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Discussion Paper No. 2022-04

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February 2022

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CeDEx Discussion Paper Series
ISSN 1749 - 3293

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Historical Self-Governance and Norms of Cooperation

Devesh Rustagi *

Abstract

Does self-governance, a hallmark of democratic societies, foster or erode norms of generalized cooperation? Does this effect persist, and if so, why? I investigate these questions using a natural experiment in Switzerland. In the middle-ages, the absence of an heir resulted in the extinction of a prominent noble dynasty. As a result, some Swiss municipalities became self-governing, whereas the others remained under feudalism for another 600 years. Evidence from a behavioral experiment, World Values Survey, and Swiss Household Panel consistently shows that individuals from historically self-governing municipalities exhibit stronger norms of cooperation today. Referenda data on voter-turnout, women's suffrage, and minority citizenship, allow me to trace these effects on individually costly and socially beneficial actions for over 150 years. Furthermore, norms of cooperation map into prosocial behaviors like charitable giving and environmental protection. Uniquely, Switzerland tracks every family's place of origin in registration data, which I use to demonstrate persistence from cultural transmission in a context of historically low migration.

JEL: D02, H41, N43, Z10

Keywords: Self-governance, norms of cooperation, cultural transmission, referendum, public goods game, Switzerland

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I. Introduction

Norms of cooperation are prescriptions of appropriate behavior in cooperation dilemmas. These norms emphasize conditional cooperation by urging individuals not to free ride but to contribute if others do the same (Tocqueville 1835, Elster 1989, Bicchieri 1990, Putnam et al. 1993, Fehr and Schmidt 1999, Ostrom 2000, Benabou and Tirole 2006). Since it is unfair if only some individuals contribute for the common cause, these norms matter for collective action, an essential prerequisite for many economic activities (Dixit 2009).[1] However, we know little about how norms of cooperation emerge, whether they persist, and if so, why? In this paper, I study whether more inclusive political institutions that encourage participatory self-governance foster or erode norms of cooperation.

Participatory self-governance is considered a hallmark of democracy, as it allows deliberative and consensual style of decision-making. This stands in contrast to autocracy, whereby an individual holds absolute power and engages in arbitrary decision-making. These different modes of governance are expected to affect norms of cooperation, but there is ambiguity over the direction of this effect. Bentham (1816) and Mill (1861) argue that self-governance offers individuals the opportunity to understand the negative externalities their actions may have on others. This may prompt individuals to develop empathy, moderate their standpoint, and build consensus by integrating divergent points of view (Putnam et al. 1993, Habermas 1996, Platteau 2000, Rodrik 2000). As individuals learn to negotiate and compromise in exchange for others doing the same, they come to acquire norms of cooperation. In contrast, in autocracy, decision-making rests with a small group of people who censor discussion and use brutality to deter opposition. This repression prevents individuals from speaking their mind and builds barriers between different groups, resulting in distrust and opportunistic free riding. Other scholars, however, argue that self-governance could also result in polarization of opinions, which may solidify and erode norms of cooperation (Lipset 1959, Bursztyn et al. 2020). Moreover, at times, autocracy may foster norms of cooperation by bringing individuals from different groups together to oust the autocrat, as witnessed in some revolutions.

In a seminal paper, Guiso et al. (2016) show a positive effect of the Italian Free City experience on prosocial behaviors operating through changes in self-efficacy beliefs. However, there is no evidence on the importance of political institutions like self-governance for norms of cooperation (Papaioannou 2020). This evidence has remained elusive, in part, because of the difficulties in measuring norms of cooperation. A positive association between self-governance and pro-social behaviors cannot be interpreted as reflecting norms of cooperation. Pro-social behavior is an equilibrium outcome. It could be reflecting the importance of other motives confounded with norms of cooperation like pure altruism,

[1] Prominent examples include donations to charities (Frey and Meier 2004), management of commons (Frey and Meier 2004), and tax compliance (Besley 2020).

beliefs about others' contribution, reputation formation, and social pressure (Benabou and Tirole 2006, Nunn 2009, DellaVigna et al. 2012). This is a major gap in the literature, given that many scholars suggest political institutions affect pro-social behaviors by changing our norms and civic values, i.e., "the type of people we are" (Mill 1861, Putnam et al. 1993, Rodrik 2000, Besley 2020).

Crucially, self-governance may arise as a result of pre-existing differences in attitudes. Studies using historical data rarely have compelling evidence from exogenous variation of self-governance. I conduct this study in Switzerland, where municipalities acquired self-governance for plausibly exogenous reasons in two phases separated by a large gap. The first phase was in the Middle Ages, when several noble dynasties administered Switzerland feudally on behalf of the Holy Roman Emperor. In 1218, one of these noble dynasties – the House of Zaehringen – became extinct from the absence of an heir (Heyck 1895, Lyon 2013). Thereafter, the Zaehringen fiefs reverted to the emperor and received from him the privileged political status of "imperial immediacy". While still subjected to the emperor's rule, these fiefs became free from the authority of nobles and the citizens therein could engage in self-governance. In contrast, areas under the rule of other noble dynasties continued largely under feudalism for hundreds of years. The second phase began in the 19th century, when Napoleon invaded Switzerland and extended self-governance to areas still under feudalism via the Act of Mediation (1803).

I compare municipalities that acquired self-governance in the first phase to those that acquired self-governance in the second phase. The latter set of municipalities serve as a valid counterfactual for three reasons. First, the emergence of self-governance in areas under the Zaehringen rule rather than in areas under the rule of other dynasties was because of the accidental extinction of the Zaehringen family.[2] Importantly, areas with and without the Zaehringen rule were similar in geographical environment, prosperity, and education at the time of the extinction. Second, areas under the rule of other dynasties did not choose self-governance, but it was Napoleon who introduced these reforms. Also, Napoleon did not selectively target areas with the highest potential for norms of cooperation, but extended self-governance to all those that were still under feudalism.[3] After Napoleon was deposed in 1814, the Congress of Vienna and a Pact between the Swiss cantons ensured that every area remained self-governed. Third, though all areas eventually experienced self-governance, the large gap between the two phases created potential pathways for differential effects on norms of cooperation.

Historical self-governance in Switzerland bore similarities to other self-governing areas of medieval Europe, as well as with limited forms of democracy, which make the findings from this study of general interest. The Swiss experience is noted for its coverage of not

[2]Banerjee et al. (2005) and Iyer (2010) use the death of a ruler from the absence of an heir to study the effect of direct vs. indirect colonial rule on agricultural development in India.

[3]Acemoglu et al. (2011) use reforms by Napoleon to study economic growth in Germany.

just urban but also rural municipalities, stronger citizen participation, absence of outside interference, and remarkably early use of referendums. Also, the Swiss experience was long-lasting, far-reaching, and based on compromise and cooperation (McCrackan 1908, Deutsch and Weilemann 1965, Kobach 1993). In self-governing municipalities, councils had equal representation of individuals from different interest groups. Deliberation was achieved through compulsory attendance in meetings and face-to-face communication (Schlaak 2010). Since no one group could dictate policy to the others, building consensus required groups to make concessions in exchange for other groups doing the same. This negotiation and compromise are likely to have fostered norms of cooperation.[4]

I measure norms of cooperation primarily as a *generalized* propensity for conditional cooperation (positive reciprocity), that is, the individual willingness to cooperate provided others do the same in interactions with strangers.[5] I use an online public goods game in which two Swiss citizens unknown to each other are paired randomly in a one-shot, anonymous interaction. This rules out benefits from repeated interaction and reputation formation. The game is implemented in the strategy method, whereby individuals decide on their contribution conditional on all possible contribution decisions of the other player. This shuts down beliefs from playing a role (Fischbacher et al. 2001, Fischbacher and Gächter 2010). I classify individuals as *free riders* if they always contribute zero, *altruists* if they always contribute full endowment, and *conditional cooperators* if their contribution increases in the contribution of the other player, as revealed by the Spearman rank correlation. Since a negligible fraction of individuals behave as altruists, I use the Spearman *rho* as a measure of norms of cooperation.

According to the OLS estimates, individuals from municipalities with historical self-governance display twice the conditional cooperation of individuals from municipalities without. These results are robust to controlling for proxies of geography, education, prosperity, religion, and politics (acknowledging that some of these are endogenous). The results hold when I include fixed effects for modern cantons, language, and historical cantons. Instrumental variables estimates that use the Zaehringen fief as an instrument for historical self-governance are similar to their OLS counterparts. I replicate these results using data from World Values Survey and Swiss Household Panel on attitudes towards cooperation like cheating on taxes, claiming false social benefits, lying in own interest, and paying a bribe. These results are robust to controlling for self-efficacy beliefs, which are uncorrelated with both norms of cooperation and historical self-governance.

Switzerland has been using referendums (and initiatives) to decide on national level decisions since 1848. Voting in these referendums mirrors norms of cooperation, as it is individually costly but benefits the society (Coleman 1990). These data offer a unique

[4]Laboratory experiments show that face-to-face communication fosters cooperation by invoking norms and group identity (Orbell et al. 1988, and Bochet et al. 2006).

[5]Platteau 2000 and Enke 2019 discuss the importance of generalized norms for economic development.

opportunity to study norms and pro-social behavior over a long period of time. Analyzing data from over 600 referendums, I show historically self-governing municipalities consistently registered higher voter turn-out for over 150 years. While examining referendums over women's suffrage and citizenship to minorities, I find stronger support in historically self-governing municipalities. These results suggest of a long-lasting and inclusive effect of historical self-governance. Further results show a strong positive association of historical self-governance and norms of cooperation with prosocial behaviors today like donations to charities, membership in associations, and environmental protection.

All Swiss municipalities are self-governing since the reforms by Napoleon, so why do the differences in norms of cooperation persist? The strong presence of state agencies and infrastructure in Switzerland rules out state capacity, protection of property rights, and constraints on executive. After ruling out prosperity, education, and trade as channels, I focus on cultural transmission (Boyd and Richerson 1985, Bisin and Verdier 2001). Using the epidemiological approach (Fernandez 2007, Giuliano 2007), I show that internal Swiss migrants whose *birth* municipality *did* experience historical self-governance show stronger conditional cooperation than Swiss migrants whose *birth* municipality *did not*, despite living in the same canton.

For cultural transmission to serve as a credible explanation, historical migration must have been low. If current inhabitants are unrelated to initial inhabitants exposed to the treatment, persistence is expected to be weaker. Despite this obvious importance of migration for cultural change and persistence, it is rarely studied (Voth 2021). Switzerland has a comprehensive register tracking the movement of Swiss family names from their town of origin to their town of destination. I use this novel data to construct measures of historical migration. I find that historical migration was low and controlling for it does not change the main results.

Municipalities with longer history of self-governance had much more time to build and consolidate democratic capital, which could have fostered a feedback loop between self-governance and norms of cooperation (see Besley and Persson 2019). To this end, I show that historically self-governing municipalities hold twice as many referendums and initiatives to arrive at *local* decisions. Data from the World Values Survey and Swiss Household Panel show that individuals from such municipalities hold stronger attitudes and support for democracy. This evidence is in line with Persson and Tabellini (2009) who argue that the transition from autocracy to self-governance does not pop-up overnight but occurs gradually through the accumulation of democratic capital from historical experience.

Related Literature. This paper contributes to several strands of literature. First, it builds on studies linking self-governance and pro-social outcomes. Dal Bo et al. (2010) and Sutter et al. (2010) use laboratory experiments with students to show a positive effect of participation on cooperation outcomes. Guiso et al. (2016) go a step further and show

a positive effect of the Free City experience in Italy on prosocial behaviors through the formation of self-efficacy beliefs. While this paper also demonstrates a positive effect of historical self-governance on a variety of pro-social behaviors, it goes beyond by highlighting the importance of such institutions in shaping norms of cooperation independently of beliefs, and then linking these norms further to pro-social behaviors. These findings fill an important gap in the literature which emphasises changes in norms and civic values in response to inclusive political institutions (Putnam et al. 1993, Habermas 1996, Platteau 2000, Rodrik 2000, Besley 2020).

Second, the paper complements the literature on the determinants of cultural traits, in particular, the interaction of institutions and culture (Alesina and Giuliano 2015). Tabellini (2010) shows constraints on executive and trust are complements, but Lowes et al. (2017) show state formation in the Kuba Kingdom and norms of rule following are substitutes. This paper shows that institutions of self-governance and norms of cooperation are complements. Like this paper, Lowes et al. (2017) also combine historical and experimental data, but their approach measures norms only at the group level. Besides using individual level experimental data, this paper employs survey and administrative data to reach similar conclusions, which bolsters the main findings.

Third, previous studies document the importance of historical treatments for cultural traits in contemporaneous periods. This paper goes beyond by covering both contemporaneous and historical periods, which allows me to address the "compression of history" critique. It does so by using administrative data from referendums on voter turnout, women's suffrage, and minority citizenship. This way, the paper advances the literature on long-run effects of historical events (Nunn 2009), determinants of voter turnout (see Leeson 2008) in Switzerland (Bursztyn et al. 2018), women's suffrage (Moehling and Thomasson 2020), and minority rights (Aghion et al. 2008).

Fourth, the paper contributes to the literature on cultural persistence in the face of migration (Voigtlaender and Voth 2012), a topic which is understudied (Voth 2021). The paper uses a novel dataset to provide insights on the extent of historical migration and how this affects norms of cooperation.

The paper is organized as follows. Section II describes the historical background. Section III presents measures of historical self-governance and norms of cooperation. Section IV presents the identification strategy and Section V the results. Section VI discusses plausible channels and Section VII offers concluding remarks.

II. Field Setting

Historical self-governance in Switzerland emerged over two phases, first due to the Zaehringen extinction and then due to the reforms by Napoleon. I describe these events below, followed by a description of the styles of historical self-governance. Throughout

the paper, figures and tables starting with an 'A' appear in the appendix.

II.A. The Emergence of Historical Self-Governance

Phase I: Extinction of the Zaehringen Dynasty.– In the Middle Ages, four major noble dynasties administered large parts of Switzerland as their feudal territory: Zaehringen, Kyburg, Hapsburg, and Savoy. These territories had similar geographical endowments because of their location on the Swiss plateau (enclosed by the Jura Mountains and the Alps). The noble dynasties acquired most of these territories from the Holy Roman Emperor and administered them on his behalf as "imperial fiefs", whereas small territories acquired through family inheritance were administered as "private fiefs". The decision-making in both imperial and private fiefs was dominated by aristocrats who appointed "the richest, most distinguished and powerful" individuals to their respective governing councils (Holenstein 2014). The citizens, such as craftsmen and peasants to whom the areas owed their wealth, were excluded from participation. This strong hierarchy of privileges benefited the aristocrats at the cost of the citizens.

In 1218, the House of Zaehringen became extinct when its last duke (Berchtold V) died accidentally at the age of 58 years, a few years after the accidental death of his only child and heir. This extinction led to the reversion of the Zaehringen imperial fiefs to the Holy Roman Emperor Frederick II, who used the German feudal law to confer upon these fiefs a privileged political status of "Imperial immediacy".[6] Though still subjected to the fiscal, military, and hospitality demands of the emperor, the imperials fiefs were now free from the authority of nobles and their citizens could participate in decision-making. In contrast, the private fiefs of the Zaehringen were divided between the family members and remained under feudalism. The fiefs under the rule of other noble dynasties also continued largely under feudalism.

Several historians have underlined the importance of the Zaehringen extinction for the emergence of self-governance in large parts of Switzerland. Hug and Stead (1893, p98) write that Switzerland was spared a monarchical fate "by a natural yet providential event, the extinction of the ducal family. For in 1218 Berchtold V dies, leaving no issue." McCrackan (1908, p58) notes "the extinction of the house of Zaehringen came most opportunely, for it is entirely within the range of possibility, that, otherwise, the state they had erected, might have become a principality, or even a monarchy, as enduring as any of those which surround Switzerland today." Eugster (2015) remarks "the fragmentation and the loose state of the Zaehringen inheritance served as an essential prerequisite for the tendency towards more municipal autonomy of the 13th and 14th century."

In 1250, Emperor Frederick II died, resulting in the great interregnum. This allowed self-governed areas to acquire considerable rights and powers previously exercised by the

[6]See Appendix I for reasons behind Frederick II's decision.

emperor to the point of full independence. The interregnum ended in 1273 with the election of a Hapsburg as the German king, who desired to bring self-governing areas back under feudalism. To counteract this threat, the self-governing areas forged an alliance called the Old Swiss Confederacy, which ensured their free status.

Phase II: Reforms by Napoleon and the Aftermath–. Napoleon invaded Switzerland in 1798 and issued the Act of Mediation in 1803. This act liberated the feudal areas, made them sovereign members of Switzerland, and allowed them to have representative governments. After Napoleon was deposed in 1814, there were concerns that the newly liberated areas may revert to feudalism. To prevent this from happening, the Congress of Vienna encouraged all areas to sign the Pact of 1815. The Pact ensured sovereignty and self-governance in all areas (Zschokke 1860, Hug and Stead, 1893). Highlighting the merits of this Pact, McCrackan (1908, p322) noted, "one is gratified to read that no subject lands and no privileged political classes would be tolerated hereafter."

In the 1830s, several areas furthered self-governance by allowing for the approval of their constitution by popular assemblies. In 1848 and 1890s, referendums and people's initiatives were formally adopted as the instruments of direct democracy at the federal and local level. Today, Switzerland uses direct democracy at federal, cantonal (state), and municipal level.

II.B. Historical Forms of Self-Governance

Deutsch and Weilemann (1965) note the Swiss style of self-governance was "more cooperative and less competitive, more moderate and inclined to relatively stable alliances and compromises". Despite common features, there were differences in styles depending largely on whether an area was rural or urban. In the rural areas, such as Glarus and Uri, eligible male citizens participated directly in decision-making through voting by show of hands in open-air public assemblies called *landsgemeinde*. These assemblies constituted the highest authority through which a governing council comprising an equal number of members from each commune was elected, new laws were enacted, and superior officials including mayors and judges were appointed (Deploige 1898, Figure A.1). In the urban areas like Zurich and Basel, governing councils were divided into a smaller council (*Kleiner Rat*) comprising 50-60 members, and a greater council (*Grosser Rat*) comprising 60-200 members. These councils included an equal share of citizens from diverse interest groups, who were elected or nominated by citizens or guilds or other community-level bodies. The councils deliberated on decisions related to the formulation of laws, election of mayor, and also constituted the highest court (Figure A.2). In the feudal areas like Vaud and Thurgau, the citizens were without political rights and were excluded from participation in decision-making (Figure A.3). The bailiffs who oversaw the governance in these areas were appointed by and served the interest of the ruling power (Holenstein 2013).

Many self-governed areas shared common elements including citizen participation in local-level decisions, constraints on the power of the elite, and reasonable dialogue between different groups to achieve mutual consensus (Berner 2006, Stadler 2008, Holenstein 2014). The council met regularly, restricted the number of topics discussed on a given day, and strictly enforced the "principle of presence" which required compulsory attendance in meetings (Deploige 1898, Schlaak 2010, p36). The primary form of deliberation was direct face-to-face communication, as the use of writing was still very limited (Hoffmann-Rehnitz 2010, p15). The power of the elites was curtailed through the inclusion of different interest groups in the council in equal numbers. Furthermore, the electoral principles prevented individuals from bequeathing municipal offices and from having siblings in the council. As the British ambassador to Bern, Abraham Stanyan (1714, p74) noted: "neither father or son nor two brothers can be of the council at the same time". In one of the rural areas, a referendum forbade a powerful monastery from using the common grazing land for free and ordered it to pay the same tax per cow as the local farmer or face exclusion from using the common (McCrackan 1908). These experiences were important for a wider social and political integration of different group members and made them feel as belonging to "one association and one political body" (Hoffmann-Rehnitz (2010, p15). Laboratory experiments also show that face-to-face communication fosters cooperation by invoking norms and group identity (Orbell et al. 1988, and Bochet et al. 2006).

Several records speak of historical self-governance in Switzerland as reflecting a "historical" form of democracy (Deploige 1898, p3). The mayor of Schaffhausen noted in 1653 the rural cantons as places where "democratic forms are very much appreciated". A source from Grisons in 1618 says, "the form of our government is democratic" (Suter 2016). Abraham Stanyan (1714, p108-109), also described rural cantons as "wholly democratic" where "sovereignty resides absolutely in the body and mass of the people". McCrackan (1908, p281) notes "...the Swiss States, both country districts and towns, were organized upon democratic principles". Nonetheless, it would be a mistake to view medieval Switzerland as a place with modern democratic principles, as in equal rights for all. The self-governance movement declined towards the end of the 17th century, BUT the decline was weaker in rural areas and cities with guilds (Stanyan 1714, Holenstein 2014).

III. Data and Descriptive Statistics

This section describes data on historical self-governance and norms of cooperation.

III.A. Historical Self-Governance

I measure historical self-governance at the level of a municipality, which can be rural or urban in Switzerland. The Swiss municipalities acquired self-governance over two phases

separated by a large gap. I classify those that became self-governing in the first phase as *with* historical self-governance and those from the second phase as *without* historical self-governance. A large share of municipalities from the first phase acquired historical self-governance because of the Zaehringen extinction. A non-trivial share, especially in the remote Alpine regions that were outside the control of the noble dynasties, acquired historical self-governance independently of the Zaehringen extinction at different points in time. Consequently, I collect data on both the experience of historical self-governance, as well as the duration of this experience.

The primary sources of data include the Historical Lexicon of Switzerland (HLS) and books on the history of Switzerland by renowned Swiss historians - Adolf Gasser (1932) and Heinrich Zschokke (1860), the American journalist - William D. McCrackan (1908), and the British Ambassador to the city-state of Bern - Abraham Stanyon (1714). I collect information at level of a municipality, the historical bailiwick, and the canton in which the municipality (was) is situated. The measures are described below:

Experience is an indicator variable, which takes the value of 1 if a municipality experienced self-governance in the first phase before the reforms by Napoleon, otherwise zero. 46 percent of the municipalities in the sample experienced historical self-governance.

Duration is a continuous variable, measured as the difference between the year Napoleon introduced reforms (1803) and the year around which a municipality acquired historical self governance. It is set to zero for municipalities that became self-governing after the reforms by Napoleon. For rural self-governing municipalities, I use the date when public assembly got established. For urban self-governing municipalities, I use the date when an independent council was elected. For some municipalities precise dates are not available, so I use the date around which the political status of these places was affected. The average duration in the full sample is 200 years, but it is 436 years in municipalities with historical self-governance.

III.B. Norms of Cooperation

I measure norms of cooperation primarily as the *generalized* propensity to cooperate conditionally using a behavioral experiment (see Appendix B for instructions and procedures). I complement this with survey measures of attitudes towards cooperation from the Swiss Household Panel and World Values Survey.

Generalized Propensity for Conditional Cooperation.– Measuring propensity to cooperate conditionally using observational data is difficult because of confounding motives operating at the same time. These include repeated interaction, reputation formation, and beliefs about others' contribution. To address these concerns, I use a public goods game that

follows the protocol of Fischbacher et al. (2001) and Fischbacher and Gächter (2010).[7] This protocol has two key features: (a) one-shot interaction between strangers, which rules out repeated interaction and reputation formation from playing a role, (b) the use of strategy method in which players respond to all possible contributions by the other player, which shuts down beliefs from playing a role. This protocol has been externally validated by Rustagi et al. (2010) and Kosfeld and Rustagi (2015).

In the game, two players are randomly assigned to an experimental group. Each player receives an endowment of 100 Swiss Francs ($\sim$ USD) and could contribute any amount from 0 to 100 in the units of 10 Swiss Francs to the public good. The amount in the public good is increased by 1.5 times and then distributed equally between the two players, regardless of their contribution. The payoff of player i, where $i \in \{1, 2\}$, is:

$$\pi_i = 100 - C_i + 0.75(C_1 + C_2), \tag{1}$$

where 100 is the endowment received at the start of the game, C_i is the contribution of player i to the public good, 0.75 is the marginal per capita return from investing in the public good, and $C_1 + C_2$ is the total contribution to the public good. Since each Swiss Franc contributed to the public good yields only 0.75 cents back, it is individually rational for players to contribute zero to the public good. However, because the *number of players**0.75 > 1, it is socially optimal for the players to contribute their full endowment; this creates a cooperation dilemma. The game involves two decisions:

- Unconditional: players decide simultaneously on their contribution to the public good and beliefs about other players' contribution play a role. This means, contribution in this decision is confounded with beliefs and may be capturing multiple equilibria – individuals with similar norms contribute differently because of differences in their beliefs. Therefore, contribution in the unconditional decision is a poor guide to norms of cooperation.

- Conditional: each player decides on her contribution for each of the 11 possible contribution decisions of the other player (strategy method). Since now the players can make their decisions contingent on the contribution of the other player, beliefs are shut down. This provides a clean measure of the underlying norms of cooperation.

At the end of the game, a lottery is drawn to determine the player for whom the unconditional decision is payoff relevant. This is matched with the corresponding contribution in the conditional decision by the other player to determine payoffs.[8]

[7] I conducted three different public goods games; this paper is based on the first game.

[8] 40 participants were randomly selected for payments. Since individuals could earn up to 175 Swiss Francs, the expected payoff per participant is 27 Swiss Francs. Bettinger and Slonim (2007) show that such a procedure does not bias behavior. The chosen participants earned on average 135 Swiss Francs.

I use the conditional decision to classify individuals as *free riders* if they always contribute close to zero regardless of what the other player does, *conditional cooperators* if they increase their contribution in response to the increasing contribution of the other player, *altruists* if they always contribute 100 irrespective of what the other player does, *flat* if they always contribute the same amount that is different from zero or 100, *hump-shaped* if their contribution first increases in the contribution of the other player but then decreases, and *non-classifiable* if they do not fall into any of the above categories. Figure 1 shows the average behavior of these types and Table 2 reports their share in the sample.

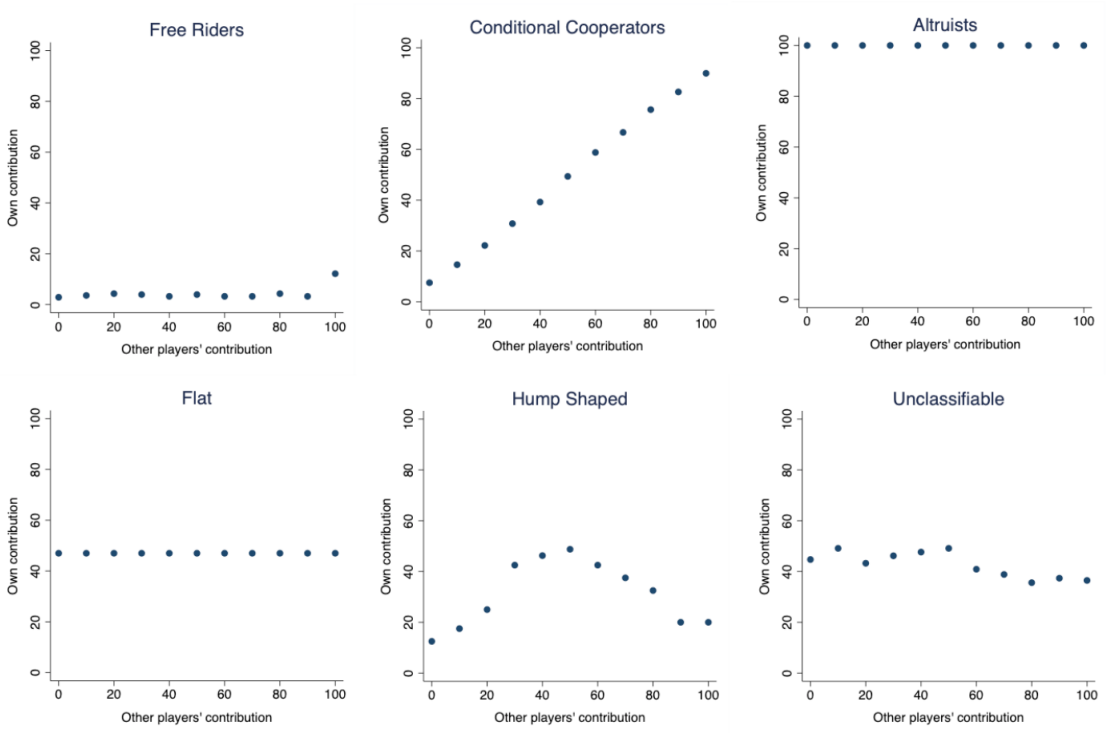

Figure 1: Player Types from the Conditional Decision of the Public Goods Game

Since most players behave either as conditional cooperators or as free riders, I use the Spearman rank correlation between own contribution and the other players' contribution in the conditional decision to measure an individuals' propensity for conditional cooperation (Fischbacher et al. 2001, Fischbacher and Gächter 2010). The higher the Spearman *rho*, the higher is the propensity to cooperate conditionally. Figure 1 and Table 2 show that the Spearman *rho* is nearly 1 for conditional cooperators, but 0 for free riders. The average propensity for conditional cooperation is 0.646 points (s.d. 0.545).[9]

The experiment to measure conditional cooperation was conducted online with Swiss households in 2013. These households were selected randomly from within cantons and linguistic groups by the Institute for Opinion Research (LINK), the largest survey agency

[9]In the second experiment with the same participants, individuals were randomly matched with another player either from their own linguistic group (in-group) or from another linguistic group (out-group). I find that conditional cooperation does not differ by identity and is the same as the generalized measure.

in Switzerland. Overall, 262 Swiss households from 174 municipalities and 23 cantons took part in the experiment. I discuss the sampling strategy in Appendix A. Tables A.1-A.2 show that municipalities and individuals in the sample are comparable to those that are not across a variety of characteristics, even when the comparison is within cantons.

Before taking the actual decision, individuals had to answer control questions correctly. I use the number of attempts to gauge an individuals' game comprehension. After the experiment, the respondents took part in a survey on demographic characteristics, native language, municipality of birth, and length of stay in the residence municipality. Several pilots were conducted to test for respondents' understanding of the experiment and survey. I made sure that native speakers from Switzerland wrote the instructions. I did not conduct any other experiment than the public goods game.

Attitudes towards Cooperation.– I use two datasets to measure attitudes towards cooperation. The first dataset is from the World Values Survey (2007), which is the only wave with municipality identifiers. It covers 399 Swiss citizens from 38 of the 174 municipalities in the experimental sample (19 without and 19 with historical self-governance). The second dataset is from wave 13 of the Swiss Household Panel (2011), which is the only wave in which attitudes were elicited. It covers 1,859 Swiss citizens from 143 of the 174 municipalities in the experimental sample (71 without and 72 with historical self-governance). In both the datasets, attitudes towards cooperation involve trade-offs between private gains and social costs, such as cheating on tax declaration, lying in own interest, claiming state benefits not entitled to, and offering a bribe (Knack and Keefer 1997, Guiso et al. 2011).[10] Since the willingness of individuals to engage in these activities is expected to depend on the willingness of others to do the same, these attitudes can be considered as reflecting propensity for conditional cooperation.

During the survey, individuals are asked to rate the extent to which the above activities are justifiable on a scale of 0-10, where 0 means "never justified" and 10 means "always justified". For the ease of interpretation, I invert the scale so that higher scores reflect stronger attitudes towards cooperation. Following Tabellini (2010), I use the first principal component underlying these responses as a summary measure.

III.C. Covariates

Data on municipal level covariates were obtained from the Swiss Federal Statistical Office including the geographical information platform, tax administration, and agriculture. Historical data on navigable waterways in the Middle Ages, Bishop city, and Roman town were obtained from maps prepared by Marco Zanoli. These maps are based on data from Amman and Schib (1958) and Putzger (2004). Data on population in the Middle

[10]In the World Values Survey, the question on lying in own interest was not covered. In the Swiss Household Panel the question on accepting a bribe was not covered.

Ages and early modern period were obtained via municipality specific articles in HLS and Swiss Federal Statistical Office. Data on distance from medieval cantonal capitals were computed via Google Maps to account for the importance of terrain in travel time. Data on access to monasteries was obtained first by preparing a list of different orders (Capuchin, Carthusian, Cistercian, Dominican, Franciscan, and Benedictine) and then using Google Maps to identify their location within a radius of 5km from a municipality. Data on individual-level covariates were obtained from the post-experimental survey. The summary statistics on covariates are listed in Panel C and D of Table 1

III.D. Descriptive Evidence

The left panel of Figure 2 shows average conditional cooperation across individuals from municipalities without (0.43) and with (0.83) historical self-governance. The difference is large in magnitude and is also statistically significant (p-value < 0.001).

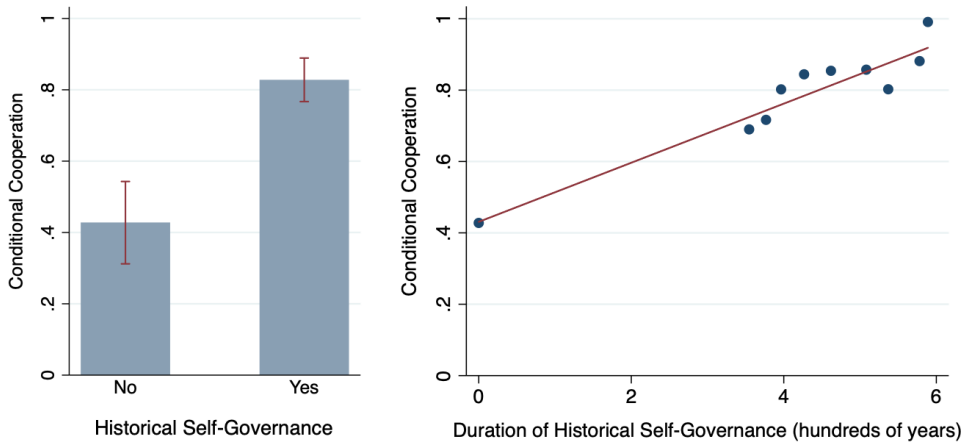

Figure 2: Conditional Cooperation and Historical Self-Governance

Notes. The left panel shows raw difference in conditional cooperation across individuals from municipalities without and with historical self-governance. The capped bars indicate 95 percent confidence bands. The right panel shows bin-scatter plot between conditional cooperation and duration of historical self-governance. Note that duration is zero for municipalities without historical self-governance.

Figure A.4 shows the difference holds when I exclude altruists and flat contributors for whom the Spearman *rho* is zero. Figure A.5 shows the difference remains robust when I split the data by language, religion, rural-urban divide, gender, politics, and education. The right panel of Figure 2 shows a strong positive and significant association between conditional cooperation and the duration of historical self-governance (p-value < 0.001). Figure 3 shows the principal component of attitudes towards cooperation is significantly higher in historically self-governing municipalities (p-value<0.001).

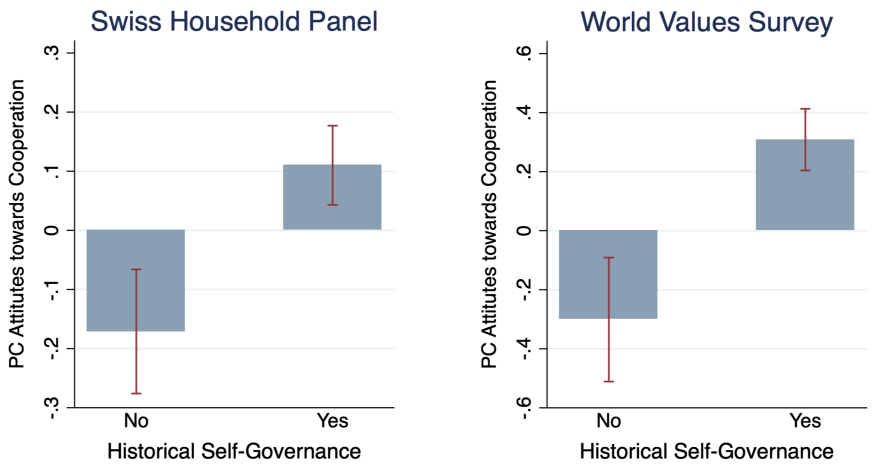

Figure 3: Attitudes towards Cooperation and Historical Self-Governance

Notes. The principal component includes the following attitudes: cheating on tax declaration, lying in own interest, claiming state benefits not entitled to, and offering a bribe. The capped bars indicate 95 percent confidence bands. Data are from Swiss Household Panel (2013) and World Values Survey (2007).

IV. Empirical Specification and Strategy

I examine econometrically the effect of historical self-governance on norms of cooperation. The exposure to historical self-governance might come from an individuals' municipality of residence as well as the municipality of birth. Since for a large majority of the respondents these two overlap and the results do not change, I use exposure from the municipality of residence. Specifically, I estimate the following equation:

$$NC_{imk} = \beta_0 + \beta_1 HSG_{mk} + \mathbf{X}_{imk}\beta_2 + \mathbf{M}_{mk}\beta_3 + \beta_k + \beta_l + \beta_d + \epsilon_{imk} \tag{2}$$

where NC_{imk} is the norm of cooperation of individual i from municipality m and canton k. It is measured as the Spearman correlation between own and other players' contribution in the conditional decision of the public goods game. Alternatively, I use the principal component of attitudes towards cooperation obtained from the World Values Survey and Swiss Household Panel. HSG is the historical self-governance from the resident municipality. It is measured at the extensive margin as 'experience' and at the intensive margin as 'duration'. Experience is an indicator variable that equals 1 if a municipality experienced historical self-governance, whereas duration is the number of years of this experience. β_k is a fixed effect for the canton of residence, β_l for the linguistic group to which an individual belongs, and β_d for the historical canton with which a municipality was associated before the invasion by Napoleon. The coefficient of interest is β_1, which captures the effect of historical self-governance on norms of cooperation.

$\mathbf{X}$ is a vector of individual characteristics that include age, education, gender, log

household income, religion (indicator variable for Catholic and Protestant, baseline category is no religion and others), and politics (indicator variable for left wing and center, baseline category is right wing and others). **M** is a vector of municipality specific controls including proxies of geography (altitude and navigable waterways in the Middle Ages), historical development and education before the Zaehringen extinction (Bishop city), and current economic environment (Gini of income). I consider additional variables when conducting robustness checks including climate and soil suitability for agriculture (Galor and Özak 2016), an indicator for Roman town, distance from the cantonal capital in the Middle Ages, population density and population growth in the historical past (Ashraf and Galor 2011), and an indicator for access to monasteries to proxy for education in the past (Caicedo 2019). I exclude the additional variables from the main specification because they are highly correlated with altitude, navigable waterways, and Bishop city.

I cluster standard errors at the treatment unit, which is a municipality. For the coefficients on experience and duration, I report three additional standard errors. Following Cameron et al. (2008), I cluster standard errors on the municipality and the canton, and separately on the municipality and the associated noble dynasty. Following Conley (1999), I account for spatial clustering over 50 km distance, as Switzerland is a small country. The results are robust to using distances of 25 and 75 km.

The Zaehringen extinction served as a natural experiment through which historical self-governance was assigned. Figure A.6 shows the location of municipalities without and with historical self-governance superimposed on a map of territories under the rule of different noble dynasties. It is evident from this figure that there is partial compliance: some municipalities acquired historical self-governance for reasons other than the Zaehringen extinction. Because the intended treatment assignment is not the same as the actual treatment delivery, the OLS estimates of equation 2 could be potentially biased. One may use intention-to-treat estimate to correct for this bias, but the effect of being a Zaehringen imperial fief on norms of cooperation is in itself uninteresting. So, I attempt to mitigate the bias through (a) balance-check on observables and fixed effects strategy, and (b) instrumental variables estimates.[11]

IV.A. Balance-Check and Fixed Effects

Balance check.– I report balance-checks with respect to (a) geographical and historical variables that proxy for prosperity, education, and trade from the time of the Zaehringen extinction, (b) historical proxies of prosperity before, during, and after the invasion by Napoleon, and (c) contemporaneous proxies of prosperity and education.

[11] A regression discontinuity approach is difficult to implement because the number of municipalities with and without historical self-governance at the border is not large enough to wield power. Nonetheless, a comparison of municipalities that are within 15km on either side of the Zaehringen boundary yields a positive and highly significant coefficient on historical self-governance (result available upon request).

Table 3 compares municipalities by historical self-governance on proxies of geography, prosperity, and access to education from the time of the Zaehringen extinction. Columns 1-2 report the means of these variables and columns 3-4 the difference obtained from a regression of each variable on an indicator for historical self-governance without and with controls. Panel A shows that the municipalities are similar with respect to altitude, navigable waterways, soil suitability for agriculture, and distance from cantonal capital. The raw difference in climate suitability though statistically significant is small in magnitude and the difference disappears when I include other controls. Panel B shows that the municipalities are also comparable across historical proxies of prosperity and education, such as Bishop city, Roman town, population in the Middle Ages, and access to monasteries.

Figure 4 shows proxies of historical prosperity like population density and population growth are very similar across municipalities before, during, and after the invasion by Napoleon (1798). Econometric analyses in Table A.3 - Table A.4 confirm this.

Figure 4: Historical Self-Governance, Population Density and Population Growth

Notes. The figure tracks population density and population growth across municipalities over time, from ca. 1600-1900. The capped bars indicate 95 percent confidence intervals.

Figure 5 shows that current proxies of prosperity and education are similar across municipalities. This includes household income, share of individuals with tertiary education, share of labor force in tertiary sector, number of start-ups, number of insolvent firms, share of foreigners, share of working population on social security benefits, and crime. The differences are mostly small and are also statistically insignificant, except for the share of tertiary sector units (p-value = 0.07) and the number of start-ups (p-value = 0.09), both of which are weakly significantly higher in municipalities with historical self-governance. This may be due to chance, so I use the first principal component of these variables to show that the overall association is not significantly different from zero (p-value = 0.35). A Bonferroni correction also reveals that the joint null of these differences being not significantly different from zero cannot be rejected.

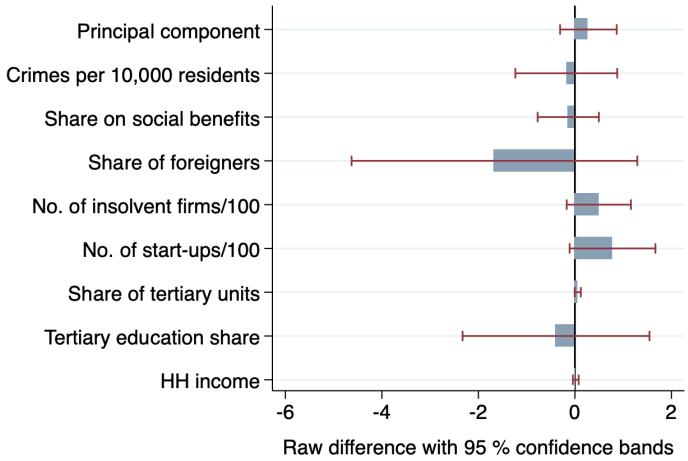

Figure 5: Historical Self-Governance and Current Proxies of Prosperity and Education

Notes. The figure plots the coefficient from a regression of each variable on the y-axis on an indicator for historical self-governance together with 96 percent confidence interval. See Table **??** for the explanation of these variables.

Fixed effects.– I consider canton fixed effects to account for cantonal wide factors. Of the 23 cantons in the sample, 7 offer within variation in historical self-governance. These are among the most populous cantons of Switzerland, accounting for 54 percent of the municipalities as well as the individuals in the sample.[12] The most important of these is the canton of Bern, which has 16 percent of the municipalities as well as the individuals in the sample, half of which are with historical self-governance. I also present the results separately for this canton to gauge the scope of canton fixed effects.

Becker et al. (2016) show that empires can have long-lasting effects even after they perish. So, I introduce fixed effects for the historical canton with which the municipalities were associated in the period before the invasion by Napoleon. It is different from canton fixed effects for 8 cantons whose boundaries changed substantially. Of these, the *historical* canton of Bern is particularly important because it was the largest city-state north of the Alps covering 25 percent of Switzerland. It included the modern cantons of Bern (excluding the Bernese Jura), Vaud, and half of Aargau (western part) for at least two hundred and fifty years (1526 to 1798). I also present results separately for this historical canton to gauge the scope of historical canton fixed effects.

Switzerland is a multi-lingual country, but language varies almost exclusively between cantons and individuals rarely migrate across linguistic regions. So, canton fixed effects already account for linguistic differences. The three cantons where language varies within are an exception. Since these cantons are home to both Swiss Germans and Swiss French, I control for an indicator for Swiss German.[13]

[12] Another two cantons offer small variation. There is no difference in conditional cooperation across cantons without and with variation in historical self-governance (p-value = 0.39).

[13] The majority of Italian speakers reside in Ticino, which was excluded from the study. I do not separately account for Rheto-Romance because of very few observations. I classify them as Swiss German

The introduction of the three fixed effects has efficiency implications, so I gauge their importance by looking at the raw difference in conditional cooperation by historical self-governance within cantons, historical cantons, and linguistic groups. The raw difference turns out to be large, positive, and statistically significant in the majority of cases. I visualize some of these in Figure 6. These patterns suggest that factors specific to cantons, historical cantons, and language are unlikely to play a role.

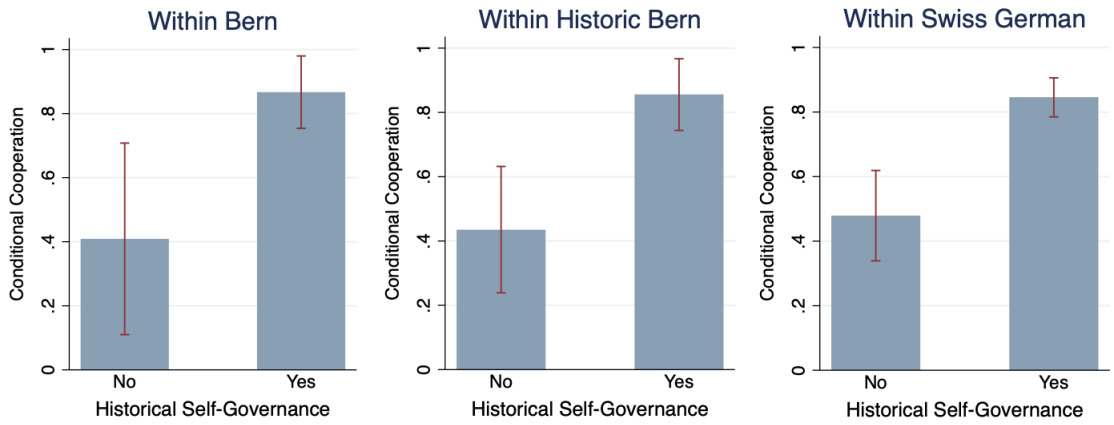

Figure 6: Conditional Cooperation and Historical Self-Governance within Canton, Historical Canton, and Linguistic Group

Notes. The capped bars indicate 95 percent confidence bands.

IV.B. Instrumental Variables Estimates

The results from a balance check and fixed effects suggest that OLS estimates may not be biased. Nonetheless, I also present results from instrumental variables estimates. I use the timing of the Zaehringen extinction interacted with an indicator for Zaehringen imperial fief as an instrument for historical self-governance. The list of these fiefs was obtained from Heyck (1895).

For the Zaehringen extinction to be an exogenous event, its timing must be unforeseen. I believe the accidental death of the last duke in the absence of an heir meets this requirement. I offer further evidence by showing that there was no transfer in the ownership of the fiefs around the timing of extinction. While the Zaehringen acquired all of their private fiefs before 1190, the last set of imperial fiefs were acquired in 1198. Since these predate the death of the last duke by at least 20 years, it is safe to say that the extinction was not anticipated. These data are for fiefs under the Zaehringen name, but it could be that anticipating extinction, the family transferred some of their fiefs via marriage to other noble houses. This seems unlikely because the last marriage in the Zaehringen family occurred in 1190, 28 years before the extinction. Moreover, because the emperor granted imperial fiefs under a contract, it was not easy to transfer these to

because of their fluency in the dialect, as revealed in the post-experimental survey.

another family without his permission.

The timing of the Zaehringen extinction appears exogenous, but there could be a concern over pre-existing differences across areas with and without the Zaehringen rule. Since in the Middle Ages, selection is likely to be based on geographic suitability for agriculture, defense, and prosperity, I conduct a balance test in Table 4. Columns 1-2 report the means, whereas column 3 shows that the differences by Zaehringen imperial fief are small in magnitude and are also statistically insignificant. This result is expected because the Zaehringen and other noble houses had their fiefs on the Swiss plateau which is geographically similar. In addition, historical records reveal that the Zaehringen did not selectively acquire any of their imperials fiefs either by waging a war or petitioning the emperor for superior quality fiefs. Rather, the fiefs were obtained from two different emperors under highly unusual circumstances involving a long chain of events (see Appendix IV for details).

For the exclusion restriction to hold, the Zaehringen imperial fief should affect norms of cooperation only through self-governance. The exclusion restriction is violated if the Zaehringen rule directly affected norms of cooperation, for instance from being special relative to other noble dynasties. This seems unlikely, for as Eugster (2015) notes, the Zaehringen rule was like that of any other noble dynasty. It was not characterized by religiosity, construction of religious foundations and ecclesiastical monasteries, through provisions of law, or a pronounced state and dynasty. I attempt to assuage this concern further by using within Zaehringen variation in historical self-governance. I compare imperial fiefs whose political status was affected by the extinction of the dynasty with private fiefs whose political status remained unchanged.[14] Column 5 of Table 4 shows that there are no differences in geographical and historical variables between Zaehringen imperial fiefs (column 2) and Zaehringen private fiefs (column 4).

V. Main Results

I first present results on the effect of historical self governance on experimental and survey measures of norms of cooperation. I then use administrative data on voter-turnout and decision-making in referendums to show that the effects persist over time. Finally, I show that norms of cooperation matter for a variety of pro-social behaviors today.

V.A. Norms of Cooperation

OLS estimates.– Table 5 presents OLS estimates of the effect of historical self-governance on conditional cooperation using experience in panel A and duration in panel B. Column

[14]The private fiefs of the Zaehringen were divided among the husbands of the two sisters of the last duke and remained under feudalism.

1 is without any controls and shows that the coefficient on experience is 0.40 and that on duration is 0.083. Both the coefficients are significant at the 1 percent level and explain at least 13 percent of the variation in conditional cooperation. The coefficients retain their magnitude and significance when I introduce municipal and individual level covariates in columns 2 and 3.[15] The estimates in column 3 suggest that individuals from historically self-governing municipalities display twice the conditional cooperation of individuals from municipalities without historical self-governance. Moreover, one standard deviation increase in duration (222 years) is associated with an increase in conditional cooperation by 0.19 points.[16] In monetary terms, for each additional 10 Swiss Francs contributed by the other player, individuals from municipalities with historical self-governance increase their contribution by over 7 Swiss Francs, whereas individuals from municipalities without do so by only 3.6 Swiss Francs. Table A.5 shows that this difference is due to municipalities with historical self-governance having a higher share of conditional cooperators by 35 percentage points, but a lower share of free riders by 8 percentage points.

Table A.6 reports the coefficients on covariates and shows that individuals from a Bishop city display significantly lower conditional cooperation by 0.19 points. One standard deviation increase in the Gini of income reduces conditional cooperation by 0.09 points. These findings are in line with the literature. The Bishop rule in Switzerland was oppressive (Zschokke 1860, McCrackan 1906) and inequality is expected to have a negative effect on civic capital (Knack and Keefer 1997).

These results are robust to a variety of checks. Following Oster (2019), I show that the selection on unobservables would have to be five times greater than the selection on observables to explain away these results. Results from a randomization inference test show that the coefficients on experience and duration retain their significance (p-value $<$ 0.001). When I test for spatial autocorrelation, the Z statistics turns out to be small and statistically insignificant ($Z = 0.28$, p-value $= 0.39$), suggesting that the null hypothesis of no spatial autocorrelation cannot be rejected (Kelly 2019). The results are not due to influential cantons. When I drop observations from one canton at a time in Table A.7, the coefficient on experience ranges from 0.383 to 0.437 and that on duration from 0.081 to 0.091.

The patterns in Figure 6 suggest that unobserved heterogeneity due to canton, language, and historical cantons is unlikely to play a role. I test this in Table 5 by introducing one by one fixed effects for cantons in column 4, language in column 5, historical cantons in column 6, and all of them simultaneously in column 7. This does not lead to any

[15]The results remain unchanged when I use experience and duration from the birth municipality. In this case, the coefficients are 0.387 (s.e. 0.075) on experience and 0.083 (s.e. 0.016) on duration; both are statistically significant at the 1-percent level.

[16]Results do not change when I introduce duration squared, which enters with a small and statistically insignificant coefficient. Moreover, in a sub-sample that includes only municipalities with historical self-governance, the coefficient on duration is positive (coef. 0.070, s.e. 0.035) and statistically significant at the 5-percent level.

changes in the magnitude and significance of coefficients on experience and duration. In contrast, the fixed effects add little to the R-squared and are also individually as well as jointly statistically insignificant. The results also hold when I consider a sub-set of municipalities from the modern and historical canton of Bern, which hold by design canton and historical canton wide factors fixed (see Table A.8).

To offset the concern that some other aspect of geography or history or individual specific characteristics is driving the result, I include additional municipal and individual level controls. At the municipal level, I include soil and climate suitability for agriculture, an indicator for Roman town, distance from the cantonal capital in the Middle Ages, and population in the Middle Ages. At the individual level, I introduce indicators for naturalized citizen and Swiss migrant, and a measure of game comprehension. Table A.9 shows that the coefficients on experience and duration retain their magnitude and significance, whereas the coefficients on additional controls are statistically insignificant. The results remain unchanged when the additional controls are jointly introduced.

Instrumental Variables Estimates.– I proceed by presenting instrumental variables (IV) estimates of the effect of historical self-governance on conditional cooperation using the Zaehringen imperial fief as an instrument for historical self-governance. Table A.10 presents reduced-form estimates (ITT) and shows that the coefficient on Zaehringen imperial fief is positive and statistically significant. The first-stage estimates are reported in panel A of Table 6 and show that municipalities that were Zaehringen imperial fiefs are significantly more likely to have experienced historical self-governance and for a much longer duration. The F-statistics confirm that the instrument is relevant. Panel B reports second-stage estimates of the effect of historical self-governance on conditional cooperation. Without or with controls, both experience and duration have positive coefficients that are statistically significant at the 1-percent level. The coefficients in the specification with the full set of controls are 0.465 on experience (column 2) and 0.084 on duration (column 4), which are remarkably similar to their OLS counterparts reported in Table 5.

The exclusion restriction is violated if the Zaehringen rule directly affected conditional cooperation. To mitigate this concern I use within Zaehringen variation in historical self-governance by comparing imperial and private fiefs. Table 7 reports the results. Column 1 shows that the OLS coefficients on experience (0.489) and duration (0.099) are significant at the 1 percent level. Column 2 shows that the corresponding IV estimates are 0.565 on experience and 0.112 on duration; both are significant at the 5 percent level.

The IV estimates are robust to dropping one canton at a time (columns 3-4, Table A.7) and controlling for language and historical canton fixed effects (columns 1-2, Table A.11). Since the instrument varies mostly between and not within cantons, it is difficult to include canton fixed effects. To remedy this, I use municipalities from the historical canton of Bern, which allows me to include simultaneously the three fixed effects. This sample holds

by design the historical canton fixed, so I additionally introduce canton and language fixed effects. Column 3 reports the results and shows that the IV estimates hold in magnitude and significance. As a further robustness check, I show in column 4 that the results remain robust when I restrict the sample to the modern canton of Bern, which holds by design canton wide factors fixed. Table A.12 shows that the IV estimates are also robust to the inclusion of additional municipal and individual level controls.

Survey Measures of Attitudes Towards Cooperation.– Historical self-governance has a positive effect on the principal component of attitudes towards cooperation from World Values Survey and Swiss Household Panel. Table 7 report the results. Columns 3 and 5 show that the OLS estimates of the effect of experience (panel A) and duration (panel B) are positive and highly significant. Individuals from municipalities that experienced historical self-governance have stronger attitudes by 30-50 percentage points than individuals from municipalities without this experience. Columns 4 and 6 show that the corresponding IV estimates are also positive, significant, and similar in magnitude to their OLS counterparts. Table A.13 shows that these results are robust to controlling for self-efficacy beliefs, measured via responses to the question on fate vs control. The coefficient on self-efficacy beliefs enters with a very small and statistically insignificant coefficient.

V.B. Voter-Turnout and Decisions in Referendums

I test whether the effect of historical self-governance holds consistently over time using data on voter-turnout and decision-making in national referendums, which are in use in Switzerland since 1848. Voter-turnout and decision-making are closely associated with norms of cooperation, as they are individually costly, non-pivotal, and benefit the society. Hence, this exercise offers a unique opportunity to track the effect of self-governance over a period of 150 years.

Ideally, we would like to study the effect of historical self-governance in the past before the reforms by Napoleon. However, data on norms of cooperation or their proxies from this period are not available. Nonetheless, since the earliest referendums were held only a few decades after Napoleon invaded Switzerland and it takes time to build democratic capital (Persson and Tabellini 2009), I suspect strong differences in voter-turnout. This would strengthen the main findings, as the presence of differences today but their absence in the past may cast doubt on historical self-governance as the driving force.

Voter Turnout.– Barring the first referendum from 1848 for which the data is missing, I study voter turnout in 645 referendums that were held from 1866-2021. The data from 1860s is available at the cantonal level and from 1960s also at the municipal level. I start by presenting evidence comparing cantons in which a large fraction of municipalities were historically self-governing to those cantons in which a large fraction of municipalities were

not.[17] The left panel of Figure 7 plots the coefficient on experience of historical self-governance over a roughly thirty-year interval, after controlling for covariates (see figure footnotes) and fixed effects for language and referendum topic (includes year). In cantons with historical self-governance, voter turnout is significantly higher in each period by a large magnitude of 2-5 percentage points. Although the gap is declining over time, it stays above 2 percentage points.[18]

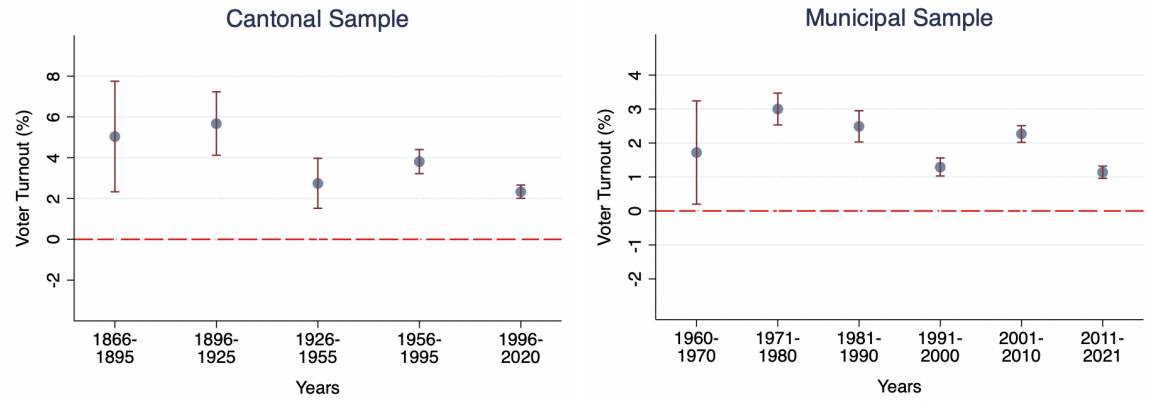

Figure 7: Historical Self-Governance and Voter Turnout in National Referendums and Initiatives

Notes. The figure plots the coefficient from a regression of voter turnout in national referendums and initiatives on historical self-governance, after controlling for covariates. The capped bars indicate 95 percent confidence bands. Data for the cantons are from 1866-2021 and for the municipalities from 1960-2021. The control variables in the cantonal sample are log population in 1850, population growth from 1850-1860, share of male population in 1850, student teacher ratio in primary school in 1888, an indicator for cantons with public assembly voting, share of German speakers in 1860, and fixed effects for referendum topic. The control variables in municipal sample are log population in 1850, altitude, navigable waterways in the middle ages, Bishop city, share of individuals with tertiary education in 2000, log of income per capita in 2010, Gini of income in 2010, ratio of young and old to the rest of the population, and fixed effects for language and referendum topic. The results are robust to controlling for a variety of other covariates including foreigner share. Source: Swiss Federal Office for Statistics.

The right panel in Figure 7 shows a significantly higher voter turnout in municipalities with historical self-governance. As before, the gap becomes smaller over time, but it is higher by 1-2 percentage points in every period and the difference is also always statistically significant at the 1-percent level. Columns 1-2 of Table 8 show that these effects are also overall economically and statistically significant.[19]

[17] Cantons largely with historical self-governance include Uri, Schwyz, Obwalden, Nidwalden, Glarus, Zug, Basel Stadt, Schaffhausen, Appenzell Ausser and Inner Rhoden, Grisons, and Zurich. Cantons largely without include Fribourg, Basel Land, Thurgau, Vaud, and Jura.

[18] This result is not due to differences in the eligibility criteria. There was universal male suffrage in 1848 in all cantons of Switzerland. The regressions also control for share of males in the population. Universal female suffrage for voting at the federal level was adopted in 1971. Since these changes were at the country level, they affected all cantons simultaneously. The only exception is the canton of Appenzell Innerrhoden which has a very small population. Dropping this canton does not change the results.

[19] IV estimates yield similar results and are available on request.

Inclusive Decision-Making.– I proceed by showing that individuals from municipalities with historical self-governance also display inclusive decision-making which is in line with generalized norms of cooperation. These data are from referendums and initiatives from a relatively recent past and cover topics on suffrage rights of women and young adults, as well as easier citizenship to immigrants. Of the 11 referendums and initiatives that were held on these topics since 1848, municipal level data are not available for four referendums that took place before 1960. I investigate the share of "yes" votes at the municipal level in the remaining seven national referendums and initiatives on: a) suffrage to women (1971); b) suffrage to 18 years old (1979); c) equal rights for men and women (1981); d) easier citizenship for young foreigners (1994); e) fair representation of women in federal authorities (2000); f) easier citizenship for young second generation foreigners (2004); and g) easier citizenship for young third generation foreigners (2004). Columns 3-5 of Table 8 reports the results after controlling for municipal level covariates, language, and referendum fixed effects. Column 3 shows that the municipalities with historical self-governance report a higher share of yes votes by nearly 3 percentage points (panel A), which translates into over 80,000 more yes votes in total or over 11,000 more yes votes per referendum. The results hold when I report the estimates separately for topics concerning women (column 4) and foreigners (column 5).

V.C. Pro-Social Behaviors

In line with the findings of Guiso et al. (2016), I show a positively association between historical self-governance and pro-social behaviors. I link these behaviors further to norms of cooperation. The data on pro-social behaviors are from the Swiss Household Panel (2011) and cover: a) donations to organizations and the amount donated in Swiss Francs; b) a principal component of membership in associations (environment, charity, sports or leisure, culture, political party); and c) a principal component of environmental protection activities (recycling, payment of trash fee, consumption of ecologically friendly products, and purchase of local fruits and vegetables to offset carbon costs).

Table 9 report the results. Panel A shows a positive effect of historical self-governance (experience) on pro-social behaviors, which is statistically significant at the 1 percent level. Individuals from municipalities with historical self-governance are more likely to donate to charities by 10 percentage points, and conditional on donation, a higher amount by 206 Swiss Francs. They are also 21 percentage points more likely to be a member of associations and 46 percentage points more likely to engage in environmental protection.

Panel B of Table 9 shows a strong positive association between norms of cooperation and pro-social behaviors, which is statistically significant at the 1 percent level. A one standard deviation increase in norms of cooperation is associated with an increase in the likelihood of donating by 4 percentage points, and conditional on donation a higher

amount by 188 Swiss Francs per year, rise in membership in associations by 14 percentage points, and rise in environmental protection activities by 24 percentage points.

VI. Plausible Channels

All Swiss municipalities acquired self-governance in the post-Napoleon period, so why haven't the gaps in norms of cooperation disappeared? The municipalities have a strong presence of state agencies and infrastructure, which rules out state capacity, protection of property rights, and constraints on executive. After ruling out prosperity, education, and trade as plausible channels, I focus on the role of cultural transmission and low historical migration. This is followed by a discussion on self-reinforcing feedback loop between culture and institutions.

VI.A. Economic Prosperity, Education, and Trade

Literature suggests that democracy is associated with higher education and prosperity (Lipset 1959, Barro 1999, Papaioannou and Siourounis 2008, Persson and Tabellini 2009, Acemoglu et al. 2017), which in turn are associated with higher civic cooperation (Knack and Keefer 1997, Tabellini 2010). If historical self-governance led to higher education and prosperity, this could explain differences in norms of cooperation today. I test this proposition using historical and contemporaneous data. Results in section IV.A show that municipalities without and with historical self-governance had similar historical education as proxied by access to monasteries (Table 3), as well as historical prosperity viewed through population density and population growth from 1600-1900 (Table A.3, Table A.4, Figure 4). Contemporaneous proxies of education and prosperity yield similar results (Figure 5). These findings suggest education and prosperity are unlikely channels. The results in Table A.14 confirm this. When I additionally control for education and prosperity or their principal component, the coefficients on experience and duration retain their magnitude and statistical significance.

Trade is also an unlikely channel. The results are robust to controlling for proxies of trade, such as the location on navigable rives and lakes (see Table 5 and Table A.6) and Roman town in the past (see Table A.9). Also, the results hold when I restrict the sample to rural municipalities less engaged in trade than the urban ones (Table A.15).

VI.B. Cultural Transmission

I investigate the scope of cultural transmission in explaining persistence using the epidemiological approach pioneered by Fernandez (2007) and Giuliano (2007). It relies on the behavior of migrants who reside in the same canton but differ in exposure to historical self-governance from their birth municipality. If people carry their norms with them

when they move, then I should observe stronger norms of cooperation among individuals whose birth municipality experienced historical self-governance than individuals whose birth municipality did not, after accounting for the common resident canton fixed effect. I collect data on historical self-governance in the birth municipality of Swiss migrants in the sample. Table 10 presents the results after accounting for individual and municipal level controls, the length of stay in the resident municipality, and fixed effects. Column 1 shows that migrants whose birth municipality experienced historical self-governance exhibit stronger conditional cooperation than migrants whose birth municipality did not. The coefficients on experience (0.62) and duration (0.11) are large in magnitude and are also highly statistically significant. In column 2, when I additionally control for historical self-governance from the resident municipality, the coefficients on experience and duration from the birth municipality remain robust in magnitude and significance. In contrast, the coefficients on historical self-governance from the residence municipality are smaller in magnitude and are also statistically insignificant. The two coefficients are also significantly different from each other (p-value < 0.05).

VI.C. Historical Migration

For cultural transmission to serve as credible mechanism, historical migration across municipalities must have been low. Christ (2006) reports that 60 percent of the Swiss resided in their ancestral municipality until the 19th century. This was due to several reasons. First, in the Middle Ages, Swiss municipalities were responsible for providing the commons. This discouraged migration because the residents were reluctant to share their scarce resources with outsiders. Second, starting from the 16th century, the welfare of citizens was the obligation of the ancestral municipality. This created further hurdles to migration. In times of crisis, non-citizens were ineligible for social support and were even deported to their ancestral municipality. It was not until 1934 that many resident municipalities were mandated to provide welfare. Third, it is likely that geography also played a role, as mountains and lakes created barriers to migration.

Studying persistence in the face of migration is difficult because data on historical migration are rarely available. I use a novel dataset from HLS to measure migration rates in the 19th century. The dataset includes a comprehensive listing of family names holding citizenship in a Swiss municipality at a given point in time. I compute municipality specific incoming migration rates for the period 1800-1900 as the proportion of new family names that acquired the citizenship to the number of family names already holding the citizenship. The average migration rate turns out to be 29 percent. Column 1 of Table A.16 shows that the coefficients on experience and duration are robust to controlling for migration, which enters with a small and statistically insignificant coefficient. In columns 2-3, I report the results separately by median migration rate. While the co-

efficients retain their statistical significance, the magnitude is larger in the sample with migration rates below the median; however, the difference is not statistically significant. This result is in line with Henrich and Boyd (1988) who show that cultural transmission can maintain between-group differences for a wide range of migration rates.

VI.D. Discussion

The transition from autocratic rule to self-governance does not occur overnight but takes a long time. In a study of democratic transitions in Europe, Berman (2007) found that the initial phase was marked by weak and ineffectual reforms, as well as frequent switching between autocratic rule and self-governance. These occurrences were also common in newly liberated areas in Switzerland (see Meuwly (2017). Since historically self-governing municipalities transitioned earlier, it is likely that they had much more time to consolidate and build democratic capital (Persson and Tabellini 2009). This could have generated a feedback loop between institutions of self-governance and norms of cooperation reinforcing each other (see Besley 2020). Below I present evidence in support of this by showing that historically self-governing municipalities have stronger institutions of direct democracy and individuals residing therein hold stronger attitudes towards democracy.

To begin with, Figure A.7 shows that an index capturing the extent of direct democracy is significantly higher in cantons where many municipalities experienced historical self-governance than otherwise. I complement this result with data on the frequency of local level referendums and initiatives that the municipalities use for local decision-making. These data were collected by Andreas Ladner using surveys with municipal administrators in 2009 and 2016. Since participation in referendums is costly, these data provides a robust measure of the quality of self-governance. Table 11 reports the results after controlling for covariates and year fixed effects. Columns 1-3 show that in municipalities with historical self-governance, the frequency of referendums and initiatives is nearly twice as high as in municipalities without. The difference holds when I analyze the results separately for referendums (column 4) and initiatives (column 5).

Further support for these findings comes from data on attitudes and support for democracy from the World Values Survey and Swiss Household Panel. In the survey, individuals are asked to rate on a scale of 1-10 whether it is an essential characteristic of democracy that (i) governments tax the rich and subsidize the poor, (ii) religious authorities interpret the laws, (iii) people choose their leaders in free elections, (iv) people receive state aid for unemployment, (v) the army takes over when the government is incompetent, (vi) civil rights protect people's liberty, (vii) people can change the laws in referendums, (viii) women have the same rights as men, (ix) democracy in own country, and (x) support for democracy. Using a principal component of attitudes towards democracy, I show in Table A.17 that individuals from municipalities that were historically self-governing show

stronger attitudes and support for democracy than individuals from municipalities that were not.[20] These results suggest of a feedback loop in which institutions and culture reinforce each other.

VII. Conclusions

I study how norms of cooperation that are crucial for the provision of public goods emerge, whether they persist, and why do they persist. My focus is on the role of political institutions that encourage participatory self-governance. The main challenges in conducting such a study are establishing causality, measuring norms independent of confounding motives, tracking effects over time, and studying persistence in the face of migration. I mitigate these challenges by combining a historical natural experiment in self-governance in Switzerland with behavioral, survey, and administrative, and family names data. The natural experiment stems from the extinction of the Zaehringen dynasty from the absence of an heir, which resulted in some municipalities acquiring historical self-governance, whereas the others remaining under autocratic rule for hundreds of years. The Swiss experience of historical self-governance lasted long and was based on cooperation and compromise, which was particularly conducive to fostering norms of cooperation.

I find a positive and significant effect of historical self-governance on experimental and survey measures of norms of cooperation. These results are robust to accounting for individual, municipal, and cantonal level covariates. Instrumental variables estimate that use the Zaehringen imperial fief as an instrument for historical self-governance yield similar results. Using administrative data on referendums, I show these effects persist for over 150 years through stronger voter-turnout and inclusive decision-making. Furthermore, norms of cooperation matter for prosocial behaviors, such as donations to charities and environmental protection. Finally, I draw attention to the role of cultural transmission in explaining this persistent effect. This was facilitated by low historical migration, measured using a unique data tracking citizenship by family names over time.

These findings highlight that the interaction between self-governance and norms of cooperation can lead to patterns that could endure over time. They help us understand the mechanisms through which self-governance affects cooperation outcomes. Banerjee and Iyer (2005) and Duflo and Pande (2007) suggest that the poor performance of landlord districts in India was autocratic landlord rule which prevented individuals from engaging in collective action. This autocratic rule may have led to weaker norms of cooperation, resulting in the failure of collective action.

[20] The results hold individually for all questions except (ii) and (v), which is not surprising.

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Table 1: Summary Statistics

	Mean	Std. Dev.
	A: Historical self-governance	
Experience (indicator)	0.460	0.498
Duration (hundreds of years)	2.004	2.221
	B: Conditional cooperation	
Propensity for conditional cooperation	0.646	0.545
Indicator for conditional cooperation	0.656	0.476
	C: Main covariates	
Municipal level		
Altitude	4.723	1.428
Navigable waterways M.A.	0.466	0.500
Bishop city	0.029	0.168
Gini income	0.339	0.060
Individual level		
Age	43.905	13.500
Education	0.450	0.498
Male	0.538	0.499
Log household income	11.602	0.532
Catholic	0.321	0.468
Protestant	0.363	0.482
Left wing	0.111	0.314
Center	0.607	0.489
	D: Additional covariates	
Municipal level		
Climate suitability for agriculture	1.345	0.727
Soil suitability for agriculture	1.506	1.626
Roman town	0.092	0.290
Distance from medieval cantonal capital	21.232	16.888
Access to monastery	0.253	0.436
Individual level		
Naturalized citizen	0.202	0.402
Swiss migrant	0.370	0.484
Game comprehension	0.599	0.491

Notes: Data in Panels A-B are at the municipal and individual level, respectively. The number of observations at the municipal level is 174 and at the individual level 262. PANEL A. Experience is an indicator for a municipality that experienced self-governance before 1803; Duration is the number of years a municipality experienced historical self-governance/100. PANEL B. Propensity to cooperate conditionally is the Spearman rho between self and other players' contribution in the conditional decision of the public goods game. The indicator for conditional cooperation identifies an individual as a conditional cooperator. PANEL C. Altitude is of the main municipality settlement in meters/100; Navigable waterways indicates the location of a municipality on a river/lake that was navigable in the Middle Ages; Bishop city is an indicator for a municipality being the seat of a Bishop; Gini income is a measure of income inequality in 2006. Age is in years; Education is an indicator for an individual with polytechnic / university degree; Male is an indicator for male; Log household income is the log of annual household income/1000; Catholic and protestant are indicators for religion; Left wing and center are indicators for political orientation. PANEL D. Climate captures municipality suitability for agriculture: highly suitable, suitable, and borderline suitable/ unsuitable. Soil captures municipality suitability for agriculture: very good production, good production, average production, impaired production, and unsuitable. Roman is an indicator for Roman town. Distance is km on foot from the medieval cantonal capital. Access to monastery is an indicator for a municipality located within 5 km from a monastery of any order. Naturalized and Swiss migrants are indicators for citizenship status and migrant. Comprehension is an indicator for individuals who got the control questions wrong in the first attempt. M.A stands for Middle Ages.

Table 2: Frequency of Types and their Propensity to Cooperate Conditionally

	Frequency	Proportion	Average Spearman *rho*
Conditional cooperator	172	0.657	0.97 (0.04)
Free rider	28	0.107	0.12 (0.26)
Altruist	10	0.038	0.00 (0.00)
Flat	10	0.038	0.00 (0.00)
Hump-shaped	8	0.030	0.05 (0.52)
Unclassifiable	34	0.130	-0.05 (0.77)
Total	262	1.00	0.65 (0.54)

Notes: Standard deviations are in parentheses.

Table 3: Balance Test by Historical Self-Governance

	Historical Self-Governance		Difference in means (2) – (1)	
	No	Yes	Without controls	With controls
	(1)	(2)	(3)	(4)
	Panel A. Geographical variables			
Altitude	4.571	4.902	0.330	0.242
	(1.033)	(1.775)	(0.225)	(0.203)
Navigable waterways	0.479	0.450	−0.029	0.044
	(0.502)	(0.501)	(0.076)	(0.072)
Climate	1.479	1.188	−0.291	−0.130
	(0.684)	(0.748)	(0.109)	(0.094)
Soil	1.596	1.400	−0.196	0.026
	(1.609)	(1.650)	(0.248)	(0.238)
Distance	22.832	19.351	3.481	−3.602
	(15.800)	(18.002)	(2.589)	(2.227)
	Panel B. Historical variables			
Bishop city	0.021	0.038	0.016	0.002
	(0.145)	(0.191)	(0.026)	(0.025)
Roman town	0.085	0.100	0.015	0.040
	(0.281)	(0.302)	(0.044)	(0.042)
Population M.A.	1971.25	2735.455	725.795	1412.167
	(2 742.395)	(1 957.122)	(1 071.164)	(3 349.567)
Access to monastery	0.245	0.263	0.018	−0.008
	(0.432)	(0.443)	(0.067)	(0.068)
Observations	94	80	174	174

Notes: Columns 1 and 2 report the average of control variables in municipalities without and with historical self-governance. Column 3 reports the difference obtained from a regression of each covariate on an indicator for historical self-governance without any control variables. Column 4 reports the difference after introducing the remaining variables together with municipal level proxies of education, income, religion, politics, and Gini of income as control variables. In these regressions, I exclude population M.A. because it is available only for a small sample of municipalities. While regressing population M.A. on historical self-governance, I additionally control for the date for which the population is available. The numbers in parentheses are standard deviations in columns 1-2 and standard errors in columns 3-4. M.A. stands for Middle Ages. Population M.A. is the population of a municipality in the late Middle Ages. It is available for 16 municipalities, of which 11 are with and 8 without historical self-governance. Data on this variable were obtained from municipality specific articles in Historical Lexicon of Switzerland.

Table 4: Balance Test by Zaehringen Imperial Fief

	Zaehringen Imperial Fief		Difference in means	Zaehringen Private Fief	Difference in means
	No	Yes	(2) - (1)	Yes	(2) - (4)
	(1)	(2)	(3)	(4)	(5)
	Panel A. Geographical variables				
Altitude	4.713	4.767	0.054	5.153	−0.386
	(1.497)	(1.108)	(0.229)	(1.072)	(0.459)
Nav. waterways	0.454	0.515	0.061	0.714	0.199
	(0.498)	(0.508)	(0.097)	(0.488)	(0.210)
Climate	1.312	1.485	0.173	1.429	0.056
	(0.728)	(0.712)	(0.137)	(0.535)	(0.286)
Soil	1.433	1.818	0.386	1.143	0.675
	(1.569)	(1.845)	(0.345)	(1.574)	(0.751)
Distance	20.487	22.876	2.029	17.714	5.161
	(16.263)	(19.527)	(3.636)	(12.389)	(7.733)
	Panel B. Historical variables				
Bishop city	0.028	0.030	0.002	0.000	0.030
	(0.167)	(0.174)	(0.033)	(0.000)	(0.066)
Roman town	0.071	0.182	0.111	0.000	0.182
	(0.258)	(0.392)	(0.071)	(0.000)	(0.150)
Population M.A.	2155.000	2857.143	289.261	1950.000	623.137
	(2 225.535)	(2 489.402)	(1 247.647)	(777.817)	(1 965.137)
Monastery access	0.248	0.273	0.025	0.429	−0.156
	(0.434)	(0.452)	(0.086)	(0.535)	(0.194)
Observations	141	33	174	7	40

Notes: Columns 1-2 report the average of control variables by an indicator for the Zaehringen imperial fief. Column 1 reports the average for municipalities that were not Zaehringen imperial fiefs. This includes municipalities that were under the custody of other noble houses (Kyburg, Habsburg, and Savoy) as well as municipalities that were private fiefs of the Zaehringen. Column 2 reports the average for municipalities that were imperial fiefs of the Zaehringen. Column 4 reports average for those municipalities that were private fiefs of the Zaehringen. Columns 3 and 5 report the difference in means obtained from the regression of each covariate on an indicator for Zaehringen imperial fief. The number of municipalities in column 4 is small because only a handful of Zaehringen fiefs were under private custody. Note that while regressing population M.A. on the Zaehringen imperial fief, I additionally control for the date for which the population is available. The numbers in parentheses are standard deviations in columns 1-2 and standard errors in columns 3 and 5. Note that observation means a municipality.

Table 5: OLS Estimates of the Effect of Historical Self-Governance on Conditional Cooperation

	Dependent variable: Conditional Cooperation						
	No controls	Municipal controls	Individual controls	Canton FE	Language FE	Historical FE	All FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Panel A			
Experience	0.400	0.417	0.414	0.408	0.386	0.419	0.400
	(0.063)	(0.061)	(0.066)	(0.086)	(0.070)	(0.089)	(0.105)
	{0.045}	{0.038}	{0.055}	{0.077}	{0.056}	{0.071}	{0.101}
	{0.055}	{0.032}	{0.056}	{0.117}	{0.060}	{0.108}	{0.141}
	[0.065]	[0.061]	[0.066]	[0.083]	[0.069]	[0.083]	[0.097]
R^2	0.13	0.17	0.20	0.22	0.20	0.24	0.25
				Panel B			
Duration	0.083	0.087	0.087	0.086	0.081	0.086	0.082
	(0.013)	(0.012)	(0.013)	(0.017)	(0.014)	(0.017)	(0.020)
	{0.008}	{0.007}	{0.011}	{0.014}	{0.011}	{0.014}	{0.020}
	{0.011}	{0.005}	{0.010}	{0.020}	{0.010}	{0.019}	{0.026}
	[0.013]	[0.012]	[0.013]	[0.016]	[0.014]	[0.016]	[0.018]
R^2	0.14	0.18	0.20	0.23	0.21	0.24	0.25
Ind. controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Mun. controls	No	No	Yes	Yes	Yes	Yes	Yes
Canton FE	No	No	No	Yes	No	No	Yes
Language FE	No	No	No	No	Yes	No	Yes
Dynasty FE	No	No	No	No	No	Yes	Yes
Observations	262	262	262	262	262	262	262
Control mean				0.43			

Notes: OLS estimates. Below the coefficients on experience and duration four different standard errors are reported. The first row in parenthesis reports standard errors adjusted for clustering within municipality. The second row in curly brackets reports standard errors that are clustered on both the municipality and the canton. The third row, also in curly brackets, reports standard errors that are clustered on the municipality and the historical dynasty with which a municipality was associated in the Middle Ages. The second and third row follow the procedure by Cameron et al. (2008). The fourth row in square brackets reports standard errors adjusted for spatial clustering with a threshold of 50 Km (Conley 1999). The results are robust to alternative thresholds at 25 and 75 km. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income. Fixed effects (FE) are for residence canton, language, and historical canton. FE stands for fixed effects.

Table 6: Instrumental Variables Estimates of the Effect of Historical Self-Governance on Conditional Cooperation

	Experience		Duration	
	No controls	Controls	No controls	Controls
	(1)	(2)	(3)	(4)
	Panel A. First-Stage Estimates			
	Dependent variable: Historical Self-Governance			
Zaehringen rule	0.391	0.397	2.201	2.204
	(0.091)	(0.086)	(0.605)	(0.507)
	(0.090)	(0.096)	(0.460)	(0.466)
R^2	0.12	0.21	0.16	0.25
F-statistics	18.70	21.27	13.26	18.86
	Panel B. Second-Stage Estimates			
	Dependent variable: Conditional Cooperation			
Historical self-governance	0.516	0.465	0.092	0.084
	(0.143)	(0.146)	(0.029)	(0.028)
	(0.133)	(0.121)	(0.028)	(0.024)
R^2	0.12	0.20	0.13	0.20
Individual controls	No	Yes	Yes	No
Municipal controls	No	Yes	Yes	No
Observations	262	262	262	262

Notes: Instrumental variables estimates with standard errors in parenthesis clustered on the municipality in row 1, and on both municipality and canton in row 2. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income.

Table 7: OLS and IV Estimates using Zaehringen only Sample, World Values Survey (WVS), and Swiss Household Panel (SHP)

	Conditional Cooperation		Attitudes towards Cooperation			
	Zaehringen Sample		WVS Sample		SHP Sample	
	OLS	IV	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A					
Experience	0.489	0.565	0.483	0.411	0.299	0.282
	(0.128)	(0.244)	(0.119)	(0.134)	(0.075)	(0.132)
F-statistics		49.59		18.70		24.07
	Panel B					
Duration	0.099	0.112	0.093	0.076	0.051	0.056
	(0.025)	(0.048)	(0.024)	(0.026)	(0.021)	(0.029)
F-statistics		42.93		21.14		17.44
Ind. control	Yes	Yes	Yes	Yes	Yes	Yes
Mun. control	Yes	Yes	Yes	Yes	Yes	Yes
Observations	82	82	398	398	1859	1859

Notes: OLS and IV estimates with standard errors in parenthesis. The dependent variable in columns 1-2 is conditional cooperation. These columns report estimates using the Zaehringen sample. The dependent variable in columns 3-6 is attitudes towards cooperation. Estimates in column 3-4 are from World Values Survey (WVS), but those in columns 5-6 are from Swiss Household Panel (SHP). Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income.

Table 8: Historical Self-Governance, Voter Turnout, and Inclusive Decision-Making in Referendums and People's Initiatives

	Voter Turnout		Yes Vote Share		
	Canton	Municipality	Women and Foreigners	Women only	Foreigners only
	(1)	(2)	(3)	(4)	(5)
Experience	3.448	2.027	2.884	2.710	3.058
	(0.191)	(0.089)	(0.881)	(0.992)	(0.935)
Controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	11,274	75,323	1215	693	522

Notes: OLS with standard errors clustered on the municipality. Column 1 reports results at the cantonal level, whereas columns 2-5 report results at the municipal level. Voter turn out is in percentage. Women and foreigners includes suffrage rights to women and young adults, and easier citizenship to foreigners (7 decisions). Women only includes suffrage rights to women and young adults (4 decisions). Foreigners only includes easier citizenship to foreigners (3 decisions). In column 1, control variables include altitude, navigable waterways in the Middle Ages, Bishop city, log population in 1850, population growth from 1850-1860, and number of schools per capita in 1888. In columns 2-5, controls variables include altitude, navigable waterways in the Middle Ages, Bishop city, and current measures of and Gini of income, share of individuals with tertiary education, log of income per capita, ratio of young and old to the rest. In column 3-5, I additionally control for the share of Catholics because of the topics of such referendums. All columns include fixed effects for language and referendum. Data are from Swiss Federal Office for Statistics.

Table 9: Historical Self-Governance, Norms of Cooperation, and Prosocial Behaviors

	Donations to organizations	Amount of donation	Membership in associations	Environmental protection
	(1)	(2)	(3)	(4)
	Panel A			
Experience	0.108	206.312	0.214	0.459
	(0.033)	(125.316)	(0.064)	(0.126)
R^2	0.13	0.06	0.09	0.15
	Panel B			
Norms of cooperation	0.041	188.343	0.143	0.242
	(0.011)	(35.764)	(0.019)	(0.025)
R^2	0.13	0.06	0.08	0.14
Controls variables	Yes	Yes	Yes	Yes
Obs.	1851	1244	1857	1828

Notes: OLS estimates with standard errors clustered on the municipality. Donations to organizations equals 1 if an individual donated to an organization. Amount of donation is in Swiss Francs. Membership in associations is a principal component that includes environmental protection, charitable organization, sports or leisure, culture, and political party. Environmental protection is a principal component that includes recycling, payment of trash fee, consumption of ecological friendly products, and purchase of local fruits and vegetables to offset carbon costs. Control variables include age, education, male, log household income, Catholic, Protestant, left wing, center, altitude, navigable waterways in the Middle Ages, and Gini of income. The number of observations is smaller in column 2 because it is only for those who donated. Data are from Swiss Household Panel (2011).

Table 10: Historical Self-Governance and Conditional Cooperation
Migrant Sample (Epidemiological Approach)

	Dependent variable: Conditional Cooperation			
	Experience		Duration	
	(1)	(2)	(3)	(4)
Birth municipality	0.670	0.621	0.128	0.113
	(0.183)	(0.169)	(0.039)	(0.036)
Residence municipality		0.145		0.049
		(0.181)		(0.037)
R^2	0.58	0.59	0.57	0.59
Control variables	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Observations	87	87	87	87

Notes: OLS estimates with standard errors in parenthesis clustered on the municipality. Control variables include age, education, male, log household income, Catholic, Protestant, left wing, center, altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income. Fixed effects are for residence canton, language, and historical canton.

Table 11: Historical Self-Governance and Frequency of Referendums and Initiatives

	Dependent variable: Frequency of Referendums and Initiatives				
	Combined			Referendum only	Initiative only
	No controls	Year FE	Full controls	Full controls	Full controls
	(1)	(2)	(3)	(4)	(5)
	Panel A				
Experience	1.530	1.645	1.696	2.616	0.809
	(0.270)	(0.281)	(0.432)	(0.748)	(0.292)
	Panel B				
Duration	0.456	0.482	0.484	0.732	0.241
	(0.090)	(0.093)	(0.094)	(0.156)	(0.085)
Year fixed effects	No	Yes	Yes	Yes	Yes
Control variables	No	No	Yes	Yes	Yes
Observations	328	328	328	151	177
Baseline		1.36		1.82	0.90

Notes: OLS estimates with standard errors clustered on municipalities and cantons in parentheses. Controls variables are at the municipal level from the years for which data were available and which are close to the years in which the dependent variable is measured. These include tertiary education share in 2000, log income per capita in 2010 and 2014, Catholic share in 2000, center vote share in 2007 and 2015, Gini of income in 2006 and 2010, altitude, and Navigable waterways in the Middle Ages. Bishop city is excluded because data on the dependent variable is available for only two such municipalities. Protestant share is excluded because it is highly correlated with Catholic share ($r = 0.92$). Data on tertiary education and Catholic share are available only for the year 2000. The results hold when standard errors are clustered only at the municipal level. Data on the dependent variable are from Andreas Ladner for 2009 and 2016. Data on control variables are from the Swiss Federal Office for Statistics.

ONLINE APPENDIX:
Historical Self-Governance and Norms of Cooperation

Devesh Rustagi

Appendix A

I. Field Setting

Plausible Reasons behind Frederick II's Decision

I discuss four plausible reasons. First, assigning the Zaehringen imperial fiefs to competing noble dynasties would have made them more powerful and a contender to the throne. The Emperor was not a stranger to such challenges, as his family lost the crown to a rival dynasty for 17 years and recovered it only when he became the king. Second, though Frederick II was a German king, his training, lifestyle, and temperament were "most of all Sicilian" – He was interested in "expanding the Sicilian kingdom into Italy rather than the German kingdom southward" (Maehl, 1979). This could be the reason why he allowed these areas to engage in self-governance under his tutelage. Third, the free areas did not have strong dynastic aspirations. From his experience with the free cities of Italy, he learned that this could serve useful to counteract the power of rival nobles and the Pope with whom he had frequent squabbles. Lastly, Frederick II was an imaginative king, who was called *stupormundi* or the "astonishment of the world". Historical accounts speak highly of the egalitarian nature of his court, administrative and judicial reforms, and religious tolerance. It could be that self-governance was in his repertoire of reforms and the Zaehringen extinction offered him the opportunity to implement these.

Styles of Historical Self-Governance

Figures A1-A3 show simplified versions of historical forms of self-governance that were typically in operation in Switzerland. Figure A.1 shows historical self-governance in rural areas like Uri. Figure A.2 shows the structure of governing council in urban areas with historical self-governance like Zurich. Figure A.3 shows governance in feudal areas like Vaud. In these areas, the foreign power was responsible for the appointment and nomination of important positions (in this case Bern) and local individuals had hardly any say in decision-making. These figures are modified from Historical Lexicon of Switzerland.

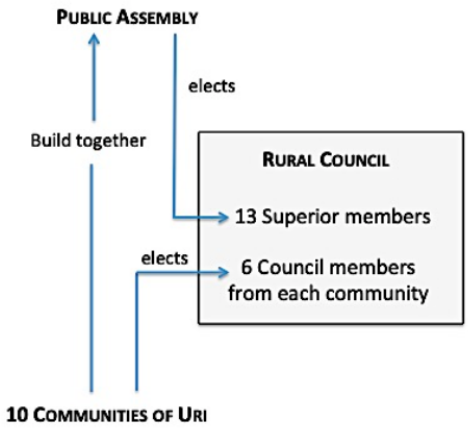

Figure A.1: Historical Self-Governance in Rural Areas

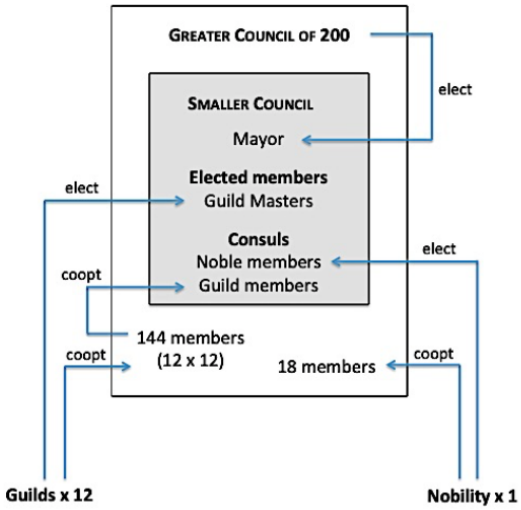

Figure A.2: Historical Self-Governance in Urban Areas

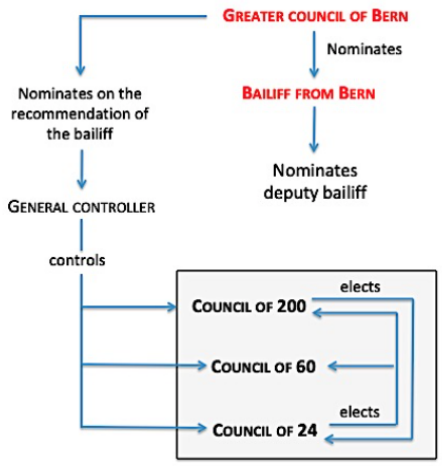

Figure A.3: Historical Self-Governance in Feudal Areas

II. Sample Construction

The experimental sample has 262 individuals, the World Values Survey 398 individuals, and the Swiss Household Panel 1859 individuals. Of these, the surveys are considered representative because of their sampling strategy. I discuss below the representativeness of the experimental sample at the municipal and individual level.

Sampling strategy

I contacted 1,003 Swiss individuals from different households to take part in an online experiment in 2013.[1] These individuals were randomly selected by the Institute for Opinion Research (LINK) to a create a representative sample from the three main linguistic groups and 26 cantons of Switzerland. Since these individuals agreed to be on the database of the survey agency, they are likely to have common characteristics. This is like recruiting individuals from Mechanical Turk, who also share common characteristics from being on that platform. In such cases, the selection concern arises from participation by some and not the others in the experiment.

Of the 1003 individuals, 303 completed the experiment. I drop Swiss Italians from the sample to avoid confounding with geographical and genetic differences.[2] This leaves 262 individuals from 174 municipalities who participated in the study and 627 individuals from 344 municipalities who did not. The response rate is 30 percent at the individual level and 34 percent at the municipal level. The participation rate is not different across cantons either at the individual (p-value = 0.37) or at the municipal level (p-value = 0.58). Since LINK provided a list of municipalities and individuals who did not respond, I can study whether there is selection in participation on key observables.

Scope of selection at the municipal level

Historical self-governance is measured at the municipal level. I test for selection in Table A.1 by comparing the means of important variables across municipalities that are not in the sample (column 1) to those that are in the sample (column 2). Columns 3-5 report the difference in means, estimated using a regression of each variable on an indicator for participation. Column 3 is without any controls, column 4 includes controls, and column 5 canton fixed effects. Regardless of the specification, I find that the differences are small in magnitude and and are also statistically insignificant. These findings suggest that municipalities in the sample are comparable to those that are not.

[1] According to the Swiss Federal Statistical Office (2014), 84 percent of adult German speakers and 82 percent of adult French speakers used Internet in the first quarter of 2014. The share rises to 100 percent if adult population up to the age of 50 years is considered.

[2] Swiss Italians are mostly confined to the canton of Ticino, which is to the south of the Alps. This created geographical barrier to mixing of genes in the past. The results hold even if I include Swiss Italians in the sample.

Table A.1: Comparison of Municipal Level Covariates

	Means by Participation (s.d.)		Difference (s.e.)		
	No	Yes	No controls	With controls	With FE
	(1)	(2)	(3)	(4)	(5)
Age index	62.96	61.81	-0.990	-0.691	-0.630
	(7.38)	(6.60)	(0.645)	(0.652)	(0.622)
Tertiary degree	20.20	19.64	-0.556	-0.044	-0.064
	(7.38)	(6.43)	(0.629)	(0.325)	(0.304)
Log income per capita	11.19	11.17	0.028	-0.011	-0.006
	(0.26)	(0.20)	(0.020)	(0.009)	(0.008)
Catholic	42.93	42.40	-0.532	-0.534	-0.363
	(24.16)	(22.42)	(2.141)	(0.599)	(0.424)
Protestant	38.45	37.98	-0.466	-0.488	0.428
	(22.80)	(21.85)	(2.062)	(0.577)	(0.445)
Left wing	17.22	17.81	0.589	0.065	0.379
	(7.38)	(7.75)	(0.709)	(0.640)	(0.411)
Centre	15.32	14.41	-0.910	-0.496	-0.304
	(10.08)	(10.76)	(0.979)	(0.953)	(0.408)
Altitude	4.86	4.72	-0.137	-0.110	-0.119
	(1.62)	(1.43)	(0.139)	(0.128)	(0.113)
Gini income	0.34	0.34	0.004	0.002	0.001
	(0.07)	(0.06)	(0.006)	(0.004)	(0.003)
Observations	344	174	518	518	518

Notes. Columns 1-2 report the mean and the standard deviation (s.d.) of covariates across municipalities of non-participants and participants in the experiment. Columns 3 reports the raw difference obtained from the regression of each covariate on an indicator for participation. Column 4 reports the same after controlling for additional variables and column 5 after controlling for canton fixed effects. Age is measured as the share of population in 2010 that is between 0-19 and over 64 per 100 persons in the age group of 20-64 (dependency ratio). Tertiary education is measured as the share of individuals with tertiary education in 2000 (data is available for this year only). Income is measured as log income per capita in 2014. Catholic and Protestant are the share of population in 2000 that is Catholic and Protestant respectively. Left wing and Center are the share of eligible population that voted for SDP and FDP in 2011 elections. Altitude is measured in meters/100. Bishop is excluded because all five Bishop cities are in the sample. Water is excluded because these data are not readily available for all municipalities and were hand coded for municipalities with historical self-governance. Otherwise stated, all data are from the Swiss federal statistical office. Data on altitude are from the Swiss geographical information platform. Data on Gini of income are from Swiss tax administrative office.

Scope of selection at the individual level

I test for selection at the individual level by comparing in Table A.2 the means of important variables across individuals that are not in the sample (column 1) with those than are in the sample (column 2). Column 3-5 reports the difference in means, estimated using a regression of each covariate on an indicator for participation. Column 3 is without any controls, column 4 includes other variables as controls, and column 5 additionally controls for canton fixed effects. As before, there are no differences in these variables by participation. The only exception is education, which is significant at the 10 percent level. However, the magnitude of the difference is small relative to the mean and standard deviation of education in the full sample (mean 0.39, s.d. 0.49). Using the Bonferroni correction, the joint null that these differences are not significantly different from zero cannot be rejected.

Table A.2: Comparison of Individual Level Covariates

	Average by participation (s.d.)		Difference (s.e.)		
	No	Yes	No controls	With controls	With FE
	(1)	(2)	(3)	(4)	(5)
Age	40.793	41.905	1.112	0.961	1.338
	(15.158)	(13.500)	(1.069)	(1.065)	(1.104)
Education	0.367	0.450	0.084	0.067	0.071
	(0.482)	(0.498)	(0.037)	(0.038)	(0.037)
Male	0.493	0.538	0.045	0.031	0.031
	(0.500)	(0.499)	(0.042)	(0.039)	(0.040)
Log HH Income	6.997	6.976	0.020	0.013	0.016
	(0.532)	(0.548)	(0.038)	(0.037)	(0.038)
Catholic	0.365	0.321	-0.045	-0.025	-0.031
	(0.482)	(0.468)	(0.035)	(0.027)	(0.027)
Protestant	0.349	0.363	0.013	-0.007	-0.016
	(0.477)	(0.482)	(0.033)	(0.026)	(0.026)
Left wing	0.094	0.111	0.017	0.007	0.002
	(0.292)	(0.314)	(0.020)	(0.019)	(0.021)
Centre	0.603	0.607	0.004	-0.000	-0.024
	(0.490)	(0.489)	(0.038)	(0.034)	(0.033)
Observations	627	262	889	889	889

*Notes.*Columns 1-2 report the mean and the standard deviation (s.d.) of covariates across non-participants and participants in the experiment. Columns 3-5 report the difference obtained from the OLS regression of each covariate on an indicator for participation, whereby standard errors are clustered on the municipality. Column 3 reports the raw difference without any controls, column 4 after including the remaining variables as controls, and column 5 after including canton fixed effects. The definition of these variables is in Table 1 of the main paper.

III. Descriptive Results

Figure A.4 shows the raw difference in conditional cooperation across municipalities without and with historical self-governance after excluding altruists and flat contributors, for whom the Spearman rho is also zero.

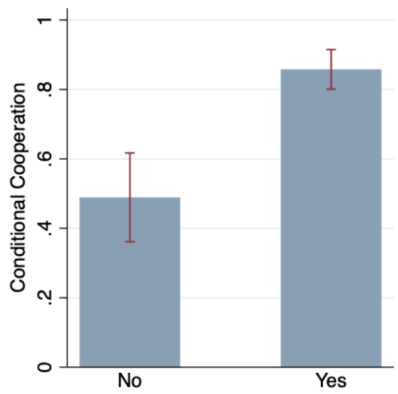

Figure A.4: Conditional Cooperation and Historical Self-Governance after Excluding Altruists and Flat Types

Notes. No and Yes refer to without and with historical self-governance.

Figure A.5 shows the raw difference in conditional cooperation across municipalities without and with historical self-governance by socio-demographic characteristics including religion, rural-urban divide, gender, politics, and education.

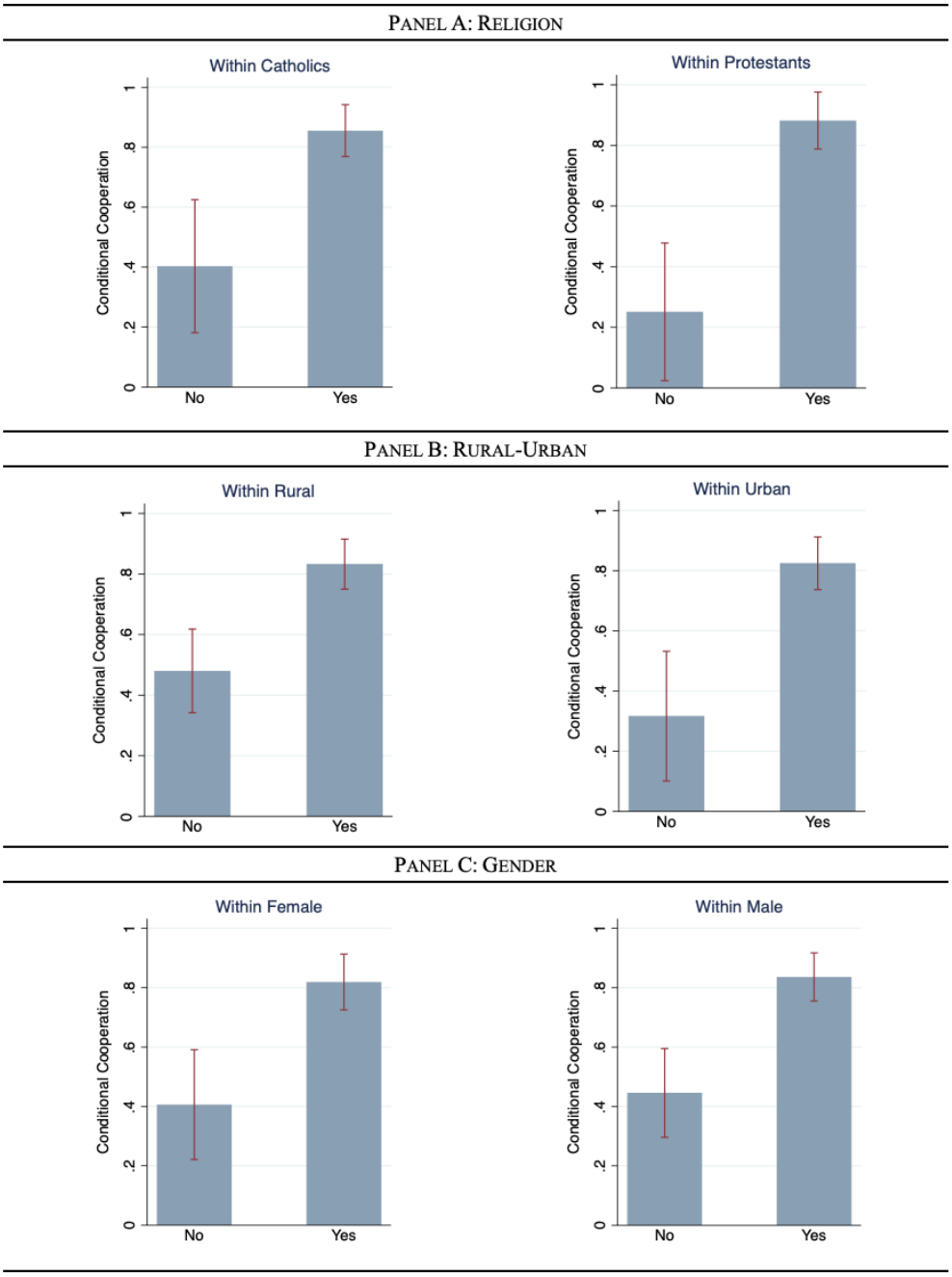

Figure A.5: Conditional Cooperation and Historical Self-Governance by Religion, Rural-Urban Divide, and Gender (continued on the next page...)

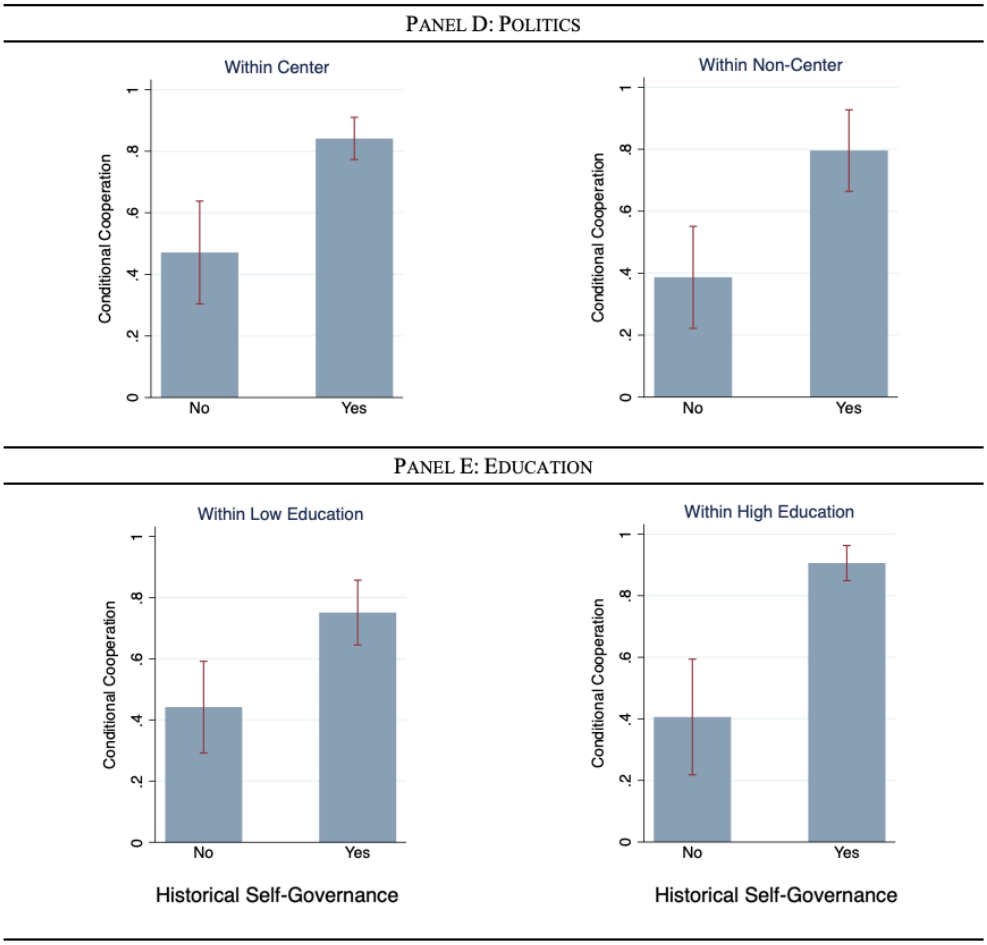

Figure A.5: Conditional Cooperation and Historical Self-Governance by Politics and Education

IV. Empirical Strategy

Figure A.6 shows the location of municipalities with and without historical self-governance superimposed on the map of territories under the rule of four major noble dynasties in the Middle Ages. Note that all four territories were located on the Swiss plateau between the Jura mountains in the west and the Alps in the south and east. The canton of Ticino to the south of the Alps was excluded from the study.

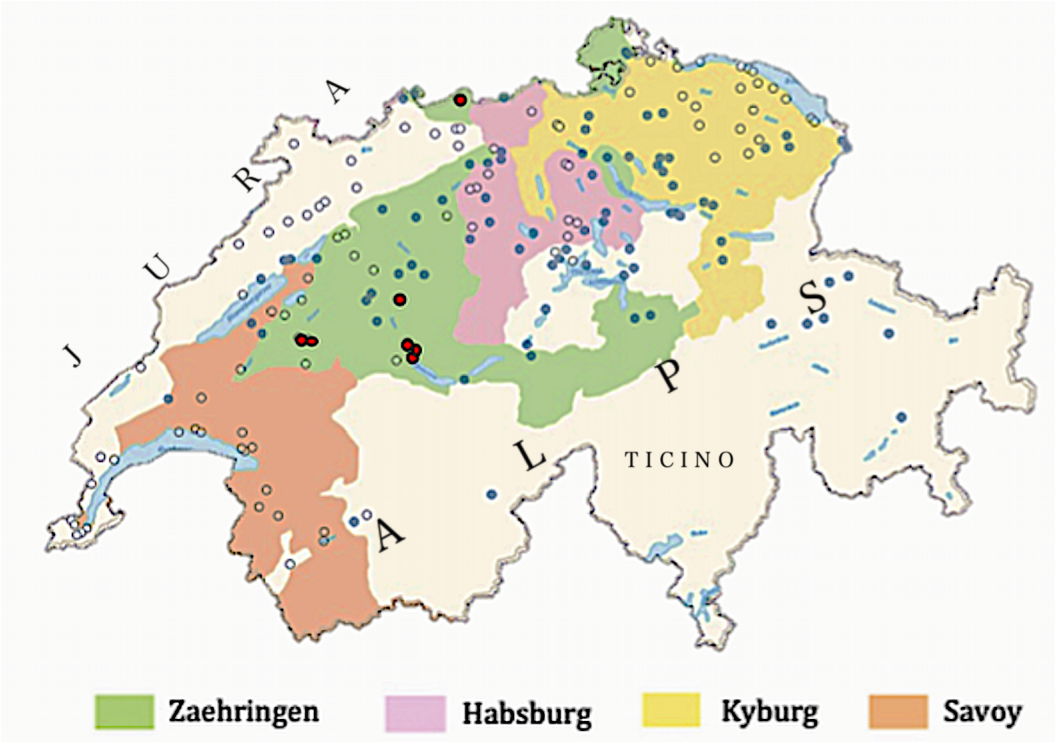

Figure A.6: Historical Self-Governance and Territories under the Rule of Major Noble Dynasties in 13th Century Switzerland

Notes. Solid circles are municipalities with historical self-governance, whereas empty circles are municipalities without historical self-governance. Zaehringen private fiefs are in solid red circles. Note that the Zaehringen family also had nominal protection authority over the Diocese of Sion, Geneva and Lausanne. Since these areas were actually administered by the respective Bishops, I exclude them from Zaehringen territories. Including these areas in the analysis has no implications on the results reported in the paper. If at all, it only strengthens the findings. Source of dynasty boundaries: Marco Zanoli, 2011.

Table A.3 and Table A.4 show that there is no association of historical self-governance with prosperity, as proxied by log population density or population growth .

Table A.3: Historical Self-Governance and Population Density in the Past

	Dependent variable: Log population density								
	1700	1798	1850	1860	1870	1880	1890	1900	PC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	PANEL A								
Experience	0.233	0.038	0.091	0.092	0.081	0.109	0.093	0.104	0.235
	(0.239)	(0.132)	(0.104)	(0.106)	(0.110)	(0.116)	(0.121)	(0.131)	(0.332)
R^2	0.331	0.245	0.308	0.322	0.315	0.305	0.301	0.308	0.317
	PANEL B								
Duration	0.055	0.015	0.026	0.028	0.028	0.035	0.032	0.037	0.080
	(0.052)	(0.030)	(0.024)	(0.025)	(0.026)	(0.028)	(0.029)	(0.032)	(0.080)
R^2	0.334	0.246	0.310	0.325	0.317	0.309	0.304	0.311	0.319
Obs.	57	134	174	174	174	174	174	174	174

Notes. OLS estimates with robust standard errors in parenthesis. Column headings indicate the year for which population density is used; the exceptions are column 1 which covers 1600-1700 and column 2 which covers 1700-1798. The number of observations in column 1 and 2 is lower because data were not available for all municipalities in the sample. While constructing principal components in column 9, I assign municipalities with missing values 100 to maintain the sample size. All columns control for altitude, navigable waterways in the Middle Ages, Bishop city, and Catholic. Data in columns 1 and 2 are from Historical Lexicon of Switzerland and in the remaining columns from Swiss Federal Office for Statistics.

Table A.4: Historical Self-Governance and Population Growth in the Past

	Dependent variable: Population growth								
	1700-1798	1798-1850	1850-1860	1860-1870	1870-1880	1880-1890	1890-1900	1900-1910	PC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	PANEL A								
Experience	0.005	0.076	-0.016	-0.108	0.295	-0.307	-0.053	0.168	-0.004
	(0.026)	(0.050)	(0.247)	(0.178)	(0.182)	(0.184)	(0.226)	(0.252)	(0.251)
R^2	0.12	0.14	0.11	0.09	0.05	0.07	0.13	0.11	0.15
	PANEL B								
Duration	-0.000	0.017	0.015	0.000	0.083	-0.054	0.007	0.038	0.029
	(0.005)	(0.011)	(0.054)	(0.040)	(0.043)	(0.040)	(0.051)	(0.054)	(0.059)
R^2	0.12	0.14	0.11	0.08	0.06	0.06	0.13	0.11	0.15
Obs.	50	135	172	173	173	173	174	174	174

Notes. OLS estimates with robust standard errors in parenthesis. Column headings indicate the period for which population growth data is available. Although columns 1 and 2 cover longer periods, growth is adjusted for decades. The number of observations in column 1 and 2 is lower because data were not available for all municipalities in the sample. While constructing principal components in column 9, I assign municipalities with missing values 0 to maintain the sample size. All columns control for altitude, navigable waterways in the Middle Ages, Bishop city, and Catholic. Data in columns 1 and 2 are from Historical Lexicon of Switzerland and in the remaining columns from Swiss Federal Office for Statistics.

Definition of variables used in Figure 5

All data used in Figure 5 are at municipal level and were obtained from the Swiss Federal Office for Statistics. Household income is for the year 2000 and is measured in logs. Tertiary education share is from 2000 (more recent data is not available). Share of tertiary units is from 2011. It is measured as the number of work units that are in the tertiary sector (non-manufacturing and non-agriculture). It is missing for four municipalities (2

from control and 2 from treatment group). Number of start-ups is from 2014. Data for this variable was missing for 22 municipalities (14 without and 8 with historical self-governance). I code these as zero under the assumption that there were no start-ups. However, results remain unchanged when these municipalities are dropped. Number of insolvent firms is from 2014. This data is not available for 23 municipalities (16 without and 7 with historical self-governance). I code these as zero under the assumption that there were no firm closures in these municipalities. It is not the case that these municipalities do not have firms. As before, results remain unchanged when these municipalities are dropped. Share of foreigners, share of working population on social benefits, and crime per 1000 residents are from 2010.

Acquisition of Imperial Fiefs by the Zaehringen Family

The Zaehringen family acquired imperials fiefs in Switzerland on two separate occasions from emperors Henry IV and Lothar III. The first set of imperial fiefs were acquired by Berthold II of Zaehringen. This happened in the context of the investiture conflict between Henry IV and Pope Gregory VII. During this conflict, Rudolf of Rheinfelden (Duke of Swabia) and brother-in-law of Henry IV was elected as the anti-king. When Rudolf and his son died, Frederick I of Hohenstaufen and Berthold II of Zaehringen contended for the duchy of Swabia. The Diet in Mainz awarded most of the duchy to Frederick, but offered Berthold fiefs to the south of the Rhine in 1098, which is in Switzerland today.

The second set of imperial fiefs were acquired by Conrad I of Zaehringen. When William III, the Duke of Burgundy, was assassinated, two of his close relatives – Conrad and Reginald III laid claim to the fiefs of Burgundy. However, the Burgundian nobles supported Reginald and appointed him as the count of Burgundy. When Reginald attempted independence of Burgundy from the Holy Roman Empire, it led to a conflict with Emperor Lothar III. Reginald lost and had to forfeit a part of Burgundy to the east of the Jura to Lothar III, who made Conrad a legitimate heir of these lands in 1127.

In both the cases, the Zaehringen family laid claim to an entire section of territories of their relatives but acquired only a part thereof, which was not of their choosing. It seems that geographical boundaries played a role. In the Duchy of Swabia, the territories happened to be to the south of Rhine, whereas in Burgundy, to the east of Jura mountains. Both the territories were on the Swiss plateau, where the territories of other noble dynasties were also located (see Figure A.6).

V. Main Results

Table A.5 shows that historical self-governance is associated with higher share of conditional cooperators (column 1) and lower share of free riders (column 2).

Table A.5: Historical Self-Governance,
Share of Conditional Cooperators and Free Riders

	Conditional Cooperator	Free rider
	(1)	(2)
	Panel A	
Experience	0.349	-0.081
	(0.058)	(0.042)
	Panel B	
Duration	0.075	-0.018
	(0.011)	(0.008)
Individual covariates	Yes	Yes
Municipal covariates	Yes	Yes
Observations	262	262

Notes. OLS estimates with robust standard errors clustered on the municipality in parentheses. The dependent variable in column 1 is an indicator for conditional cooperation and column 2 an indicator for free rider. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal level controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income.

Table A.6 reports coefficients on covariates corresponding to the specification in column 3, Table 5 of the main paper.

Table A.6: Historical Self-Governance and Conditional Cooperation
Coefficients on Covariates

	Dependent variable: Conditional Cooperation	
	Experience	Duration
Historical self-governance	0.414	0.087
	(0.066)	(0.013)
Individual controls		
Age	0.001	0.001
	(0.002)	(0.002)
Education	0.066	0.063
	(0.060)	(0.060)
Male	-0.004	-0.009
	(0.066)	(0.065)
Log household income	0.026	0.032
	(0.064)	(0.064)
Catholic	-0.017	-0.011
	(0.082)	(0.083)
Protestant	-0.098	-0.105
	(0.083)	(0.084)
Left wing	0.182	0.163
	(0.123)	(0.123)
Center	0.090	0.094
	(0.085)	(0.084)
Municipal controls		
Altitude	-0.050	-0.045
	(0.036)	(0.035)
Navigable waterways M.A.	-0.015	-0.026
	(0.061)	(0.062)
Bishop	-0.224	-0.212
	(0.107)	(0.108)
Gini income	-1.507	-1.607
	(0.632)	(0.650)
Constant	0.786	0.724
	(0.785)	(0.785)
Observations	262	262
R-squared	0.20	0.20

Notes. OLS estimates with robust standard errors clustered on the municipality in parentheses.

Table A.7 shows that the OLS and IV estimates are robust in magnitude and significance to dropping one canton at a time.

Table A.7: Historical Self-Governance and Conditional Cooperation
OLS and IV Estimates after Dropping One Canton at a Time

	Dependent variable: Conditional Cooperation			
	OLS estimates		IV estimates	
	Experience	Duration	Experience	Duration
Canton dropped	(1)	(2)	(3)	(4)
Zurich	0.413	0.092	0.525	0.109
	(0.071)	(0.014)	(0.171)	(0.035)
Bern	0.383	0.081	0.476	0.081
	(0.073)	(0.015)	(0.187)	(0.032)
Lucerne	0.420	0.088	0.483	0.086
	(0.068)	(0.014)	(0.157)	(0.028)
Uri	0.411	0.086	0.456	0.084
	(0.067)	(0.014)	(0.170)	(0.031)
Schwyz	0.405	0.085	0.485	0.088
	(0.066)	(0.013)	(0.154)	(0.028)
Obwalden	0.418	0.088	0.464	0.084
	(0.066)	(0.013)	(0.158)	(0.028)
Glarus	0.419	0.087	0.461	0.083
	(0.066)	(0.013)	(0.157)	(0.028)
Zug	0.415	0.086	0.463	0.084
	(0.066)	(0.013)	(0.157)	(0.028)
Fribourg	0.391	0.082	0.385	0.071
	(0.066)	(0.014)	(0.139)	(0.026)
Solothurn	0.419	0.086	0.494	0.085
	(0.067)	(0.014)	(0.169)	(0.029)
Basel city	0.414	0.086	0.460	0.079
	(0.067)	(0.014)	(0.180)	(0.031)
Basel land	0.416	0.087	0.468	0.084
	(0.067)	(0.014)	(0.164)	(0.029)
Schaffhausen	0.410	0.086	0.450	0.080
	(0.066)	(0.013)	(0.167)	(0.030)
Appenzell AR	0.419	0.087	0.462	0.084
	(0.065)	(0.013)	(0.156)	(0.028)
St. Gallen	0.435	0.087	0.445	0.082
	(0.070)	(0.013)	(0.155)	(0.028)
Grisons	0.413	0.086	0.474	0.087
	(0.065)	(0.013)	(0.154)	(0.028)
Aargau	0.415	0.087	0.488	0.087
	(0.070)	(0.014)	(0.168)	(0.030)
Thurgau	0.435	0.091	0.503	0.089
	(0.067)	(0.014)	(0.175)	(0.031)
Vaud	0.395	0.083	0.387	0.068
	(0.073)	(0.015)	(0.189)	(0.033)
Valais	0.398	0.083	0.497	0.089
	(0.066)	(0.014)	(0.166)	(0.030)
Neuchatel	0.437	0.091	0.467	0.084
	(0.067)	(0.014)	(0.157)	(0.028)
Geneva	0.424	0.088	0.488	0.087
	(0.067)	(0.014)	(0.166)	(0.030)
Jura	0.413	0.086	0.464	0.084
	(0.066)	(0.014)	(0.159)	(0.028)

Notes. Columns 1-2 show OLS estimates with robust standard errors clustered on the municipality in parentheses. Columns 3-4 show Instrumental variables estimates with roust standard errors in parentheses. Controls include age, education, male, log household income, Catholic, Protestant, left wing, center, altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income.

Table A.8 reports results from the sub-sample of municipalities that are in the modern canton of Bern (column 1) and the historical canton of Bern (column 2).

Table A.8: Historical Self-Governance and Conditional Cooperation: Sub-samples from the Modern and Historical Cantons of Bern

	Dependent variable: Conditional cooperation	
	Modern Bern	Historical Bern
	(1)	(2)
	Panel A	
Experience	0.503	0.466
	(0.222)	(0.133)
R^2	0.30	0.39
	Panel B	
Duration	0.109	0.098
	(0.049)	(0.026)
R^2	0.30	0.39
Individual controls	Yes	Yes
Municipal controls	Yes	Yes
Fixed effects	Yes	Yes
Observations	42	71

Notes. OLS estimates with standard errors clustered on the municipality in parenthesis. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal level controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income. Fixed effects include canton and language. Estimates in column 1 exclude Bishop city because there is none in the modern canton of Bern. I also exclude Catholic, Protestant, and Left because of little variation. The sample in column 1 holds by definition the modern canton fixed. The sample in column 2 holds by definition the historical canton fixed, so I additionally control for language and canton fixed effect.

Table A.9 reports results after introducing additional controls at the municipal level (column 1 and 4), individual level (column 2 and 5), and both together (column 3 and 6). The joint p-value is from a joint test of significance of the added covariates in the respective column.

Table A.9: Historical Self-Governance and Conditional Cooperation
Additional Controls

	Dependent variable: Conditional Cooperation					
	Additional municipal controls (1)	Additional individual controls (2)	All additional controls (3)	Additional municipal controls (4)	Additional individual controls (5)	All additional controls (6)
	Experience			Duration		
Historical self-governance	0.410	0.406	0.415	0.102	0.083	0.102
	(0.112)	(0.109)	(0.115)	(0.023)	(0.020)	(0.023)
Additional municipal controls						
Climate	0.012		0.013	-0.005		-0.003
	(0.100)		(0.089)	(0.090)		(0.090)
Soil	0.015		0.013	0.022		-0.019
	(0.033)		(0.034)	(0.033)		(0.034)
Roman	0.218		0.220	0.190		0.192
	(0.127)		(0.126)	(0.122)		(0.121)
Distance	0.002		0.002	0.003		0.003
	(0.003)		(0.003)	(0.003)		(0.003)
Population M.A.	-0.000		-0.000	-0.000		-0.000
	(0.000)		(0.000)	(0.000)		(0.000)
Additional individual controls						
Naturalized citizen		-0.025	-0.040		-0.038	-0.052
		(0.076)	(0.082)		(0.077)	(0.081)
Swiss Migrant		0.007	0.010		-0.004	-0.002
		(0.083)	(0.083)		(0.082)	(0.082)
Comprehension		-0.048	-0.047		-0.037	-0.039
		(0.085)	(0.088)		(0.083)	(0.087)
Joint p-value	0.44	0.93	0.68	0.41	0.92	0.63
Individual covariates	Yes	Yes	Yes	Yes	Yes	Yes
Municipal covariates	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.26	0.25	0.26	0.27	0.25	0.27
Observations	262	262	262	262	262	262

Notes. OLS estimates with standard errors clustered on the municipality in parenthesis. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal level controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income. Fixed effects include canton, language, and historical dynasty. The joint p-value is of the added covariates in the respective column. Population M.A. is not available for all municipalities so I use 100 for the missing municipalities.

Table A.10 presents reduced-form estimates – the effect of being a Zaehringen imperial fief on conditional cooperation without (column 1) and with controls (column 2).

Table A.10: Reduced Form Estimates (ITT)

	Dependent variable: Conditional cooperation	
	Without controls	With controls
	(1)	(2)
Zaehringen imperial fief	0.202	0.185
	(0.057)	(0.063)
Individual controls	No	Yes
Municipal controls	No	Yes
Observations	262	262

Notes. OLS estimates with robust standard errors clustered on the municipality in parentheses. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal level controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income.

Table A.11 shows the robustness of IV estimates to the inclusion of fixed effects. Columns 1-2 use the full sample and control for language and historical canton fixed effects, respectively. Results in columns 3-4 use sub-samples to highlight the robustness of the results to canton fixed effects. Column 3 uses the sub-sample of municipalities from the historical canton of Bern, which holds by design the historical canton fixed. In this specification, I additionally control for canton and language fixed effects. Column 4 uses a sub-sample of municipalities from the modern canton of Bern, which holds by design the canton fixed.

Table A.11: Instrumental Variables Estimates: Fixed Effects

	Dependent variable: Conditional cooperation			
	Full sample		Historical canton of Bern	Modern canton of Bern
	Language FE	Historical Dynasty FE	All FE	Canton FE
	(1)	(2)	(3)	(4)
	Panel A			
Experience	0.444	0.520	0.544	0.530
	(0.190)	(0.216)	(0.203)	(0.319)
F-statistics	17.01	11.29	16.69	32.38
	Panel B			
Duration	0.077	0.095	0.111	0.115
	(0.034)	(0.040)	(0.041)	(0.069)
F-statistics	15.73	14.65	15.10	32.01
Individual controls	Yes	Yes	Yes	Yes
Municipal controls	Yes	Yes	Yes	Yes
Language FE	Yes	Yes	Yes	No
Historical canton FE	No	Yes	Yes	No
Canton FE	No	No	Yes	Yes
Observations	262	262	71	41

Notes. IV estimates with standard errors clustered on the municipality in parentheses. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal level controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income. Estimates in column 4 exclude Bishop city because there is none in the modern canton of Bern. I also exclude Catholic, Protestant, and Left because of limited variation. FE stands for fixed effects.

Table A.12 shows the robustness of IV estimates to additional municipal and individual level controls.

Table A.12: Instrumental Variables Estimates: Additional Municipal and Individual Level Controls

	Dependent variable: Conditional cooperation		
	Additional Municipal controls (1)	Additional Individual controls (2)	Both types of additional controls (3)
	Panel A		
Experience	0.452	0.467	0.462
	(0.185)	(0.149)	(0.190)
F-statistics	11.19	20.72	10.42
	Panel B		
Duration	0.099	0.084	0.093
	(0.038)	(0.028)	(0.039)
F-statistics	10.77	18.79	10.73
Individual controls	Yes	Yes	Yes
Municipal controls	Yes	Yes	Yes
Observations	262	262	262

Notes. IV estimates with standard errors clustered on the municipality in parentheses. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income. Column 1 includes the following additional municipal level controls: soil, climate, and Roman town. Column 2 includes the following additional individual level controls: naturalized citizen, Swiss migrant, and game comprehension. Column 3 includes both types of additional controls.

Table A.13: Historical Self-Governance, Attitudes towards Cooperation, and Self-Efficacy Beliefs

	Experience		Duration	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
	Dependent variable: Attitudes towards Cooperation			
Historical self-governance	0.485	0.405	0.092	0.077
	(0.119)	(0.136)	(0.024)	(0.027)
Self-Efficacy beliefs	−0.023	−0.023	−0.023	−0.023
	(0.028)	(0.027)	(0.028)	(0.027)
F-statistics		18.82		20.85
Individual controls	Yes	Yes	Yes	Yes
Municipal controls	Yes	Yes	Yes	Yes
Observations	395	395	395	395

Notes: OLA and Instrumental variables (IV) estimates with standard errors in parenthesis clustered on the municipality. Self-Efficacy beliefs are measures via responses to the question on fate vs control. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income. The data are from the World Values Survey, 2007

VI. Plausible Channels

Table A.14 shows that the effect of historical self-governance is robust to controlling for the principal component of current and past proxies of prosperity and education.

Table A.14: Historical Self-Governance and Conditional Cooperation: Controlling for the Principal Component of Past and Current Proxies of Prosperity and Education

	Dependent variable: Conditional cooperation				
	PC Current prosperity (1)	PC Population Density (2)	PC Population Growth (3)	Monastery access (4)	All of them (5)
	Panel A				
Experience	0.427	0.413	0.444	0.396	0.413
	(0.068)	(0.066)	(0.069)	(0.068)	(0.068)
R^2	0.20	0.20	0.21	0.20	0.22
	Panel B				
Duration	0.096	0.089	0.099	0.085	0.095
	(0.014)	(0.013)	(0.014)	(0.014)	(0.014)
R^2	0.21	0.20	0.23	0.20	0.23
Individual controls	Yes	Yes	Yes	Yes	Yes
Municipal controls	Yes	Yes	Yes	Yes	Yes

Notes. OLS estimates with robust standard errors clustered on the municipality in parentheses. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income. PC current is the first principal component of current measures of economic prosperity. PC population density is the principal component of past population density, and PC population growth is the principal component of past population growth. Monastery access is an indicator for access to education in the Middle ages which equals 1 if a monastery was located within 5 km distance, otherwise 0.

Table A.15 shows positive and significant coefficients on experience and duration in the sample of rural municipalities that were not engaged in trade (see Figure A.5, Panel B).

Table A.15: Historical Self-Governance and Conditional Cooperation: Rural Municipalities

	Dependent variable: Conditional cooperation
	Panel A
Experience	0.383
	(0.091)
R^2	0.18
	Panel B
Duration	0.092
	(0.021)
R^2	0.19
Controls	Yes
Observations	140

Notes. OLS estimates with robust standard errors clustered on the municipality in parentheses. Control include age, education, male, log household income, Catholic, Protestant, left wing, and center, as well as municipal controls like altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income.

Table A.16 shows the effect of historical self-governance on conditional cooperation controlling for migration rate from 1800-1900. Column 1 reports result using the full sample. Column 2-3 report results from samples below and above the median migration rate.

Table A.16: Historical Self-Governance, Conditional Cooperation, and Historical Migration

	Dependent variable: Conditional cooperation		
	Full sample	Migration < Median	Migration > Median
	Panel A		
Experience	0.389	0.507	0.362
	(0.070)	(0.099)	(0.115)
Migration rate	0.109	0.572	0.084
	(0.112)	(0.536)	(0.218)
	Panel B		
Duration	0.085	0.122	0.076
	(0.015)	(0.022)	(0.023)
Migration rate	0.011	0.564	-0.079
	(0.124)	(0.533)	(0.253)
Individual controls	Yes	Yes	Yes
Municipal controls	Yes	Yes	Yes
Observations	259	130	129

Notes. OLS estimates with robust standard errors clustered on the municipality in parentheses. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal controls include altitude, navigable waterways in the Middle Ages, Bishop city, and Gini of income. Data for two municipalities were not available. Data on migration are computed from the register of Swiss family names with citizenship in a Swiss municipality made available by Historical Lexicon of Switzerland.

VII. Discussion

The index of direct democracy was compiled by Stutzer (1999) and Fischer (2009). It rates cantons on the ease of participatory decision-making from 1970-2005 on a scale of 1-6, where 1 is the worst and 6 is the best. Figure A.7 show that the index is around 5 in cantons where many municipalities experienced historical self-governance. However, it is around 3 in cantons where most municipalities were without historical self-governance.

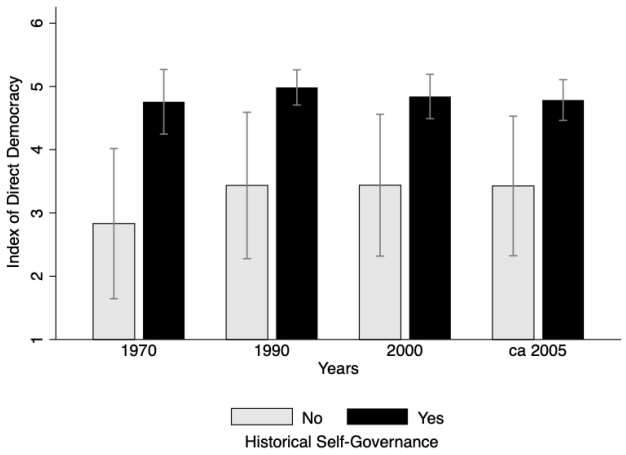

Figure A.7: Historical Self-Governance and Index of Direct Democracy Over Time

Notes. The capped bars indicate 95 percent confidence intervals. Data are from Stutzer (1999) and Fischer (2009).

Table A.17 shows individuals from municipalities with historical self-governance show stronger attitudes and support for democracy. Data on attitudes towards democracy are obtained from the World Values Survey, whereas data on support for democracy are from the Swiss Household Panel. Columns 1-2 use the first principal component of nine attitudes towards democracy as the dependent variable.

Table A.17: Historical Self-Governance, Attitudes Towards Democracy and Support for Democracy

	Dependent variable is			
	Principal component of attitudes towards Democracy (World Values Survey)		Support for Democracy (Swiss Household Panel)	
	No controls (1)	Controls (2)	No controls (3)	Controls (4)
	Panel A			
Experience	0.881	0.873	0.448	0.403
	(0.170)	(0.165)	(0.100)	(0.095)
R^2	0.06	0.09	0.01	0.05
	Panel B			
Duration	0.182	0.174	0.091	0.081
	(0.033)	(0.032)	(0.018)	(0.018)
R^2	0.06	0.08	0.01	0.05
Individual controls	No	Yes	No	Yes
Municipal controls	No	Yes	No	Yes
Observations	398	398	1859	1859

Notes. OLS coefficients with standard errors in parentheses clustered at the municipal level. Individual controls include age, education, male, log household income, Catholic, Protestant, left wing, and center. Municipal level controls include altitude, navigable waterways in the Middle Ages, and Gini of income. Bishop is excluded as municipalities that were Bishop cities are missing in the World Values Survey and only two such municipalities feature in the Swiss Household Panel.

Appendix B Experimental Instructions

Introduction

You are taking part in a research by ETH Zurich. This is a research about decision-making by individuals.

The contents will be kept highly confidential and will be only used for scientific purposes. Whatever decisions you take will be ANONYMOUS.

You will take part in THREE studies. Depending on your and other players' decisions in these studies, you can earn up to 175 Swiss Francs. Therefore, please read the instructions carefully.

In the end, we will use a lottery to select 40 participants and pay them the exact amount earned by them in one of the three studies. We will get in touch with the selected participants to transfer the money.

Please take all the decisions without consulting anyone else.

Please, do not use the back and forward button of the browser.

Basic Instructions

We will now introduce you to the basic situation in which you have to take a decision. You will confront this situation in all the three studies.

You are a member of a group comprising two players A and B.

YOU ARE ALWAYS PLAYER A

Player B is not a computer, but a real person.

You don't know who player B is. Similarly, player B does not know who you are. You are also not known to us.

Each player gets 100 Francs at the start of the study. You have to decide what to do with this money.

You can either keep the Francs in your "private account" or you can invest them in a "common fund". Francs not invested in the common fund are automatically transferred to your private account.

Earnings from the private account: For each Franc you keep in the private account, you get exactly 1 Franc. For example, if you put 50 Francs in your private account, you will earn exactly 50 Francs. Except for you, no one else has access to earnings from your private account.

Earnings from the common fund: For each Franc that you invest in the common fund you get 0.75 Francs and player B also gets 0.75 Francs. Of course, you also get 0.75 Francs for each token invested by player B.

Earnings from the common fund = total number of Francs invested in the common fund by you and player B multiplied by 0.75.

Example, if the sum of Francs invested by you and player B in the common fund is 200, you and player B earn 200 x 0.75 = 150 Francs each from the common fund.

Total earnings = earnings from the private account + earnings from the common fund.

Control Questions

Now we will ask you to answer two questions to help you understand the instructions better. Please answer the following questions carefully.

Question 1: Out of 100 Francs, player A and B invest 10 Francs each in the common fund.

How much does each player earn from the common fund?

What are the total earnings of player A?

What are the total earnings of player B?

Question 2: Out of 100 Francs, Player A invests zero Francs in the common fund, but player B invests 40 Francs.

How much does each player earn from the common fund?

What are the total earnings of player A?

What are the total earnings of player B?

STUDY 1

Study 1 contains the decision situation we have just described to you. You will get 100 Francs. You can put them into your private account or you can invest them into a common fund. You will have to take two types of decisions. We will call them Decision I and Decision II.

Decision I: You will have to decide how many out of 100 Francs to invest into the common fund. You can ONLY invest in multiples of 10. Example: 0, 10, 20, 30 and so on till 100. You will have to enter the amount in a box like this:

Decision II: You will have to indicate the amount of Francs you would like to invest into the common fund for each possible investment by player B. This will become clear to you, if you look at the table on the screen below (please, do not fill in the table as yet):

Player B (Anonymous)	Player A (You)	Player B (Anonymous)	Player A (You)
0			
		60	
10			
		70	
20			
		80	
30			
		90	
40			
		100	
50			

You will have to enter your decision into the box next to the contribution of player B. For example: How many Francs would you like to invest into the common fund if player B invests zero Francs in the common fund? How many Francs would you like to invest into the common fund if player B invests 10 Francs... and so on till 100 Francs.

You will have to make an entry into each box. Make sure that no box is empty.

After all participants have taken their decisions I and II, we will use a lottery to select one of the two decisions taken by you. This will be matched with the remaining decision of the other player to determine your payoffs in study 1.

You are now taking part in study 1. It will be conducted only once.

Decision I: Out of 100 Francs, how many would you like to invest into the common fund? Please enter the amount into the box below:

Decision II: How many Francs would you like to invest into the common fund for each possible investment by player B? Please choose between the amounts 0, 10, 20, 30, 40, 50 and so on till 100. Make sure that you fill each empty box.

Player B (Anonymous)	Player A (You)	Player B (Anonymous)	Player A (You)
0			
		60	
10			
		70	
20			
		80	
30			
		90	
40			
		100	
50			

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