Coronagraben. Culture and social distancing in times of COVID-19

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Abstract

Social distancing measures have been introduced in many countries in response to the COVID-19 pandemic. The rate of compliance to these measures has varied substantially. We study how cultural differences can explain this variance using data on mobility in Swiss cantons between January and May 2020. We find that mobility declined after the outbreak but significantly less in the German-speaking region. Contrary to the evidence in the literature, we find that within the Swiss context, higher generalized trust in others is strongly associated with lower reductions in individual mobility. Additionally, support for a limited role of the state in matters of welfare is also found to be negatively associated with mobility reduction. We attribute our results to a combination of these cultural traits having altered the trade-off between the chance of contracting the virus and the costs associated with significant alterations of daily activities.

Keywords: COVID-19, Culture, Social distancing, trust, political attitudes

JEL Codes: H12, Z1, D91

1 Introduction

After the initial outbreak in Wuhan in early January 2020, COVID-19 quickly spread across all regions of the world, achieving a pandemic status. Flattening the contagion curve has rapidly become a priority in many countries in an attempt to reduce the load on the healthcare system and the overall mortality rate. A two-months strict lockdown was introduced in the Chinese province of Hubei on January 23, and Western democracies followed suit enacting shelter-in place and social

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distancing measures and large cut backs on production activities. Many countries have also tried to reduce interpersonal contact and mobility through massive "stay at home" media campaigns aimed at altering citizens habits. While the health measures enacted have been, by and large, homogeneous across countries, compliance to these rules varied widely with the local context. In the absence of perfect enforcement capacity by the states, cultural attitudes and behavioral norms, which typically vary from country to country, can make an important difference and explain deviations in voluntary compliance. This is all the more true when it comes to individual mobility decisions, which entails a delicate trade-off between the chance of contracting (or diffusing) a disease and the economic (and individual well being) costs associated to significant alterations of daily activities.

There are major cultural differences, for example, in the physical distance that people keep when interacting with others, with Southern Europeans preferring closer interpersonal distance than Northern Europeans and Northern Americans (Remland et al. (1995); Sorokowska et al. (2017)). Since social contact patterns are a crucial factor behind the spread of the disease, the benefit of abiding to strict social distancing rules and reducing mobility will be higher in societies accustomed to close interactions (Prem et al. (2017); Oksanen et al. (2020)). Can there be a role for cultural biases in the spread of pandemics? We study how cultural values may play a role in the evolution of individual mobility under COVID-19 measures. Our work contributes to a growing body of studies linking cultural variables, social distancing, and the spread of COVID-19 (Durante et al. (2020); Barrios et al. (2020); Borgonovi and Andrieu (2020); Brodeur et al. (2020); Egorov et al. (2020); Bargain and Aminjonov (2020)). Building on these papers, we investigate various dimensions of culture and focus our analysis on Switzerland, which provides a unique case study due to its native language groups which are shared by the adjoining countries and the distinct linguistic geographical areas with deep historical roots. These areas are associated with specific cultural traits and an example that highlights this is the colloquial name for the border between the French and German speaking region, called Röstigraben. *Rösti* refers to a hashed potato dish which originated in the canton of Bern and is typical of Swiss German cuisine, and *Graben* is a trench or division. The intensity of the COVID-19 pandemic has varied substantially between the Swiss regions and the divide around the spread of the virus has been defined by some observers as a *Coronagraben*, in

reference to the cultural border. We discuss this in further detail in section 2.

We add to the existing literature by focusing on a set of cultural dimensions and mechanisms that might have shaped the actual adherence to social distancing in Switzerland. More precisely, first we examine the relationship between average distance travelled in a day and language as a proxy for culture. Then to further investigate the role of specific cultural dimensions, we examine the relationship between daily mobility and a set of specific cultural traits associated with the linguistic background - trust, altruistic beliefs, political leaning and preferences for re-distributive policies. We measure these values and attitudes using European Social Survey and Swiss Household Panel,. To capture the adherence to social distancing, we rely on phone location tracking records of 3000 individuals, collected by Intervista AG on behalf of the Swiss Federal Statistical Office (FSO). Our analysis focuses on two important dates. The first is February 25, when the first COVID-19 case was reported in Switzerland, marking the beginning of the outbreak in the country. The second is March 16, when the Swiss government declared an "extraordinary situation", instituting a ban on all private and public events and closing places such as restaurants and bars. The period between these two dates would be indicative of voluntary compliance to social distancing while the period post March 16 would be indicative of adherence to official measures. In our empirical model, we include canton and daily fixed effects and also control for time-varying number of COVID-19 cases reported and fatalities at the canton level. Our specification also includes the interaction of a rich set of baseline geographic, demographic, and socio-economic cantonal controls with time dummies. This accounts for difference in mobility levels across cantons and the the common evolution of mobility in all cantons in any give day. Additionally it accurately captures the effect of culture by controlling for factors that maybe correlated with it and may affect changes in mobility. Lastly to ensure the effect we are capturing is from our stated cultural dimensions and not other elements of social capital, we also control for average time spent watching, reading or listening to news and for trust in institutions.

Using this approach, we find surprising results showing that cantons in the German linguistic region, which are also characterized by higher levels of generalized trust towards others and more altruistic beliefs, reduced their mobility significantly less than the French speaking cantons. There-

fore, within the Swiss context, high interpersonal trust is strongly associated with lower reductions in individual mobility. These findings are at odds with Durante et al. (2020) and Brodeur et al. (2020), who document a significantly higher decline in mobility in areas with higher civic capital and trust. We attribute these results to the specific way in which these cultural traits alter the trade-off behind individual decision on mobility. Reducing mobility becomes less relevant as an instrument to reduce the probability of contracting (or diffusing) the disease if one believes that other individuals in society will respect, among other things, physical distance and other infection prevention and control norms (IPC), thus making mobility reduction less relevant. In a sense, physical distancing replaces social distancing. Additionally it is important to note that German speaking cantons are also relatively right leaning on the political scale, support a limited role of the state in maters of welfare and greatly value individual freedom. Therefore in these cantons, reducing individual mobility due to government imposition could be perceived as a sacrifice of a taller order than in more collectivist regions. We also find preliminary evidence of a possible mechanism driving these results: a combination of higher interpersonal trust and conservative political attitude that may have shaped the lower reduction in mobility for the German speaking cantons. Overall, our results show that the costs and benefits associated with compliance changes with culture and suggests that contextual conditions, shaped by the culture of reference, are key in determining how traits such as interpersonal trust, preference for re-distributive policies and political attitudes, mediate the social distancing process. The paper closest to ours is Mazzonna (2020), who uses a different set of mobility data for Switzerland and sheds light on the mobility differences across the German and Latin (French and Italian) speaking regions in Switzerland. While Mazzonna (2020) looks at differences across the linguistic regions and the role of elderly demographic, our paper decomposes the effect of culture by highlighting the specific cultural values and beliefs that may explain these differences and also explores the underlying mechanism. Both the papers can be seen as complimentary in emphasizing the role of culture and the main results are consistent with one another.

The remainder of the paper is organized as follows. Section 2 presents our conceptual framework, discusses the cultural differences in Switzerland and gives a background on the COVID-19 emergency in the country. Section 3 describes the data used for our analysis and Section 4 presents our

empirical and identification strategy. Section 5 discusses the results while Section 6 concludes.

2 Culture and its dimensions

We first clarify what we mean by *culture*. We follow the definition proposed by Guiso et al. (2006), where *culture* is defined as a set of "customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation". We focus on language as a proxy for culture and further look at two specific dimensions or traits of culture and explain their place in the context of Switzerland:

Language: There is a large literature linking culture and language. This literature essentially builds on *The Sapir–Whorf hypothesis* also known as the linguistic relativity hypothesis, which highlights how the language one speaks influences the way one perceives the world. This hypothesis is a culmination of several early contributions in anthropology that explored this link, spanning from van Humboldt (1836) to Mandelbaum (1951), Whorf (1956), Sapir (1968) and Boas (1982) whose work on cultural relativism further highlighted that language and culture were interdependent. Several studies, across various disciplines, have shown that an examination of cultural groups can be engaged by language since it has an impact on identity, values, attitudes and behaviour (Heslop et al. (1998); Schulz et al. (2006); Laesser et al. (2014)). More recently works of economists such as Bisin and Verdier (2011) and Ginsburgh and Weber (2020) show that the notion of a common native language is inextricably linked with cultural proximity. This goes beyond language proficiency and ability to speak and in fact captures the vertical and horizontal transmission of values.

Generalized trust: One of the most commonly defined cultural trait is generalized trust towards others, the beliefs held about others' trustworthiness. Alesina and La Ferrara (2002) hypothesize that this belief is a moral or cultural attitude and is positively correlated with individual characteristics such as the level and type of education received and occurrence of recent misfortunes. They also show the importance of community characteristics such as high income inequality which often leads to low interpersonal trust. From the early work of Arrow (1972), who recognized the importance of mutual trust in commercial and noncommercial transactions, the relation between

generalized trust and economic development is well established (Algan and Cahuc (2014); Butler et al. (2016)). It is important to note that this differs from the concept of trust in institutions, which may simply be capturing the efficiency or corruption of the government in power.

Preferences for redistribution: Alesina and Giuliano (2011) define preferences for redistribution as a situation in which one agent also cares about the utility of somebody else. They reject the notion of these preferences being unpredictable "social noise" and highlight the role of culture as an important determinant. Different cultures may have distinct approaches in contrasting the merits of equality versus individualism. As shown by Alesina and Giuliano (2015), views on inequality and redistribution emphasize both the *value* and *belief* component of culture. Luttmer and Singhal (2011) highlight the former by showing a significant correlation between second-generation immigrants' redistributive preferences and the average preference in their birth countries. An individual's predisposition to support a welfare state may also be determined by cultural traits such as perception of poverty and fairness. Think of an individual who not only cares about his own income but dislikes inequality due to luck rather than effort and ability. His *belief* that success is primarily determined by luck and personal connections, rather than hard work, will determine his preferences for redistribution and social policies. Furthermore, these cultural values and attitudes are significantly persistent and tend to remain fairly stable over time and generations.

Alesina and Giuliano (2011, 2015) show that these preferences also underlie the formation of political attitudes and are in fact a crucial factor in dividing the political left and the political right. Perception about fairness (work vs. luck) in the income-generating process is key in formation of political attitudes and supporting a welfare state. Luttmer and Singhal (2011) find evidence that cultural influences affect voting behaviour by documenting that immigrants from high-preference countries are more likely to vote for more pro - redistribution parties.

2.1 Why Switzerland?

Switzerland provides an excellent case study where language is in fact a very appropriate proxy for culture (Büchi (2001)). Switzerland has twenty-six cantons and four official languages having equal status in law - German, French, Italian and Romansh. According to the 2000 census, German is

spoken by 63.7% of the population, French by 20.4%, Italian by 6.5%, and Romansh by 0.5%. Three cantons - Valais, Fribourg, and Berne - are bilingual (French, German); one canton - Graubünden - is officially trilingual (German, Romansh, Italian). From the remaining cantons, seventeen are German speaking, four French speaking and one Italian speaking. Looking at Panel (a) in Figure 1, we observe that there are geographically distinct linguistic regions. These language borders have deep historical roots and with the exception of few minor movements, the early historical development of the German-French and German-Italian language boundaries have been relatively stable since AD 1100 (Sonderegger et al. (1967); Egger and Lassmann (2015); Büchi (2001)). For example, historically the border of the canton Valais traced along the border of the Roman-Catholic Diocese of Sion and most of the canton Graubünden was once part of a Roman province called Raetia, which was established in 15 BC, resulting in multilingualism (Eugster et al. (2017)). These language borders are a measure of cultural values and beliefs manifested by means of differences in native languages. Therefore these explicit language regions can be thought of as pockets of different cultures and the *Röstigraben* exemplifies this fact. The language frontier manifests itself through different preferences in many aspects of everyday life and provides an ideal context to study the effects of culture. There are several works of public economics and trade that have exploited this unique variation in languages within Switzerland (Eugster et al. (2017), Athias and Wicht (2014), Egger and Lassmann (2015) and Eugster and Parchet (2011)).

These distinct language zones also capture the variation in preferences for redistributive and social policies. One can see this in the voting shares of Swiss citizens on several federal popular initiatives.[1] These initiatives tackle various socio-economic issues and are very informative about the attitudes and perception of cantons towards matters of welfare and social spending. One issue that has always brought the cultural divide to the forefront is the unemployment insurance (assurance-chômage). In 1997 and 2010, the citizens voted on whether there should be further cuts on the financing of unemployment benefits. The variation in vote share, as seen in Panel (b) of Figure 1, results in a map with demarcations that look strikingly similar to the language borders seen in Panel (a). Despite the thirteen years gap, note the persistence in the preferences across the cultural

[1]This is a unique aspect of Swiss democracy which allows citizens to propose changes to the Swiss Federal Constitution. For a popular initiative to succeed, those launching the initiative need to collect 100,000 signatures from people entitled to vote within eighteen months. If Parliament decides that the initiative is valid, it is put to a popular vote.

borders. Thus one can say the Röstigraben is also reflective of the left-leaning voting behavior of the French-speaking part, especially when it comes to social policy issues (Germann et al. (2012)).

2.2 COVID-19 in Switzerland

The first case of COVID-19 in Switzerland was confirmed on February 25 a 70-year-old man tested positive in Ticino, followed by a second case on February 26 in Geneva. Due to its proximity to Lombardia, Ticino took early restrictive measures while the only rule imposed on the remaining cantons was a relatively moderate step taken by the federal government - to raise the alert level to "special situation" by banning events with more than 1,000 people.[2] However, by mid March the country was particularly affected by the epidemic, the increase in confirmed cases accelerated with the reproductive number oscillating between 1.5 and 2 (Sciré et al. (2020)). With more than 2,600 people infected, there was a need to mobilise up to 8,000 members of the military to help contain the rapid spread, representing the largest army mobilisation since the Second World War. The Swiss government also introduced border checks with Germany, France and Austria. This was the turning point for Switzerland and on March 16 the government declared an "extraordinary situation", instituting a ban on all private and public events and closing restaurants, bars, leisure facilities and shops apart from grocery stores and pharmacies. It is important to note that unlike its neighbours, Switzerland did not announce a definite lockdown but encouraged its citizens to follow "social distancing" as part of an information campaign by the Federal Office of Public Health (FOPH). The first phase of relaxing the restrictions began on April 27. Figure A.1 shows the evolution of the total cases reported in Switzerland for three different periods.

The intensity of the health crisis has varied substantially in the country. An invisible border has divided Switzerland during the emergency: the French- and Italian-speaking parts have been significantly more affected than the German-speaking areas, with only few exceptions. The cantons of Geneva, Ticino and Vaud lead by far the ranking of most cases per 10,000 inhabitants, recording values that more than double the majority of German speaking cantons. This linguistic divide around the spread of the virus has been defined by some observers as a *Coronagraben*, in reference to the cultural Röstigraben.

[2]This included football and ice hockey championships, carnivals in Basel and Lucerne, the Geneva Motor Show and Baselworld watch fair.

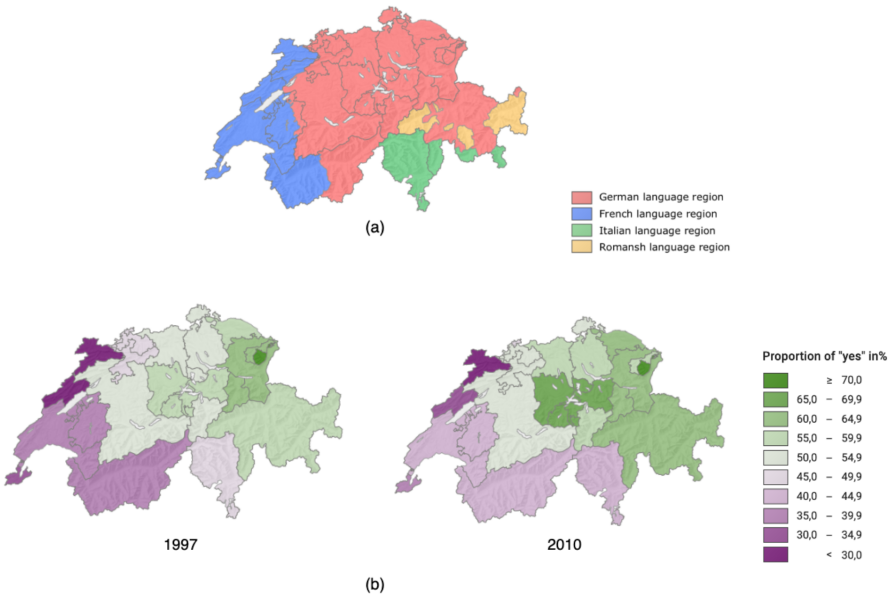

Figure 1: Panel (a) - Language regions of Switzerland. The grey lines are the canton borders. Panel (b) - Percentage of yes votes for the Law on unemployment insurance in 1997 and the revision of this law in 2010. *Source: Swiss Federal Statistical Office (FSO)*

3 Data

Before we proceed to describe the variables we use for our empirical analysis, we address one major limitation. Although it would be ideal to have data at the municipal level and use the multilingual cantons as a way to investigate our research question, unfortunately neither the mobility data nor the statistics related to the pandemic are available for municipalities. All the data described below are at the cantonal level. Therefore we drop five cantons from our sample of twenty-six: Bern, Valais, Fribourg and Graubünden, as they are officially multilingual. Additionally we also drop Ticino because of its proximity to the Italian region of Lombardia which may bias our results. This limits our focus to studying the the impact of cultural differences between the French and German speaking cantons.

Social Distancing: We use daily data on individual mobility in each canton between January 1 and April 27, 2020. This has been collected by Intervista AG, a market research institute, on behalf of the Swiss Federal Statistical Office (FSO). It is based on the phone location tracking records of 3,000 individuals, selected according to several criteria, such as sex, age, canton of residence and mobility behavior in accordance with the representative guidelines provided by the FSO. The data

consists of average distance travelled each day as well as the radius of daily travel, both measured in kilometres. The former indicates the sum of all journeys made by an individual during a day, by foot or by means of transport such as car, bicycle or public transportation. The daily radius indicates the distance from the overnight accommodation, the night before, to the most distant location reached in one day as the crow flies.

Culture: For the first indicator of culture, language, we associate each canton with a dummy variable equal to one if the official language is German and zero if it is French. This information is available on the official websites of the FSO and of every canton. To measure cultural traits we use two surveys: Swiss Household Panel (SHP)[3] and European Social Survey (ESS).[4]

To assess generalized trust towards others, the survey elicits beliefs by asking - *Would you say that most people can be trusted or that you can't be too careful in dealing with people, if 0 means "Can't be too careful" and 10 means "Most people can be trusted"?* Using the average intensity of trust beliefs we classify cantons as "high trust in others" and "low trust in others". To gauge interpersonal trust we also look at an additional question - *Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?* Similar to above, the response is on scale from 0 to 10, where 0 means people mostly look out for themselves and 10 means that people mostly try to be helpful. The intended contrast is between self-interest and altruistic helpfulness. We classify cantons as "high altruistic beliefs" and "low altruistic beliefs ".

To capture views on equality and beliefs about preferences for redistribution, the survey asks the respondents to agree or disagree with the statement - *Large differences in people's incomes are acceptable to properly reward differences in talents and efforts.* Using the percentage of respondents who agreed, we classify cantons as "high acceptance of income differences" and "low acceptance of income differences".[5] As discussed in Section 2, cultural perceptions of the role of state are central to formation of political attitudes and ideologies. Utilizing the survey question - *In politics*

[3]It is an annual panel study based on a random sample of private households in Switzerland over time. The aim is to observe social change, in particular the dynamics of changing living conditions and representations in the population of Switzerland. We use wave 19 (2017) and wave 20 (2018).

[4]The ESS is a cross-sectional survey administered in a large sample of mostly European nations, containing information on individuals' social values,cultural norms, and behavioral patterns. We use round 8, 2016 for Switzerland.

[5]The survey provides five options: strongly agree, agree, neither agree nor disagree, disagree and strongly disagree. We look at the share of first two responses.

people sometimes talk of "left" and "right". Where would you place yourself on this scale, where 0 means the left and 10 means the right? - we focus on political positioning along the left-right spectrum and classify cantons as "right leaning" and "left leaning". The cantonal distribution of these measures can be seen in Figure 2.

Other variables: To distinguish the effect of culture from other factors, we include a rich set of economic, demographic and geographic controls at the cantonal level. To capture the quality of the health system and hospital capacity, we use data on the number of hospital beds per 1000 inhabitants. We also control for two measures of vulnerability to the pandemic: the share of population older than 65, representing the at-risk individuals and the tourism statistics which is the total number of arrivals in hotels and health establishments. Our specification also includes population density, area, share of urban and foreign population in the canton, graduation rate in higher education institutions, household disposable income, temperature and GDP per capita. These help control for the fact that they maybe potentially correlated with both mobility and the cultural traits. This information is publicly available on the FSO website. Additionally to control for the severity of COVID-19 at the local level, we control for the total cases reported and fatalities recorded. The data on daily COVID-19 statistics is taken from the website corona-data.ch, which uses official information communicated by the cantons and FOPH.

Finally, to ensure the effect we are capturing is from our stated cultural dimensions and not other elements of social capital we control for average time spent watching, reading or listening to news and for trust in institutions. Although we do not have a variable on physical proximity, we use information on frequency of interpersonal relations, which maybe a likely determinant of mobility. This information is taken from ESS and SHP. Summary statistics for all variables are reported in Table A1.

4 Empirical strategy

First we estimate the following equation:

$$Y_{ct} = \alpha_c + \theta_t + \beta\ Lang_c \times D_t + \delta \mathbf{X}_{ct} + \epsilon_{ct} \tag{1}$$

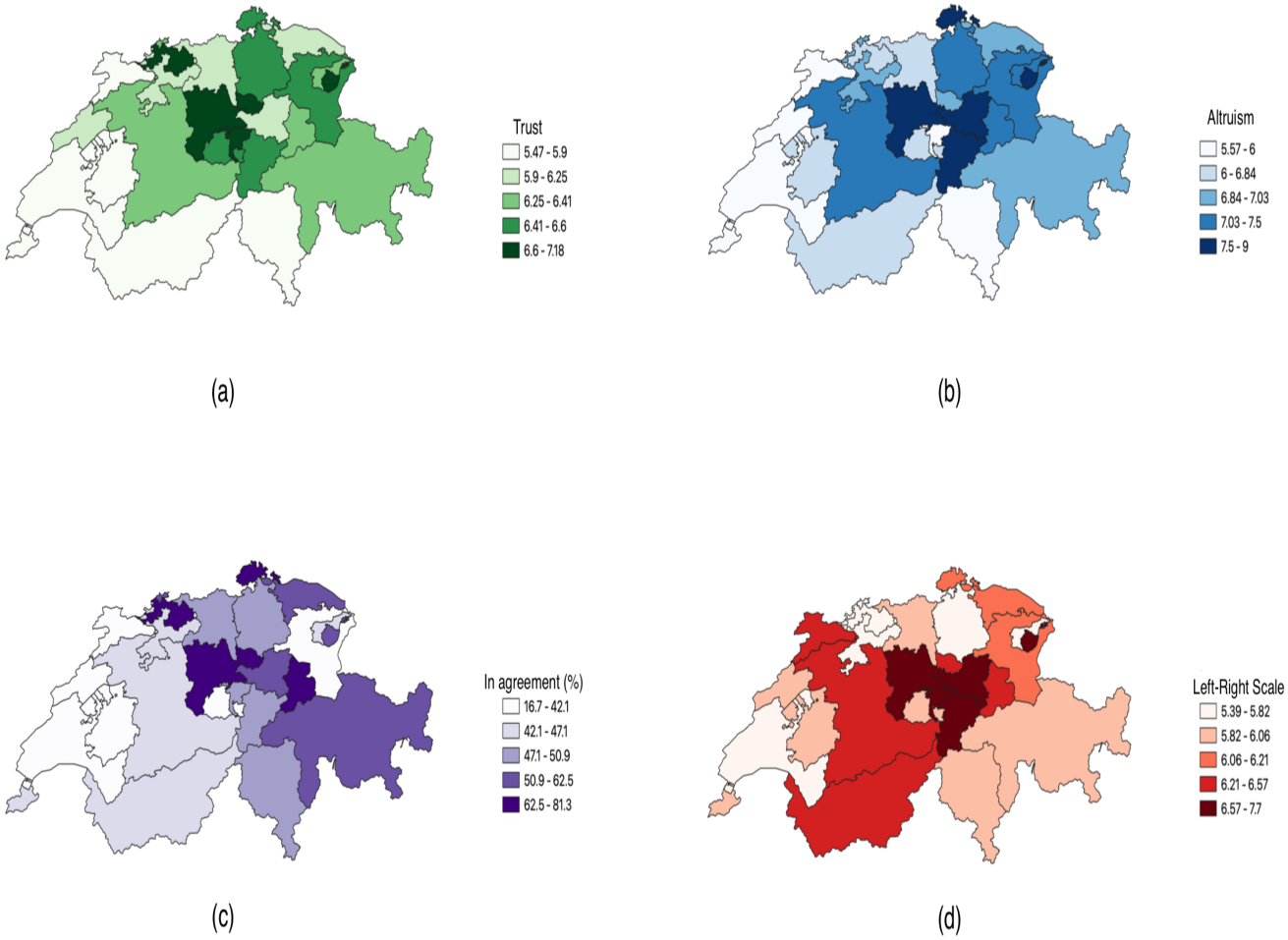

Figure 2: Panel (a),(b) - Distribution of measures of trust. Panel (c),(d) - Preferences for redistribution and political positioning

Y_{ct} is the average distance travelled in a day t, in a given canton c, measuring individual mobility and adherence to social distancing. $Lang_c$ is a dummy variable which is equal to one if the official language is German and zero if French. D_t is a vector of time dummies indicating the three phases of the pandemic:

- Phase 1: January 1 - February 25 $\longrightarrow$ Pre-outbreak
- Phase 2: February 25 - March 16 $\longrightarrow$ Post-outbreak & Pre - "extraordinary situation"
- Phase 3: March 16 - April 27 $\longrightarrow$ Post - "extraordinary situation"

Our main interest is in the coefficient β on the interaction between $Lang_c$ and D_t. This captures the differential evolution of mobility in areas with different languages, as a proxy for cultural values, over the different phases. Note that Phase 1 is excluded as the reference. $\mathbf{X}_{ct}$ is a vector of controls that includes average monthly temperature and log of total COVID-19 cases and fatalities reported in the canton up until day $t-1$, which captures the degree of exposure and the urgency to comply with social distancing measures. To isolate the effect of the culture and to control for factors that maybe correlated with it and may affect the change in mobility, we include interactions between the phase time dummies and all the economic, geographic and demographic controls described in section 3. Additionally we include daily fixed effects θ_t and canton fixed effects α_c to account for difference in mobility levels across cantons and the the common evolution of mobility in all cantons in any give day. Similar to Durante et al. (2020), the identifying assumption for (1) comes from the fact that after controlling for canton observable and unobservable time invariant characteristics, severity of the pandemic at the cantonal level and daily changes in mobility at the country level, the differential change in mobility in German and French speaking cantons is unrelated to factors other than the ones explicitly controlled for.

While equation (1) provides us with the first insight in to the significant mobility differences across the German and French speaking region, to further examine the role of specific *dimensions* of culture, we estimate:

$$Y_{ct} = \alpha_c + \theta_t + \gamma\ Dim_c \times D_t + \delta \mathbf{X}_{ct} + \epsilon_{ct} \tag{2}$$

All the variables in (2) are the same as (1) with the exception of Dim_c which reflects one of the cultural dimensions - generalized trust towards others and preferences for redistribution. As

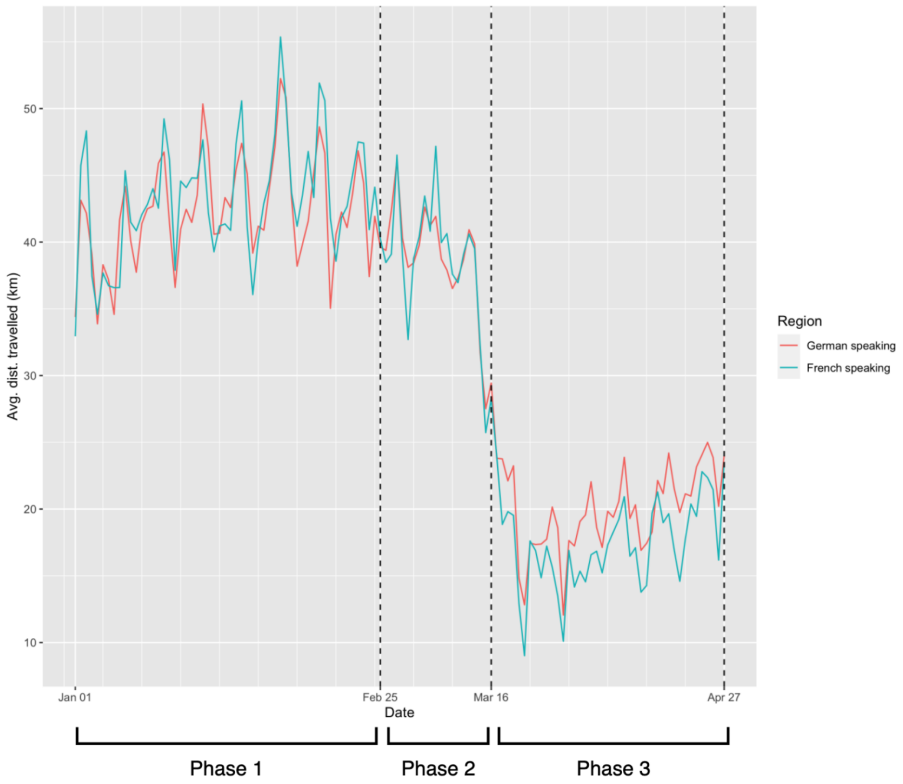

Figure 3: Daily mobility (average distance travelled in a day) across the linguistic regions

discussed in section 3, Dim_c is a dummy variable taking on one of the four indicators capturing these dimensions and our main coefficient of interest is γ. Finally, to understand the possible mechanism driving our results we estimate a modified version of (2). Instead of looking at one cultural dimension at a time, we introduce a triple interaction between the two dimensions - trust in others and political position on the left-right scale - and the phase time dummies.

$$Y_{ct} = \alpha_c + \theta_t + \phi\, Trust_c \times Political\ Position_c \times D_t + \delta \mathbf{X}_{ct} + \epsilon_{ct} \tag{3}$$

5 Results

Figure 3 shows the relationship between mobility and linguistic regions using the raw data.[6] In the weeks prior to the outbreak, cantons in both linguistic regions displayed more or less similar mobility patterns. Soon after the first case was reported we can observe elements of divergence. Although there is a marked drop in mobility for both areas, there is a clear difference between the

[6]This depiction comprises all the cantons in both the linguistic regions, including the multilingual ones.

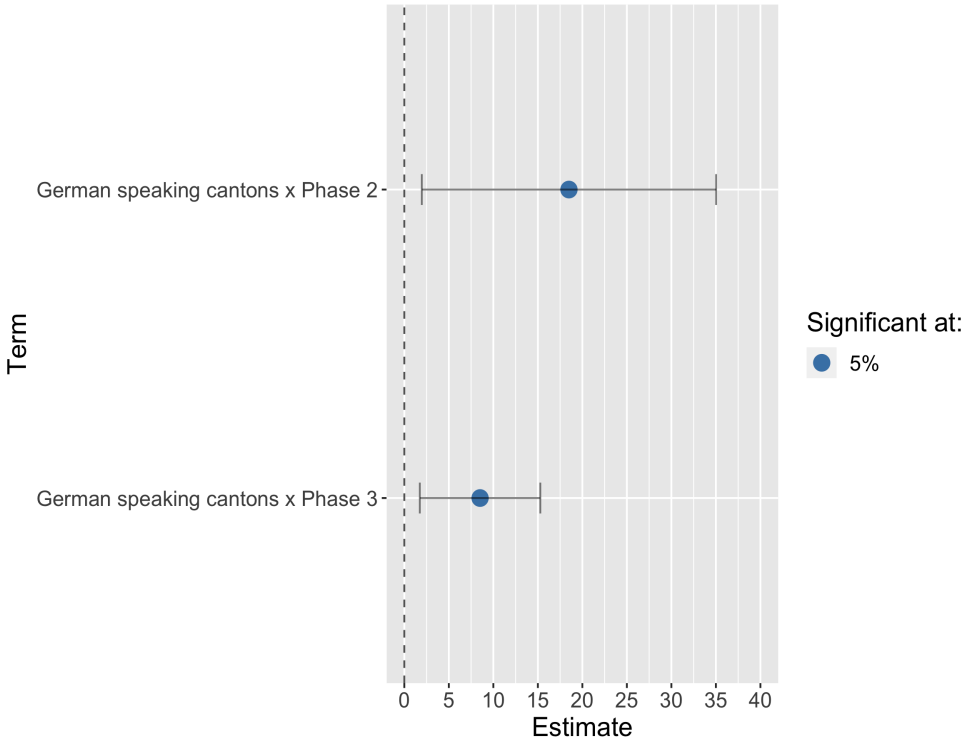

Figure 4: Language as proxy for *culture*. Estimating equation (1) with economic, demographic, geographic and COVID -19 controls. Daily and canton FE. Standard errors are wild bootstrapped and clustered at canton level

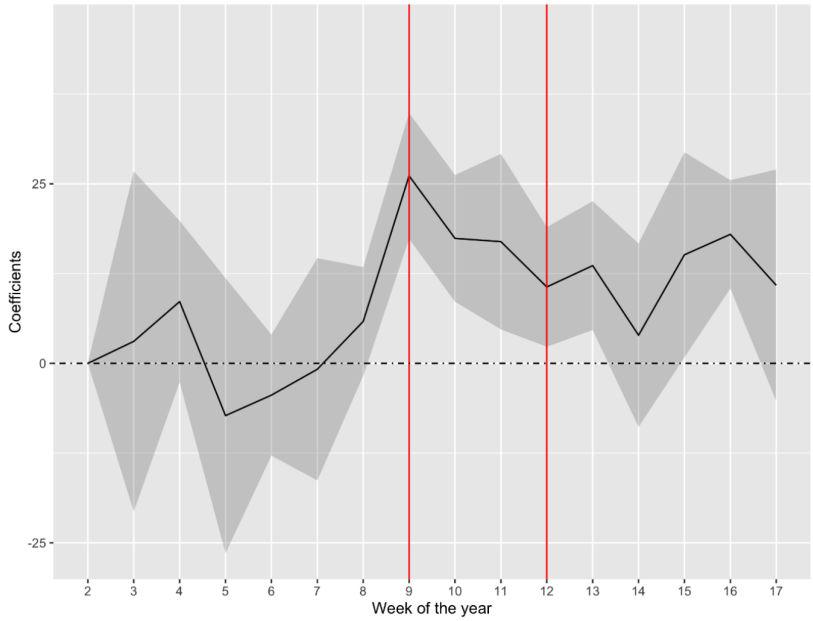

Figure 5: Difference in mobility between German and French speaking cantons. Week 9: 24 February - 1 March. Week 12: 16 March - 22 March. Date of outbreak: 25 February and implementation of federal measures: 16 March

two, especially in phase three. After the government declared "extraordinary situation", in fact, the fall in average distance travelled daily is notably less in German speaking region as compared to the French speaking one. Figure A.2, in the Appendix, shows how the difference, between the two regions evolves over time, and the mean value of the difference for each phase. Note how the average value of the difference becomes positive post-outbreak. This is validated by our results from estimating (1) and the cultural trait indicators provide an explanation as to why we may be observing this behaviour.

Figure 4 shows our main results from (1). We find that during phase two i.e. post-outbreak and pre - "extraordinary situation", the drop in mobility in the German speaking cantons was, on average, around 18 kilometres less than in the French speaking region. The mobility reduction in this phase is indicative of the voluntary compliance of individuals in response to the outbreak. Although this difference reduced in phase three which is post - "extraordinary situation", it continued to remain positive and significant, with German speaking cantons reducing their average mobility by 8 kilometres less than their counterpart. Figure 5 shows average differences in weekly mobility between the two linguistic regions over several phases of the pandemic. The pattern is broadly consistent with that of Figure 3. Prior to the outbreak, there is no significant difference between the German and French speaking cantons but the divergence in mobility patterns becomes significantly positive after the identification of the first COVID-19 case in the country (phase two) and remains significant up until week 13 of phase three.

To further examine which cultural traits may be contributing to this divergence, we estimate (2). Figure 6 depicts the results for the first cultural dimension, generalized trust towards others. We find that after the introduction of federal measures, in cantons with higher trust in others, the mobility decline was around 6 kilometres less than in the low trusting cantons. Similarly, for phase two and three of the pandemic, cantons with higher altruistic beliefs reduced their mobility by 12 and 8 kilometres less than cantons with lower altruistic beliefs. Figure 7 shows the results for the second cultural dimension, preferences for redistribution. Cantons which are more accepting of inequality and position themselves towards the political right, reflecting the diffusion of individualistic attitudes in the society, reduced their mobility significantly less than their counterparts. In the

right leaning cantons, for both phase two and three, the mobility reduction was approximately 6 kilometres less than in the left leaning cantons. We show the average differences in weekly mobility for each of these cultural indicators in Figure A.3. In the Appendix, section B, we show further robustness checks.

6 Discussion and mechanisms

Our results show the existence of significant differences concerning the evolution of mobility in the German and French speaking cantons. Cultural values and beliefs may provide an insight into the divergence in mobility patterns between the two linguistic regions. Observe in Figure 2, cantons with higher generalized trust towards others and politically right leaning with stronger stance against re-distributive social policies, tend to broadly fall in the German speaking linguistic region. Individuals living in these cantons may believe that even while travelling, fellow citizens will behave responsibly by following social distancing and hygiene rules, reducing the benefit of limiting individual mobility as meeting strangers and acquaintances involves a relatively lower (perceived) risk of contracting the disease. Additionally, their attitude towards income differences and poverty may reflect their position on the role of state and the fact that the population is likely to be more uncomfortable with public decisions entailing severe limitations of personal liberties to preserve the social welfare. This is also reflected in a recent public survey where a third of Swiss Germans believed that the closing of shops and establishments of personal services was too extreme, against 18% of Swiss French.[7] It is also of interest to note that many cantons within the German linguistic region are the stronghold of The Swiss People's Party also known as the Democratic Union of the Centre (SVP/UDC), which has consistently won the largest share of votes in the national council since 1999. Ideologically the party stands for the rejection of the expansion of the welfare state, lower taxation and was extremely critical and vocal during the pandemic to reopen the economy.

As discussed in the introduction, a part of our results is at odds with the recent work on civic capital and mobility, and especially the results by Brodeur et al. (2020) who show high-trust American counties decrease their mobility significantly more than low-trust counties post-lockdown.

[7]This survey was carried out by Sotomo research institute and more information can be found on: https://www.rts.ch/info/suisse/11314737–coronagraben-quand-romands-et-alemaniques-ne-vivent-pas-la-meme-crise.html

However, our results on political attitudes and the role of state are broadly consistent with the second finding of Brodeur et al. (2020), that counties with relatively more self-declared democrats decrease significantly more their mobility. To understand the possible mechanism driving our results we estimate (3) as displayed in Figure 8. Instead of looking at one cultural dimension at a time, we introduce a triple interaction between the two cultural dimensions - trust in others and political position on the left-right scale - and the phase time dummies. This allows us to gauge the heterogeneity present in our results. Figure 8 shows that, during both phases of the pandemic, the effect of higher trust in others, on average daily mobility, is significant and *positive* for right leaning cantons compared to the left leaning cantons where it is *negative* and significant. This provides some preliminary insight into the the fact that it may have been a combination of higher interpersonal trust and conservative political attitude that shaped the lower reduction in mobility in the German speaking cantons. This emphasizes the fact that the same cultural traits may elicit different responses under a crises situation such as a pandemic and that understanding the country specific context is crucial to policy implementation. It is extremely telling that the Swiss government did not impose any stringent lockdown like several other European countries and even while preparing for a possible second wave the government is against imposing nationwide lockdown restrictions.

7 Conclusion

Rarely in history have we witnessed such homogeneous policy response to shocks as in the case of the COVID-19 pandemic. In an attempt to contain the spread of the virus and reducing the load on the healthcare system, virtually all countries have adopted restrictive measures aimed at reducing individual mobility and inducing social distancing. Interestingly, however, the rate of compliance to such measures has varied enormously. This paper examines to what extent cultural differences can explain these variations. We focus on a specific set of cultural dimensions that might have shaped the actual adherence to social distancing in Switzerland, a country characterized by cultural differences that vary across its cantons. More precisely, we examine the relationship between average distance travelled in a day and language, trust, altruistic beliefs, political leaning and preferences for re-distributive policies. We document how the Swiss reduced their mobility first

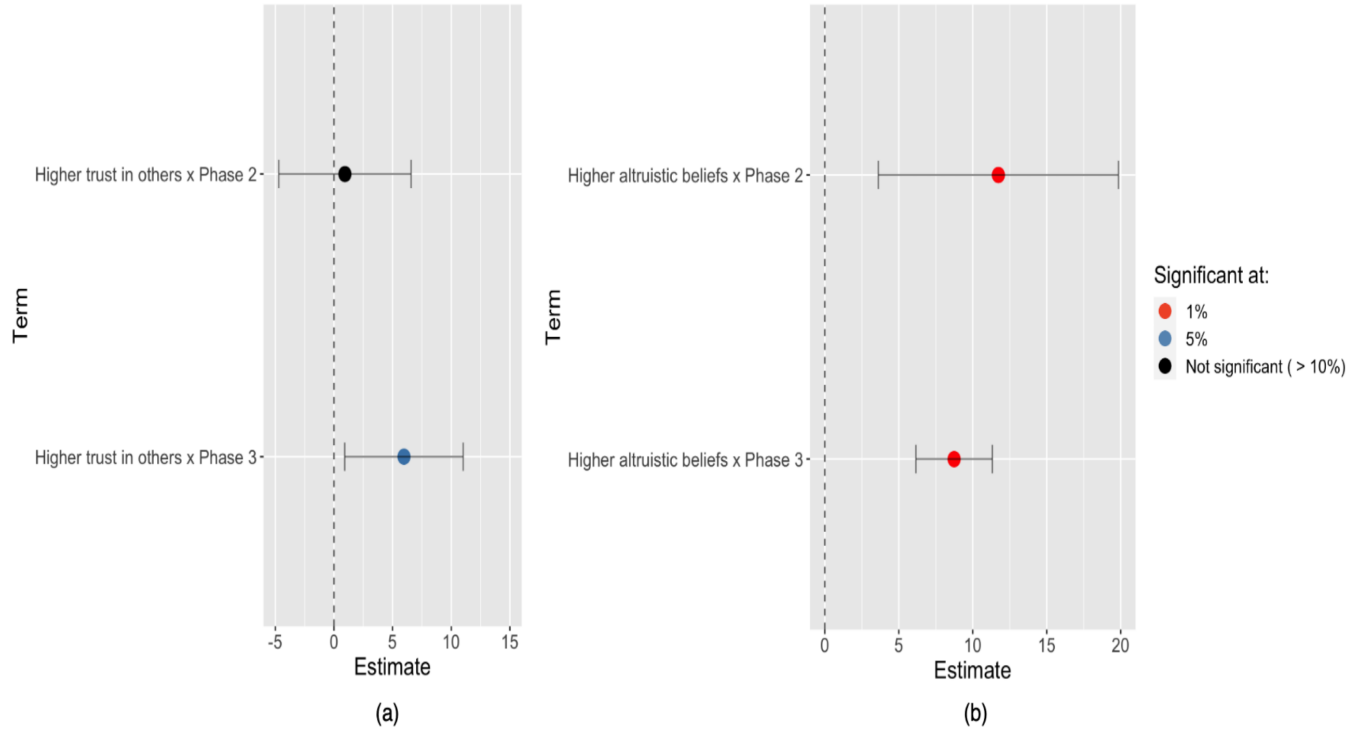

Figure 6: Cultural *dimension*: Generalized trust towards others. Estimating equation (2) with economic, demographic, geographic and COVID -19 controls. Daily and canton FE. Standard errors are wild bootstrapped and clustered at canton level

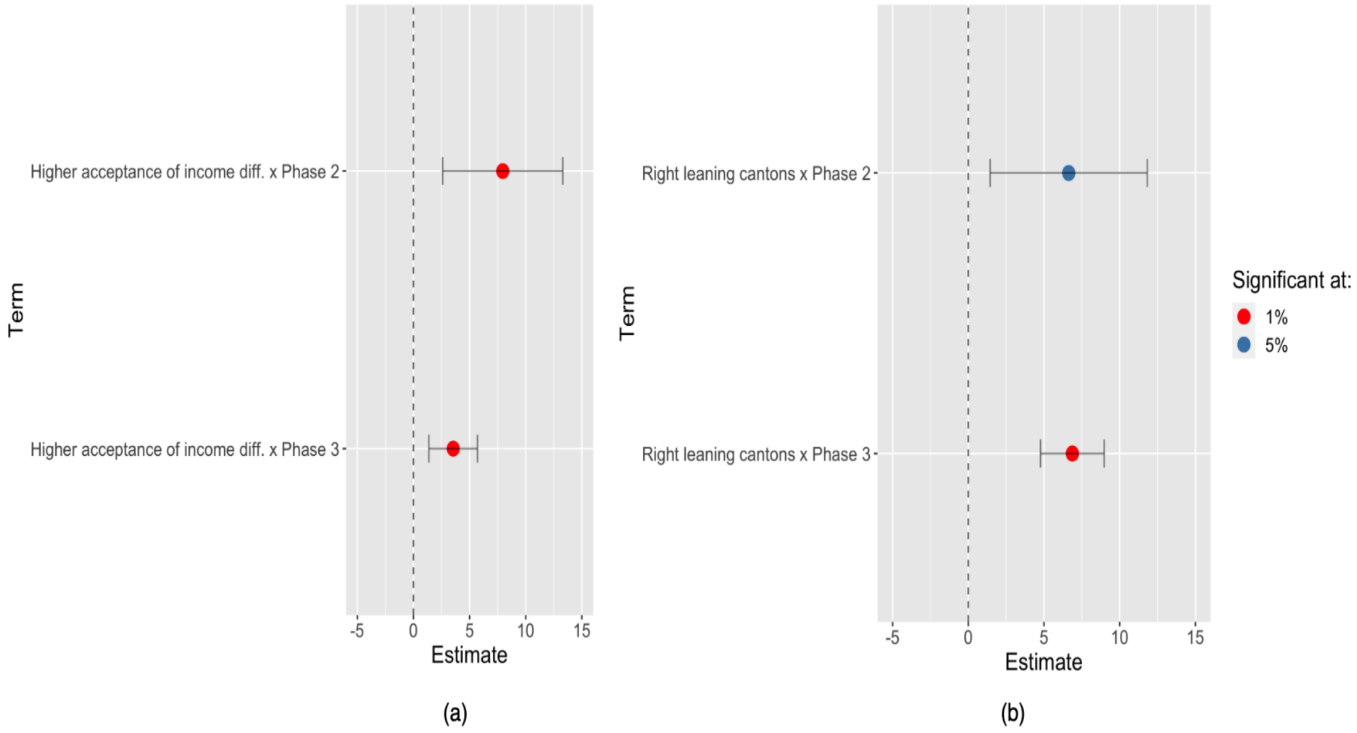

Figure 7: Cultural *dimension*: Preferences for redistribution. Estimating equation (2) with economic, demographic, geographic and COVID -19 controls. Daily and canton FE. Standard errors are wild bootstrapped and clustered at canton level

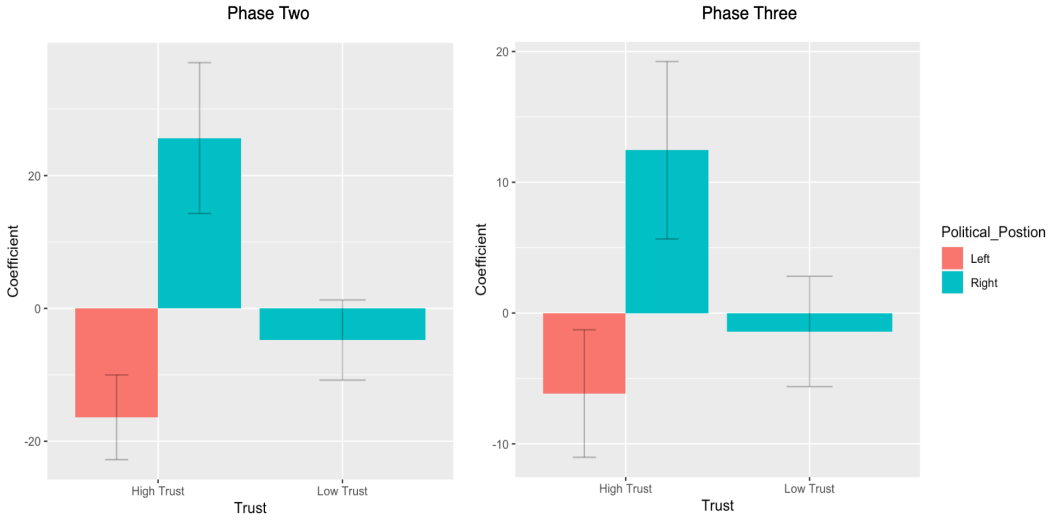

Figure 8: Heterogeneity across the the cultural dimensions. Estimating equation (3) with economic, demographic, geographic and COVID -19 controls. Daily and canton FE. Standard errors are wild bootstrapped and clustered at canton level

as a (voluntary) response to the outbreak in Ticino and Geneva during the last week of February and later in response to the federal measures introduced by the government on March 16. This reduction, however, was lower in German cantons than in French speaking areas of the country. We also document how specific cultural traits, can shape individual mobility decisions. Our results suggest that the perceived costs and benefits of complying to individual mobility restrictions norms change with culture. As a consequence, contextual conditions, shaped by the culture of reference, are of critical importance in determining how traits such as interpersonal trust, preference for re-distributive policies and political attitudes, mediate the social distancing process.

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Appendix

A Figures & Tables

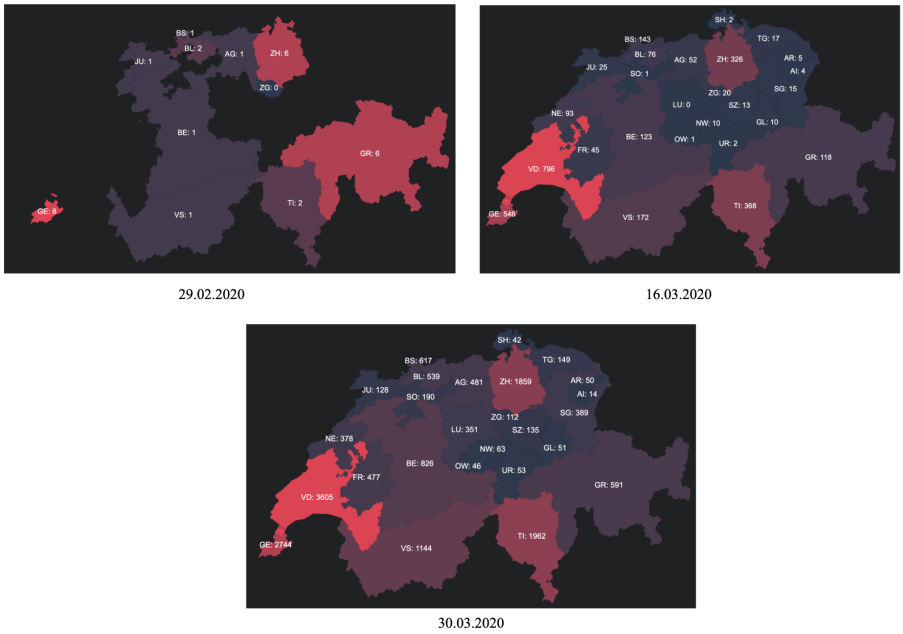

Figure A.1: Evolution of total COVID-19 cases reported

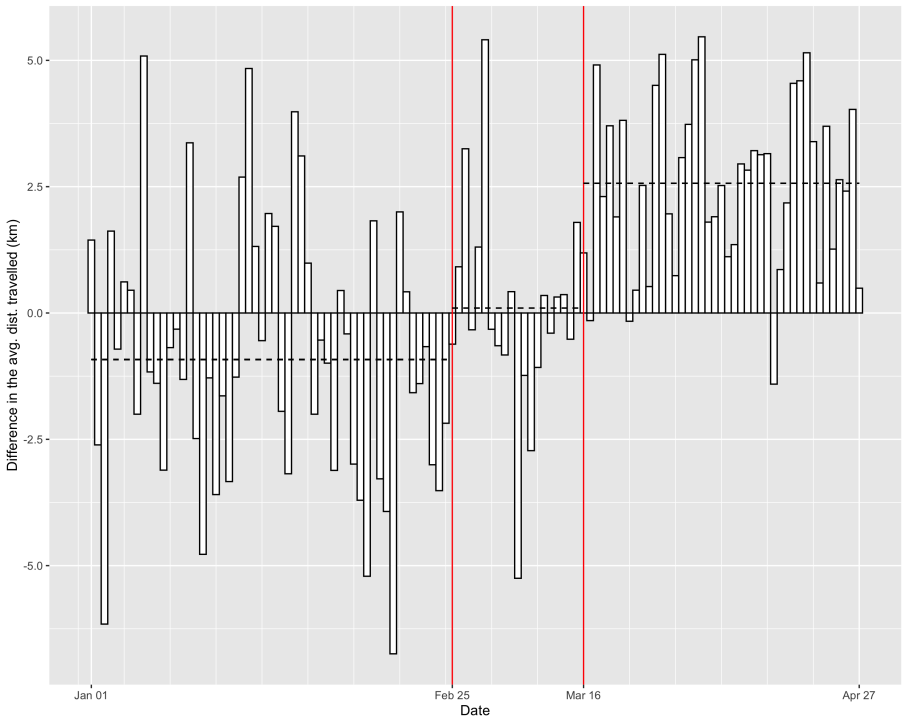

Figure A.2: Difference in mobility. The dashed lines are the period means.

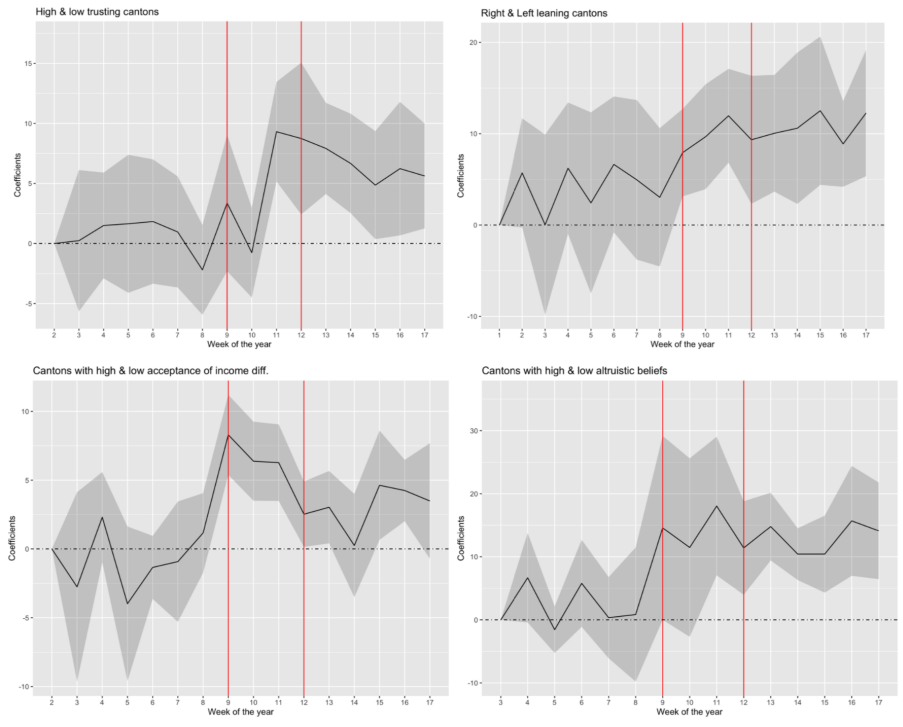

Figure A.3: Average difference in weekly mobility (Average distance travelled daily). Week 9: 24 February - 1 March. Week 12: 16 March - 22 March. Date of outbreak: 25 February and implementation of federal measures: 16 March

Table A1: Summary Statistics

	N	Mean	St. Dev.	Min	Median	Max
Avg. distance travelled (km)	2,457	33.181	16.348	0.049	32.663	131.405
Daily total reported cases	2,457	242.025	776.836	0	0	5,222
Daily total fatalities	2,457	8.555	35.690	0	0	373
Avg. monthly temperature (°C)	2,457	4.397	4.291	−2.260	5.460	11.790
Urban population (%)	2,457	76.352	25.070	0	85	100
Hospital beds per 1000 inhabitants	2,457	4.148	2.251	1.300	3.800	11.100
Graduation rate in higher education institutions	2,457	27.290	4.148	19.900	26.500	34.300
Foreign nationals (%)	2,457	23.043	7.455	11.300	24.100	40.000
Population density	2,457	611.386	1,124.819	34.500	275.000	5,271.100
Tourism (in 1000)	2,457	544.143	761.769	65	208	3,299
Share of people aged 65 and over (%)	2,457	18.881	1.583	16.400	19.000	21.900
GDP per capita in Swiss francs	2,457	79,695.330	31,751.090	52,468	68,102	185,826
Area in km^2	2,457	881.790	743.746	36.980	790.370	3,212.210
Trust toward others	2,457	6.346	0.407	5.610	6.404	7.179
Trust in institutions	2,457	6.315	0.250	5.885	6.278	6.873
Frequency of interpersonal relations	2,457	0.685	0.102	0.500	0.684	0.870
Altruistic beliefs	2,457	6.926	0.851	5.632	6.981	9.000
Avg. time watching, reading or listening to news	2,457	151.838	126.889	47.143	87.145	530.000
Left - right scale	2,457	6.249	0.570	5.393	6.133	7.700
Share of agreement for statement on income diff. (%)	2,457	51.654	13.860	16.667	50.000	81.250
Household disposable income	2,457	78,897.670	10,175.900	62,001.800	78,291.820	102,216.800

B Robustness Check

In Figure B.4 we show results from estimating (1) and (2) but using an alternative measure for mobility. Our dependent variable is now average radius of daily travel. Observe, although the difference in reduction of daily mobility between the two linguistic regions is not significantly very different in phase two, it becomes strongly significant in phase three. Post federal measures, the German speaking region reduced their radius of daily travel by 5 kilometres less than the French speaking area. This is also clearly visible in the raw data in Figure B.5, where there is a marked difference in the mobility levels of the two regions after March 16. Consistent with our main results, when comparing regions across different cultural dimensions we observe a similar trend. Cantons having higher trust, altruistic beliefs and conservative political ideologies reduced their radius of daily travel by less when compared to other areas. Figure B.6, similar to Figure 5 and A.3, shows average differences in weekly radius of daily travel between the two regions, over several phases of the pandemic, and confirms that there wasn't a significant difference in the mobility patterns prior to the outbreak. However, post February 25 and the introduction of federal measures, one can observe a significant and positive change.

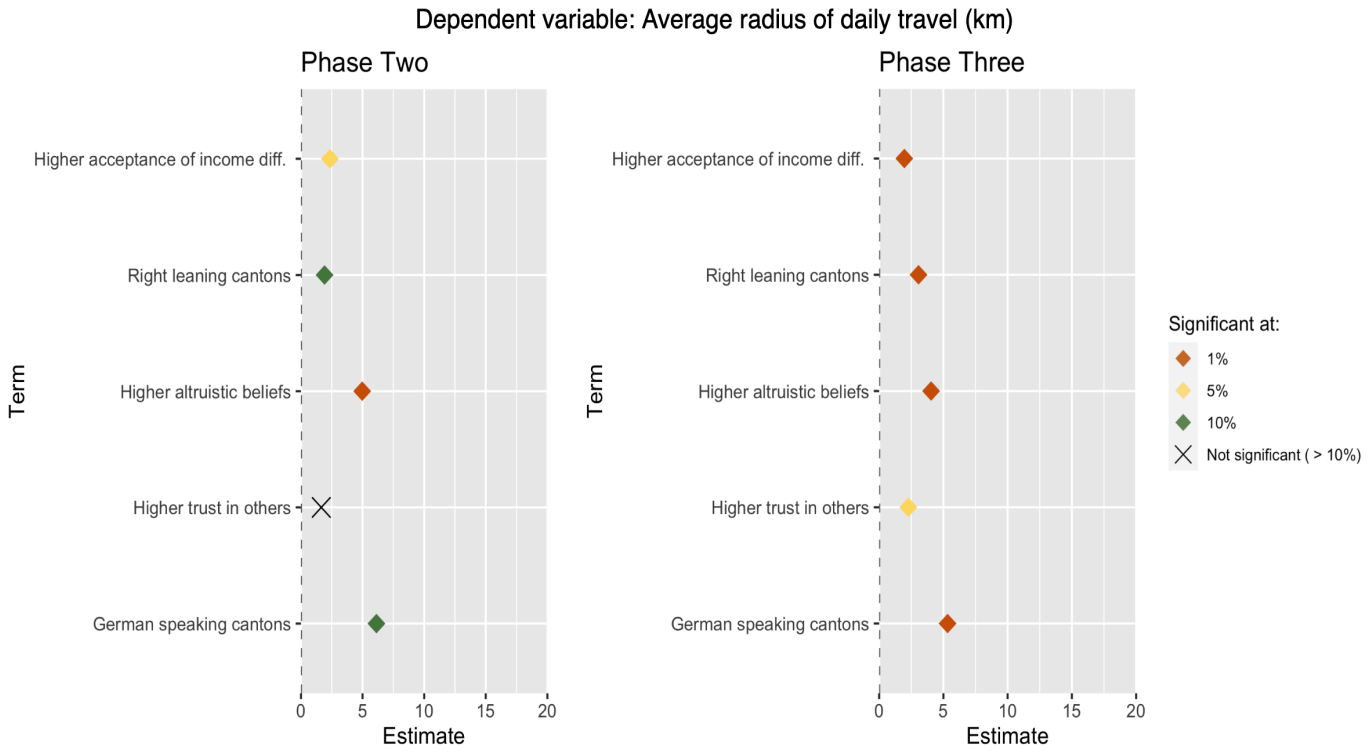

Figure B.4: Economic, Demographic, Geographic and COVID -19 Controls. Daily and Canton FE
Note: Standard errors are wild bootstrapped and clustered at canton level

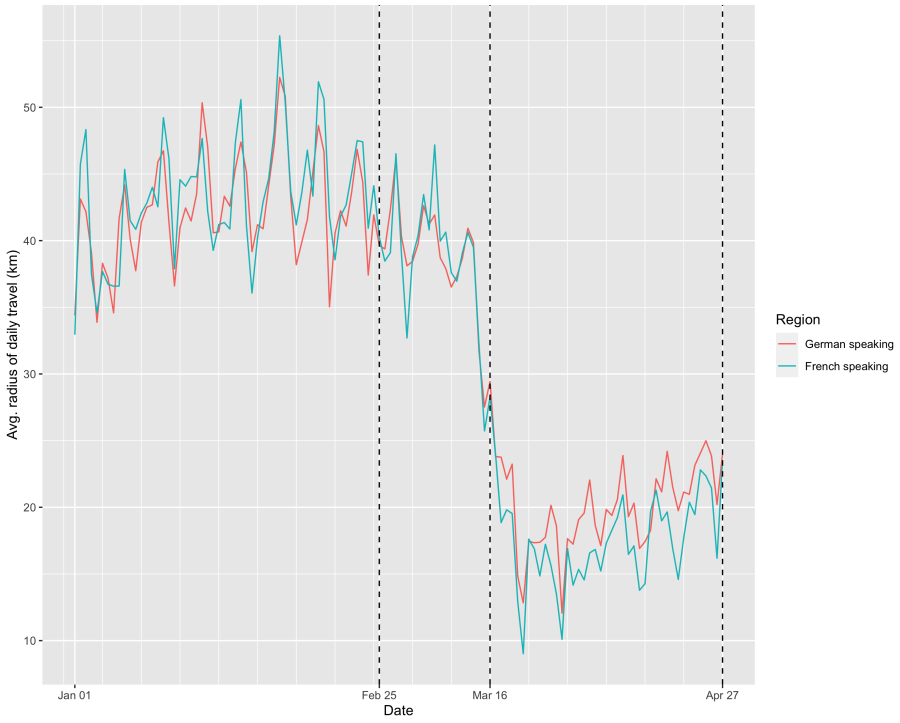

Figure B.5: Daily mobility (average radius of daily travel) across the linguistic regions

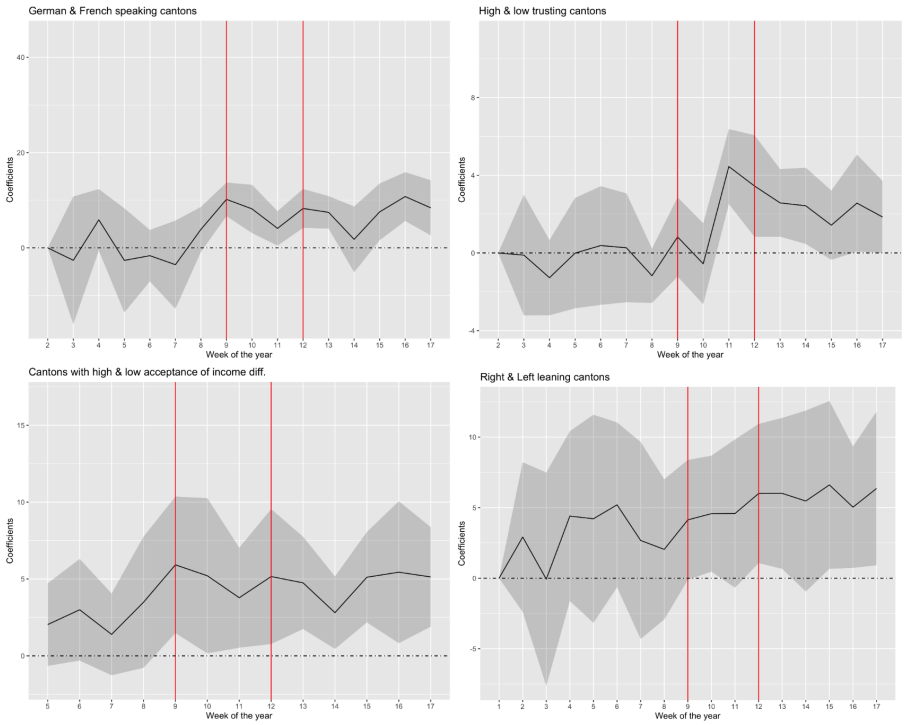

Figure B.6: Average difference in weekly mobility (Average radius of daily travel). Week 9: 24 February - 1 March. Week 12: 16 March - 22 March. Date of outbreak: 25 February and implementation of federal measures: 16 March