WAITING FOR NAPOLEON?

HISTORICAL DEMOCRACY AND NORMS OF COOPERATION

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Abstract

This paper uses a natural experiment to study the effect of historical experience of democracy on norms of cooperation today. In the Middle Ages, the extinction of the Zaehringen dynasty from the absence of an heir resulted in some Swiss municipalities acquiring historical forms of democracy, but the others continued largely under feudalism until Napoleon intervened. Behavioral and survey measures show that individuals from treated municipalities display stronger norms of cooperation than individuals from control group municipalities. These differences persist due to cultural transmission, as well as economic prosperity, education, and better functioning of democratic institutions in treated municipalities.

JEL: D02, N43, H41, Z10

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I. Introduction

A growing body of evidence highlights the importance of institutions and social norms for economic development.[1] An open question that has received little attention is how do institutions and social norms interact, whether this interaction can generate self-reinforcing patterns of conduct, and the mechanisms through which these patterns could persist over time. In this paper, I examine the long-run effect of historical experience of democracy on norms that emphasize *generalized* cooperation towards everyone including strangers, as opposed to norms that limit cooperation to family members but encourage free riding otherwise.[2]

Democracy, relative to autocracy, allows for political representation of diverse interest groups and constraints on the power of the elite. These features are hypothesized to affect norms of cooperation in two opposing ways. One possibility is that democracy erodes norms of cooperation because of increased polarization (Sunstein 2002, Stasavage 2007). In contrast, autocracy may help promote cooperation by uniting strangers to revolt against the autocrat, as witnessed in several uprisings, such as the French Revolution. Another possibility is that democracy fosters norms of cooperation by encouraging different interest groups to engage in participatory and deliberative processes, which help people understand the negative externalities their preferred policy may have on others. This may prompt communities to develop empathy, moderate their standpoint, and develop consensus by integrating divergent points of view. Over time, as communities are exposed to this participatory, deliberative, and consensual style of decision-making, they come to acquire normative patterns of behavior that emphasize collective action in situations where individual and societal interests are at conflict (Bentham [1816] 1999, Putnam et al. 1993, Habermas 1996, Platteau 2000, Rodrik 2000, Tabellini 2010). Seen this way, the experience of democracy could foster norms of cooperation among individuals from different groups to provide public goods. In contrast, in autocratic regimes, strong hierarchy of privileges accessible to a small group of people promotes family and group centric outlook, resulting in opportunistic free riding in interactions with strangers.

However, there is hardly any empirical evidence on the importance of democracy for

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[1] See Alesina and Giuliano (2015) for a comprehensive review of this literature. Institutions are formal rules created by the polity that structure human interactions. Social norms are standards of behavior based on informal understandings of how group members ought to behave in a situation and are sustained by guilt and shame that a person suffers from violating them, and by punishment from group members (Elster 1989).
[2] Banfield (1958), Platteau (2000), and Tabellini (2010) discuss the importance of norms of *generalized cooperation* for economic development.

norms of cooperation. One reason is the challenge in identifying this effect because of omitted variables bias and reverse causality. Another reason is the difficulty in measuring norms of cooperation using observed cooperation outcomes, as these measures might be reflecting the importance of confounding motives and beliefs about the behavior of others. Individuals might cooperate not because of internalized norms but because of benefits from repeated interaction. Moreover, communities in which little cooperation is observed cannot be inferred as lacking norms due to confounding with beliefs about the behavior of others, resulting in multiple equilibria (Ellingson et al. 2012, Bigoni et al. 2018).

I mitigate these challenges by combining plausibly exogenous variation in the experience of historical democracy with behavioral measures of norms of cooperation that preclude confounding motives and beliefs from playing a role. The study takes place in Switzerland, where the extinction of the House of Zaehringen from the absence of an heir, resulted in some municipalities acquiring historical forms of democracy but the others continued under feudalism. This event was of such immense importance that historians describe it as an "essential prerequisite" for the emergence of historical forms of democracy in Switzerland (Zschokke 1860, Hug and Stead 1890, Vincent 1891, McCrackan 1908, Eugster 2015).

The Zaehringen were among the four major noble families of medieval Switzerland, who managed large swathes of land as fiefs of their own (allodial) and as fiefs they obtained from the Holy Roman Emperor (imperial). After the last duke of Zaehringen died heirless in 1218, the allodial fiefs were divided within the family, but the imperial fiefs escheated to the emperor and received from him the privileged political status of imperial immediacy. This let the imperial fiefs acquire freedom from the authority of nobles and gradually transform their governance from that run by a "circle of the richest, most distinguished and most powerful"[3] to that based on historical forms of democracy. The citizens could now elect and nominate individuals from their own interest group to governing councils in proportions similar to that of the elite. Such changes fostered citizen participation, division of power, dialogue at different levels, and constraints on the power of the elite, all of which contributed towards a participatory, deliberative, and consensual form of decision-making. As for the allodial fiefs of the Zaehringen and areas under the control of the remaining three noble families, their citizens mostly continued under feudalism and were excluded from political decision-making. This variation in the experience of historical democracy persisted for hundreds of years until

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[3] Holenstein (2014) quoting Eberhard Isenmann.

Napoleon invaded Switzerland and allowed every area to practice self-governance via the Act of Mediation (1803). I refer to municipalities with and without historical democracy as belonging to treatment and control groups.

I collect information from several historical sources to construct measures of whether or not a municipality experienced historical democracy before the invasion by Napoleon, as well as the duration of this experience. I then proceed by eliciting norms of cooperation among Swiss households using a behavioral experiment that follows the protocol of Fischbacher et al. (2001) and Fischbacher and Gächter (2010). In the experiment, two individuals are randomly paired in a one-shot, anonymous public goods game. The game is implemented in the strategy method, whereby individuals decide on their contribution conditional on a set of contribution decisions of the other player. This allows me to elicit norms of cooperation in a neat and clean manner. An individual is an *altruist* if she always contributes the full amount, *free rider* if she always contributes lower amounts, and *conditional cooperator* if her contribution increases in the contribution of the other player. Since the share of altruists in the sample is negligible, I use the propensity for conditional cooperation as a proxy for norms of cooperation. It is measured as the Spearman rank correlation between self and other players' contribution. The higher the Spearman rank correlation the higher is the propensity for conditional cooperation (mean 0.65, s.d. 0.55).

I find that individuals from treated municipalities display twice the conditional cooperation of individuals from control group municipalities. Moreover, one standard deviation increase in the duration of experience increases conditional cooperation by 0.21 points. In monetary terms, for each Swiss Franc contributed by the other player, individuals from treated municipalities contribute 0.71 cents, whereas those from control group municipalities contribute only 0.36. These differences are mainly due to treated municipalities having a higher share of conditional cooperators by 35 percentage points and a lower share of free riders by 8 percentage points. The results are robust to controlling for geography (altitude, navigable waterways, climate, and soil), historical development (bishop city, roman city, population in the Middle Ages), religion, and current measures of education, politics, income, and inequality (acknowledging that some of these are endogenous). The results hold when I introduce fixed effects for cantons, language, and historical dynasties. Similar estimates are obtained when I use a sub-sample of municipalities from the city-state of Bern that experienced the same historical authority for over 250 years.

Instrumental variables estimates that use an indicator for the Zaehringen imperial fief as an instrument for historical democracy yield similar results. Though the timing of the

Zaehringen extinction is plausibly exogenous, municipalities with and without the Zaehringen rule might be prone to pre-existing differences. To this end, I verify that the two sets of municipalities are comparable across observable proxies of geography and historical development. The first-stage results show that Zaehringen imperial fiefs are considerably more likely to experience historical democracy and also for longer duration. The second-stage estimates are remarkably similar in magnitude to their OLS counterparts. The exclusion restriction is violated if the Zaehringen rule itself affected norms of cooperation. I assuage this concern by showing that similar estimates are obtained when I conduct within Zaehringen analysis by comparing imperial fiefs that experienced historical democracy with and allodial fiefs that did not.

I replicate the above results using data from the Swiss Household Panel (2011) on attitudes towards cooperation, such as lying in own interest, cheating on taxes, and claiming social benefits not entitled to (Knack and Keefer 1997, Guiso et al. 2011). These attitudes focus on activities that involve tradeoff between private gains and social costs. They are similar in similar in spirit to conditional cooperation because the willingness to engage in these activities is likely to depend on the willingness of others to do the same (Gächter 2007).

The above findings raise the question: what explains persistence in the effect of historical democracy on norms of cooperation, especially knowing that control group municipalities have now over 200 years of democratic experience? If institutions and norms are self-reinforcing, as this study points out, then one possibility is that norms of cooperation take really long time to establish. If so, then differences in the length of the self-reinforcing loop may explain persistence. This seems plausible because in the sample of treated municipalities, the effect of duration of historical democracy on conditional cooperation turns out to be positive and statistically significant.

Another possibility is that municipalities differ in the nature of the self-reinforcing loop. This may arise if democratic institutions in control group municipalities were not strong enough to have a bearing on conditional cooperation, and if treated municipalities witnessed higher economic prosperity and investments in education, which then led to higher conditional cooperation. Data from several sources provides strong support for this possibility. First, I find that treated municipalities hold significantly higher frequency of referendums and initiatives; this can be considered as reflecting the willingness of the state and its citizens to engage in participatory, deliberative and consensual decision-making. To this end, data from SHP show that trust in government and support for democracy are significantly higher among individuals from treated municipalities. Second, using population

size in pre-and post-Napoleon periods (1700-2013) as a proxy for economic prosperity (see Ashraf and Galor 2011), I show that treated municipalities were indeed more prosperous in the past and continue to do so even today. Similar results are obtained when I use data on the share of workforce in tertiary sector (1970-2013). Third, historical proxies of education, such as the number of books in libraries in 1868 (Heitz 1872) and performance of conscripts in exams in 1875 (Boppart et al. 2013) show that treated municipalities were associated with higher number of books and also higher performance by over 50 percentage points.

The differences in norms of cooperation could have also been transmitted culturally (Boyd and Richerson 1988, Bisin and Verdier 2001, Tabellini 2008). I test this proposition using the epidemiology approach on the dataset of Swiss migrants (Fernandez 2007, Giuliano 2007). Holding the resident canton fixed, I find that individuals from birth municipality with historical democracy show stronger conditional cooperation than individuals from birth municipality without. The result is robust to accounting for historical democracy from resident municipality, which has a small and insignificant coefficient.

For the above findings to hold, migration rates must have been low. This seems likely for in the later half of the 19th century 60 percent of the Swiss resided in their ancestral municipality (Christ 2006). I compute municipality specific migration rates from 1800-1900 using a novel dataset on the register of all family names holding citizenship in a Swiss municipality. I then show that the inclusion of this variable as an additional control has no bearing on the effect of historical democracy on conditional cooperation. Though the effect turns out to be smaller in the sample of municipalities with higher migration rate, it remains highly significant. This result is in line with Henrich and Boyd (1988) who show that conformist transmission can maintain between group differences for a wide range of migration rates.

The paper is organized as follows. Section II describes related literature and section III the historical background. Section IV describes data including measures of historical democracy and norms of cooperation. Section V presents the identification strategy, section VI the main results on the effect of historical democracy on norms of cooperation, and section VII the plausible channels. Section VIII offers concluding remarks.

II. Related Literature

This paper connects to several strands of literature. First, it complements recent studies on the interaction between institutions and culture, which include theoretical (Tabellini 2008, and Bisin and Verdier 2017) as well as empirical papers on communism and redistribution

(Alesina and Fuchs-Schuendeln 2007), Habsburg bureaucracy and corruption (Becker et al. 2016), free city experience and civic capital (Guiso et al. 2016), and state centralization and rule following (Lowes et al. 2017). The focus of previous studies is on a package of institutions. This paper, in contrast, puts emphasis on one specific institution – historical democracy – through which citizens from diverse groups engaged in participatory self-governance. Laboratory experiments by Dal Bo et al. (2010) and Sutter et al. (2010) show that stronger cooperation emerges in groups with democratic participation that otherwise. Banerjee and Iyer (2005) and Duflo and Pande (2007) discuss that the absence of participation and the resulting failure to act in collective interest is one of the key reasons behind the poor economic performance of landlord districts in India. Persson and Tabellini (2009) note that cumulative experience of democracy is critical for the formation of democratic capital that prevents states from relapsing to autocracy. Yet, there is hardly any evidence on the importance of democracy for norms of cooperation. This paper therefore fills a major gap in the literature on the interaction between democracy and culture.

Second, the paper provides a novel contribution to the literature by using a behavioral experiment to elicit norms of cooperation, which precludes confounding motives and beliefs from playing a role. The paper thus circumvents a major challenge associated with using observed cooperation outcomes as a measure for norms of cooperation.

Third, the paper also relates to studies on the emergence of inclusive institutions. Aidt and Franck (2015) exploit the threat of violence and Angelucci et al. (2018) the rise of merchants to study democratization in England. This paper isolates plausibly exogenous variation in the emergence of historical democracy arising from the extinction of prominent heirless nobility in medieval Switzerland. This approach is similar in spirit to that of Banerjee et al. (2005) and Iyer (2010) who use the "Doctrine of Lapse" that the British exploited to annex heirless states in India. While being heirless increased the likelihood of colonization in India, it increased the likelihood of acquiring historical democracy via imperial immediacy in medieval Switzerland.

Fourth, the paper also connects to the literature on persistent effects of historical institutions and culture, such as colonial land tenure system (Banerjee and Iyer 2005), slavery (Nunn and Wantchekon 2011), trade (Jha 2013), culture of honor (Grosjean 2014), industrialization (Franck and Galor, 2018), and state condition (Dell et al. *forthcoming*). The focus of these papers is on comparatively recent events, whereas this paper documents persistence for a much longer period of time and is thus similar to studies by Voigtländer and Vogt (2012) and Guiso et al. (2016).

Fifth, the paper discusses the role of several factors, which could explain persistence in the effect of historical democracy on norms of cooperation. By showing the importance of economic prosperity and education as potential mechanisms using a within-country setting, it speaks to several cross-country studies showing the importance of democracy for these variables (Lipset 1959, Barro 1999, Glaeser et al. 2007, Acemoglu et al. 2009, Persson and Tabellini 2009, Tabellini 2010, Acemoglu et al. 2017). On the role of differential functioning of democratic institutions in maintaining persistence, it connects to studies by Banerjee and Iyer (2005) and Duflo and Pande (2007) who discuss the role of policy choice in understanding the persistent effect of the long abolished landlord institution in India. Finally, with respect to using the epidemiology approach to study the scope of cultural transmission as a channel, it connects to the work of Fernandez (2007) and Giuliano (2007).

III. Historical Background

A. *Historical Setting*

The first Swiss federal constitution offering cantons the right to extensive self-governance was adopted in 1848 when modern Switzerland was found. However, historical antecedents of these rights date back to the Middle Ages, when Switzerland was part of the Holy Roman Empire. In the 13th century, four major noble houses administered large parts of Switzerland as their feudal territory. These were the House of Zaehringen, Kyburg, Habsburg, and Savoy (see Figure 1). A key characteristic of governance during this period was exclusive dominance by noble families. The governing council was a small body appointed or coopted from the "circle of the richest, most distinguished and powerful" individuals (Holenstein 2014). The citizens, such as the craftsmen and peasants to whom the areas owed their wealth, were excluded from having any say in decision-making. However, starting 13th century, idiosyncratic events led to the emergence of historical forms of democracy in some but not all areas of Switzerland. One such rare event with wider consequences for large parts of Switzerland was the extinction of the House of Zaehringen from the absence of an heir.[4] This event was of such immense importance that historians consider this to be an "essential prerequisite" for the emergence of historical forms of democracy in Switzerland (Zschokke 1860, Hug and Stead 1890, McCrackan 1908, Eugster 2015).

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[4] The extinction of the Zaehringen affected parts of Aargau, Basel city, Bern, Fribourg, Schaffhausen, Solothurn, Thurgau, Uri, Vaud, and Zurich. These cantons were and are still home to the majority of the Swiss population.

The Zaehringen managed large swathes of land as private fiefs (allodial) and as fiefs they obtained from the Holy Roman Emperor (imperial). However, the noble house became extinct in 1218 when its last duke died of natural causes without an heir. Upon this event, the allodial fiefs were divided among the husbands of the two sisters of the last duke, but the imperial fiefs escheated to the Holy Roman Emperor and received from him the privileged status of imperial immediacy.[5] This set the imperial fiefs free from the authority of nobles and placed them directly under the control of the emperor. The citizens of imperial fiefs used this opportunity to transform their governance gradually from that dominated by noble families to that based on historical forms of democracy (see part B of this section for details). In contrast, the citizens residing in allodial fiefs of the Zaehringen and in areas under the control of the other three noble houses continued largely under feudalistic institutions and were excluded from political decision-making.

The importance of the extinction of the Zaehringen for the emergence of historical forms of democracy has featured in many historical writings. For instance, 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." Similarly, 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." And finally 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".

The extinction of the Zaehringen was instrumental in generating variation in historical democracy, but events in the period thereafter were key to maintaining this variation. An episode of considerable importance was the rise of the Old Swiss Confederacy (1291-1798), which ensured that Switzerland was not subject to foreign rule from the late Middle Ages until the invasion by Napoleon. The prelude to the Old Swiss Confederacy is marked by interregnum (1254-1273) in which the weakening of imperial authority allowed the free areas to bolster historical forms of democracy even further (Stadler 2007). However, the rise of the Habsburgs in the period thereafter and the ensuing threat of return to feudalism, led to areas

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[5] I could not find a discussion in historical sources on why the emperor made this decision instead of redistributing the fiefs to other noble houses. I believe that two reasons are possible. First, the emperor lent his imperial fiefs in return for military support. If the other noble houses had already offered this support then it may not have been possible for them to extend it further because of limited resources (availability of men for military). Second and more plausible, the emperor did not want to make the other noble houses more powerful than they already were because this could have generated a potential rival to his present or future generations.

with imperial immediacy forming an alliance called the Old Swiss Confederacy, which included at its height 13 states called *Dreizehn Orte*.[6] These states had a small population, which meant a limited supply of resources (soldiers, food, raw materials).[7] To assuage this handicap, they pursued an expansionist territorial policy that involved wresting surrounding areas from the control of the noble families and administering these as their own subjugated territories. By 1415, the Old Swiss Confederacy was so successful that it eliminated major noble houses including Habsburgs from Switzerland and emerged as the most powerful entity in the country.

While most members of the Old Swiss Confederacy allowed historical forms of democracy in handling their internal affairs, most subjugated territories were devoid of such opportunities. For them, it was simply the replacement of one master by the other. As Vincent (1891, p18) notes the states of the Old Swiss Confederacy were "democrats at home but not abroad". This resulted in a mosaic of areas with and without historical democracy, which persisted for hundreds of years; as Vincent (1891, p18) again writes "upon this territorial basis of states, subject lands and allies, the fabric of government stood till the close of the 18th century". The invasion of Switzerland by Napoleon in 1798 resulted in the dissolution of the Old Swiss Confederacy and the liberation of its subjugated territories. In 1803, Napoleon issued the Act of Mediation, which made every subjugated territory a sovereign member of Switzerland and also allowed them to have their own representative governments (Frankhauser 2009).

Several historical works document the practice of historical forms of democracy in Switzerland. For example, McCrackan (1908, p131 & p281) writes "In general, Swiss cities advanced much further in the path of independence than the majority of cities in other parts of the German Empire. They grew to be veritable republics. Their sovereignty, when once attained…gave them perfect freedom in all municipal matters". He further elaborates that "...the Swiss States, both country districts and towns, were organized upon democratic principles". Similar views were echoed in the past, when the mayor of Schaffhausen noted in 1653 that rural cantons are places where "democratic forms are very much appreciated". A source in the canton of Grisons from 1618 says, "the form of our government is democratic" (Suter 2016). The British ambassador to Berne, Abraham Stanyan (1714, p108-109), also

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[6] These 13 states were: Appenzell, Basel, Bern, Fribourg, Glarus, Lucerne, Schaffhausen, Schwyz, Solothurn, Uri, Unterwalden, Zug, and Zurich.
[7] Cities like Bern and Zurich had around 5000 inhabitants each; the population of the rural-states was even smaller.

described the rural cantons as "wholly democratic" where the "sovereignty resides absolutely in the body and mass of the people".

The democracy movement in Switzerland declined towards the end of the 17th century primarily due to "anxieties over the scope of life, the workplace, and adequate nutrition" (see Holenstein 2014). This decline was, however, weaker in rural areas with public assemblies and cities with guilds, but stronger in cities without guilds (see also Stanyan 1714). Nonetheless, it would be a mistake to view medieval Switzerland as a place where modern democratic principles, as in equal rights for all, were enshrined. Still, as McCracken (1908, p281) notes, "…early Swiss were, nevertheless, the best democrats of their day, unconscious, but practical exponents of the virtues of self-governance".

B. *Historical Forms of Democracy*

Historical democracy in Switzerland included several traditions that were associated with citizen participation in the execution of local level decisions, division of power among different interest groups, reasonable dialogue between different levels of government, and constraints on the power of the elite (see for instance Berner 2006, Stadler 2008, Holenstein 2014). However, its precise nature varied, depending largely on whether a municipality was rural or urban.

In the rural municipalities, such as those in Uri and Schwyz, eligible male citizens from each commune participated directly in decision-making through voting by show of hands in open-air public assemblies called *Landsgemeinde.* This public assembly constituted the highest authority through which the governing council comprising an equal number of members from each commune was elected, new laws and administrative reforms were enacted, and superior officials including the mayor and judges were appointed (see Figure 2a). This form of self-governance was well established by the 14th century and even survived into modernity until the introduction of anonymous voting in the late 19th-20th century in all but two rural cantons.

In the urban communes, such as Zurich and Basel, the governing council was divided into a smaller council (*Kleiner Rat*) comprising 50 – 60 members, and a greater council (*Grosser Rat*) comprising 60-200 members. The smaller council included besides nobles, an equal share of citizens from diverse interest groups, who were elected or nominated by citizens or guilds or other community level bodies. To foster citizen participation even further, the cities additionally constituted a grand council from different interest groups. It often met with the smaller council to deliberate on decisions related to the formulation of

laws, election of the mayor, bailiffs, and other municipal officials, and also constituted the highest court (see Figure 2b).

In subjugated areas that experienced historical democracy, governance was modeled on the prevailing style in the ruling state and whether it is rural (example: public assembly in Uznach and Hasliberg) or urban (example: governing council in Aarau and Winterthur). In some subjugated areas, it was limited to the appointment of local judges and recourse to local justice.

In contrast, the citizens of most subjugated areas, such as those in Vaud and Thurgau, had little say in the execution of decisions affecting them. They were without any political rights and were excluded from participation in political decisions and appointment in local offices (see Figure 2c). Administratively, bailiffs appointed by the states of the Old Swiss Confederacy oversaw the governance of these subjugated territories. These bailiffs represented the authorities and interest of the ruling states and also administered local justice (Holenstein 2013).

In summary, historical forms of democracy in Switzerland show the presence of a tendency for participatory, consensual, and deliberative style of decision-making. It also came with constraint on the power of the elite via division of power. This was further manifested through electoral principles preventing individuals from bequeathing the municipal office and having siblings within the council. As Abraham Stanyan (1714) noted: "neither father or son nor two brothers can be of the council at the same time". At times, the presence of a greater council kept a check on the functioning of the smaller council, especially to maintain broader public support for governance (Holenstein 2014). In the rural areas, public assemblies put further restrictions on the power of the elite. In one such assembly, a referendum forbid 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 else be excluded from using the common (McCrackan 1908).

IV. Data and Descriptive Statistics

I collect data from several different sources. Data to measure norms of cooperation were collected using a behavioral experiment, which was conducted online in 2013 among a representative sample of Swiss households. After the experiment, the respondents took part in a post-experimental survey in which they answered questions related to their socio-demographic characteristics, native language, municipality of birth, and length of stay in the residence municipality. These households were selected randomly from within cantons and

linguistic groups by the institute for opinion research LINK, the largest survey agency in Switzerland. This is the main dataset used in the paper and it comprises 262 Swiss households from 174 municipalities and 23 cantons. Tables A1-A2 show that individuals and municipalities that are in the sample are comparable to individuals and municipalities that are not across a variety of characteristics, even when the comparison is within cantons.

I complement the experimental dataset with survey data on attitudes towards cooperation from wave 13 of the Swiss Household Panel (SHP). Following previous studies, I focus on attitudes towards activities that involve a tradeoff between private gains and social costs, such as *cheating on tax declaration*, *lying in own interest*, and *claiming state benefits not entitled to* (Knack and Keefer 1997, Guiso et al. 2011).[8] Since the willingness of individuals to pay taxes, cheat others, and claim false benefits is expected to depend on the willingness of others to do the same, these data can be considered as reflecting conditional cooperation (see Gächter 2007). A key advantage in using SHP is that it covers a large sample of 1,859 Swiss individuals. However, it might be difficult to separate internalized norms from confounding motives and beliefs while using these data. Also, 30 municipalities in the experimental sample are not included in the SHP. Due to these reasons, I use this dataset to show primarily the robustness of the main results.

I match 174 municipalities in the experimental sample with data on historical experience of democracy that I hand collected using several sources. I then combine the resulting dataset with (i) data on municipal level covariates from the Swiss federal statistical office, Swiss geographical information platform, Swiss tax administration office, and Swiss federal office for agriculture; (ii) historical data on navigable waterways in the Middle Ages, Bishop city, and Roman city from the maps that Marco Zanoli prepared using the maps by Amman and Schib (1958) and Putzger (2004); (iii) data on population from different time periods obtained via municipality specific articles in the HLS and Swiss federal Statistical Office; (iv) district level data assembled by Boppart et al. (2013) on the performance of conscripts in 1875 on a variety of exams; (v) data on the number of books in libraries in 1868 by Heitz (1872); (vi) Data on the frequency of referendums and initiatives from surveys conducted by Andreas Ladner with municipality administrators in 2009 and 2016); (vii) data on trust in government and trust in democracy from wave 13 of SHP; and (viii) data on migration rates computed using a register of Swiss family names that acquired the citizenship of a

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[8] This is the only SHP wave in which attitudes towards cooperation were elicited. Swiss Household Panel does not include the full list of questions on values asked in the World Values Survey, such as accepting a bribe, speeding over the limit, and throwing away litter in a public space.

municipality between 1800-1900 made available by HLS. Below I present in detail the measures of historical democracy and conditional cooperation, followed by descriptive statistics on the association between these two measures.

A. *Historical Democracy*

I measure historical democracy at the municipal level, which is the smallest administrative unit in Switzerland at which individuals live and socially interact. The primary data sources are the online Historical Lexicon of Switzerland (HLS) and the study by Gasser (1932). I complement these with books on the history of Switzerland by Zschokke (1860) and McCrackan (1908). While referring to these sources, I gathered information from several articles at several levels that included besides the municipality itself, the historical bailiwick in which the municipality was situated, and the canton in which the municipality is located. As Coppedge et al. (2016) point out democracy is multidimensional, so I focus on whether or not a municipality allowed for any of these elements: voting in public assemblies, voting or nomination of individuals to the governing council, division of power through the representation of different interest groups in the governing council, increased citizen representation via the formation of smaller and greater councils, administration of justice at the local level, and decentralized resource management. In addition, I also consider the duration for which a municipality allowed these opportunities. Accordingly, there are two measures:

Experience is an indicator variable, which takes the value of 1 if a municipality allowed its citizens any of the above listed elements of historical democracy from the Middle Ages until 1803. Panel A, Table 1 shows that 54 percent of the respondents in the sample are from municipalities with historical democracy. Figure 1 shows the location of municipalities with and without the experience of historical democracy in Switzerland.

Duration is a continuous variable, which is measured as the difference in years between 1803 and the date a municipality started practicing historical forms of democracy. For the rural areas, I use the date when public assembly got established. For the urban areas, I use the date starting which a city could elect its own council. For some areas precise dates around which historical democracy got established are not available, so I use the date around which the members of the Old Swiss Confederacy acquired these areas, as this was the time when major political changes took place. Note that duration is measured in hundreds of years. Panel A,

Table 1 shows that the average duration of historical democracy in the sample is about 2.6 hundreds of years or 260 years.

B. *Measuring Conditional Cooperation*

As mentioned in the introduction, measuring conditional cooperation using data on observed cooperation outcomes is challenging because these outcomes might be reflecting the importance of other motives and beliefs. To circumvent these concerns, I follow the experimental design of Fischbacher et al. (2001) and Fischbacher and Gächter (2010) and use a one-shot, anonymous linear public goods game in the strategy method. This allows me to control for benefits from repeated interaction, reputation formation, as well as beliefs about the contribution of others. This experiment has been used in several field settings (see for instance Kocher et al. 2008, Herrmann and Thöni 2009) and has also been externally validated by Rustagi et al. (2010) and Kosfeld and Rustagi (2015). The experimental instructions and procedures are in Appendix B.

Behavioral experiment. – In the experiment, two players are randomly assigned to an experimental group. Each player receives an endowment of 100 CHF (Swiss Francs) and has to decide on his/her contribution to the public good. Players could contribute any amount from 0 to 100 in units of 10 CHF. Any amount in the public good is increased by 1.5 times and then distributed equally between the two players, regardless of their contribution. Formally, the payoff of player i, where $i \in \{1, 2\}$, is given by:

$$(1) \qquad \Pi_i = 100 - C_i + 0.75(C_1 + C_2),$$

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 the public good, and $C_1 + C_2$ is the total contribution to the public good. Given the marginal per capita return, each Swiss Franc contributed by a player to the public good yields only 0.75 back. Thus, it is individually rational for a player to contribute nothing to the public good. However, because 2*0.75 > 1, it is socially optimal to contribute the entire endowment; this creates a cooperation dilemma. The game involved two decisions: unconditional and conditional. In the unconditional decision, players decided simultaneously on their contribution to the public good and beliefs play a role. In the conditional decision, I implemented the strategy method, whereby each player had to decide on his/her contribution for each of the 11 possible contribution decisions of the other player, thereby making beliefs redundant. At the end of

the experiment, a lottery was drawn to determine the player for whom the unconditional decision is payoff relevant; this was matched with the conditional decision of the other player to determine payoffs.

In addition to the experiment described above, I also conducted a second public goods game, which is not part of this paper. One of the two experiments was randomly selected to determine the payoff.[9] Note that I did not conduct any other experiment than the public goods games mentioned above. After the experiments, individuals took part in an in-depth post-experimental survey. Several pilots were conducted to test for respondents' understanding of the experiment and questions. I also made sure that native language speakers from within Switzerland wrote the instructions. Before taking the actual decision, individuals had to answer three control questions on game comprehension correctly. I use this to gauge an individuals' understanding of the experiment and to ensure that I am not capturing noise.

Measures of conditional cooperation. – I use the conditional decision in the game to measure conditional cooperation. In this decision, players could make their contribution contingent on the contribution decisions of the other player. This allows me to cleanly identify different types of norms. Following the literature, I classify individuals who increase their contribution in response to the increasing contribution of the other player as *conditional cooperators*. Individuals who contribute zero or low amounts in each of the 11 decisions regardless of what the other player does are classified as *free riders*. Individuals who contribute 100 in each of the 11 decisions irrespective of what the other player contributes are classified as *altruists*. Individuals whose contribution first increases in the contribution of the other player but then decreases are classified as *hump-shaped*. Individuals who contribute the same amount that is different from zero or 100 in all the 11 decisions are classified as *flat*. Individuals who do not fall into any of the above categories are classified as *unclassifiable*. The table below displays the frequency of these types (see also Figure A1, Appendix A).

FREQUENCY OF TYPES AND THEIR PROPENSITY TO COOPERATE

Type	Frequency	Proportion	Average Spearman *rho*
Conditional cooperator	172	0.657	0.97
Free rider	28	0.107	0.12
Altruist	10	0.038	0.00
Flat	10	0.038	0.00
Hump-shaped	8	0.030	0.05
Unclassifiable	34	0.130	-0.05

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[9] I paid a random sub-sample of 32 participants from the sample following procedures by Bettinger and Slonim (2007). On average, subjects earned CHF 135.

Since a large proportion of individuals behave either as conditional cooperators or as free riders, the propensity to cooperate conditionally serves as a proxy for norms of cooperation. Following Fischbacher et al. (2001) and Fischbacher and Gächter (2010), I measure it as the Spearman rank correlation between self and the other players' contribution in the conditional decision: the higher the Spearman *rho*, the higher is the propensity for conditional cooperation. The above table shows that the Spearman *rho* is close to 1 for conditional cooperators, but close to 0 for free riders. The average conditional cooperation in the sample is 0.65 points (s.d. 0.54) (panel B, Table 1).

Figure 3a shows that conditional cooperation across individuals from control group municipalities is 0.42 but 0.83 across those from treated municipalities. The difference is not only large in magnitude but also highly significant (*p*-value < 0.001). This difference is not due to altruists or flat contributors, for the gap holds in magnitude when these types are dropped from the sample in Figure 3b and Figure 3c, respectively. Figure 4 shows that there is a positive association between conditional cooperation and duration of experience.

V. Empirical Specification and Strategy

A. *Empirical Specification*

I examine econometrically the effect of historical democracy on conditional cooperation. The exposure to historical democracy might come from an individuals' municipality of residence as well as the municipality of birth. Since for over 90 percent of the respondents these two overlap, I present results using measures of historical democracy from the municipality of residence. Specifically, I estimate the following equation:

$$(2) \qquad CC_{imk} = \beta_0 + \beta_1 HD_{mk} + \mathbf{X_{imk}}\boldsymbol{\beta_2} + \mathbf{M_{mk}}\boldsymbol{\beta_3} + \beta_k + \beta_l + \beta_d + \mu_{imk},$$

where *CC* is the conditional 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. *HD* is historical democracy 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 the individual is from a municipality with historical experience of democracy. Duration is the number of years that the municipality experienced historical democracy. The coefficient of interest is β_1, which captures the effect of historical democracy on conditional cooperation. β_k , β_l, and

β_d are fixed effects for the canton of residence, the linguistic group to which an individual belongs (indicator for Swiss German), and the historical dynasty with which the municipality was associated.

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 politics (indicator variable for left wing and center, baseline category is right wing). **M** is a vector of municipality specific controls including geography (altitude and navigable waterways in the Middle Ages), history (indicator variable for Bishop city), and economic environment (Gini of income). The summary statistics are reported in Table 1. I consider additional proxies of these variables while conducting robustness checks: climate and soil suitability for agriculture, distance from the cantonal capital in the Middle Ages, an indicator variable for Roman city, and population in the Middle Ages. Note that since additional variables are highly correlated with altitude, navigable waterways, and Bishop city, I use them only for robustness checks.

For the coefficient on historical democracy, I report two standard errors. First, because the behavior of individuals within a municipality might be correlated, I adjust standard errors for clustering within municipalities. Second, following Conley (1999), I also account for spatial clustering over 100 km distance. The results are robust to using lower distances of 25 and 50 km.

B. *Empirical Strategy*

As explained in section III, the extinction of the Zaehringen served as an instrument through which the treatment variable *historical democracy* was assigned. However, owing to partial compliance, the actual treatment delivery is not the same as the intended treatment assignment. This means that the OLS estimates of equation 2 could be potentially biased. One approach to correct for this bias is to use intention-to-treat estimate, but the effect of being a Zaehringen imperial fief on conditional cooperation is in itself uninteresting. This leaves me with two approaches: controlling for observables and instrumental variables estimation.

Controlling for observables

This approach requires answering the question: to what extent are the municipalities comparable to each other on the basis of their actual treatment delivery? Could it be that

more accessible and economically rich municipalities were the ones that actually received the treatment?

Balance check. – Table 2 compares control and treated municipalities along observable proxies of geography and economic development from the period before the extinction of the Zaehringen. Columns 1-2 report the means of these variables and columns 3-4 the difference obtained from a regression of each variable on historical democracy without and with the inclusion of other controls. Panel A shows that treated and control group municipalities have similar geographical characteristics with respect to altitude, navigable waterways, and soil suitability for agriculture. Although the difference with respect to climate suitability is statistically significant in column 3, the magnitude of the difference is small and disappears when I include other controls in column 4. Panel B shows that treated and control group municipalities are comparable across historical variables that proxy for economic development in the Middle Ages, such as an indicator for whether a municipality was a Bishop city or a Roman town. I also consider population in the late Middle Ages, but this data is available only for a small number of municipalities. Together, these results imply that treated municipalities were not more readily accessible, or geographically more conducive to development, or more prosperous.

Fixed effects. – While the above results are encouraging, they may not account for a host of unobservables affecting both historical democracy and conditional cooperation. Therefore, in some specifications, I include fixed effects for cantons to account for differences in cantonal wide factors. Switzerland is a multi-lingual country, which potentially raises the concern that historical democracy is picking some systematic differences across linguistic groups (see Eugster et al. 2011). Note that because language varies almost exclusively between and not within cantons, the fixed effects for cantons already account for linguistic differences. However, in the three Roestigraben cantons of Bern, Fribourg, and Valais, language also varies within cantons. Since these cantons are home to both Swiss Germans and Swiss French, I additionally control for an indicator for Swiss German. Becker et al. (2016) show that even if whole empires themselves perish, they can have long-lasting effects. To this end, I introduce fixed effects for dynasties with which the municipalities were associated in the period before the invasion by Napoleon. As mentioned earlier, the members of the Old Swiss Confederacy managed many of their surrounding areas as subjugated territories. I match each

municipality in the sample with the original member or ally with which it was associated until 1798 to create dynasty fixed effects.[10]

Sub-sample analysis. – Another potential source of difference could be institutions other than historical democracy, such as differences in historical authority. The inclusion of canton and dynasty fixed effects accounts for such differences to some extent. To alleviate the scope of such differences from driving the results even further, I consider the sub-sample of municipalities from cantons that were under the authority of the city-state of Bern for at least over two hundred and fifty years (1526 to 1798). Bern was the largest city-state north of the Alps covering nearly 25 percent of the Swiss area today that included the modern cantons of Bern (excluding Bernese Jura), Vaud, and half of the canton of Aargau (western part).

Instrumental variables estimates

The extinction of the House of Zaehringen offers quasi-experimental variation in the experience of historical democracy. Following Banerjee et al. (2005) and Iyer (2010), I use this event to report instrumental variables estimate (IV), whereby I use the indicator for Zaehringen imperial fief as an instrument for historical democracy.

Although the timing of the extinction of the Zaehringen is plausibly exogenous, differences across areas with and without the Zaehringen rule might result in selection bias. The bias is expected to be weaker if the Zaehringen were assigned their imperial fiefs than when these were selectively acquired by the Zaehringen themselves. Historical records concur that emperors Henry IV and Lothair assigned Zaehringen these fiefs. It is highly unlikely that the Zaehringen were given more productive imperial fiefs because such favoritism could have resulted in a rift with other noble houses whose support the emperor needed in the Middle Ages. Nevertheless, this raises the question to what extent are the municipalities comparable to each other on the basis of their intended treatment status? I consider in Table 3 geographical (panel A) and historical (panel B) proxies on which selection could have occurred. Columns 1-2 report averages in municipalities without and with the status of Zaehringen imperial fief. Column 3 reports that there are no differences either in geographical or historical variables. Column 5 repeats this exercise by showing that there are no differences in means across municipalities that were Zaehringen imperial fief

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[10] These are not the same as canton fixed effects because after the dissolution of the Old Swiss Confederacy several new cantons were created (example: Aargau and Sankt Gallen).

(column 2) and those that were Zaehringen allodial fief (column 4). This alleviates the concern over selection bias arising from pre-existing differences.

The IV estimate of the effect of historical democracy on conditional cooperation require that the exclusion restriction be met, that is, the Zaehringen rule did not have a direct effect on conditional cooperation. I believe this condition holds because of the quasi-experimental nature of the extinction of the Zaehringen. Nonetheless, I mitigate this concern further by exploiting within Zaehringen variation in historical democracy. I compare imperial fiefs whose political status was affected by the extinction of the dynasty with allodial fiefs whose political status remained unchanged. Since both these fiefs were under the Zaehringen rule, for exclusion restriction to be violated, Zaehringen must have behaved differently with respect to these fiefs, which is doubtful.

Because the instrument varies largely between and not within cantons, I am unable to include canton fixed effects in this analysis. This may not be a concern because cantons fixed effects turn out to be statistically insignificant in the OLS results. Nonetheless, to gauge the extent to which canton specific factors could be driving the IV result, I report results from the canton of Bern, which offers variation in both historical democracy and the instrument. In addition, I also report IV estimates from the sample of municipalities that were under the city-state of Bern. Finally, I drop one canton at a time to test if the results hold.

VI. Main Results

A. *OLS Estimates*

Table 4 presents OLS estimates of the effect of historical experience of democracy on conditional cooperation using experience in panel A and duration in panel B; the coefficients on covariates are reported in Tables A3 of Appendix A. Column 1 shows that in the specification without any control variables, the coefficient on experience is 0.414 and that on duration is 0.087. Both the coefficients are significant at the 1 percent level and explain 13 percent of the variation in conditional cooperation. The coefficients remain stable in magnitude and significance when I introduce individual level covariates in column 2 and municipal level covariates in column 3. According to these estimates, individuals from municipalities *with* historical democracy display twice the conditional cooperation of individuals from municipalities *without*. Moreover, one standard deviation increase in duration (2.44) is associated with an increase in propensity for conditional cooperation by

0.21 points.[11] In monetary terms, for each additional 10 Swiss Francs contributed by the other player individuals from municipality with historical democracy contribute slightly over 7 Swiss Francs, whereas individuals from municipalities without contribute only 3.6.

I verify that these estimates are not due to influential cantons in columns 1-2 of Table A4. When I drop observations from one canton at a time, the coefficient on experience ranges from 0.396 to 0.446, while that on duration from 0.083 to 0.094. Table A5 shows that there is no difference in conditional cooperation by different styles of historical democracy. In Table A6, I further show that reasons behind this large gap are two-fold: municipalities with historical democracy have a higher share of conditional cooperators by 35 percentage points, but a lower share of free riders by 8 percentage points.

Among the covariates, individuals from Bishop cities display significantly lower conditional cooperation by 0.22 points, whereas one standard deviation increase in the Gini of income reduces conditional cooperation by 0.08 points. These estimates are plausible because Bishop rule was associated with oppression in Switzerland (Zschokke 1860, McCrackan 1906), and the literature also suggests a negative effect of inequality on civic capital (Knack and Keefer 1997).

B. *Robustness Checks*

The effect of historical democracy on conditional cooperation is robust to the introduction of fixed effects for cantons, language, and historical dynasty; inclusion of additional municipal and individual level controls; sub-sample analysis using the city-state of Bern; and alternative sample based on survey measures of attitudes towards cooperation from SHP.

Fixed effects. – I introduce one by one fixed effects for cantons in column 4, language in column 5, historical dynasty in column 6, and all of these simultaneously in column 7 of Table 4. This does not lead to any major changes in the coefficients on experience and duration; they remain remarkably robust in magnitude and significance. In contrast, the fixed effects add little to the *R*-squared and are also jointly statistically insignificant. These results suggest that historical democracy is not capturing the effect of canton, language, and dynasty specific differences.

Additional controls. – At the municipality level, I consider additional proxies of geography, history, and past economic prosperity. To counteract the possibility that some other

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[11] Results remain unchanged when I introduce the quadratic term of duration. The quadratic term is actually very small in magnitude and is also statistically insignificant.

unobserved aspect of geography or history is driving the result, I additionally control for soil and climate suitability for agriculture, distance of a municipality from the cantonal capital in the Middle Ages as this could have affected subjugation, an indicator for a Roman town, and population in the Middle Ages.[12] Table A7 reports the results. The coefficients on experience (column 1) and duration (column 4) are similar in magnitude and significance to the results reported in Table 4, whereas the coefficients on additional controls are neither individually nor jointly significantly different from zero.

At the individual level, I introduce the following additional controls: naturalized citizen, Swiss migrant, and game comprehension. The effect of historical democracy on conditional cooperation might differ for individuals who acquired Swiss citizenship by birth and for those who acquired it via naturalization. So, I control for an indicator for naturalized Swiss citizen. For similar reasons, I also consider an indicator for a migrant from within Switzerland.[13] The measure of conditional cooperation comes from a behavioral game. To counteract the concern that this measure is simply capturing differences in game comprehension, I control for the number of correct responses to three control questions that each participant had to answer before proceeding to the main experiment. The inclusion of these additional controls in column 2 and 5 of Table A10 does not lead to any major changes in the coefficients on experience and duration. In contrast, the coefficients on additional controls are not significantly different from zero.

When I jointly introduce these additional municipal and individual level controls in columns 3 and 6, the results hold both in magnitude and significance.

Sub-sample analysis. – Table A8 reports results from the sub-sample of municipalities that were in the city-state of Bern. These municipalities were exposed to the same historical authority and therefore offer the advantage of holding many historical factors fixed. Whether without or with controls and fixed effects, the coefficients on experience and duration turn out to be slightly larger than those obtained using the full sample, but they remain highly significant.

Attitudes towards cooperation. – In SHP individuals are asked to rate the extent to which the following activities are justifiable on a scale of 0-10, where 0 means "never justified" and 10 "always justified": (a) lying in own interest; (b) cheating on tax declaration; and (c) claiming

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[12] I follow Cantoni (2014) and assume the population to be 100 in municipalities for which I do not have this data. The precise year for which the population data are available differs, so I additionally control for the year.
[13] Only two individuals moved across linguistic groups. Dropping these individuals does not change the results.

state benefits not entitled to. For the ease of interpretation, I invert the scale so that a higher score reflects stronger attitudes towards cooperation. Since the responses in these questions are highly correlated with each other, I use the first principal component underlying these responses as a summary measure of attitudes towards cooperation (see Tabellini 2010). Table A9 reports the results and shows that the coefficients on experience (panel A) and duration (panel B) are positive and highly significant. According to the estimates in columns 1-2, individuals from municipalities with historical democracy have stronger attitudes by 30 percentage points than individuals from municipalities without. Also, one standard deviation increase in duration is associated with an increase in the principal component of attitudes by 15 percentage points. These estimates drop in magnitude when fixed effects are introduced (column 3), but are robust to the inclusion of additional municipal controls (column 4).

C. Instrumental Variables Estimates

I proceed by presenting instrumental variables estimates of the effect of historical democracy on conditional cooperation using the indicator for Zaehringen imperial fief as an instrument for historical democracy. The first-stage estimates in panel A of Table 5 show that there is a strong positive and significant association between Zaehringen imperial fief and historical democracy, which is robust to the inclusion of controls (see also Figure 1). Municipalities that were Zaehringen imperial fiefs are 40 percentage points more likely to have experienced historical democracy and for a longer duration by over 200 years. The *F*-statistics are large (> 35), confirming that the instrument is relevant. Panel B reports second-stage estimates of the effect of historical democracy on conditional cooperation. 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 0.47 on experience (column 2) and 0.084 on duration (column 4), which are remarkably similar to their OLS counterparts reported in Table 4. I further show in table A4 that these results are not due to influential cantons and hold even when I drop one canton at a time in columns 3-4.

The exclusion restriction is violated if the Zaehringen rule had a direct effect on conditional cooperation. Since the extinction of the Zaehringen affected the political institutions of only the imperial fiefs and not the allodial fiefs, I alleviate this concern by restricting the sample to only those municipalities that experienced the Zaehringen rule. I verify in column 5 of Table 3 that these two types of fiefs are comparable across a number of geographical and historical variables. Table A10 reports the results. Column 1 shows that the OLS coefficients on experience (0.49) and duration (0.09) are significant at the 1 percent

level. Column 2 shows that the corresponding instrumental variables estimates are 0.53 on experience and 0.11 on duration; both are significant at the 5 percent level. These estimates are similar to their OLS counterparts in column 1 and are also comparable to those obtained from the full sample.

Because the variation in the instrument is mostly between and not within cantons, I am unable to account for fixed effects. To mitigate this concern, I present results from the canton of Bern, which offers large variation in both the instrument and historical democracy. Columns 1-2 of Table A11 show that OLS and IV estimates from this sample are similar in magnitude to those obtained using the full sample and are also statistically significant. Results in Table A12 further highlight that the IV estimates are robust to using the sub-sample of the city-state of Bern and SHP as an alternative data source.

VII. Plausible Channels

The above findings are intriguing, especially knowing that the control group municipalities were also treated after the invasion by Napoleon and have been under democratic institutions for over 200 years now. This raises the question: why haven't the treated and control group municipalities converged in their norms of cooperation? In other words, what explains persistence in the effect of historical democracy on conditional cooperation even until today? If institutions and norms are self-reinforcing, as this study points out, then several reasons are possible: (i) differences in the duration of the feedback loop between institutions and norms; (ii) differences in the nature of the feedback loop itself; (iii) cultural transmission (Boyd and Richerson 1985, Bisin and Verdier 2001, Tabellini 2008), and (iv) low migration rates. Below I offer evidence in support of each of these arguments.

A. *Duration of the feedback loop*

The feedback loop between institutions and norms has been in operation for longer period of time in treated municipalities. Thus, it is plausible that norms of cooperation take very long time to establish and persistence comes from differences in the length of the feedback loop. Figure 4 shows that there is some evidence that the duration of the feedback loop plays a role. In the sample of treated municipalities, the coefficient on duration turns out to be smaller than in the full sample, but it is nonetheless positive and statistically significant at the 5 percent level (Table A13). According to the estimate, an increase in duration by 100 years is associated with an increase in conditional cooperation by 0.07 points. This estimate implies that if control group municipalities were to acquire the duration of experience of the first

quartile of treated municipalities (3.98 hundreds years), then conditional cooperation in control municipalities would rise from 0.43 to 0.71 points. This estimate is close to the actual conditional cooperation of 0.76 points in the first quartile of treated municipalities.[14]

B. *Nature of the feedback loop*

In addition to the length of the feedback loop, it is plausible that treated and control group municipalities also differ in the nature of the feedback loop. Several potential reasons could have led to this difference. One possibility is that democratic institutions in control group municipalities were weak and thus did not have the same effect on norms of cooperation as democratic institutions in treated municipalities. This explanation finds support in the study by Banerjee and Iyer (2005) and Duflo and Pande (2007), who discuss the role of policy choices in understanding the persistent effect of long abolished landlord institution. Another possibility is that treated municipalities experienced improvements in economic prosperity and education, which in turn led to higher conditional cooperation. This possibility is consistent with several studies showing a positive association of democracy with economic prosperity and education (Lipset 1959, Barro 1999, Glaeser et al. 2007, Acemoglu et al. 2009, Persson and Tabellini 2009, Acemoglu et al. 2017) and of these variables with civic cooperation (Knack and Keefer 1997, Tabellini 2010). I discuss both these possibilities below using municipality level regressions.

Functioning of democratic institutions. – To test the conjecture that democratic institutions differ across treated and control group municipalities, I use data from two waves of surveys conducted by Andreas Ladner. In these surveys, municipal administrators were asked to report the frequency of referendums and people's initiatives in their respective municipalities. While the former can be seen as reflecting the willingness of the state to involve people in decision-making to change the law, the latter can be considered as the willingness of individuals to participate in decision-making. Since both involve extensive discussions, they together serve as a comprehensive measure on the functioning of democratic institutions, especially its participatory, deliberative, and consensual components. Figure 5 and Table A14 shows that treated and control group municipalities differ widely with respect to the functioning of democratic institutions. The frequency of referendums and initiatives is nearly

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[14] This explanation may seem to be at odd with the recent evidence by Fuchs-Schündeln and Schündeln (2016) showing that the experience of democracy can lead to changes in support for democracy over shorter periods of time. But, data from SHP shows that in the Swiss context support for democracy increases with duration of experience even in the treated sample of municipalities (coef. 0.21, s.e. 0.08).

two times higher in treated municipalities and these differences are highly significant. These patterns are also reflected in data from SHP on trust in government and support for democracy. Columns 1-2 of Table A15 highlight that individuals from treated municipalities indeed show higher trust in government and also higher support for democracy than individuals from control group municipalities. Together, these results support the view that treated and control group municipalities differ in the nature of democratic institutions.

Economic prosperity and education. – To test whether historical democracy led to differences in economic prosperity and education in the past, I focus on the historical measures of these variables. I start by using populations in periods before and after the invasion by Napoleon as a proxy of economic development.[15] Figure 6 and Table A16 show that treated municipalities have, on average, higher population by nearly 50 percentage points. This large gap in population surfaced as early as the 17th century and it not only survived the invasion by Napoleon, but also persisted well into the 19th century, and continues to exist even today. Similar results are obtained when I use as an alternative measure share of workforce in tertiary sector, data for which are available at the municipal level only from 1970 onwards. Table A17 reports the results and shows that the coefficients on experience and duration are always positive and often statistically significant. In 1970, share of workforce in tertiary sector in treated municipalities was higher by over 4 percentage points, thereafter the gap declined to 2.8 percentage points in 1980 and 1.8 percentage points in 1990 and 2000, but then rose to over 3 percentage points in 2013.

As far as education is concerned, historical data are difficult to obtain. The earliest period for which I could find such data are from 1868 on the number of books in libraries with at least 6000 books (Heitz 1872). Figure 7 and Table A18 show that the association between historical democracy and number of books is always positive and statistically significant. These estimates imply that treated municipalities had more books in libraries than control group municipalities by over 100 percentage points. The gap declines in magnitude to about 50 percentage points when I use per capita number of books adjusted for population in 1850 (columns 3-4), but it remains statistically significant. Alternatively, I use district level data from 1875 on the performance of conscripts in exams on math, comprehension, lecture, and geography (Boppart et al. 2013). Table A19 shows that the association of historical democracy with performance is always positive and statistically significant in columns 1, 2

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[15] Ideally, I would like to use population density. However, in Switzerland, more mountainous municipalities tend to have larger areas covering mountains and barren land, which distorts the density measures.

and 3. Since the scores are highly correlated with each other, I use in column 5 their first principal component as the dependent variable. The coefficient on experience implies that the performance in treated municipalities is over 50 percentage points larger; it is also statistically significant at the 5 percent level (see also Figure 8). Overall, these findings suggest that treated municipalities experienced higher economic prosperity and education.[16]

C. *Cultural Transmission*

To test for the scope of cultural transmission, I follow Fernandez (2007) and Giuliano (2007) and study conditional cooperation among migrants using the epidemiological approach. To this end, I construct measures of historical democracy using experience and duration from the *birth* municipality of migrants. Table 6 presents the results after accounting for resident canton fixed effects, individual and municipal controls, and the length of stay within the resident municipality. Column 1 shows that migrants from birth municipalities *with* historical democracy exhibit stronger conditional cooperation than migrants from birth municipalities *without*. The coefficients on experience (0.62) and duration (0.11) are large in magnitude and are also highly significant.[17] In column 2, I jointly introduce measures of historical democracy from both birth and residence municipalities. The coefficients on experience and duration from the *birth* municipality remain stable in magnitude and also retain their significance. In contrast, the coefficients on historical democracy from the *residence* municipality are not only considerably smaller in magnitude, but are also statistically insignificant. The two coefficients are also significantly different from each other (p-value < 0.05). These results suggest the importance of cultural transmission in maintaining differences in norms of cooperation over time.

D. *Migration*

The above results insinuate that migration rates must have been low. This is plausible for even until the second half of the nineteenth century as many as 60 percent of the Swiss

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[16] It is tempting to include different channels as additional controls to see whether the effect of historical democracy on conditional cooperation diminishes after their inclusion. However, it is not possible to include simultaneously the measures of population or share of workforce in the tertiary sector from different time periods, as these are highly correlated. Moreover, the measures of economic prosperity, education, and institutional quality are also correlated with each other. Thus, besides the issue of introducing many endogenous controls, they may simply cancel each other out. The choice to include one measure over the other is ad hoc. Nonetheless, when I conduct such an exercise, the coefficients on experience and duration decline slightly in magnitude and that too in some specifications only. The largest drop comes from the inclusion of the frequency of referendums and initiatives. However, they always remain highly significant (results available on request).

[17] The results hold even when I use two-way clustering at the level of the birth and resident cantons.

resided in their ancestral municipality (Christ 2006). There are several reasons behind this low mobility. First, in the Middle Ages, the Swiss municipalities were responsible for the provision of common property resources, such as grazing land and firewood, to its citizens. This discouraged migration because the residents were not willing to share their commons with newcomers owing to extensive stress this would have put on natural resources. Second, starting 16th century, the welfare of citizens was the obligation of the ancestral municipality. This created further hurdles to movement because in times of crisis non-citizens were ineligible for state support and were even deported to their ancestral municipality. It was not until 1934 that many cantons made it mandatory for resident municipality to provide welfare. Third, it is likely that geography also played a role, as mountains and lakes served as a barrier to movement across municipalities. This low migration together with the small size of Swiss municipalities (90 percent have population below 5000) could have facilitated persistence in norms of cooperation (see also Voigtländer and Vogt 2012).

Using a novel dataset, I show empirically that migration rates in the 19th century have no bearing on the effect of historical democracy on conditional cooperation. The dataset is made available by HLS and it includes a comprehensive listing of all family names holding citizenship in a Swiss municipality. I compute municipality specific incoming migration rates for the period 1800-1900 by constructing the proportion of new family names that acquired citizenship over the total number of family names holding the citizenship. The average migration rate in the overall sample turns out to be 29 percent. Column 1 of Table A20 shows that the coefficients on experience and duration remain robust in magnitude and significance when I additionally control for migration rate. In contrast, the coefficient on migration rate is not only small in magnitude but also statistically insignificant. These results could be masking a heterogeneous effect, for in 10 percent of the municipalities the migration rate is zero, but in municipalities with a population of over 10,000 in 1850 it averages 63 percent. So, in columns 2-3 I report the results separately by median migration rate. While the coefficients on experience and duration are larger in the sample with migration rates below the median, they always remain statistically significant at the 1 percent level. This result is in line with Henrich and Boyd (1988) who show that conformist transmission can maintain between group differences for a wide range of migration rates.

VIII. Conclusions

I study the effect of historical experience of democracy on norms of cooperation today. The two main challenges in conducting such a study are establishing causality and measuring

norms of cooperation. I mitigate these challenges by combining plausibly exogenous variation in the experience of historical democracy with behavioral measures of norms of cooperation. The study takes place in Switzerland, whereby the House of Zaehringen from the absence of an heir resulted in some municipalities acquiring historical forms of democracy, but the other municipalities continued under feudalism. I measure norms of cooperation as the individual propensity for conditional cooperation via a behavioral experiment with Swiss households.

I find a strong positive and highly significant effect of historical democracy on conditional cooperation, which is robust to accounting for individual and municipal level covariates, as well as fixed effects for canton, language, and dynasty. Instrumental variables estimates that use the indicator for Zaehringen imperial fief as an instrument for historical democracy yield results that are comparable to their OLS counterparts. The results hold when I conduct within Zaehringen analysis to mitigate the concern over the violation of the exclusion restriction. Analyses using data on attitudes towards cooperation from the Swiss Household Panel yield similar results.

I discuss the role of several potential mechanisms in the persistence of these effects. To the extent institutions and norms are self-reinforcing, I draw attention to two plausible reasons. First, I discuss the possibility that norms of cooperation take long time to develop and then show a positive effect of duration on conditional cooperation in the sample of treated municipalities. Second, I argue that persistence could also come from differences in the nature of the feedback loop. I show that these differences materialized because treated municipalities experienced economic prosperity, investments in education, and better quality of democratic institutions, all of which could have prevented control group municipalities from catching up.

In addition, I also highlight the role of cultural transmission by using the epidemiological approach. I find that migrants from birth municipality with historical democracy show stronger conditional cooperation than migrants from birth municipality without, even after accounting for historical democracy from resident municipality. Lastly, using a novel dataset on the register of family names with citizenship in a Swiss municipality, I compute incoming migration rates and show that this has little bearing on the effect of historical democracy on norms of cooperation.

Overall, these findings highlight that the interaction between institutions and norms can lead to self-reinforcing patterns of conduct that could endure over time.

REFERENCES

Acemoglu, D., S. Naidu, P. Restrepo, and J. Robinson. 2017. "Democracy Does Cause Growth," *Journal of Political Economy (forthcoming)*.

Acemoglu, D., S. Johnson, J. A. Robinson, and P. Yared. 2005. "From Education to Democracy." *American Economic review*, 95, 44–49.

Aidt, T. and R. Franck. 2015. "Democratization under the Threat of Revolution: Evidence from the Great Reform act of 1832," *Econometrica*, 83, 505-547.

Alesina, A. and N. Fuchs-Schuendeln. 2007. Good-Bye Lenin (or Not?): The Effect of Communism on People's Preferences," *American Economic Review*, 97, 1507-1528.

Alesina, A. and P. Giuliano. 2015. "Culture and Institutions," *Journal of Economic Literature*, 53, 898-944.

Ammann, H., and K. Schib. 1958. *Historischer Atlas der Schweiz*, Aarau.

Angelucci, C., S. Meraglia, N. Voigtländer. 2018. "How Merchant Towns Shaped Parliaments: From the Normal Conquest of England to the Great Reform Act," NBER Working Paper Series 23606.

Ashraf, Q. and O. Galor. 2011. "Dynamics and Stagnation in the Malthusian Epoch," *American Economic Review*, 101, 2003-2041.

Banerjee, A. and L. Iyer. 2005. "History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure System in India," *American Economic Review*, 95, 1190-1213.

Banerjee, A., L. Iyer, and R. Somanathan. 2005. "History, Social Divisions, and Public Goods in Rural India," *Journal of the European Economic Association*, 3, 639-647.

Banfield, E.C. 1958. "Moral Basis for a Backward Society". Glencoe: The Free Press.

Barro, R. J. 1999. "Determinants of Democracy," *Journal of Political Economy*, 107, 158-183.

Becker, S., O. K. Boeckh, C. Hainz, and L. Woessmann. 2016. "The Empire Is Dead, Long Live the Empire! Long-Run Persistence of Trust and Corruption in the Bureaucracy," *Economic Journal*, 126, 40-74.

Bentham, J. [1816] 1999. *Political Tactics*. Oxford: Oxford University Press.

Berner, H. 2006. "Grosser Rat (Ancien Regime)," *Historisches Lexikon der Schweiz* (31 January).

Bettinger, E. and R. Slonim. 2007. "Patience in Children: Evidence from Experimental Economics," *Journal of Public Economics*, 91, 343-363.

Bigoni, M., S. Bortolotti, M. Casari, and D. Gambetta. 2018. "At the Root of the North–South Cooperation Gap in Italy: Preferences or Beliefs?" *Economic Journal, forthcoming*.

Bisin, A and T. Verdier. 2001. "The Economics of Cultural Transmission and the Dynamics of Preferences," *Journal of Economic Theory*, 97, 298–319.

Bisin, A. and T. Verdier. 2017. "On the joint evolution of culture and institutions," NBER Working Paper Series **23375**.

Boppart, T., J. Falkinger, V. Grossmann, U. Woitek, and G. Wüthrich. 2013. "Under which Conditions does Religion affect Educational Outcomes," *Explorations in Economic History*, 50, 242-266.

Boyd, R. and P. Richerson. 1985. "Culture and the Evolutionary Process," Chicago, IL, University of Chicago Press.

Cantoni, D. 2014. "The Economic Effects of the Protestant Reformation: Testing the Weber Hypothesis in the German Lands," *Journal of the European Economic Association*, 13, 561–598.

Christ, T. 2006. "Fürsorge," *Historical Lexicon of Switzerland* (07 December 2018).

Conley, T. G. 1999. "GMM Estimation with Cross Sectional Dependence," *Journal of Econometrics*, 92, 1–45.

Coppedge, M., S. Lindberg, S. Skaaning, and J. Teorell. 2016. "Measuring high level democratic principles using the V-Dem data," *International Political Science Review* 37, 580- 593.

Dal Bo, P., A. Foster, and L. Putterman. 2010. "Institutions and Behavior: Experimental Evidence on the Effects of Democracy," *American Economic Review*, 100, 2205-2229.

Dell, M., N. Lane, and P. Querubin. "The Historical State, Local Collective Action, and Economic Development in Vietnam," *Econometrica (forthcoming)*.

Duflo, E. and R. Pande. 2007. "Dams" *Quarterly Journal of Economics*, 122, 601-646.

Elster, J. 1989. "Social Norms and Economic Theory," *Journal of Economic Perspectives*, 3, 99-117.

Ellingson, T., M. Johannesson, J. Mollerstrom, and S. Munkhammar. 2012. "Social Framing Effects: Preferences or Beliefs?" *Games and Economic Behavior* 76 (1), 117-130, 2012.

Eugster, B., R. Lalive, A. Steinhauer, and J. Zweimuller. 2011. "The Demand for Social Insurance: Does Culture Matter?" *Economic Journal*, 121, 413-448.

Eugster, E. 2015. "Zähringen, von" *Historisches Lexikon der Schweiz* (1 January).

Fernandez, R. 2007. "Women, Work and Culture," *Journal of the European Economic*

Association, 5, 305-332.

Fischbacher, U., S. Gächter, and E. Fehr. 2001. "Are People Conditionally Cooperative: Evidence From a Public Goods Experiment," *Economic Letters*, 71, 397-401.

Fischbacher, U. and S. Gächter. 2010. "Social Preferences, Beliefs, and the Dynamics of Free Riding in Public Goods Experiments," *American Economic Review*, 100, 541-556.

Frankhauser, A. 2009. "Mediationsakte," *Historisches Lexikon der Schweiz* (12 August).

Fuchs-Schündeln, N and M. Schündeln. "On the Endogeneity of Political Preferences: Evidence from Individual Experience with Democracy," *Science*, 347, 1145-1148.

Galor, O. and R. Frank. 2017. Flowers of Evil? Industrial Development and Long-Run Prosperity. NBER Working Paper Series 23701.

Gächter, S. (2007). Conditional cooperation. Behavioral regularities from the lab and the field and their policy implications. In B. Frey & A. Stutzer (Eds.), *Economics and psychology. A promising new cross-disciplinary field. CESifo Seminar Series*. Cambridge: MIT Press.

Glaeser, Edward L., Giacomo A. M. Ponzetto, and Andrei Shleifer. 2007. "Why Does Democracy Need Education?" *Journal of Economic Growth*, 12, 77–99.

Gasser, A. 1932. *Die Territoriale Entwicklung der Schweizerischen Eidgenossenschaft 1291-1797*. Aarau: Sauerlaender.

Giuliano, P. 2007. "Living Arrangements in Western Europe: Does Cultural Origin Matter?" *Journal of the European Economic Association*, 5, 927-952.

Grosjean, P. 2014. "A History of Violence: The Culture of Honor and Homicide in the US South," *Journal of the European Economic Association*, 12, 1285-1316.

Guiso, L., P. Sapienza, and L. Zingales. 2011. "Civic Capital as the Missing Link", In J. Benhabib, A. Bisin, and M. Jackson (eds.), *Handbook of Social Economics*, Volume 1A, 339-416. The Netherlands: North-Holland.

Guiso, L., P. Sapienza, and L. Zingales. 2016. "Long Term Persistence," *Journal of the European Economic Association*, 14, 1401-1436.

Habermas, J. 1996. *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy*. Cambridge, MA: MIT Press.

Herrmann, B. and C. Thöni. 2009. "Measuring Conditional Cooperation: A Replication Study in Russia," *Experimental Economics*, 12, 87-92.

Heitz, E. 1872. "*Die Oeffentlichen Bibliotheken der Schweiz im Jahre 1868*", Basel: Schweighauser.

Henrich, J. and R. Boyd. 1988. "The Evolution of Conformist Transmission and the

Emergence of Between-Group Differences," *Evolution and Human Behavior* 19, 215-241.

Holenstein, A. 2013. "Untertanengebeite" *Historisches Lexikon der Schweiz* (9 December).

Holenstein, A. 2014. "Räte" *Historisches Lexikon der Schweiz* (9 December).

Hug, L. and R. Stead. 1890. "*Switzerland,*" London: T. Fischer Unwin; and New York: G.P. Putnam Sons.

Iyer, L. 2010. "Direct versus Indirect Colonial Rule in India: Long-Term Consequences," *Review of Economics and Statistics*, 92, 693-713.

Jha, S. 2013. "Trade, Institutions and Ethnic Tolerance: Evidence from South Asia," *American Political Science Review*, 107, 806-832.

Knack, S. and P. Keefer. 1997. "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation," *Quarterly Journal of Economics*, 112, 1251-1288.

Kocher, M. G., T. Cherry, S. Kroll, R. J. Netzer, and M. Sutter. 2008. "Conditional Cooperation on Three Continents," *Economics Letters*, 101, 175-178.

Kosfeld, M., and D. Rustagi. 2015. "Leader Punishment and Cooperation in Groups: Experimental Field Evidence from Commons Management in Ethiopia," *American Economic Review*, 105, 747-783.

Lipset, Seymour Martin. 1959. "Some Social Requisites of Democracy: Economic Development and Political Legitimacy," *American Political science review*, 53, 69–105.

Lowes, S., N. Nathan, J. A. Robinson, and J. Weigel. 2017. "The Evolution of Culture and Institutions: Evidence from the Kuba Kingdom," *Econometrica*, 85, 1065-1091.

McCrackan, W. D. 1908. *The Rise of the Swiss Republic: A History*. New York: Henry Holt and Company.

Nunn, N., and L. Wantchekon. 2011. "The Slave Trade and the Origins of Mistrust in Africa," *American Economic review*, 101, 3221-3252.

Persson, T. and Tabellini. 2010. "Democratic Capital: The Nexus of Political Change and Economic Change," *AEJ Marco*, 1, 88-126.

Platteau, J.P. 2000. *Institutions, Social Norms, and Economic Development*. London: Hardwood Academic Publishers.

Putnam, R., **R. Leonardi, and R. Y. Nanetti**. 1993. *Making Democracy Work: Civic Traditions in Modern Italy*. New York: Simon & Schuster.

Putzger. 2004. *Historischer Weltatlas*, Schweizer Ausgabe, Berlin.

Rodrik, D. 2000. "Do Democratic Transitions Produce Bad Economic Outcomes," *American Economic Review Papers and Proceedings*, 95, 50-55.

Rustagi, D., S. Engel, and M. Kosfeld. 2010. "Conditional Cooperation and Costly

Monitoring Explain Success in Forest Commons Management," *Science,* 330, 961-965.

Stadler, H. 2008. "Landsgemeinde" *Historisches Lexikon der Schweiz* (11 November).

Stanyan, A. 1714. *An Account of Switzerland*, London: Jacob Tonson.

Stasavage, D. 2007. "Polarization and Publicity: Rethinking the Benefits of Deliberative Democracy," *Journal of Politics*, 69, 59-72.

Sunstein, C. 2002. "The Law of Group Polarization," *The Journal of Political Philosophy* 10, 175–95.

Suter, M. 2016. "Demokratie" *Historisches Lexikon der Schweiz* (13 April).

Sutter, M., S. Haigner, and M. Kocher. 2010. "Choosing the Carrot or the Stick: Endogenous Institutional Choice in Social Dilemma Situations," *Review of Economic Studies*, 77, 1540-1566.

Tabellini, G. 2008. "The Scope of Cooperation: Values and Incentives," *Quarterly Journal of Economics*, 123, 905-950.

Tabellini, G. 2010. "Culture and Institutions: Economic Development in the Regions of Europe," *Journal of the European Economic Association*, 8, 677-716.

Vincent, J.M. 1891. *State and Federal Government of Switzerland*. Baltimore: John Hopkins Press.

Voigtländer, N., and H. J. Voth. 2012. "Persecution Perpetuated: The Medieval Origins of Anti-Semitic Violence in Nazi Germany," *Quarterly Journal of Economics*, 127, 1339-1392.

Zschokke, H. 1860. *History of Switzerland*. Translated by F.G. Shaw, New York: Hurst and Company Publishers.

TABLE 1: SUMMARY STATISTICS

	Sample Mean	Standard Deviation
Panel A: *Historical democracy*		
Experience (indicator)	0.546	0.499
Duration (hundreds of years)	2.600	2.443
Panel B: *Conditional cooperation*		
Propensity for conditional cooperation	0.646	0.545
Indicator for conditional cooperation	0.656	0.476
Panel C: *Individual covariates*		
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
Panel D: *Municipal covariates*		
Altitude	4.558	1.252
Navigable waterways M.A.	0.546	0.499
Bishop city	0.073	0.260
Gini income	0.345	0.056
Observations	262	

Notes. M.A. stands for Middle Ages. PANEL A. Experience is an indicator variable equal to 1 if an individual lives in a municipality that experienced historical democracy before 1803; Duration refers to the number in hundreds of years a municipality was exposed to historical democracy before 1803. PANEL B. Propensity to cooperate conditionally is the Spearman correlation between self and other players' contribution in the conditional decision of the public goods game that was conducted online in 2013. The indicator for conditional cooperation equals one if an individual is a conditional cooperator. PANEL C (Individual controls): Age is measured in number of years; Education is an indicator variable that equals 1 if an individual has a degree from a polytechnic or a university; Male is an indicator variable that equals 1 if an individual is male; Log household income is the log of annual household income/1000; Catholic and protestant are indicator variables indicating the religion of an individual (benchmark category is atheist); Left wing and center are indicator variables referring to the political orientation of an individual (benchmark category is right). PANEL D (Municipal controls): Altitude is the elevation of the main settlement of a municipality in meters/100; Navigable waterways M.A. is an indicator variable which equals 1 if a municipality is located on a river or lake that was navigable in the late Middle Ages; Bishop city is an indicator variable that equals 1 if a municipality was a Bishop city in the past; Gini income is a measure of income inequality at municipal level in 2006. Data in Panel C were obtained via the post-experimental survey conducted online in 2013. Data on altitude were obtained from the Swiss geographical information platform. Data on navigable waterways and Bishop cities were obtained from the maps prepared by Marco Zanoli. Data on Gini of income were obtained from Swiss tax administration office.

TABLE 2: BALANCE TEST BY HISTORICAL DEMOCRACY

	Historical experience of democracy			
	No	Yes	Difference (Without controls)	Difference (With controls)
	(1)	(2)	(3)	(4)
	Panel A: *Geographical variables*			
Altitude	4.571	4.902	0.330	0.155
	(1.033)	(1.775)	(0.225)	(0.183)
Navigable waterways M.A.	0.479	0.450	-0.029	0.034
	(0.502)	(0.500)	(0.076)	(0.071)
Climate	1.479	1.188	-0.291	-0.127
	(0.684)	(0.748)	(0.109)	(0.091)
Soil	1.596	1.400	-0.196	-0.062
	(1.609)	(1.650)	(0.248)	(0.236)
	Panel B. *Historical variables*			
Bishop	0.021	0.038	0.016	0.011
	(0.145)	(0.191)	(0.026)	(0.026)
Roman	0.085	0.100	0.015	0.030
	(0.281)	(0.302)	(0.044)	(0.043)
Population M.A.	1971.25	2735.455	725.795	894.622
	(514.064)	(409.343)	(1071.164)	(1565.24)

Notes. M.A stands for Middle Ages. The number of municipalities is 174, of which 94 are *without* and 80 *with* historical democracy. Column 1 and 2 report the average of the control variable for municipalities without and with historical experience of democracy. Column 3 reports the difference obtained from a regression of the covariate on a dummy variable for historical experience of democracy 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. Population M.A. is excluded because it is available only for a small sample of municipalities). While regressing population M.A. on historical democracy, I additionally control for the date for which the population is available. Climate classifies municipalities on the basis of their suitability for agriculture: highly suitable, suitable, and borderline suitable (Swiss Federal office for Agriculture). Because of four observations in the category 'unsuitable' it was merged with the category 'borderline suitable'. Soil suitability classifies municipalities on the basis of their suitability for agriculture: very good production, good production, average production, impaired production, and unsuitable (Swiss Federal office for Agriculture). Roman town is an indicator variable that equals one if a municipality was a Roman town. Population M.A. is the population of a municipality in the late Middle Ages. It is available for 16 municipalities, of which 8 are *with* and 11 *without* historical democracy. Data on Roman towns is based on maps prepared by Marco Zanoli. Data on population in the Middle Ages were obtained from municipality specific articles in the HLS.

TABLE 3: SUMMARY STATISTICS BY ZAEHRINGEN FEUDAL RULE

	Zaehringen imperial fief		Difference in means	Zaehringen allodial fief	Difference in means
	No	Yes	(2) – (1)		(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)
Navigable 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)
			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 city	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	298.261	1950.00	623.137
	(2225.535)	(2489.402)	(1247.647)	(777.817)	(1965.179)

Notes. Columns 1-2 report average by an indicator variable for the Zaehringen imperial fief. Column 1 reports average for 141 municipalities that were not Zaehringen imperial fiefs. This includes 134 municipalities that were under the custody of other noble houses (Kyburg, Habsburg, and Savoy) as well as 7 municipalities that were allodial fiefs of the Zaehringen. Column 2 reports average for 33 municipalities that were imperial fiefs of the Zaehringen. Column 4 reports average for only the 7 municipalities that were allodial fiefs of the Zaehringen. Columns 3 and 5 report the difference in means obtained from the regression of the variable on an indicator for Zaehringen imperial fief. The number of municipalities in column 4 is small because only a handful of the fiefs of Zaehringen were under their allodial custody. While regressing population M.A. on the Zaehringen imperial fief, I additionally control for the date for which the population is available.

	Dependent variable: Conditional Cooperation						
	No controls	Individual controls	Municipal controls	Canton FE	Language FE	Dynasty FE	All FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Panel A: *Experience*						
Experience	0.400	0.392	0.414	0.408	0.386	0.419	0.400
	(0.063)	(0.070)	(0.066)	(0.086)	(0.070)	(0.089)	(0.105)
	[0.065]	[0.070]	[0.066]	[0.083]	[0.069]	[0.083]	[0.091]
Joint *p*-value		0.58	0.013	0.62	0.43	0.08	0.17
R^2	0.13	0.16	0.20	0.22	0.20	0.24	0.25
	Panel B: *Duration*						
Duration	0.083	0.081	0.087	0.086	0.081	0.086	0.082
	(0.013)	(0.015)	(0.013)	(0.016)	(0.014)	(0.017)	(0.020)
	[0.013]	[0.015]	[0.014]	[0.016]	[0.014]	[0.016]	[0.018]
Joint *p*-value		0.59	0.011	0.81	0.40	0.20	0.33
R^2	0.14	0.17	0.20	0.23	0.21	0.25	0.25
Individual controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Municipal controls	No	No	Yes	Yes	Yes	Yes	Yes
Canton fixed effects	No	No	No	Yes	No	No	Yes
Language fixed effects	No	No	No	No	Yes	No	Yes
Dynasty fixed effects	No	No	No	No	No	Yes	Yes
Observations	262	262	262	262	262	262	262
Control group mean				0.43			

Notes. OLS estimates. Below the coefficient on historical democracy two standard errors are reported. The first row in parenthesis reports standard errors adjusted for clustering within municipality. The second row in square brackets reports standard errors adjusted for spatial clustering with a threshold of 100 Km (Conley 1999). The results are robust to alternative thresholds at 25 and 50 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. Column 4 includes fixed effects for cantons, column 5 for language, and column 6 for dynasty. Column 7 includes all three fixed effects. Joint *p*-value corresponds to that of the added covariates listed in the column heading; in column 7 it is for all the fixed effects. FE stands for fixed effects.

TABLE 5: INSTRUMENTAL VARIABLES ESTIMATES OF THE EFFECT OF
HISTORICAL DEMOCRACY ON CONDITIONAL COOPERATION

	Experience		Duration	
	No controls	Controls	No controls	Controls
	(1)	(2)	(3)	(4)
	Panel A. *First-Stage Estimates*			
	(Dependent variable: Historical Democracy)			
Zaehringen rule	0.391	0.397	2.201	2.204
	(0.057)	(0.066)	(0.292)	(0.319)
R^2	0.12	0.21	0.16	0.25
F-statistics	46.47	36.53	57.00	47.72
	Panel B. *Second-Stage Estimates*			
	(Dependent variable: Conditional Cooperation)			
Historical democracy	0.516	0.465	0.092	0.084
	(0.154)	(0.159)	(0.027)	(0.029)
R^2	0.12	0.20	0.13	0.20
Individual controls	No	Yes	No	Yes
Municipal controls	No	Yes	No	Yes
Observations	262	262	262	262

Notes. Instrumental variables estimates with robust standard errors 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.

TABLE 6: HISTORICAL DEMOCRACY AND CONDITIONAL COOPERATION:
MIGRANT SAMPLE

	Conditional cooperation	
	(1)	(2)
	Panel A	
Experience - birth	0.670	0.621
	(0.183)	(0.169)
Experience - residence		0.145
		(0.181)
R^2	0.58	0.58
	Panel B	
Duration - birth	0.127	0.113
	(0.039)	(0.036)
Duration - residence		0.049
		(0.037)
R^2	0.57	0.59
Individual controls	Yes	Yes
Municipal controls	Yes	Yes
Fixed effects	Yes	Yes
Observations	87	87

Notes. OLS estimates with standard errors clustered on the municipality of residence. 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 are for residence canton, language, and dynasty. Results hold when standard errors are clustered on both residence and birth municipalities.
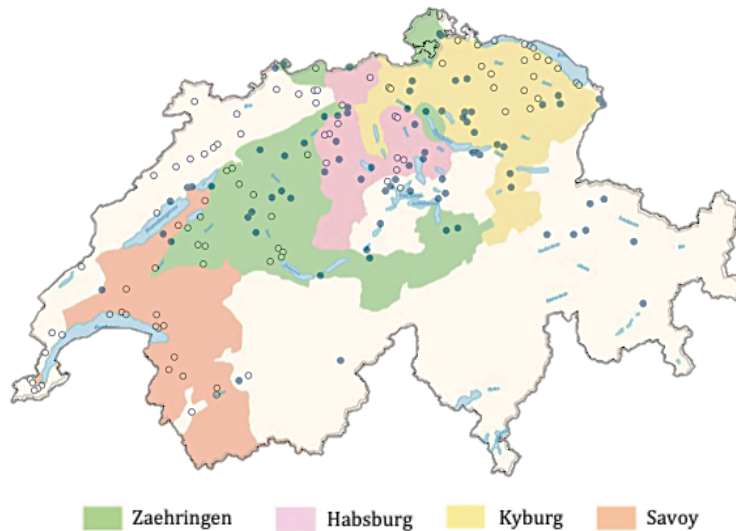
FIGURE 1. NOBLE DYNASTIES IN THE MIDDLE AGES AND
HISTORICAL EXPERIENCE OF DEMOCRACY

Notes. Figure 1 shows rough boundaries of areas under the control of four major noble dynasties in medieval Switzerland. The empty areas are mostly high Alps (south and east), Jura (west), and the canton of Ticino (south, excluded from the study). Solid circles are municipalities with historical experience of democracy, whereas empty circles are municipalities without. Areas under the Zaehringen rule include both imperial and allodial fiefs. The latter are mostly concentrated in the south. Source: Base map by Marco Zanoli, 2011.

A. RURAL AREAS   B. URBAN AREAS   C. SUBJUGATED AREAS
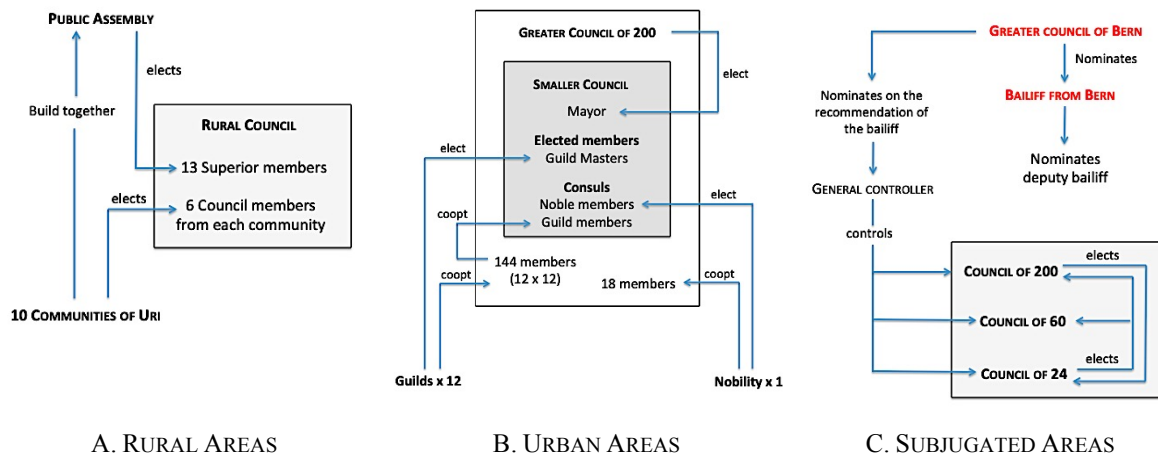
FIGURE 2. HISTORICAL FORMS OF DEMOCRACY

Notes. Panel A and B show simplified versions of historical forms of democracy that were typically in operation in rural and urban areas of Switzerland, respectively. Panel A shows governance in rural areas with historical democracy, such as Uri, was participatory, had equal representation of communities in the rural council, and there was also division of power. Panel B shows that the governing councils in urban areas with historical democracy, such as Zurich, involved participation from both nobles and merchants, who could elect and nominate members from their own community in fairly equal proportions to both smaller and greater councils. This meant division of power and constraint on the power of the elite from implementing policies exclusively in their favor. Panel C shows governance in subjugated areas without historical democracy, such as those in Vaud. In such 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. Source: based on figures in HLS.

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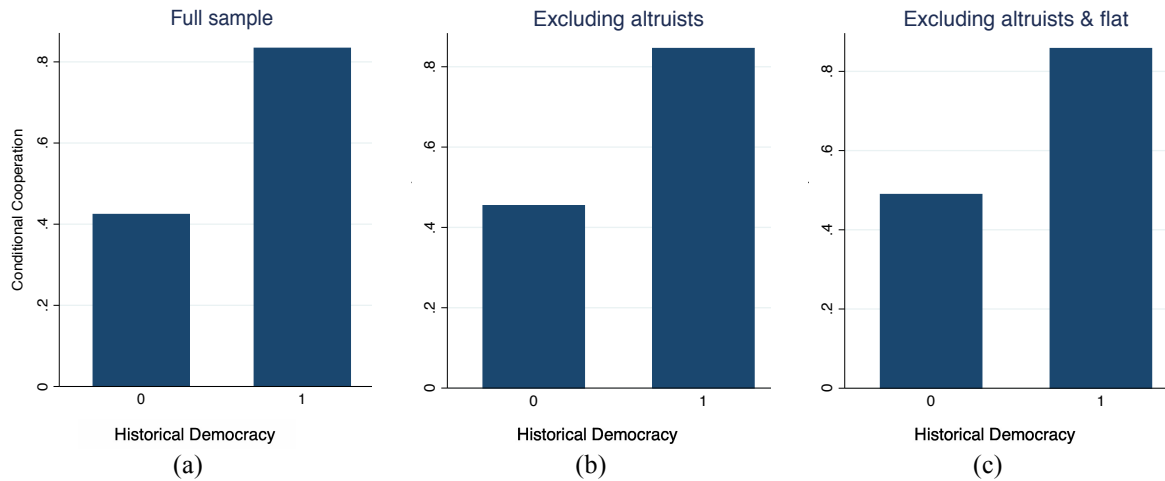
FIGURE 3. CONDITIONAL COOPERATION AND HISTORICAL EXPERIENCE OF DEMOCRACY

Notes. Conditional cooperation is measured as the Spearman correlation between self and other players' contribution in the public goods game. Panel (a) shows raw difference in conditional cooperation in the full sample across individuals from municipalities without and with historical experience of democracy. Panel (b) shows the same but after excluding altruists, and Panel (c) after excluding both altruists and flat contributors.
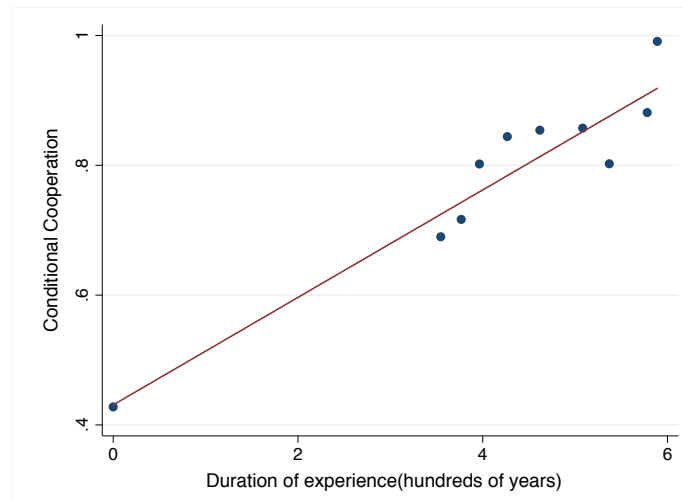
FIGURE 4. CONDITIONAL COOPERATION AND DURATION OF HISTORICAL DEMOCRACY

Notes. The figure shows a binscatter plot between conditional cooperation and historical experience of democracy. Conditional cooperation is measured as the Spearman correlation between self and other players' contribution in the public goods game. Duration of historical experience of democracy is measured in hundreds of years. There is a positive association between duration and conditional cooperation even in the treated sample of municipalities.
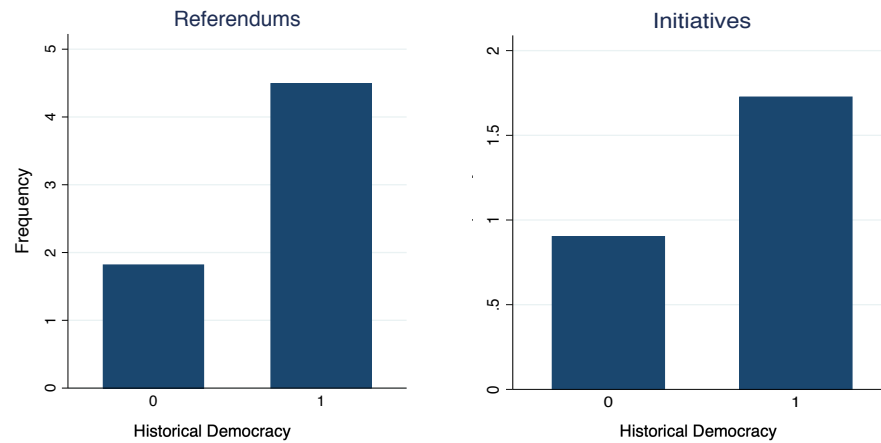
FIGURE 5. REFERENDUMS, INITIATIVES, AND HISTORICAL DEMOCRACY

Notes. The figure shows raw differences in the frequency of referendums and initiatives across treated and control group municipalities. Data are from surveys administered by Andreas Ladner in 2009 and 2016.
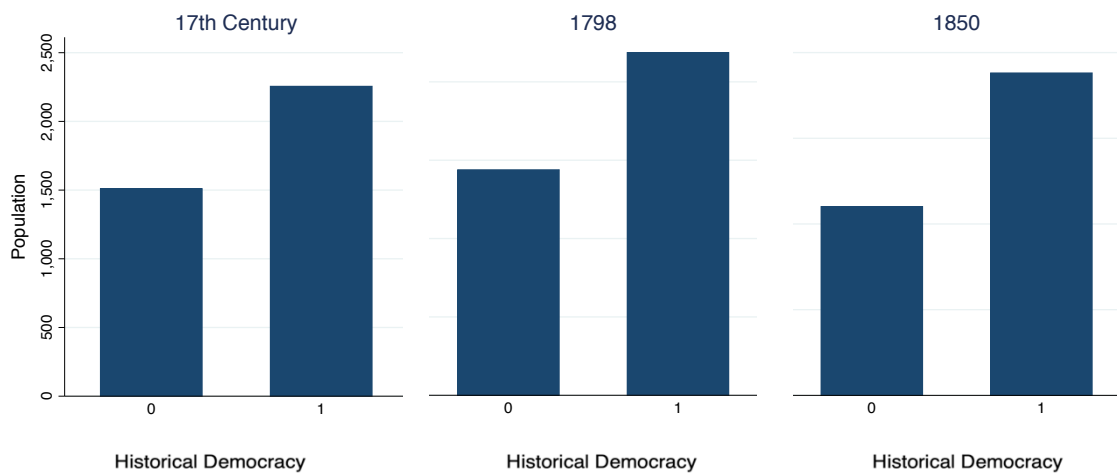
FIGURE 6. POPULATION AND HISTORICAL DEMOCRACY

Notes. The figure shows raw differences in population across treated and control group municipalities. It excludes population in 1900 and 2017 to save space. The results for these years are in Table A19. Data for 17th century and 1798 are from HLS, and 1850 from Swiss federal statistical office.
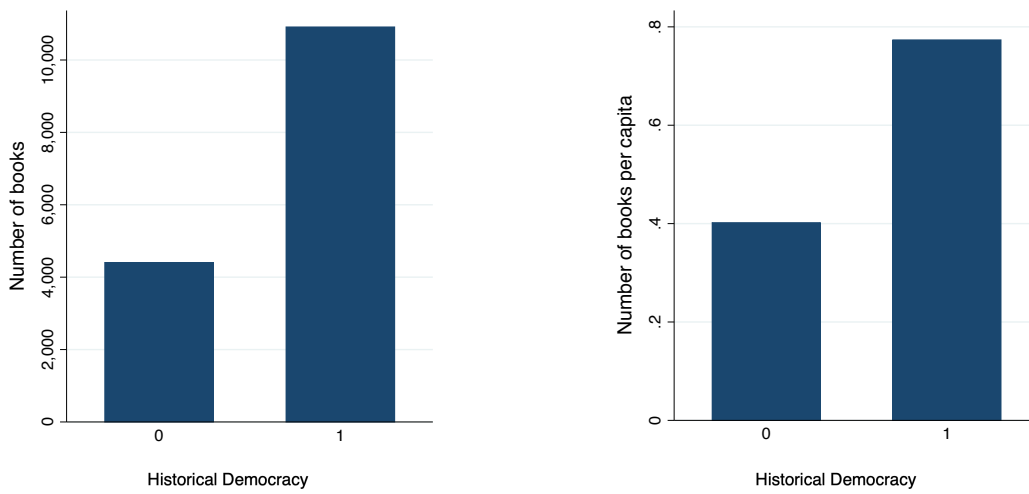
FIGURE 7. NUMBER OF BOOKS IN LIBRARIES AND HISTORICAL DEMOCRACY

Notes. The figure shows raw differences in number of books across treated and control group municipalities. Per capita estimates are adjusted for population size in 1850. Data are from Heitz (1872) for the year 1868
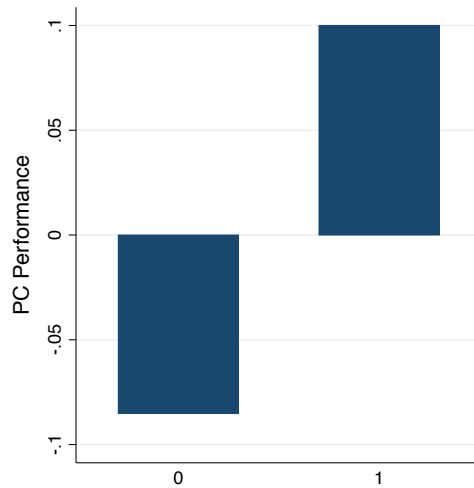
FIGURE 8. PERFORMANCE IN EXAMS AND HISTORICAL DEMOCRACY

Notes. The figure shows raw differences in performance on exams across treated and control group municipalities. PC Performance is the principal component of scores in exams in 1875. The scores are inverted so that higher scores reflect higher performance. Data are from Boppart et al. 2013 for the year 1875.

ONLINE APPENDIX

WAITING FOR NAPOLEON?

HISTORICAL DEMOCRACY AND NORMS OF COOPERATION

DEVESH RUSTAGI

APPENDIX A

I. SAMPLE CONSTRUCTION

In this section, I discuss the sampling strategy and also highlight the representativeness of the sample at both municipal and individual level.

A. *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 from the three main linguistic groups and 26 cantons of Switzerland. Of these, 303 individuals completed the experiment. After dropping Swiss Italians from the sample to avoid confounding with geographical and genetic differences, I am left with 262 individuals from 174 municipalities who participated in the study and 627 individuals from 344 municipalities who did not.[2] This implies a response rate of around 30 percent at the individual level and 34 percent at the municipal level. These participation rates do not differ by cantons either at the individual (p-value = 0.37) or at the municipal level (p-value = 0.58).

B. *Scope of selection at the municipal level*

Since historical democracy is measured at the municipal level, I test for representativeness of the sample in Table A1. Specifically, I compare the means of a number of important variables across municipalities that are not in the sample (column 1) with municipalities that are in the sample (column 2). Columns 3-5 report the difference in means, estimated using a regression

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[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. However, the shares are 100 percent if adult population only up to the age of 50 years is considered.
[2] Swiss Italians are confined to the canton of Ticino, which is to the south of the Alps, thereby creating geographical and genetic differences. For these reasons I exclude them. However, all the results hold even if I include them in the sample.

of each variable 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. Regardless of the specification, I find that the differences are small in magnitude and statistically insignificant. These findings suggest that municipalities in the sample are comparable to those that are not.

TABLE A1: COMPARISON OF MUNICIPAL LEVEL COVARIATES

	Means by Participation (s.d.)		Difference		
	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 OLS 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. Tertiary education is measured as the share of individuals with tertiary education in 2000 (data at the municipality level is not available for years after or before this date). 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 Bishop cities are already included in the sample. Water is excluded because these data are not readily available but were hand coded for treated municipalities. 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.

C. *Scope of selection at the individual level*

I also test for the scope of selection at the individual by comparing in Table A2 the means of a number of important covariates across individuals that are not in the sample (column 1) with those than are included 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 1 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 control 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 A2: COMPARISON OF INDIVIDUAL LEVEL COVARIATES
ACROSS PARTICIPANTS AND NON-PARTICIPANTS

| | Average by participation | | Difference | | |
| | 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.

II. DATA

Figure A1 shows the behavior of individuals classified into different types in the conditional decision of the experiment.
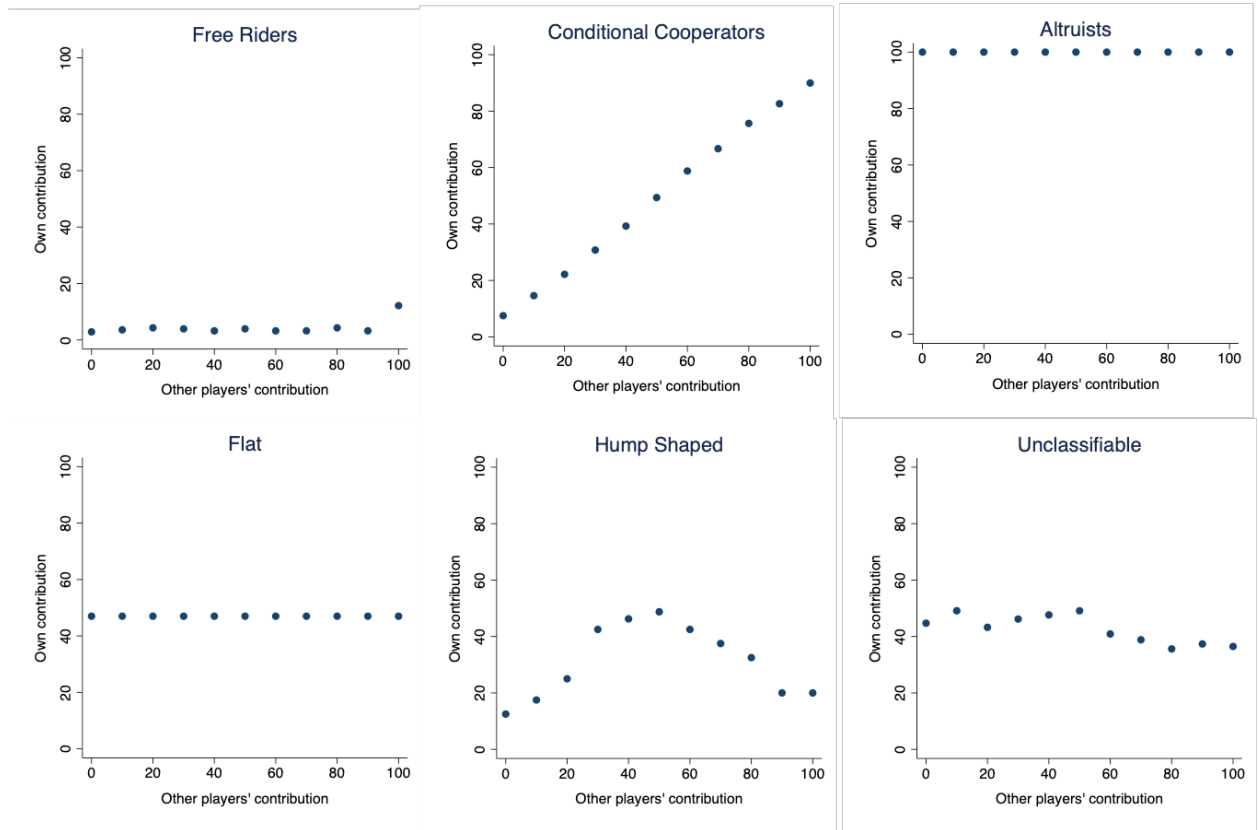
FIGURE A1: BEHAVIOR OF DIFFERENT PLAYER TYPES IN THE CONDITIONAL DECISION
OF THE PUBLIC GOODS GAME

III. MAIN RESULTS

Table A3 reports coefficients on covariates corresponding to the specification in column 3, Table 4 of the main paper. Table A4 shows that the coefficients on experience and duration are robust both in magnitude and significance after dropping one canton at a time. Table A5 shows the effect of historical democracy on conditional cooperation by different styles of democracy. Table A6 shows that effect of historical democracy on conditional cooperation is largely due to higher share of conditional cooperators and lower share of free riders.

	Dependent variable: Conditional Cooperation	
	Experience	Duration
Historical democracy	0.414	0.087
	(0.066)	(0.013)
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)
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 with robust standard errors clustered on the municipality in parentheses.

TABLE A4: HISTORICAL DEMOCRACY AND CONDITIONAL COOPERATION:
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 are OLS coefficients with robust standard errors clustered on the municipality in parentheses. Columns 3-4 are Instrumental variables estimates with roust standard errors in parentheses.

TABLE A5: HISTORICAL DEMOCRACY AND CONDITIONAL COOPERATION:
STYLES OF DEMOCRACY

	Dependent variable: Conditional cooperation
Historical democracy	
Rural areas	0.430
	(0.092)
Urban areas	0.440
	(0.088)
Individual covariates	Yes
Municipal covariates	Yes
R-squared	0.20
Observations	262

Notes. OLS coefficients with robust standard errors clustered on the municipality in parentheses. Historical experience of democracy is split according to the style of democracy that a municipality practiced. 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 A6: HISTORICAL DEMOCRACY,
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 coefficients 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.

IV. ROBUSTNESS CHECKS

Table A7 reports coefficients on experience (column 1-3) and duration (column 4-6) obtained after introducing additional controls at municipal level, individual level, and both together. The joint p-value is from a joint test of significance of the added covariates in the respective column. Table A8 reports coefficients on experience (Panel A) and duration (Panel B) in the sub-sample of municipalities that were under the common historical authority of the city-state of Bern. Table A9 reports results from the Swiss Household Panel (SHP), whereby the principal component of attitudes towards cooperation is the dependent variable.

TABLE A7: HISTORICAL DEMOCRACY AND CONDITIONAL COOPERATION

- ADDITIONAL CONTROLS

	Dependent variable: Conditional Cooperation					
	Additional municipal controls	Additional individual controls	All additional controls	Additional municipal controls	Additional individual controls	All additional controls
	(1)	(2)	(3)	(4)	(5)	(6)
	Experience			Duration		
Historical democracy	0.380	0.406	0.387	0.093	0.083	0.094
	(0.110)	(0.109)	(0.114)	(0.023)	(0.020)	(0.023)
	[0.100]	[0.099]	[0.103]	[0.021]	[0.018]	[0.021]
Additional municipal controls						
Soil	0.020		0.018	0.027		0.024
	(0.033)		(0.034)	(0.033)		(0.034)
Climate	0.006		0.007	-0.010		-0.008
	(0.091)		(0.090)	(0.091)		(0.091)
Distance	0.003		0.003	0.003		0.004
	(0.003)		(0.003)	(0.003)		(0.003)
Roman	0.145		0.148	0.111		0.114
	(0.128)		(0.128)	(0.126)		(0.125)
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	-0.039		-0.038	-0.051
		(0.076)	(0.081)		(0.077)	(0.080)
Swiss Migrant		0.007	0.006		-0.004	-0.006
		(0.083)	(0.083)		(0.082)	(0.082)
Comprehension		-0.048	-0.054		-0.037	-0.048
		(0.085)	(0.087)		(0.083)	(0.086)
Joint *p*-value	0.66	0.93	0.83	0.28	0.92	0.41
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 coefficients. Below the coefficient on historical democracy two standard errors are reported. The first row reports standard errors adjusted for clustering at the municipality level and the second row for spatial clustering with a threshold of 100 Km (Conley 1999). 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. Additional municipal level controls include soil, climate, distance from cantonal capital in the Middle Ages, Roman city, and population in the Middle Ages. Additional individual level controls include naturalized citizen, Swiss migrant, and game comprehension.

TABLE A8: HISTORICAL DEMOCRACY AND CONDITIONAL COOPERATION –

SUB-SAMPLE FROM THE CITY STATE OF BERN

	Dependent variable: Conditional Cooperation		
	No controls	Controls	Fixed effects
	(1)	(2)	(3)
	Panel A		
Experience	0.420	0.520	0.466
	(0.109)	(0.133)	(0.133)
	[0.106]	[0.120]	[0.114]
R^2	0.13	0.38	0.39
	Panel B		
Duration	0.087	0.109	0.098
	(0.023)	(0.027)	(0.026)
	[0.023]	[0.024]	[0.022]
R^2	0.13	0.38	0.39
Individual controls	No	Yes	Yes
Municipal controls	No	Yes	Yes
Fixed effects	No	No	Yes
Observations	71	71	71

Notes. OLS coefficients. Below the coefficients on experience and duration two standard errors are reported. The first row in parenthesis reports standard errors adjusted for clustering at the municipal level and the second row in square brackets reports standard errors adjusted for spatial clustering with a threshold of 100 Km (Conley 1999). 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.

TABLE A9: HISTORICAL DEMOCRACY AND ATTITUDES TOWARDS COOPERATION (SHP)

	Dependent variable: Principal Component of Attitudes towards Cooperation			
	No controls	Controls	Fixed effects	Additional controls
	(1)	(2)	(3)	(4)
	Panel A			
Experience	0.281	0.299	0.185	0.194
	(0.095)	(0.075)	(0.104)	(0.117)
	[0.095]	[0.076]	[0.101]	[0.108]
R^2	0.01	0.07	0.10	0.11
	Panel B			
Duration	0.051	0.058	0.037	0.054
	(0.021)	(0.015)	(0.022)	(0.027)
	[0.021]	[0.015]	[0.021]	[0.025]
R^2	0.01	0.07	0.10	0.11
Individual controls	No	Yes	Yes	Yes
Municipal controls	No	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes
Additional controls	No	No	No	Yes
Observations	1859	1859	1859	1859

Notes. OLS coefficients with standard errors adjusted for clustering 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. Fixed effects include canton, language, and historical dynasty. Additional controls include soil, climate, latitude, longitude, Roman, distance from cantonal capital, and population in the Middle Ages.

V. INSTRUMENTAL VARIABLES ESTIMATES

Table A10 reports OLS and instrumental variables (IV) estimate that exploit variation in historical democracy within the areas covered by the Zaehringen rule, namely, their allodial and imperial fiefs. This permits a tighter control over the exclusion restriction that the Zaehringen rule directly affected norms of cooperation. Table A11 shows OLS and IV estimates from the sub-sample of the canton of Bern, which holds canton specific factors fixed. Table A12 shows that IV estimates are robust to using the sub-sample of Bern city-state (column 1) and alternative measures of norms of cooperation using SHP sample (column 2).

TABLE A10: OLS AND INSTRUMENTAL VARIABLE ESTIMATES
ZAEHRINGEN SUB-SAMPLE (ALLODIAL AND IMPERIAL PROPERTIES)

	Dependent variable: Conditional cooperation	
	OLS	IV
	(1)	(2)
	Panel A	
Experience	0.489	0.534
	(0.127)	(0.266)
F-statistics		63.78
	Panel B	
Duration	0.099	0.106
	(0.025)	(0.052)
F-statistics		51.40
Individual controls	Yes	Yes
Municipal controls	Yes	Yes
Observations	81	81

Notes. Column 1 reports OLS estimates with robust standard errors clustered on the municipality. Column 2 reports IV estimates with robust standard errors 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.

TABLE A11: OLS AND INSTRUMENTAL VARIABLE ESTIMATES
SUB-SAMPLE FROM THE CANTON OF BERN

	Dependent variable: Conditional cooperation	
	OLS	IV
	(1)	(2)
	Panel A	
Experience	0.486	0.530
	(0.226)	(0.266)
F-statistics		34.82
	Panel B	
Duration	0.105	0.115
	(0.050)	(0.064)
F-statistics		35.18
Individual controls	Yes	Yes
Municipal controls	Yes	Yes
Observations	42	42

Notes. Column 1 reports OLS estimates with robust standard errors clustered on the municipality. Column 2 reports IV estimates with robust standard errors in parentheses. Individual controls include age, education, male, log household income, Catholic, and center. Municipal controls include altitude, navigable waterways in the Middle Ages, and Gini of income.

TABLE A12: INSTRUMENTAL VARIABLE ESTIMATES: ROBUSTNESS CHECKS

	Conditional cooperation	Principal component of attitudes towards cooperation
	City-state of Bern (2)	SHP Sample (3)
	Panel A	
Experience	0.584	0.281
	(0.261)	(0.123)
F-statistics	23.58	681.52
	Panel B	
Duration	0.121	0.056
	(0.054)	(0.024)
F-statistics	24.35	646.97
Individual controls	Yes	Yes
Municipal controls	Yes	Yes
Observations	71	1859

Notes. IV estimates with robust standard errors 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 uses sub-sample from the city-state of Bern and column 2 uses data from SHP.

VI. PLAUSIBLE CHANNELS

A. *Duration of the feedback loop*

Table A13 shows that the effect of duration is positive and significant even in the sample of treated municipalities.

TABLE A13: EFFECT OF DURATION IN THE SAMPLE OF MUNICIPALITIES WITH HISTORICAL EXPERIENCE OF DEMOCRACY

	Dependent variable: Conditional cooperation
Duration	0.070
	(0.035)
R^2	0.17
Individual controls	Yes
Municipal controls	Yes
Observations	143

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. The table excludes observation without the historical experience of democracy.

B. *Functioning of democratic institutions*

Table A14 shows that the frequency of referendums and initiatives is two times higher in treated municipalities. The standard errors are clustered both on municipalities and cantons. Note that these data are not available for all municipalities in the sample. I verify that the effect of historical democracy on conditional cooperation holds in the sample of municipalities for which this data is available.

TABLE A14: FREQUENCY OF REFERENDUMS, INITIATIVES, AND
HISTORICAL EXPERIENCE OF DEMOCRACY

	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
Control group mean		1.36		1.82	0.90

Notes. OLS estimates with standard errors clustered on municipalities and cantons in parentheses. Data on the dependent variable are from Andreas Ladner for years 2009 and 2016. Data on control variables are from the Swiss federal statistical office. Controls variables are at the municipal level from the year that is closest 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 the share of individuals with tertiary education and share of Catholics are available at the municipality level only for the year 2000. The closest dates for which data on education and income are available at the municipal level include 2010 and 2014. Wherever listed, the regressions include year fixed effects. The results hold when standard errors are clustered only at the municipal level.

Table A15 uses data from the Swiss Household Panel (wave 11) to show that individuals from treated municipalities show stronger trust in government and stronger support for democracy.

TABLE A15: TRUST IN GOVERNMENT, SUPPORT FOR DEMOCRACY,
AND HISTORICAL EXPERIENCE OF DEMOCRACY

	Dependent variable:			
	Trust in Government		Support for Democracy	
	No controls	Controls	No controls	Controls
	(1)	(2)	(3)	(4)
	Panel A			
Experience	0.356	0.349	0.448	0.403
	(0.110)	(0.107)	(0.100)	(0.095)
R^2	0.01	0.03	0.01	0.05
	Panel B			
Duration	0.066	0.064	0.091	0.081
	(0.021)	(0.021)	(0.018)	(0.018)
R^2	0.01	0.03	0.01	0.05
Individual controls	No	Yes	No	Yes
Municipal controls	No	Yes	No	Yes
Observations	1859	1859	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. Data are from the SHP.

C. *Economic prosperity and education*

Tables A16-A19 show that treated municipalities experienced higher economic prosperity and investments in education that control group municipalities.

In these tables, the dependent variables in most of the columns are from the distant past but in the others from a more recent period. It might not make sense to include contemporaneous measures of education or income when the dependent variable is from the past. Therefore, in line with previous studies in economic history, I show results with a set of controls that can be considered exogenous, such as proxies of religion (catholic), geography (navigable waterways, altitude), and past economic development (Bishop city). These controls are relevant and correlated with the dependent variable in expected ways. For instance, Bishop city is positively correlated with population size in various periods, as well as performance in exams and number of books in a library, where the correlation of these variables with altitude is negative.

Nonetheless, it is important to note that the results hold even when I consider contemporaneous proxies of education, income, inequality, and vote share of left wing and

center parties. In fact, they become slightly larger in magnitude as well as significance. These results are available upon request.

Table A16 shows that treated municipalities were nearly 50 percentage points more populous than control group municipalities in the past and continue to do so even until today.

TABLE A16: POPULATION IN PERIODS BEFORE AND AFTER THE INVASION BY NAPOLEON AND HISTORICAL EXPERIENCE OF DEMOCRACY

	Dependent variable: Log Population in the year				
	1600-1700	1798	1850	1900	2017
	(1)	(2)	(3)	(4)	(5)
	Panel A				
Experience	0.804	0.523	0.485	0.448	0.520
	(0.289)	(0.190)	(0.160)	(0.187)	(0.179)
R^2	0.33	0.25	0.19	0.20	0.27
	Panel B				
Duration	0.219	0.146	0.135	0.137	0.138
	(0.063)	(0.044)	(0.039)	(0.047)	(0.044)
R^2	0.39	0.28	0.22	0.22	0.29
Controls	Yes	Yes	Yes	Yes	Yes
Observations	57	135	174	174	174

Notes. OLS coefficients with robust standard errors in parentheses. Control variables include catholic, navigable waterways in the Middle Ages, altitude, and bishop city. Results are robust to controlling for contemporaneous measures of income, education, Gini of income, and vote share of left and center parties. Data on population size in 1600-1700 and 1798 are from municipality specific articles in HLS; data on population size in 1850, 1900 and 2017 are from Swiss federal statistical office.

Table A17 shows that treated municipalities have higher share of workforce in the tertiary sector. Note that the regressions always control for the share of workforce in the secondary sector.

TABLE A17: SHARE OF WORKFORCE IN THE TERTIARY SECTOR
AND HISTORICAL EXPERIENCE OF DEMOCRACY

	Dependent variable: Share of workforce in tertiary sector				
	1970	1980	1990	2000	2013
	(1)	(2)	(3)	(4)	(5)
	Panel A: *Full set of controls*				
Experience	0.045	0.028	0.018	0.016	0.035
	(0.016)	(0.014)	(0.011)	(0.007)	(0.017)
R^2	0.44	0.50	0.55	0.64	0.61
	Panel B: *Full set of controls*				
Duration	0.011	0.006	0.004	0.003	0.007
	(0.004)	(0.003)	(0.003)	(0.002)	(0.004)
R^2	0.45	0.50	0.55	0.64	0.61
Controls	Yes	Yes	Yes	Yes	Yes
Observations	174	174	174	174	174

Notes. OLS coefficients with robust standard errors in parentheses. Control variables include catholic, navigable waterways in the Middle Ages, altitude, and bishop city. Results are robust to controlling for contemporaneous measures of income, education, Gini of income, and vote share of left and center parties. Data are from Swiss federal statistical office.

Table A18 shows that treated municipalities had higher number of books in libraries with at least 6000 books in 1868.

TABLE A18: NUMBER OF BOOKS IN LIBRARIES IN 1868
AND HISTORICAL EXPERIENCE OF DEMOCRACY

	Dependent variable			
	Log number of books		Log number of books per capita	
	Experience	Duration	Experience	Duration
	(1)	(2)	(3)	(4)
Historical democracy	1.331	0.475	0.506	0.181
	(0.759)	(0.200)	(0.300)	(0.078)
R^2	0.25	0.27	0.24	0.26
Controls	Yes	Yes	Yes	Yes
Observations	174	174	174	174

Notes. OLS coefficients with robust standard errors in parentheses. Control variables include catholic, navigable waterways in the Middle Ages, altitude, and bishop city. Results are robust to controlling for contemporaneous measures of income, education, Gini of income, and vote share of left and center parties. Log number of books per capita is obtained after adjusting for population in 1850. Data on the number of books are from Heitz (1872).

Table A19 shows that the performance of conscripts in exams is significantly higher in treated municipalities.

TABLE A19: PERFORMANCE OF CONSCRIPTS IN 1875
AND HISTORICAL EXPERIENCE OF DEMOCRACY

	Dependent variable: Performance in exam on				
	Lecture	Comprehension	Math	Geography	PC Performance
	(1)	(2)	(3)	(4)	(5)
	Panel A				
Experience	0.151	0.089	0.162	0.074	0.571
	(0.048)	(0.055)	(0.058)	(0.062)	(0.244)
R^2	0.35	0.41	0.28	0.33	0.36
	Panel B				
Duration	0.033	0.022	0.034	0.018	0.129
	(0.011)	(0.013)	(0.014)	(0.015)	(0.058)
R^2	0.35	0.41	0.28	0.33	0.36
Controls	Yes	Yes	Yes	Yes	Yes
Observations	174	174	174	174	174

Notes. OLS estimates with robust standard errors in parentheses. Control variables include catholic, navigable waterways in the Middle Ages, altitude, and bishop city. Results are robust to controlling for contemporaneous measures of income, education, Gini of income, and vote share of left and center parties. The dependent variables in column1-5 are measured at the district level. PC Performance in column 5 is the principal component of the four scores. Data are from Boppart et al. (2013).

D. *Migration*

Table A20 shows the effect of historical democracy on conditional cooperation after accounting for migration rates in the period 1800-1900. Column 1 reports result from the overall sample, whereas column 2-3 report results from sample below and above the median migration rates.

TABLE A20: HISTORICAL EXPERIENCE OF DEMOCRACY,
CONDITIONAL COOPERATION, AND MIGRATION RATES

	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, Bishop city, and Gini of income. Data for two municipalities is not available. Data on migration are computed on the basis of the register of Swiss family names with citizenship in a Swiss municipality made available by HLS.

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 <u>without consulting anyone else</u>.

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 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			