$
Church attendance	$\begin{array}{c} 0.36^{***} \\ (0.04) \end{array}$	$0.30 \\ (0.29)$
Age	$-0.02^{***}$ (0.00)	$-0.02^{***}$ (0.00)
Woman	-0.09 (0.09)	-0.09 (0.09)
Level 2 (context)		
Catholic proportion	$0.81^{*}$ (0.46)	1.10 (3.49)
Catholic proportion <sup>2</sup>		-0.63 (3.63)
Threshold (log)	$0.28^{***}$ (0.10)	$0.29^{***}$ (0.11)
Romandie	-0.26 (0.18)	-0.27 (0.19)
Catholic X Catholic proportion		2.31 (4.76)
Church attendance X Catholic proportion		-0.00 (1.36)
Catholic X Catholic proportion <sup>2</sup>		-2.36 (4.81)
Church attendance $X$ Catholic proportion <sup>2</sup>		0.24 (1.37)
Constant	$4.80^{***}$ (0.43)	$\begin{array}{c} 4.85^{***} \\ (0.82) \end{array}$
RANDOM-EFFECTS PARAMETERS		
sd (Catholic)	0.38	0.44
sd (Church attendance)	0.14	0.14
sd (Constant)	0.31	0.33
corr (Catholic, Church attendance)	-0.04	-0.06
corr (Church attendance, Constant)	-0.01	-0.16
Observations	418	39 (26)
Standard errors in parentheses		( - /

Table 4: Individual and contextual determinants in religious voting (14)(15)

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

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