



# The Clash of Brothers: Wars to Avoid Diffusion in a Contagious World

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The Clash of Brothers:  
Wars to Avoid Diffusion in a Contagious World

A dissertation presented

by

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to

The Department of Political Economy and Government

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

in the subject of

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## The Clash of Brothers: Wars to Avoid Diffusion in a Contagious World

### Abstract

My dissertation explores macro-level questions in Political Economy. Using the toolbox of Economics, I find a new reason for international conflict: cultural similarity. Two culturally similar nations may have very different political regimes (e.g. the two Koreas). The cultural similarity encourages citizens to compare the different political regimes, which in turn threatens a dictator. I formalize this process of political contagion in an infinitely-repeated bargaining model and show that more cultural similarity gives a politically-threatened dictator greater incentive to start a war against a democracy. The leader wants to ensure that his citizens see the other nation as an enemy rather than a role model. I test the implications of my model using cross-national statistical analysis, historical case studies, and text analysis. My cross-national statistical data set combines cultural similarity measures of up to  $200 \times 200$  country pairs with data on wars among these nations between 1816 and 2008. In panel regressions which include country-pair fixed effects, I find that when two countries share culture (measured by religion, race, and civilization), but differ in their political institutions, they are up to 80% more likely to fight a war. My results are stronger between physically distant country-pairs, which suggests that cultural affinity is not mismeasured physical proximity but a distinct factor in wars. I complement my analysis by considering an extension of my theory to domestic conflict, and by exploring the implications of wars creating shared identity.

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To my family.

# Introduction

This book explores macro-level questions about war, culture, and regime change, using an economic framework. Political institutions have greater propensity to spread between culturally-similar countries, which implies that elites in repressive regimes feel threatened by a country with shared culture where the citizens are empowered. This threat can lead to international conflict. The example of the two Koreas illustrates such a case vividly. North Korean citizens are most likely to push for change when they are inspired by a democracy with shared culture such as South Korea. As a result, North Korean dictators work to prevent their citizens from learning about South Korean democracy. Thus conflict is most likely when two countries share culture, but differ in their political institutions (most typically a contrast between a repressive regime and a more democratic one). I build an infinitely-repeated bargaining model to generalize the case of the two Koreas to any pairs of politically-different countries, and test my model on a panel data set of wars, as well as with historical and quantitative case studies.

In a stylized version of my model, the main representative actors are a dictator and his citizens. Each period they bargain over the wealth of the country. The citizens may violently reject the dictator's offer in a costly revolution and then set up a new political system with a stochastic outcome for wealth. Every period citizens may also try to observe the outcome of the particular policy chosen by the democracy abroad. Observing that the other country is successful increases the value of revolution as the citizens can replicate the flourishing democracy. Hence the dictator has an incentive to prevent such learning. Cultural similarity

amplifies this mechanism as learning becomes easier for the citizens.

My model elaborates on several further important dimensions. I assume that every period the cost of revolution is either low or prohibitively high, following standard models of democratization.<sup>1</sup> The dictator only has an incentive to redistribute resources to the citizens in periods when the cost of revolution is low, and in the Markov Perfect Equilibrium the dictator cannot commit to yield any wealth in low-pressure periods. This means the dictator cannot stay in power without a war if revolution is very cheap in the high-pressure periods. In such a case, the citizens cannot be placated by current transfers because they know that if they overthrow the dictator in this period in a costly democratic revolution, they lock in a higher share of the resources for themselves forever. War in this case is particularly appealing to the dictator as long as it allows him to cling on to power. I also generalize my model by adding alternative tools for the dictator to stay in power (repression, hostility-seeking), two-sided social learning, more countries, more general timing structure and additional mechanisms (emigration, altruism).

My model yields several interesting comparative statics beyond my main finding that greater cultural similarity leads to a higher likelihood of war in the presence of institutional differences. I find that wars described in my theory occur in dictatorships where the dictator is insecure (i.e. revolution is cheap). War is costly for both sides, so it only occurs if the dictator would be overthrown without it. Otherwise, a peaceful Coasian bargaining solution between the two countries exists. However, this peaceful solution disappears when a regime change is inevitable without a war. A further interesting finding is that wars are started by dictators who only face revolutionary pressure infrequently. In such a dictatorship, the citizens push hard to oust the dictator in the infrequently-recurring periods when they are able to organize. Therefore the dictator has a greater incentive to lower pressure on himself by eliminating the other country.

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<sup>1</sup>The democratization side of my argument builds on ideas in Acemoglu and Robinson 2000, 2001, and 2006.

I test the implications of my model extensively. First, I use cross-national statistical analysis to show the generality of my theory. The data I use covers the last two centuries and all countries. Second, three historical case studies complement my statistical analysis. These examples give detailed evidence, which confirms that in many historical instances, leaders think alongside the logic of my model. Finally, I also explore how the dictator paints an enemy image of a country that could serve as an example to the dictator's citizens. The three empirical approaches therefore complement each other.

The cross-national statistical analysis builds on a data set that combines cultural similarity measures and war-proneness data on all country-pairs between 1816 and 2008. Each observation in my unbalanced panel data set is a pair of countries in a given year. The cultural data set consists of different measures of cultural similarity, comprising two groups: broad and fine-grained measures. The variables in the broad group are based on civilization, religion, and race, which are all visible cultural similarity measures that act as channels for social learning.<sup>2</sup> The fine-grained group consists of questions about different aspects of culture from the World Values Survey. Some are about political attitudes toward institutions, some are about the ease of communication, and some are about non-political elements of culture.

I confirm my hypothesis that the most war-prone countries share culture but differ politically. I control for the usual covariates and use country-pair fixed effects to capture time-invariant unobserved heterogeneity such as geographic proximity and ease of interaction. I perform a number of robustness checks: I employ non-linear machine learning tools, use different measures for the dependent and the independent variables, change specifications, use lagged terms, address endogeneity, and the results remain the same. My results are stronger between physically distant country-pairs, which reinforces my argument that cultural affinity is not simply mismeasured physical proximity but a distinct factor in wars.

I also test a number of secondary hypotheses. Cultural similarity in political values and

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<sup>2</sup>E.g. Simmons and Elkins 2004, Rogers 1995.

beliefs should matter most for social learning, and I indeed find positive correlations between visible cultural similarity and political orientations. I also show that the dictatorship is more likely to initiate the conflict in the presence of institutional differences and cultural similarity. Moreover, I test my mechanism. I create a domestic pressure variable through the concept of social learning: for each country in each year, I calculate the average excess growth rate abroad in culturally-similar but institutionally-different countries. I show that culturally-similar and institutionally-different countries go to war when pressure in one of them is high. Next, I estimate the occurrence of democratization and wars jointly and show that domestic pressure raises both the probability of democratization as well as that of wars. I then show that changing the dependent variable to domestic repression leaves the results unchanged - wars and repression usually occur together. Finally, I show that hostility occurs when domestic repression happens infrequently, just as predicted by my model.

The cases I use show that wars have historically often occurred in the manner predicted by my model. These cases also illustrate that many political institutions other than democracy are subject to anti-diffusional wars. When Russia invaded Hungary in 1849, it was in order to stem inspiration from a democratic regime. When Austria-Hungary invaded Serbia in 1914, triggering the First World War, Vienna tried to stem the diffusion of an ethnically-Serb-dominated regime. Finally, when Iraq invaded Iran in 1980, one of the primary motivations of Saddam Hussein was to extinguish the Islamist regime there.

Then I show the manner in which the dictator paints an enemy image of a potentially inspirational democratic regime through the quantitative text analysis of dictatorial propaganda. I use two current East Asian cases to explore this question. First I analyze how the North Korean regime portrays South Korea. I show that words that have negative connotations and make life in South Korea appear appalling increase after South Korea democratizes in 1987. Second I use the case of Chinese propaganda against Japan in the Diaoyu island dispute. I contrast Beijing's portrayal of the Japanese government with Seoul's depiction, and show that only the Chinese regime talks about Shinzo Abe's regime in dictatorial terms.

My work fits into the larger literature on the political economy of institutions. My findings contribute to the little existing research on cultural factors as a source of interstate wars, which has mixed or weak findings.<sup>3</sup> Most recently Spolaore and Wacziarg 2012 use genetic distance instead of broader cultural similarity and find that genetic proximity is associated with war-proneness. Spolaore and Wacziarg 2012 build an evolutionary model to account for this finding, where they assume that genetic proximity implies a larger number of issues to fight over. But the work of Spolaore and Wacziarg 2012 ignores the role of political institutions, which shape the impact of culture on war-proneness.

I also seek to make contributions to the bargaining literature on the causes of war and peace. This literature asks the question of why war occurs even though it is inefficient as it is costly for both sides. I find a new explanation for this war puzzle: the dictator's inability to redistribute resources to the citizens in low-pressure periods. Although the commitment problem has been cited as a primary cause of wars in the existing literature,<sup>4</sup> in my model the commitment problem arises in a novel way. It revolves around a ruler's inability to make credible promises to his citizens, and not his inability to commit to refraining from projecting power. Existing commitment explanations of inefficient wars often fail to address a theoretical shortcoming: in order to avoid war, a state could destroy material resources that lead to higher long-term growth rates and/or to offensive advantages. By contrast, my theory does not suffer from this problem as states cannot destroy their inspirational ability.

The final literature my paper contributes to analyzes cultural relations as sources of wars in International Relations. The best-known work on culture and war is Huntington's clash of civilizations thesis,<sup>5</sup> which argues that the post-Cold War world is characterized by more fighting between countries which belong to different civilizations. In Huntington's

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<sup>3</sup>Huntington 1993, Huntington 1996, Henderson 1998, Russett, Oneal and Cox 2000, Chiozza 2002, Gartzke and Gleditsch 2006.

<sup>4</sup>Fearon 1995, Powell 1999, Garfinkel and Skaperdas 2000, Powell 2006 and Garfinkel and Skaperdas 2007 (Part 5).

<sup>5</sup>Huntington 1993, Huntington 1996

theory, political institutions are so deeply embedded into his cultural concept of civilization that his theory does not take into account those countries that share cultural similarity but not political institutions. I define inspiration less inclusively by focusing solely on political institutions, separately from culture. Nye's work (2004) on soft power as the ability to influence the behavior of others to get the outcomes you want through attraction is more clear about the content of inspiration, but he does not clarify whether citizens, the elite or certain leaders are the sources/recipients of inspiration.

This book explores a source of war that has not been studied deeply, yet wars are multifaceted and in any given instance multiple causes jointly lead to conflict. My regression analysis allows me to control for other factors that we understand to lead to hostility such as physical proximity, domestic political institutional considerations, capabilities, and economic variables. My regression results show that cultural space in combination with differences in political institutions is a key source of wars in addition to these other factors.

In the last part of my dissertation, I explore two extensions of my model's ideas. First, the question arises: is my theory applicable to the case of one country, rather than to a conflict between two countries? I adapt my model to describe the interaction between two elites, which compete for the loyalty of their citizens. I illustrate the model's findings with the actions of different ethnic groups during the 1848 revolutions in the Austrian Empire.

The second topic is to see whether wars may affect shared identity as well. In the first part of my book, I only analyze whether shared identity can affect war-proneness, but the reverse question is also interesting to explore. I build a new model to show that over the horizon of centuries, shared war experience for countries fighting on the same side in a conflict leads to shared identity. This shared identity subsequently leads to institutional diffusion (e.g. democratization). I use cross-national data on democratization to support the findings of my theory, as well as an illustrative case study.



# Chapter 1

## A Game-Theoretic Model

I start by laying out the theory that formalizes my ideas. A game-theoretic model is a convenient way to precisely capture the interactions of strategic actors: dictators and citizens. By building the model, I can derive formalized predictions that I can later test through my multi-pronged empirical approach.

### 1.1 Theoretical Framework and Concepts

First, I discuss the concepts of culture and institutions as I use them in this book, in which I follow the Political Economy literature (e.g. Guiso, Sapienza and Zingales 2006, Guiso, Sapienza and Zingales 2009). Culture consists of deep-held beliefs in a society, while political institutions are the political rules and regulations in a country (e.g. parliament, constitution). The key difference between the two concepts is that while culture (deep-held values and beliefs) in a society generally evolves slowly, political institutions can change sometimes overnight (e.g. the 1989 revolutions in Central-Eastern Europe). The rest of this section can easily be skipped for the uninterested reader. In what follows, I lay out more precise considerations of culture and institutions.

How do we know that two countries are culturally similar in a consequential way? Previous research finds that cultural markers that aid international diffusion are highly visible

(Simmons and Elkins 2004). Examples are religion, ethnicity and race. Visibility matters because of cognitive heuristics (Kahneman and Tversky 1973, Kahneman, Sovic and Tversky 1982). Weyland (2006) describes three cognitive shortcuts in his study on the diffusion of Latin American welfare institutions: availability, representativeness, and anchoring. The availability heuristic captures people's tendency to "place excessive importance on information that - for logically accidental reasons - has special immediacy, strikingness, and impact, that grabs their attention" (Weyland 2006, p.47). Highly visible shared cultural markers make the example of a country immediate and striking. The representativeness heuristic makes people draw excessively clear and confident conclusions based on the available information. Finally, due to anchoring people fail to adapt the copied information to their specific needs.

I argue it is not irrational, just boundedly-rational for individuals to emulate countries with visible cultural proximity. Citizens use visible identity as a proxy for the relevance of the information coming from the other country to the political processes and outcomes in their own country (e.g. Huntington 1991, pp.102-3). I assume citizens believe that the success of an uprising and the success of democracy in their own country depend on their political culture.<sup>1</sup> Because citizens lack time and cognitive capacity to explore the political cultures of other countries, they rely on the shortcut of visible shared identity markers. If two countries are characterized by similar political culture, the citizens of one country can learn more from the other country about the performance of democracy. This holds even if political culture gradually evolves over the long run. Any change in political culture in an originally similar democracy contains relevant information for the dictatorship about how political culture would evolve if this dictatorship turned democratic.

For a more refined view of what parts of cultural similarity are relevant for my theory, I focus on political culture: beliefs and values about politics. Following Almond and Verba

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<sup>1</sup>Political culture is defined as views on the "nature of the political game played, on proper modes of conduct, and on goals and strategies." (Elkins and Simeon 1979, p.132)

1963,<sup>2</sup> I define political culture as a “particular distribution of patterns of orientation toward political objects among the members of a nation” (p.13), which includes knowledge, beliefs, feelings, judgments and opinions about politics (p.14). By political objects, Almond and Verba (1963) mean (1) roles and structures such as legislative bodies, (2) incumbents of such roles such as particular monarchs, (3) particular decisions, policies and their enforcement (p.14). As my theory describes institutional fit with a certain culture, the relevant part of political culture are the particular distribution of patterns of orientation toward roles and structures. Notice that even if political culture is important for my theory, this is distinct from political institutions. Political values and beliefs cannot be changed by leaders immediately, while new constitutions and institutional systems can be easily adopted overnight.

Are there meaningful differences in political culture among countries? Inglehart and Welzel (2010) argue that there are. Some illustrative evidence is found in specific questions of the World Values Survey. According to conventional wisdom, Confucian societies often value loyalty and authority. Let us look at democratic countries, so that we can make sure respondents express preferences more or less unconstrained. The percentage of those who think it would be good or very good to have a strong leader<sup>3</sup> is 33% in France, 28% in Britain, 14% in Italy; 47% in South Korea; 60% in Taiwan and 24% in Japan. In response to whether the respondent had recently attended peaceful/lawful demonstrations<sup>4</sup> 20.6% of

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<sup>2</sup>Almond and Verba (1963) investigate how political culture differs in the US, the UK, Germany, Italy, and Mexico. They describe three archetypes of political culture. The first one, parochial culture, is characterized by passive and distant citizens. The second one, the subject culture, involves citizens who are aware, but have little scope for dissent. In the third one, the participant culture, citizens are both aware and active.

<sup>3</sup>Question asked between 2005-7. Exact question: “V148.- I’m going to describe various types of political systems and ask what you think about each as a way of governing this country. For each one, would you say it is a very good, fairly good, fairly bad or very bad way of governing this country? Having a strong leader who does not have to bother with parliament and elections” Possible answers: “1 Very good, 2 Fairly good, 3 Bad, 4 Very bad, -1 Don’t know, -2 No answer, -3 Not applicable, -4 Not asked in survey, -5 Missing; Unknown”

<sup>4</sup>Question asked between 2005-7. Exact question: “V102.- Have you or have you not done any of these activities in the last five years? ((Read out and code one answer for each) action): Attending peaceful/lawful demonstrations.” Possible answers: “1 Have done, 2 Not done, -1 Don’t know, -2 No answer, -3 Not applicable, -4 Not asked in survey, -5 Missing; Unknown”

French, 54.1% of Britons, 12.8% of Dutch, 11.3% of Americans said yes, while only 2.9% of Japanese, 11.2% of South Koreans and 7.4% of Taiwanese said they did so.

I build on Inglehart and Welzel's (2005) research in capturing the content of political culture. In some of the quantitative test of my theory, in addition to specific individual questions I use both their rational-secular values and their self-expression values for my analysis. These aggregate indices are developed by Inglehart and Welzel based on factor analysis of public responses to questions on social and political values. These two dimensions tap important values, explaining 71 percent of total cross-national variation (p.49).

Although rational-secular and self-expression values go beyond political values to capture broader social values, they also reflect the essence of political values. The first dimension, secular-rational values has traditional values as its opposing pole. Traditional values emphasize the importance of religion, and deference to the authority of God, fatherland and family, emphasize social conformity and rarely discuss politics (p.52). The traditional pole could be paired up with Almond and Verba's parochial culture. The self-expression versus survival dimension "taps a syndrome of tolerance, trust, emphasis on subjective well-being, civic activism, and self-expression that emerges in postindustrial societies with high levels of existential security and individual autonomy." (p.52). Survival values emphasize economic and physical security and people feel threatened by foreigners, ethnic diversity, non-traditional gender roles. Survival values sound like the subject culture, while a participant culture would combine rational-secular and self-expression values. Later I will also work with specific questions about patterns of orientation toward political institutions in general, and democracy in particular.

Not only Almond and Verba's different political culture concepts, but Huntington's civilization zones also correlate with both rational-secular values and survival-self-expression values to a large extent. Cultural zone membership is especially important in shaping traditional/secular-rational values (p.83). Overall, cultural zone membership alone explains 59 percent of the variance of the two value dimensions.

After seeing that political culture is about orientations toward politics, now let us turn to institutions more precisely. I will use the Northian (North 1990) definition of institutions: “institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction.” Thus an important difference between culture and institutions is that institutions can be changed/adopted by humans, whereas culture evolves. Yet informal institutions constitute a gray area. Beliefs and values that are hard to change belong to culture in this paper. Huntington himself includes these softer concepts in institutions in *Political Order in Changing Societies* when defining institutions as “behavioral manifestation of the moral consensus and mutual interest” (p.10). When it comes to norms, a useful way to decide whether they form a part of institutions or culture is to ask whether society attaches emotions to the norm.

In the theory I concentrate on the relationship between a dictatorship and a democracy. Although the theory could be generalizable to a pair of dictatorships where the main opposition to one regime is similar to the actor being in power in the other dictatorship (especially if this is true of both dictatorships). The Iran-Iraq War (1980-8) is an example of this, as I show in the historical case studies. However the theory should best describe the dictatorial-democratic pairs. The reason for this is threefold. First, the appeal of democracy, which is based on liberty should inspire stronger opposition movements than a religious/military/communist dictatorship would as liberty entails the assumption that a disenfranchised group should have the right to organize. Second, by their open nature, democracies are the least capable of controlling or suppressing their inspirational appeal. Third, attraction is the typical tool in the toolkit of a democratic politician, much more than in that of a dictator (Nye 2004, p.6).

How do culture and institutions fit together? Put simply, political institutions describe how power is distributed in a society, while culture reveals the preferences of the members of society. Almond and Verba (1963) argue that the parochial culture is congruent with traditional political institutions, the subject culture with centralized authoritarian institutions

and the participant culture with what North and Weingast (2012) would call open-access order. Inglehart and Welzel (2005) provide quantitative evidence that political regimes only become stable if they are in line with people's beliefs and values. This is known as the congruence hypothesis (Sheafer and Shenhav 2012).

However, the congruence hypothesis leaves much room for uncertainty. What would happen if incongruent culture and institutions were combined? Would economic growth be positive but not impressive, or maybe even negative? The congruence hypothesis neglects to answer this question, and actors can only glean this information if such an experiment is indeed played out. History shows that before such an experiment, public debate is often between 'copy-ers' and 'unique-ers'. For instance, in Russia in the 1840s, there were Westernizers who wished to copy Western European political institutions, and Slavophiles, who thought Russian culture based on communal solidarity would prevent Western ideas to flourish.

After distinguishing between institutions and culture, let us look deeper into the channels through which political culture matters. Let us imagine a 2x2 matrix. Along one dimension, we have the feasibility of copying, and the expected success of copying. Along the other dimension we have events: institutional change (revolution) and the post-revolutionary period. Cultural similarity affects all four cells of the matrix.

Let us start with the feasibility column. This concept is basically about mutual understanding and interpretation. For instance, Liebes and Katz (1993) found that people of different cultural background constructed different meanings after watching Dallas. Communication theorists talk of hybridity (Kraidy 2002) to express ideas that communication occurs in a local context. Talking about cultural fusion, Norris and Inglehart (2009) emphasize how California cuisine, for instance, merges Asian, Mediterranean and Latin American cooking with local farmers' market produce. An example from the political realm is early 20th-century Thailand. Following the Chinese Revolution of 1911 that overthrew China's imperial dynasty, the Thai king Wachirawut drummed up nationalism against Thailand's

Chinese minorities, seeing in them “the harbingers of a popular republicanism profoundly threatening to the dynastic principle” (Anderson 1983, p.100).

Feasibility matters for both the revolution and the post-revolutionary period. First consider the revolution. For instance, if it is the middle classes that need to fight for the revolution then if those middle classes have no group consciousness then the revolution cannot be copied. Second, feasibility also matters for the period after the revolution would succeed. For instance, if the middle classes take power in order to implement an Islamist regime containing Sharia law then if those middle classes are not Muslim, they will not be able to understand how to implement such a regime. As another example, the Egyptian is apparently looking at their Pakistani counterpart for inspiration about strategies to run the country.<sup>5</sup> Cultural distance thus makes the diffusion of institutional ideas more laborious and thus less feasible: in 1845 liberal Russian circles needed to publish a ‘Dictionary of Foreign Words’ in order to be able “to discuss the concepts as well as to define their meaning” (Rapport 2009, p.102).

The expected success of copying also matters (Beissinger 2007 describes the power of ‘good life’ in a democratic example). It is possible that the revolution and the post-revolution are both feasible to copy, but there is little information contained in them. Maybe the middle classes could organize the revolution in Bosnia in 1848, copying their French counterpart’s strategy, but because French political culture excludes massacring thousands of protesters, whereas Bosnian political culture allows it, the critical mass of revolutionaries may not gather. Furthermore, there can be skepticism about how well the French institutional system fits with Bosnian political culture. Hard times could be coming when liberalism survives in France but a coup would occur in Bosnia. Appointing cronies might be prohibited by French political culture but not the Bosnian. Diamond (1997) talks about social value and prestige when analyzing which societies copy innovations. His example is the “horrendously

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<sup>5</sup>Economist article, from Aug 3rd 2013, downloaded Aug 8th 2013. Available at: <http://www.economist.com/news/middle-east-and-africa/21582564-generals-who-deposed-muslim-brotherhood-are-keener-power-they-let>

cumbersome” kanji writing system in Japan (p.248), which has resisted replacement by more efficient alphabets due to its prestige.

How much of the copying is controlled by actors leading the democratic example? Nye (2011) discusses that soft power is difficult for governments to wield, and only a part of it is generated by a government through public diplomacy (pp.100-1). Due to modern technology, increasingly actors other than governments are in a good position to use soft power, including transnational actors (Nye 2011, p.103).

All in all, political culture interacts with political institutions. This means that social learning should be stronger among countries whose culture shares features that reveal the most information about how well those institutions would fare in the country.

## 1.2 Environment

Consider two infinite-horizon economies  $A$  and  $B$ , which are a pair of countries consisting of a dictatorship ( $A$ ) and a democracy ( $B$ ). My theory is applicable to any pair of countries where at least one of the two inspires the opposition of a ruler in the other, but in the model let me use the terminology democracy-dictatorship. In the baseline version of my model only the democracy is inspiring. For simplicity, there are only three actors altogether: the elite of  $A$  ( $A_E$ ), the citizens of  $A$  ( $A_C$ ), and the citizens of  $B$  ( $B_C$ ), each aggregated into a representative actor. I assume that by the start of the game  $B_C$  has taken power over in  $B$ , but in  $A$  it is still the old elite  $A_E$  that rules. Institutions in the model simply describe which group’s representative agent is in power and decides over their country’s policy in a given period  $t$ .

In each period the three actors need to divide up a resource worth  $S_A + S_B$  among themselves, where  $S_A$  and  $S_B$  capture the size of the two countries. I normalize the size of



country  $A$  to 1:  $S_A = 1$ . Utilities at time  $t$  are given by:

$$V_{A_E} = E_t \sum_{s=t}^{\infty} \beta^{s-t} p_A(s), \quad (1.1)$$

$$V_{A_C} = E_t \sum_{s=t}^{\infty} \beta^{s-t} p_C(s), \quad (1.2)$$

$$V_{B_C} = E_t \sum_{s=t}^{\infty} \beta^{s-t} p_B(s), \quad (1.3)$$

where  $p_I(s)$  is the share of agent  $I$  at time  $s$ . If no costly war or costly revolution destroys any resources then  $p_A(s) + p_B(s) + p_C(s) = 1 + S_B$  in each period  $s$ . The common discount factor is  $\beta$ .  $E_t$  is the expectations operator conditional on all information available at time  $t$ .

The important assumption about policy is that each country has a single policy to decide over.  $A_E$  and  $A_C$  have opposing preferences over this policy. The domestic part of my model shares some similarities with the Acemoglu-Robinson (2006) model, which builds on the Meltzer-Richard (1981) framework,<sup>6</sup> whereby the decision is over a linear tax rate (with lump-sum redistribution). Since the elite's representative agent is richer (or more productive) than the citizens', he or she would opt for less redistribution. In international conflict the issue indivisibility may not always be over fiscal policy between the rich and the poor, so my framework is more general in this sense than Acemoglu and Robinson 2006. There is a growing literature on how a single public good should be decided over and the further apart preferences are in a given country, the less it will be supplied and the more likely secession will be (e.g. Alesina and Spolaore 1997, Alesina, Baqir and Easterly 1999). On balance, policy preference differences may be over any division of some valuable resource between  $A_E$  and  $A_C$ .

In case of an interstate war the distribution of material power is equal to relative sizes  $S_A = 1$  and  $S_B$ , so that the war leads to the destruction of  $A$  with probability  $\frac{S_B}{1+S_B}$  and to

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<sup>6</sup>Which in turn builds on (Romer, 1975). Distortionary taxation arises from labor-leisure choice of agents of different productivity and preferences satisfy the single crossing property over the redistributive tax rate.

that of  $B$  with probability  $\frac{1}{1+S_B}$ . The winner takes over all the resources of the loser, as is standard in the literature.<sup>7</sup> However war is costly: whichever actor is in power in  $A$  at the start of the war ( $A_E$  or  $A_C$ ) needs to pay  $\frac{c_A}{1-\beta}$  and  $B_C$  needs to pay  $\frac{c_B}{1-\beta}$  in a war regardless of outcome ( $c_A$  and  $c_B$  are the amount of resources getting destroyed in a war). I allow for a bargaining solution by assuming that  $B_C$  can make any transfer to the actor in power in  $A$  at the start of each period.

In the Acemoglu-Robinson (2006) framework the domestic interaction is determined by the threat of revolution (de facto power of  $A_C$ ) which ebbs and flows. Let this threat be captured through  $1 - \mu$ , the amount of total income destroyed through the revolution, which at any time  $t$  may be high or low. This parameter captures how easy it is to organize collective action. I model it as taking up the value  $\mu_H \in (0, 1)$  with probability  $h$  and  $\mu_L = 0$  with probability  $1 - h$  (i.e. no threat). After a revolution, all income in the economy is forever taken over by the citizens but as  $1 - \mu$  is destroyed,  $\frac{1-\mu}{1-\beta}$  is the effective cost of the revolution.  $\mu(t) \in \{\mu_H, 0\}$  is therefore a measure of domestic pressure at time  $t$  in  $A$ .

Now let me add  $\gamma$  ( $\gamma \geq 0$ ) as a measure of the attractiveness of  $B_C$  to  $A_C$  (how appealing  $B_C$  is to  $A_C$ ). I will derive  $\gamma$  in the next subsection, but for the ease of exposition, for now assume it to be exogenously given. If  $B_C$  is alive in period  $t$  and there is high revolutionary pressure in  $A$  in this period then the cost of revolution is not  $1 - \mu_H$  but  $1 - \mu_H - \gamma$  (assume  $\gamma \in (0, 1 - \mu_H)$ ), thus revolution becomes less costly as citizens gain additional de facto (bargaining) power through having a democratic neighbor. As a simplifying assumption, in case of low revolutionary pressure ( $\mu_L = 0$ ), the citizens would still get 0 resource after a revolt even with a democracy present next door.

How does a war cut down  $\gamma$  from the opposition's de facto bargaining power? The simplest interpretation of the model is that the elite in one country eliminates the other

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<sup>7</sup>In the conflict literature we usually think about dividing up the resource. However if we want to ground the analysis here in the Meltzer-Richard (1981) framework where issue indivisibility is over linear taxation, this condition simply states that whoever is the winner in the conflict will determine the policy (alone) in the newly acquired country.

physically in a war. However, even if the war does not eliminate  $B_C$ , it still forces the citizens of the dictatorship to focus on the fact that they are nationals of their country rather than citizens along the cross-national identity dimension. A lot of research in social psychology<sup>8</sup> suggests people are social creatures and are prone to promptly set up in-group and out-group categories. In sociology and political science it is an old idea that conflict with an outside group solidifies ingroup cohesion.<sup>9</sup> Gellner 1983 Snyder 2000 and de Figueiredo and Weingast 1999 argue that rational elites provoke nationalism to strengthen their position, and Schrock-Jacobson 2012 shows that nationalism can lead to interstate war.<sup>10</sup>

The second type of reason why enmity-seeking by itself can prevent social learning operates at the society level. As people exhibit discriminating tendencies against outgroup members (McDermott 2009, p.348), these outgroup members are less likely to reveal themselves, or ingroup members might talk less about outgroup friends or relatives, thereby inhibiting the flow of information. Also, an intervention in a democracy can result in damage to the democratic system in a target country,<sup>11</sup> and indeed Gibler and Tir 2014 find that territorial disputes often prevent full democratization.

A further reason why conflict may cut down on information flowing from  $B_C$  to  $A_C$  even without eliminating  $B_C$  is by making information transmission more difficult. For instance, once the war starts, the most democratic citizens may be more easily imprisoned in the name of national security or forced to leave the country, or will simply not reveal themselves to be democratic-minded.<sup>12</sup> During the intervention in Crimea, Putin cracked down on dissent

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<sup>8</sup>Seminal studies include Sherif et al. 1961 and Tajfel and Turner 1979.

<sup>9</sup>Coser 1956, Simmel 1955. Some recent field experiment evidence is in Gilligan, Pasquale and Samii (2013), Bellows and Miguel 2009 and Blattman 2009.

<sup>10</sup>Bueno de Mesquita and Dickson 2008 argues that terrorist groups attempt to provoke outsiders to gain support from their own people.

<sup>11</sup>Historian Timothy Snyder believes this was one of the reasons behind Putin's invasion of Crimea: <http://www.nybooks.com/blogs/nyrblog/2014/mar/07/crimea-putin-vs-reality/>

<sup>12</sup>War could lead to what Van Evera (2001) calls minority-oppressing as opposed to minority-respecting nationalism. Enmity could encourage this minority-oppressing nationalism, reducing communication between

at home, and banned various opposition websites. An eminent historian who denounced Putin's intervention was promptly fired.<sup>13</sup> The head of the biggest company in the country, the Russian Railways, proposed the idea of a Trans-Eurasian Development Belt that would take non-Western values into account.<sup>14</sup>

The game is infinite, and the timing of each stage is as follows. International-level decisions are made first, then domestic-level decisions occur. Due to the logic of backward induction this means international decisions have domestic reasons. More precisely the timing is:

1. Either  $A_E$  or  $A_C$  is in power in  $A$  ( $I_A(t) \in \{A_E, A_C, \emptyset\}$ ),  $B_C$  is either alive or not: ( $I_B(t) \in \{B_C, \emptyset\}$ ).  $I_A$  is allocated  $S_A = 1$ ,  $I_B$  is allocated  $S_B$  units of resources (based on size).
2. The shock  $\mu(t)$  ( $\mu(t) \in \{\mu_L, \mu_H\}$ ) is realized in  $A$  (no shock in  $B$ ). The shock  $\mu(t)$ , the agent in power in  $A$  and  $B$ , and whether there had been a revolution  $R \in \{0, 1\}$  in  $A$  build the state vector:  $\{\mu(t), I_A(t), I_B(t), R(t)\}$ .
3. International interactions:
  - $B_C$  (if alive) can make any positive transfer  $\tau$  to whoever is in power in  $A$ .<sup>15</sup>
  - Whoever is in power in  $A$  ( $I_A$ ) can attack  $B_C$ .
  - $B_C$  (if alive) can attack  $I_A$ .

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$A_C$  and immigrants from  $B_C$  so  $A_C$  would expect to know less about the policy outcome of  $B_C$ .

<sup>13</sup>Timothy Snyder in the New York Review of Books: <http://www.nybooks.com/blogs/nyrblog/2014/mar/07/crimea-putin-vs-reality/>

<sup>14</sup>Julia Ioffe in the New Republic, March 15th 2014: <http://www.newrepublic.com/article/117007/while-west-watches-crimea-putin-cleans-house-moscow>

<sup>15</sup>The exact bargaining protocol is unimportant here, this closed rule with one round of proposals is the easiest choice. If an efficient Coasian bargaining solution exists, we want it to occur. with  $A$ 's agent in power making the first offer so that he can extract all the bargaining surplus (see e.g. Schelling 1960, Fearon 1995, Powell 1999). If the bargaining range is empty, one of the sides will attack.

#### 4. Domestic interactions:

- Whoever is in power in  $A$  may transfer political power to the other domestic actor (i.e.  $A_E$  may democratize in order to avoid a revolution).
- Agents in power make domestic decisions: whoever is now in power in  $A$  ( $I_A$ ) makes an allocative decision  $p_A$  (offer), while, if alive,  $B_C$  consumes  $S_B - \tau$ .
- The citizens' representative agent  $A_C$  decides whether to revolt or not.
- If there was a revolt,  $I_A$  picks policy  $p'_A$  (i.e. allocates the resource).

Note that the war cuts down domestic pressure on  $A_E$  by  $\gamma$ , which will lead to a lower transfer to  $A_C$ . The flow costs of war are  $c_A$  and  $c_B$ , thus I assume:

Assumption 1.  $\gamma < c_A + c_B$ .

This assumption says that the war is costly: its costs exceed its benefits. I will analyze the game under this assumption and show that they can occur even in the presence of this war-is-costly assumption.

### 1.3 Definition of Equilibrium

I define Markov Perfect Equilibria in this game: strategies depend only on the current state of the world and the prior actions taken within the same period. The state vector is  $\{\mu(t), I_A(t), I_B(t), R(t)\}$ . The strategy of  $B_C$  is  $\sigma_{B_C}(S(t))$  and consists of  $p_B(t)$ , where  $p_B(t)$  implicitly defines  $\tau(t) = 1 - p_B(t)$ , the transfer that  $B_C$  is making to  $A_E$  or  $A_C$ . The strategy of the elite  $A_E$  is denoted by  $\sigma_{A_E}(S(t)|p_B(t))$ . The strategy  $\sigma_{A_E}$  consists of a binary decision whether to go to war  $\omega(t) \in \{0, 1\}$ , a binary decision whether to yield power to  $A_C$   $\delta(t) \in \{0, 1\}$ , and  $p_A^E(t)$ , which together with  $p_B(t)$  determine the size of the transfers that  $A_C$  is offered in period  $t$ :  $1 + S_B - p_A^E(t) - p_B(t)$ .<sup>16</sup> The elite only set the tax rate

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<sup>16</sup>To be more precise, we would need to subtract the cost of a revolution/war if either had occurred.

when they do not yield power ( $\delta(t) = 0$ ). The strategy of  $A_C$  is  $\sigma_{A_C}(S(t)|\omega(t), \delta(t), p_A^E(t))$ , which depends on the state, the decision on war, the decision whether  $A_E$  had yielded power and the elite's policy offer  $p_A^E(t)$ . This strategy determines the actions  $\{\rho, p_A^C(t)\}$ , where  $\rho \in \{0, 1\}$  is the binary decision whether to revolt ( $\rho = 1$  is a revolution), and  $p_A^C(t)$  is the amount of redistribution to  $A_E$ .

Transitions between states are as follows. Starting from  $(\mu(t), A_E, B_C, 0)$  if there is no revolution or democratization but there is a war ( $\omega(t) = 1$ ) then the transition is to  $(\mu(t+1), \emptyset, B_C, 0)$  with probability  $\frac{S_B}{1+S_B}$  and to  $(\mu(t+1), A_E, \emptyset, 0)$  with probability  $\frac{1}{1+S_B}$ . If there is no war but there is democratization ( $\delta(t) = 1$ ) then the transition is to  $(\mu(t+1), A_C, B_C, 0)$ . If there is neither war, nor democratization but there is a revolution then the transition is to  $(\mu(t+1), A_C, B_C, 1)$ . The combinations of war, democratization and revolution occurring simultaneously are analogously defined.

A pure strategy Markov Perfect Equilibrium is a strategy combination  $\{\sigma_{A_E}(S(t)|p_B(t)), \sigma_{B_C}(S(t)), \sigma_{A_C}(S(t)|\omega(t), \delta(t), p_A^E(t))\}$ , such that  $\sigma_{A_E}(S(t)|p_B(t))$ ,  $\sigma_{B_C}(S(t))$ , and  $\sigma_{A_C}(S(t)|\omega(t), \delta(t), p_A^E(t))$  are best responses to each other for all possible states.

## 1.4 Modeling Social Learning

Now I will endogenize  $\gamma$  through social learning. Elkins and Simmons 2004 posits two classes of mechanisms behind diffusion: those for which a country's adoption alters the value of the practice, and those for which a country's adoption reveals information. Altered payoffs result from changes in material or reputational concerns, while new information can arise from observing successful policies, through communication or through cultural reference groups. I argue that in the case of political institutions, new information is the primary reason for diffusion.

There are various sources of new information. I distinguish between two types of information acquisition about political institutions. The first is revolutionary information. This

type of information reveals the success of a change in political regimes. This occurs during waves of democratization, such as the third wave of democratization (1974-91, Huntington 1991), or the Arab Spring. Prior example of successful revolution reveals not only tactics with which the incumbents can be successfully challenged, but also that these incumbents are vulnerable in the current period (Tarrow 1994, Beissinger 2007).

The second type of information is revelatory information, which is about the success of a democratic system in another country. Unlike revolutionary information, revelatory information comes from democracies that have existed for some time and proved successful.<sup>17</sup> For example, South Korean democracy from the the 1990s onward has been a revelatory source of information to North Korea.

Both revolutionary and revelatory information can be modeled the same way. Let growth  $g(p_A, A_C, t)$  denote the extra available income under democracy in  $A$  beyond the unit-sized resource, given policy  $p_A$ . There is uncertainty about this variable, but if  $B_C$  is not attacked then  $A_C$  is allowed to observe  $B_C$ 's policy success before choosing his or her own, and thus  $B_C$ 's success as well as failure will reveal information to  $A_C$ . I will derive how much information the existence of  $B_C$  reveals to  $A_C$ :

$$\gamma = E[g(p_A, A_C, t) | I_B(t+1) = B_C] - E[g(p_A, A_C, t)]. \quad (1.4)$$

Actors assume that different policies lead to different income levels under different circumstances, such as a specific culture or economic development level.<sup>18</sup> Their assumption may or may not be true but for actors with limited cognitive resources, this is a convenient mental shortcut. I will make a number of non-essential unrealistic assumptions to keep the model sharp and clean. First I assume actors are correct in their assumption of similar outcomes. Next, assume that the country's income level given a policy  $p_A$  only depends on the country's

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<sup>17</sup>Volden 2006 analyzes the Children's Health Insurance Program from 1998 to 2001 and shows that states with more successful policies are more likely to be emulated than states with failing policies.

<sup>18</sup>The approach is related to Mukand and Rodrik (2005) and Brender and Drazen (2007), who both have a one-country model.

circumstances, but not directly on institutions:  $g(p_A, A_C, t) = g(p_A, A_E, t) = g(p_A, A, t)$  at any time  $t$ . As a result, it is the information  $A_C$  gets from  $B_C$ 's adopted policy that makes citizens abroad valuable. Therefore no matter whether that information will be bad or good, the ex ante expected income rises for  $A_C$  knowing that  $B_C$  will have started 'experimenting' with the expected ideal policy of  $A_C$ . If that policy is confirmed to work,  $A_C$  will be able to adopt it, while if it is revealed not to work,  $A_C$  will be able to choose a different policy.

Next assume that growth  $g_A(p_A, t)$  and  $g_B(p_B, t)$  are random variables that can take up only two values:  $g^H(p_A, A, t)$  or  $g^L(p_A, A, t)$  and  $g^H(p_B, B, t)$  or  $g^L(p_B, B, t)$ . Also assume that only the variances of policies differ:  $E[g_I(p_I, t)] = E[g_I(p'_I, t)] = 0, \forall p_I, p'_I \in [0, 1], I \in \{A, B\}$ . and that  $g_I(p_I) \forall I \in \{A, B\}$  are uncorrelated over time. So the democratic country only conveys information in the time period of the revolt. Assume that policies within countries are uncorrelated, so if  $g(p_B)$  is revealed to have a bad outcome then  $g(p_B - \epsilon)$  still has the same expected value for any small  $\epsilon$ . This assumption again keeps the model sharp.

Let the correlation coefficient between  $g_A(p, t)$  and  $g_B(p, t)$  be  $C(p, t) \geq 0$  and constant across policies and time ( $C(p, t) = C$ ). This correlation  $C$  captures cultural similarity. Let  $\pi(p, A, t) = \text{Prob}(g_A(p, t) = g^H(p, A, t))$  and  $\pi(p, B, t)$  be the prior probabilities that growth is high at time  $t$  for policy  $p$  in  $A$  and  $B$ , while  $\tilde{\pi}(p, A, t)$  is the posterior probability conditional on growth being high in  $B$  for the same policy  $p$ :  $\tilde{\pi}(p, A, t) = \text{Prob}(g_A(p, t) = g^H(p, A, t) | g_B(p, t) = g^H(p, B, t))$ .

Lemma 1. The posteriors relative to the priors are given by:

$$\tilde{\pi}(p, A, t) - \pi(p, A, t) = \frac{C}{\pi(p, B, t)} \sqrt{\pi(p, A, t)(1 - \pi(p, A, t))} \sqrt{\pi(p, B, t)(1 - \pi(p, B, t))}. \quad (1.5)$$

Proof. Transform  $g_A(p, t)$  and  $g_B(p, t)$  to get  $a = \frac{g_A(p, t) - g^L(p, A, t)}{g^H(p, A, t) - g^L(p, A, t)}$  and  $b = \frac{g_B(p, t) - g^L(p, B, t)}{g^H(p, B, t) - g^L(p, B, t)}$  to get two Bernoulli random variables. Notice that the correlation coefficient between  $a$  and  $b$  is still  $C$  (since  $\text{cov}(c_1x + c_2, c_3y + c_4) = c_1c_3 \cdot \text{cov}(x, y)$  for  $c_1, c_2, c_3, c_4$  constants). Then  $a$  and  $b$  both take on 1 and 0 with  $E[a] = \pi(p, A, t)$  and  $E[b] = \pi(p, B, t)$ .  $ab$  takes on



1 and 0 too, and  $\text{Prob}(ab = 1) = \text{Prob}(g_A(p, t) = g^H(p, A, t), g_B(p, t) = g^H(p, B, t)) = \tilde{\pi}(p, A, t)\pi(p, B, t)$ , where the last equation follows from Bayes' rule.

Then writing out C:

$$C = \frac{\text{cov}(a, b)}{\sqrt{\text{var}(a)}\sqrt{\text{var}(b)}} = \frac{E[ab] - E[a]E[b]}{\sqrt{\text{var}(a)}\sqrt{\text{var}(b)}} = \frac{(\tilde{\pi}(p, A, t) - \pi(p, A, t))\pi(p, B, t)}{\sqrt{\pi(p, A, t)(1 - \pi(p, A, t))}\sqrt{\pi(p, B, t)(1 - \pi(p, B, t))}}$$

or

$$\tilde{\pi}(p, A, t) - \pi(p, A, t) = C\sqrt{\pi(p, A, t)(1 - \pi(p, A, t))}\sqrt{\frac{1}{\pi(p, B, t)} - 1}. \quad (1.6)$$

□

This lemma says that information from high income realization abroad is greater when there is higher correlation between the two growth rates, when there is greater uncertainty over the growth rate of  $A$  and less over that of  $B$ . Note that the uncertainty is the greatest when  $\pi(p, A, t) = \frac{1}{2}$ . Therefore if  $B$  is expected to have a high growth rate with a very high probability ( $\pi(p, B, t)$  is high) then  $B$  is less valuable to reveal information (in fact  $\lim(\tilde{\pi}(p, A, t) - \pi(p, A, t)) \rightarrow 0$  as  $\pi(p, B, t) \rightarrow 1$ ). It is not a high expected growth rate that makes  $B$  poisonous for  $A_E$  but an uncertain growth rate that ex post carries a lot of information for  $A_C$ .

I assume that if  $B_C$  is alive then after the revolt  $A_C$  will have already had time to observe the outcome of  $B_C$ 's policy in the given period. However as  $B_C$  cannot commit ex ante to pick any  $p_B$  to prevent war, he or she will simply have picked  $p_B = 1$ . The success of  $A_E$ 's policy is revealed simultaneously with the policy success of  $p_B$ .

Having  $B_C$  next door reveals information about good growth strategies (or even about what not to try). Note that the flipside is not true:  $A_E$  will not want to keep  $B_C$  to prove it to  $A_C$  that they are bad at being in power. For instance, North Korea is not deliberately maintained to scare the world away from being nostalgic about communism. The reason is that if  $B_C$  produces a bad outcome by a policy thought to be optimal by  $A_C$ , that helps  $A_C$

because they know now better which policy does not work. In the sharp framework here,  $A_C$  picks  $p_A = 1 - \epsilon$  in the bad case and ends up with the same expectations as at the start of the game (expects to produce 1). This also means that  $A_E$  cannot pick the same policy as  $B_C$  ( $p_A = p_B = 1$ ) to avoid information revelation because  $A_E$  needs to decide over policy before  $B_C$ 's success or failure is revealed, thus cannot change the policy to  $p_A = 1 - \epsilon$  as the citizens could.

The income of  $B_C$  is only revealed if  $B_C$  is not eliminated in an attack by  $A_E$ . Given the success of the policy chosen by  $B_C$ ,  $A_C$  can expect the same policy to be more effective. The expected probability of  $B_C$  being beneficial to  $A_C$  is thus  $\pi(p, B, t)$ . Therefore if  $B_C$  is not eliminated then the expected total income in  $A$  under the rule of  $A_C$  is equal to:<sup>19</sup>

$$v_{A_C} = 1 + \pi(p, B, t) \left( (\tilde{\pi}(p, A, t) - \pi(p, A, t))(g^H(p, A, t) - g^L(p, A, t)) \right), \quad (1.7)$$

plugging in Lemma 7 yields:

$$\gamma = C \sqrt{\pi(p, A, t)(1 - \pi(p, A, t))} \sqrt{\pi(p, B, t)(1 - \pi(p, B, t))} \left( g^H(p, A, t) - g^L(p, A, t) \right). \quad (1.8)$$

Thus  $\gamma$  inspirational-leadership support to  $A_C$  is increasing in the correlation of policy outcomes  $C$ . As  $C$  captures cultural similarity between the two countries, this is the main finding of this subsection.  $\gamma$  is also higher the higher the uncertainty about policy outcomes either in  $A$  or  $B$  is.

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<sup>19</sup>

$$\begin{aligned} v_{A_C} = & 1 + \pi(p, B, t) \left( (\tilde{\pi}(p, A, t)g^H(p, A, t) + (1 - \tilde{\pi}(p, A, t))g^L(p, A, t)) \right) \\ & + (1 - \pi(p, B, t)) \left( (\pi(p, A, t)g^H(p, A, t) + (1 - \pi(p, A, t))g^L(p, A, t)) \right), \end{aligned}$$

and use  $\pi(p, A, t)g^H(p, A, t) + (1 - \pi(p, A, t))g^L(p, A, t) = 0$ .

## 1.5 Analysis

I look for the Markov Perfect Equilibrium (MPE) in the infinitely-repeated game. The broad logic is that commitment problems can be solved either through yielding power to the domestic opposition through institutional reform or through destroying the outside entity that helps the domestic opposition. If revolutionary pressure is low in a given period then  $A_E$  never starts a war since he or she can always wait until  $\mu(t) = \mu_H$  to do so, and as future costs are discounted, there is no reason why  $A_E$  should not wait for  $\mu(t) = \mu_H$  to start a costly war. Thus I need to only investigate how  $A_E$  behaves when revolutionary pressure is high in the present ( $\mu(t) = \mu_H$ ).

One strategy the elite can pick is to start a war. Notice that after a victorious war, the dictator may still need to give up power if the pressure is too high. Whether this is the case can be captured by a ‘commitment constraint’ that describes whether the dictator in power can transfer enough resources to the citizens so that he or she can stay in power, even though he or she cannot commit to implement redistribution in low pressure periods in the future. The commitment constraint binds if the citizens wish to lock in<sup>20</sup> their current high-pressure advantage by taking power this period because the dictator cannot commit to implementing redistribution in the future when pressure is low. But if the pressure is low enough that the dictator can stay in power after a war then his or her utility can be easily calculated:

Lemma 2. If  $\mu_H$  is low enough that  $A_C$  can be bought off with transfers without the presence of  $B_C$ :  $\mu_H \leq 1 - \beta(1 - h)$ , i.e. the ‘commitment constraint’ is not binding, then the utility of  $A_E$  from war is:

$$V_{A_E}^w(\mu = \mu_H) = \frac{1 - \mu_H}{1 - \beta} - \frac{c_A + c_B}{1 - \beta}. \quad (1.9)$$

Proof. I use backward induction. After a (victorious) war, how much will  $A_E$  need to transfer

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<sup>20</sup>For a general discussion of lock-in problems see: Powell 2004.

to  $A_C$  to avoid a revolution? With a revolution the utility of  $A_C$  would be:

$$V_{A_C}^r(\mu = \mu_H) = \frac{\mu_H}{1 - \beta}, \quad (1.10)$$

so  $A_E$  needs to give a transfer  $\hat{\mu}_H$  today to  $A_C$  which brings  $A_C$  to an expected utility of  $\frac{\mu_H}{1 - \beta}$ . Is  $A_E$  able to do this?

The maximum transfer that  $A_E$  can offer is  $\hat{\mu}_H = S_A = 1$ . If  $A_C$  accepts this then he knows that  $A_E$  is not able to commit to give any transfer at all in non-revolutionary periods, which means:

$$V_{A_C}^p(\mu = \mu_H) = \frac{1}{1 - \beta} - \frac{\beta(1 - h)}{1 - \beta}, \quad (1.11)$$

where in a proportion of  $1 - h$  periods  $A_C$  gets nothing and in the rest they get everything.<sup>21</sup> Since no more than  $S_A = 1$  can be transferred to the citizens, buying the citizens off is not always possible. Whenever the citizens cannot be bought off with transfers ( $V_{A_C}^r(\mu = \mu_H) \geq V_{A_C}^p(\mu = \mu_H)$ ) we say that the ‘commitment constraint’ is binding:

$$\frac{\mu_H}{1 - \beta} \geq \frac{1}{1 - \beta} - \frac{\beta(1 - h)}{1 - \beta}, \quad (1.12)$$

or

$$\mu_H \geq 1 - \beta(1 - h), \quad (1.13)$$

Note that when the commitment constraint is not binding, the minimum amount of transfer to avoid a revolution is  $\hat{\mu}_H = \frac{\mu_H}{1 - \beta(1 - h)}$ ,<sup>22</sup> so that the higher is the probability of having high revolutionary pressure in the future, the lower this transfer needs to be because there is a higher chance in the future that  $A_C$  will demand transfers again. We can call this  $\hat{\mu}_H$

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<sup>21</sup>This follows similar logic to Powell 2006: we are looking for an upper bound and the elite is willing to redistribute all to the citizens today to avoid a revolution but cannot credibly commit doing so in the future too.

<sup>22</sup>This is not simply  $\mu_H$  because the citizens know that they have some de facto power in the future  $h$  share of the time. The elite wants to give the citizens so much transfers  $\tau$  to get the citizens’ utility to  $\frac{\mu_H}{1 - \beta}$ , knowing that (we are looking at MPE’s) he will give the same  $\tau$  in any high period in the future:  $\frac{\tau}{1 - \beta} - \frac{\beta(1 - h)\tau}{1 - \beta} = \frac{\mu_H}{1 - \beta}$ , from which:  $\tau = \frac{\mu_H}{1 - \beta(1 - h)}$ . If there is no future high period ( $h = 0$ ), this transfer is logically  $\frac{\mu_H}{1 - \beta}$ , if there are always high periods in the future then it is  $\mu_H$ .

amount a sort of dynamic revolutionary pressure.

Now let us turn to the war. In a war the total resource sized  $1 + S_B$  is taken over by probability  $\frac{1}{1+S_B}$ . In the victorious case  $\hat{\mu}_H$  needs to be transferred to  $A_C$  in high periods. From the point of view of  $B$ , the whole resource  $1 + S_B$  is taken over with probability  $\frac{S_B}{1+S_B}$ , leading to expected utility  $S_B - \frac{c_B}{1-\beta}$ . Therefore the maximum amount of transfer from  $B$  to  $A_E$  to avoid a war is  $\frac{c_B}{1-\beta}$ .

Note that if the commitment constraint is not binding the war yields a net expected utility:

$$V_{A_E}^w(\mu = \mu_H) = \frac{1}{1 + S_B}(1 + S_B) \left( (1 - \hat{\mu}_H) + \beta \frac{h(1 - \hat{\mu}_H) + (1 - h)1}{1 - \beta} \right) - \frac{c_A + c_B}{1 - \beta}, \quad (1.14)$$

This can be rearranged to:

$$V_{A_E}^w(\mu = \mu_H) = \frac{1}{1 - \beta} - \frac{(1 - \beta(1 - h))\hat{\mu}_H}{1 - \beta} - \frac{c_A + c_B}{1 - \beta}, \quad (1.15)$$

which has a straightforward interpretation: the first term is giving all of the unit resource to  $A_E$  forever; the second term is how much is expected to be needed to be given to  $A_C$  in order to avoid a revolution (if  $h = 1$  this term is  $\frac{-\hat{\mu}_H}{1-\beta}$  since it is given every period, if  $h = 0$  the term is  $-\hat{\mu}_H$  because it is given only in this period); the third term is the cost of war. This war cost is the combined cost of war  $c_A + c_B$ , which is just an accounting trick: we are taking the opportunity cost  $c_B$  into consideration here, since this is the amount of transfer  $B_C$  would be willing to make to  $A_E$  to avoid being attacked. Substituting in for  $\hat{\mu}_H$  yields:

$$V_{A_E}^w(\mu = \mu_H) = \frac{1 - \mu_H}{1 - \beta} - \frac{c_A + c_B}{1 - \beta}. \quad (1.16)$$

□

Lemma 7 has a simple interpretation: after a war the expected utility to be divided up between  $A_E$  and  $A_C$  is  $\frac{1}{1-\beta} - \frac{c_A+c_B}{1-\beta}$  and  $A_C$  is given just enough of this to be brought to the level of its outside option, which is utility of a revolt:  $\frac{\mu_H}{1-\beta}$ , while the rest goes to  $A_E$ .  $c_B$  appears because  $B_C$  would always be willing to transfer this much to  $A_E$  to avoid war, thus

it is an opportunity cost of war from the point of view of  $A_E$ .<sup>23</sup>

On the other hand, if even a successful war is followed by democratization (i.e.  $\mu_H$  is high enough that the commitment constraint binds even without an inspiring democracy:  $\mu_H \geq 1 - \beta(1 - h)$ ) then war never takes place. This is because  $A_E$  gains nothing (and nor does  $B_C$ ) since  $A_E$ 's utility from democratization is:

$$V_{A_E}^d(\mu = \mu_H) = 0, \quad (1.17)$$

as  $A_C$  would take power/revolt and take the whole unit resource forever.  $A_E$ 's payoff would be  $V_{A_E}^d(\mu = \mu_H) = -\frac{c_A + c_B}{1 - \beta}$  with a war.

The second instance when war does not occur is when the the commitment constraint is not binding even with  $B_C$  present:  $\mu_H + \gamma \leq 1 - \beta(1 - h)$ . In this case  $A_E$  needs to compare giving transfers to  $A_C$  or starting a war against  $B_C$ .  $A_E$  starts a war if  $V_{A_E}^p \leq V_{A_E}^w$ <sup>24</sup> or:

$$\frac{1 - \mu_H - \gamma}{1 - \beta} \leq \frac{(1 - \mu_H) - (c_A + c_B)}{1 - \beta}, \quad (1.18)$$

or

$$\gamma \geq c_A + c_B, \quad (1.19)$$

which in view of the standard war-is-costly assumption (Assumption 1) never happens. In other words, if the commitment constraint is not binding with  $B_C$  present then war will never occur.

This is a striking result: as long as  $A_E$  can avoid democratization without a war, it will not attack  $B_C$ . The reason is a simple Coasian efficiency of transfers argument: I allowed all types of transfers between actors, thus  $A_E$  will always be able to transfer some resource to  $A_C$  and  $B_C$  to  $A_E$  to avoid a war. So in the presence of efficient bargaining, peace prevails.

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<sup>23</sup>With more precision we should write the two equations as  $V_{A_E}^w = \frac{1 - \mu_H}{1 - \beta} - \frac{c_A}{1 - \beta}$  and  $V_{A_E}^p(\mu = \mu_H) = \frac{1 - \mu_H - \gamma + \tau}{1 - \beta}$  with  $\tau$  being the transfer from  $B$  which takes on a maximal  $c_B$  value.

<sup>24</sup>It is straightforward to derive  $V_{A_E}^p$  like in Lemma (7). Exactly a  $\frac{\mu_H + \gamma}{1 - \beta}$  amount of income needs to be guaranteed to  $A_C$ .

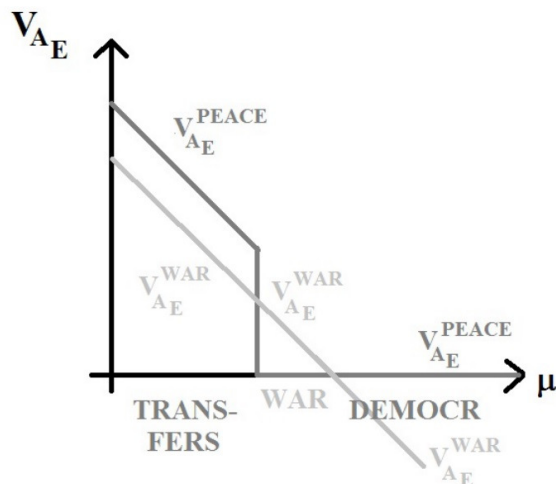


Figure 1.1: Under the assumption that war is costly (Assumption 1) for low levels of domestic pressure:  $V_{A_E}^{WAR} = V_{A_E}^{PEACE} - \frac{c_A - c_B}{1 - \beta} + \frac{\gamma}{1 - \beta} < V_{A_E}^{PEACE}$ . However when the commitment constraint starts to bind,  $V_{A_E}^{PEACE}$  jumps discontinuously down, while  $V_{A_E}^{WAR}$  is still continuous, making it possible that there is a middle region between democratization and transfers where war occurs.

However when the choice of the dictator is between democratization and war, commitment problems enter the scene. The source of war is that there is a discontinuity in the utility of  $A_E$  as a function of  $\mu_H$  and the discontinuity occurs where the commitment constraint starts to bind. Once we start increasing  $\mu_H$  then up until the point where the commitment constraint becomes binding with  $B_C$  present, transfers are preferred to a war by  $A_E$  since in all low periods  $A_E$  can keep the whole unit resource. Therefore at the point where the commitment constraint starts to bind<sup>25</sup>,  $A_E$  would keep  $\frac{\beta(1-h)}{1-\beta} > 0$  (as long as  $h < 1$ ), yet any further increase means the utility of  $A_E$  drops to 0 without a war. This is because  $A_E$  now needs to give up power and in democracy the citizens never have any incentive to redistribute anything to the old elite.

In the Acemoglu-Robinson (2006) model, the dictator has no way of overcoming this discontinuity.<sup>26</sup> In my model, however, at a cost of  $\frac{c_A + c_B}{1 - \beta}$ ,  $\mu_H + \gamma$  can be cut to  $\mu_H$  so that

<sup>25</sup> $\mu_H = 1 - \beta(1 - h)$  or  $\mu_H + \gamma = 1 - \beta(1 - h)$  depending on the regime of  $A$ .

<sup>26</sup>Acemoglu and Robinson 2006 do add the possibility of repression in a later version of their workhorse

if  $\frac{c_A+c_B}{1-\beta}$  is less than the discontinuous jump and the war again leads to the slackness of the commitment constraint, a war is efficient from the perspective of  $A_E$ .

All this means that we have the following Markov Perfect Equilibria:

Proposition 1. The (essentially unique) MPE of the infinite game  $\Gamma(\infty)$  is as follows. Whenever  $\mu = \mu_L$  or  $A_C$  is in power, neither war nor democratization occurs. In this case whoever is in power in  $A$  keeps the whole resource and no transfers between  $A$  and  $B$  occur. Whenever  $\mu = \mu_H$  and  $A_E$  is in power, the equilibrium is as follows:

- If the commitment constraint never binds, not even with  $B_C$  present ( $\mu_H + \gamma \leq 1 - \beta(1 - h)$ ) or  $B_C$  is not present and the commitment constraint is not binding ( $\mu_H \leq 1 - \beta(1 - h)$ ) then there is no war or regime change. Instead redistribution of  $\hat{\mu}_{H\gamma} = \frac{\mu_H + \gamma}{1 - \beta(1 - h)}$  from  $A_E$  to  $A_C$  occurs with transfers from  $B_C$  to  $A_E$  up to  $\frac{c_B}{1 - \beta}$ .
- If the commitment constraint only binds with  $B_C$  present ( $\mu_H \leq 1 - \beta(1 - h)$  and  $\mu_H + \gamma \geq 1 - \beta(1 - h)$ ) then:
  - If  $B_C$  is present and war is better than democratization for  $A_E$  ( $V_{A_E}^w \geq V_{A_E}^d$ ),<sup>27</sup>  $\mu_H \leq 1 - (c_A + c_B)$ , then there is war to avoid democratization, after war there is redistribution.
  - Otherwise there is democratization without a war.
- If the commitment constraint always binds, i.e.  $\mu_H \geq 1 - \beta(1 - h)$  (i.e. even without  $B_C$  present), then there is no war, just democratization to avoid a revolution.

## 1.6 Discussion

Proposition 1 finds that in my sharp framework three conditions need to be jointly satisfied for war to occur:

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model.

$$^{27} \frac{(1 - \mu_H) - (c_A + c_B)}{1 - \beta} \geq 0$$



- first, a war is needed to avoid democratization (necessary)
- second, a war can indeed avoid democratization (sufficient)
- third, a war is not too costly.

This means that  $A_E$  is better off without starting a war against  $B_C$  as long as the presence of  $B_C$  does not tip the balance into democratization in  $A$ . When domestic pressure  $\mu_H$  is so high that transfers do not suffice to keep the citizens down, war and democratization are alternatives.

Solving the model has led to my main result. Increasing attractiveness  $\gamma$ , which increases in cultural similarity, will eventually lead to either war or regime change (democratization). The interaction of the level of domestic pressure in the dictatorship during high periods  $\mu_H$  and the attractiveness of the democracy  $\gamma$  is particularly important. At low levels of domestic pressure having an inspiring  $B_C$  is effective to support  $A_C$  (which results in larger transfers from  $A_E$ ). By contrast, if domestic pressure is higher so that  $A_C$  gets closer to gaining power, a high  $\gamma$  becomes detrimental, leading to war. Thus it is not surprising that countries that are challenging the US today such as Iran are the ones where democratic pressure is high, while more peaceful Saudi Arabia (where repression keeps democracy a much more distant prospect) has become a reliable US ally. Yet if war is too costly or domestic pressure  $\mu_H$  has reached a very high level, an inspiring democratic neighbor can be effective by tipping the regime into democracy (think of the revolutions of 1989).

Even though wars are more likely to be started by dictatorships where domestic pressure is high, the dictatorships that face this domestic pressure less frequently (low  $h$ ) are the ones that are likely to start such a war. This is because citizens realize that at the time of the high domestic pressure they have a rare opportunity to overthrow the elite and thus they become difficult to placate with transfers.

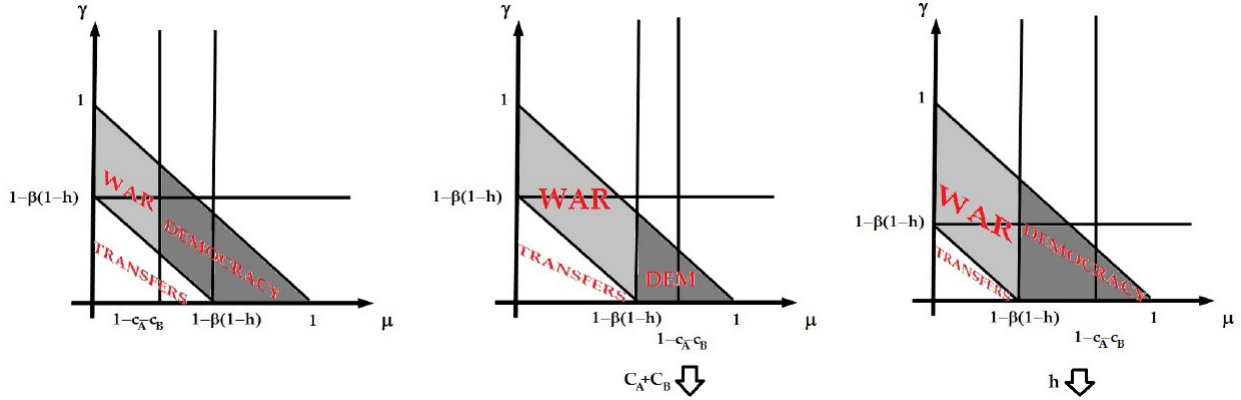


Figure 1.2: Outcomes and some comparative statics (with respect to the total costs of war ( $c_A + c_B$ ); and the frequency of domestic pressure ( $h$ )).

Additional comparative statics can be derived with respect to the other variables (Figure 1.2). A high discount factor  $\beta$  (long shadow of the future) makes wars more likely as the commitment problem worsens. This suggests that dictatorships where the dictator is more certain about secure succession are more likely to fight. Dictatorships where a dynasty holds power (monarchies), are one-party dictatorships could be especially likely to engage in such wars.

## 1.7 Alternatives to War: Repression and Enmity

In this section I address the question whether the dictator has tools other than war to avoid democratization. The answer is naturally yes, and such an alternative tool can be trivially incorporated in the model. In particular, the model becomes more realistic by adding the possibility of repression.<sup>28</sup> Assume that internal repression achieves the same benefit as a war but at cost  $c_r$  rather than  $c_A$ . Then repression and war are perfect substitutes and war will be chosen when in addition to the three conditions of war being a necessary, sufficient and cheap way of avoiding democratization, it is also the case that repression is relatively

<sup>28</sup>On repression as a tool that dictators use to stay in power, see Acemoglu and Robinson 2006, Davenport 2007. Danneman and Ritter 2014 argue that state authorities respond to potential threats of civil war by repression.

expensive:

$$c_r \geq c_A + c_B, \quad (1.20)$$

where recall that  $c_B$  is the maximum transfer  $B_C$  is willing to give up to avoid war. Thus costly repression makes war more likely.

However, intuitively, internal and external repression occur jointly. For instance, South Africa's wars during the Cold War against black regimes occurred jointly with the repressive Apartheid system. Why could this be the case? Assume that instead of a binary decision to repress, the dictator can choose the level  $r$  of repression, which lowers domestic pressure on him or her by  $k(r)$  at cost  $c_r r$  where  $k(\cdot)$  is a concave function. This means the marginal benefit of repression is falling. As a result, repression will be used up to the point where the marginal benefit compared to the marginal cost of repression ( $\frac{k'}{c_r}$ ) falls to the level of war's marginal benefit compared to its marginal cost ( $\frac{\gamma}{c_A + c_B}$ ). Thus the equilibrium  $r^*$  is:<sup>29</sup>

$$r^* = k'^{-1} \left( \gamma \frac{c_r}{c_A + c_B} \right), \quad (1.22)$$

where  $k'^{-1}$  is the inverse of the marginal benefit function and is therefore a decreasing function. In words, repression and war are used together by the dictator. However if  $r^*$  is high enough that internal repression alone avoids democratization, war is avoided.  $A_E$  will attack  $B_C$  only if war is needed in addition to repression to avoid democratization.

A different extension is when I consider explicitly that some dictator may only seek enmity to set up ingroup-outgroup categories, but this might spiral out of control. Let  $p_w$  be the probability that enmity seeking leads to war. In this case war is never chosen, as enmity is strictly preferred as long as  $p_w < 1$ . In this case enmity is more often chosen than war in the workhorse version of the model as its benefits are always reaped but its costs are

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<sup>29</sup>This can be derived from:

$$\frac{k'(r)}{c_r} = \frac{\gamma}{c_A + c_B}. \quad (1.21)$$

lower in expectation. So the ‘war is costly’ requirement for peace becomes:

$$\mu_H \geq 1 - p_w(c_A + c_B). \quad (1.23)$$

Thus the possibility of hostility not spiraling out of control makes the dictatorship more likely to engage in it.

## 1.8 Subgame Perfect Nash Equilibria instead of Markov Perfect Nash Equilibria

Since many of my results depend on commitment problems, it is a legitimate concern that this commitment problem only arises because I focus on past-independent MPE and once I extend my horizon to the wider set of subgame perfect equilibria, where infinite punishment strategies are allowed, the possibility of war. However, the results are not driven by the restricted equilibrium concept. Indeed punishment is allowed in SPNE, however the elite still cannot commit to redistribution perfectly because if it deviates from its strategy, punishment cannot occur immediately as it deviates in low revolutionary periods.

The structure of the MPE resembles that of the SPE with different cutpoints. Mathematically a deviation to no redistribution in the low revolutionary period yields:

$$V_{A_E}^{dev}(\mu = \mu_L) = 1 + \beta(1 - h) + \beta^2(1 - h)^2 + \beta^3(1 - h)^3 + \dots = \frac{1}{1 - \beta(1 - h)}, \quad (1.24)$$

where the flow of payments only keeps on going through period  $n$  if there are  $n$  consecutive low periods. Now for incentive compatibility, if the elite redistributes  $\tau_H$  in high periods and  $\tau_L$  in low periods that should yield a higher utility than  $V_{A_E}^{dev}(\mu = \mu_L)$  in low periods:

$$1 - \tau_L + \beta \frac{h(1 - \tau_H) + (1 - h)(1 - \tau_L)}{1 - \beta} \geq \frac{1}{1 - \beta(1 - h)}, \quad (1.25)$$

with the other incentive compatibility constraint (for citizens to avoid revolution) being:

$$\tau_H + \beta \frac{h\tau_H + (1-h)\tau_L}{1-\beta} \geq \frac{\mu_H}{1-\beta}. \quad (1.26)$$

Now what we need for war to be possible is that there exists a pair  $\tau_H, \tau_L$  that satisfies (1.25) and (1.26) but for parameters of  $\mu_H$  and  $\gamma$ , no pair of transfers exists which satisfy (1.25) but does not satisfy:

$$\tau_H + \beta \frac{h\tau_H + (1-h)\tau_L}{1-\beta} \geq \frac{\mu_H + \gamma}{1-\beta}. \quad (1.27)$$

To see that we can find such a case, assume that we cannot. That means that for a given pair of transfers that are incentive compatible for the elite, we cannot set  $\mu_H + \gamma$  high enough for it not to satisfy:

$$\tau_H + \beta \frac{h\tau_H + (1-h)\tau_L}{1-\beta} \geq \frac{\mu_H + \gamma}{1-\beta}. \quad (1.28)$$

Let us try doing this. To minimize the incentive for the elite to deviate set  $\tau_L$  as low as possible since in high periods it will not deviate anyways, so we can have  $\tau_H = 1$ . Then  $\tau_L$  should be given by:

$$\frac{(1-\beta + \beta(1-h))(1-\tau_L)}{1-\beta} = \frac{1}{1-\beta(1-h)}, \quad (1.29)$$

or or:

$$\tau_L = \beta(1-h). \quad (1.30)$$

Now plug these values  $\tau_H$  and  $\tau_L$  in to the citizen revolution-avoiding (commitment) constraint:

$$1 + \beta \frac{h + (1-h)\beta(1-h)}{1-\beta} \geq \frac{\mu_H + \gamma}{1-\beta}, \quad (1.31)$$

which means that

$$1 - \beta + \beta(h + (1-h)^2\beta) \geq \mu_H + \gamma, \quad (1.32)$$

where the left-hand side is less than 1 since  $h + (1-h)^2\beta$  is less than 1 because  $(1-h)^2\beta$  is less than  $1-h$ . So we can in fact always find a  $\mu_H$  and  $\gamma$  so that  $\mu_H \leq 1 - \beta + \beta(h + (1-h)^2\beta)$

$h)^2\beta) < \mu_H + \gamma$ . Therefore war will be a possibility in the model.

Therefore extending the analysis to SPNE changes the cut-off points and gives more commitment power to the elite (transfers in low periods may be positive  $\tau_L \geq 0$ ), which makes both democratization and war less likely but for a smaller range of values we still have the equilibrium structure described in the case of MPE's.

## 1.9 Extensions of the Baseline Model

### 1.9.1 Extension: Two-Sided Inspiration

So far I have considered only inspirational links arising in one country, however it is natural to think that enhanced domestic pressure can go both ways: during the early Cold War, both democrats in the Soviet Union ( $A_C$ ) and Communists in the West ( $B_E$ ) could look to the other country's incumbents for inspiration and information. Extending the model yields two results. First, the one-sided MPE described above remains unchanged with adding a domestic level to  $B$  as long as the commitment constraint in  $B$  is not binding (so that redistribution solves the issue) or regime change in  $B$  is unavoidable (the commitment constraint binds even with  $A = A_C$ ), therefore the result is quite general. Second when war can solve both  $A_E$ 's and  $B_C$ 's commitment problems<sup>30</sup> war breaks out more easily:  $\mu_H^A + \mu_H^B \leq 2 - (c_A + c_B)$  as the combined cost of war  $\frac{c_A + c_B}{1 - \beta}$  is now covered by not one benefit term<sup>31</sup> but two.<sup>32</sup>

In the baseline model I showed the conditions under which war arises in the presence of one country's binding commitment constraint. With two-sided inspiration the only interesting case is if both countries' commitment constraints are binding with the other country present,

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<sup>30</sup>  $\mu_H^A \leq 1 - \beta(1 - h_A)$  but  $\mu_H^A + \gamma_A \geq 1 - \beta(1 - h_A)$  and  $\mu_H^B \leq 1 - \beta(1 - h_B)$  yet  $\mu_H^B + \gamma_B \leq 1 - \beta(1 - h_B)$

<sup>31</sup>  $V_{A_E}^w - V_{A_E}^p = \frac{1 - \mu_H^A}{1 - \beta}$

<sup>32</sup>  $(V_{A_E}^w - V_{A_E}^p) + (V_{B_C}^w - V_{B_C}^p) = \frac{(1 - \mu_H^A) + (1 - \mu_H^B)}{1 - \beta}$

but these constraints do not bind if the other country is eliminated. The standard benefits-not-greater-than-costs assumption modifies to:

Assumption 2.

$$\gamma_A + \gamma_B < c_A + c_B$$

Proposition 2. In the presence of two-sided inspiration if both commitment constraints bind, war occurs whenever:

$$\mu_H^A + \mu_H^B \leq 2 - (c_A + c_B). \quad (1.33)$$

Proof. Let us start with  $\mu^A(t) = \mu_H^A$  and  $\mu^B(t) = \mu_H^B$ , when pressure is high in both countries. The commitment constraint is not binding in  $A$  if  $\mu_H^A + I(B = B_E)\gamma_C \leq 1 - \beta(1 - h_A)$  and similarly, it is not binding in  $B$  if  $\mu_H^B + I(A = A_E)\gamma_E \leq 1 - \beta(1 - h_B)$ , where  $I(\cdot)$  is just the indicator function used for notational simplicity. In this case redistribution is possible in both countries. The minimal amounts of redistribution to avoid revolutions are  $\hat{\mu}_H^A = \frac{\mu_H^A}{1 - \beta(1 - h_A)}$  and  $\hat{\mu}_H^B = \frac{\mu_H^B}{1 - \beta(1 - h_B)}$  respectively.

A war yields the usual expected benefits, except for now let us not account for the opportunity cost of receiving a transfer from abroad ( $-c_B$ ) in  $A_E$ 's value function. Then:

$$V_{A_E}^w = p \frac{1}{p} \left( \frac{1 - \hat{\mu}_H^A}{1 - \beta} + \beta \frac{(1 - h_A)\hat{\mu}_H^A}{1 - \beta} \right) - \frac{c_A}{1 - \beta'}, \quad (1.34)$$

where the second term again reflects the capital gain whenever  $\mu^A(t) = \mu_H^A$  and:

$$V_{B_C}^w = (1 - p) \frac{1}{1 - p} \left( \frac{1 - \hat{\mu}_H^B}{1 - \beta} + \beta \frac{(1 - h_B)\hat{\mu}_H^B}{1 - \beta} \right) - \frac{c_B}{1 - \beta'}, \quad (1.35)$$

where  $B_C$  gains a territory of size  $\frac{1}{p}$  instead of size  $\frac{1 - p}{p}$  if he wins, which happens with probability  $1 - p$ . These expressions again can be simplified to:

$$V_{A_E}^w = \frac{1 - \mu_H^A}{1 - \beta} - \frac{c_A}{1 - \beta'} \quad (1.36)$$

and

$$V_{B_C}^w = \frac{1 - \mu_H^B}{1 - \beta} - \frac{c_B}{1 - \beta'} \quad (1.37)$$

since both  $A_E$  and  $B_C$  need to give just enough to their domestic opposition to avoid a revolt.

Therefore once again you can see that if no commitment problem is present, war is never an equilibrium-path outcome, since  $V(A_E)^w + V(B_C)^w < V(A_E)^p + V(B_C)^p$ :

$$\frac{2 - \mu_H^A - \mu_H^B}{1 - \beta} - \frac{c_A + c_B}{1 - \beta} < \frac{2 - \mu_H^A - \mu_H^B}{1 - \beta} - \frac{\gamma_A + \gamma_B}{1 - \beta}, \quad (1.38)$$

where the inequality arises from the war-is-costly assumption.

War only happens if it helps solve at least one of the commitment problems. The case with one-sided inspiration earlier was exactly the case when  $B$ 's domestic conflict could be ignored because the commitment constraint there was not binding, so reanalyzing that case is futile. Let us turn instead directly to the case where the commitment constraint is binding in both countries. It is easy to see that if a war would still lead to regime change in both countries, again it is suboptimal and will not occur. How about the case when a war saves  $A_E$  from democratization but not  $B_C$  (from a coup)? This is the case when  $\mu_H^A \leq 1 - \beta(1 - h_A)$  but  $\mu_H^A + \gamma_A \geq 1 - \beta(1 - h_A)$  and  $\mu_H^B \geq 1 - \beta(1 - h_B)$ . Then  $V_{A_E}^w + V_{B_C}^w \geq V_{A_E}^p + V_{B_C}^p$  becomes  $\frac{(1 - \mu_H^A + 0) - (c_A + c_B)}{1 - \beta} \geq 0$ , which is the same condition  $\mu_H^A \leq 1 - c_A + c_B$  that we had for war in the one-sided case. Therefore the one-sided equilibrium describes the conditions fully when the domestic conflict in  $B$  is such that war is either not necessary to solve it (redistribution solves it) or war is not sufficient to solve it (regime change is unavoidable).

Finally, let us look at the case when both commitment problems can be solved by a war:  $\mu_H^A \leq 1 - \beta(1 - h_A)$  but  $\mu_H^A + \gamma_A \geq 1 - \beta(1 - h_A)$  and  $\mu_H^B \leq 1 - \beta(1 - h_B)$  yet  $\mu_H^B + \gamma_B \leq 1 - \beta(1 - h_B)$ . War happens if  $V_{A_E}^w + V_{B_C}^w \geq V_{A_E}^p + V_{B_C}^p$  or:

$$\frac{((1 - \mu_H^A) + (1 - \mu_H^B)) - (c_A + c_B)}{1 - \beta} \geq 0 \quad (1.39)$$

or

$$\mu_H^A + \mu_H^B \leq 2 - (c_A + c_B). \quad (1.40)$$

□



This result simply states that wars are more likely under two-sided inspiration than under one-sided inspiration. The reason is that if both countries inspire the other country's domestic opposition then both countries benefit from eliminating the other country.

### 1.9.2 Extension: Hostility-Seeking

Next I extend the model to capture not just wars in which the objective is to destroy the enemy completely, but to seek other types of hostility. For instance, during the 2013 crisis, North Korea's ruling elite had probably no intention of invading South Korea, aware that an all-out war would likely herald the end of the Kim regime. Instead Pyongyang was seeking low-level hostility by painting an enemy image of South Korea - an image that prevents North Korean citizens from seeing their brothers' free regime in South Korea as an example.

This model in particular develops the idea that a dictator is engaging in low-key hostility seeking, that would not lead to full-blown war. This can include show of force, a nuclear test, the closing of a joint industrial plant such as Kaesung, or even simply aggressive rhetoric aimed at  $B_C$ . The actors still have the option of starting an invasion, but low-level hostility seeking is another tool. The cost of low-level hostility seeking is  $0 \leq h_A < c_A$  for  $A_E$  and  $0 \leq h_B < c_B$  for  $B_C$ .

What does hostility-seeking achieve? I model the following micro-mechanism for the exchange of information. I assume that some citizens of  $A$  have more connections and thus access to better-quality information about  $B_C$ . Each uninformed citizen can attempt to gather information about  $B_C$  from informed citizens. The benefit of such information is that the uninformed citizen can make a better informed decision whether to participate in the overthrow of the dictator  $A_E$ . The cost of collecting information varies between uninformed citizens. This cost is an opportunity cost of foregone wages or any productive economic activity.

The informed citizens are not required to reveal their information if they meet an uninformed citizen. In peacetime they have no incentive not to reveal this information. But in a

hostile environment revealing information about  $B_C$  is risky because it also reveals that this informed citizen has connections to an enemy. In a hostile environment such an individual faces the possibility of repression or imprisonment. As a result, in a hostile environment some informed citizens do not reveal their information. In addition, uninformed citizens face lower benefits from searching for the truth. Thus less information about  $B_C$  reaches  $A_C$ .

For instance, Pyongyang is trying to prevent foreign DVD's from being smuggled into the country. The risk of execution is higher for DVD's emanating from South Korea than culturally-distant democracies such as the US. As a result, the black-market price of a smuggled South Korean DVD is 10 times higher than the price of a smuggled American DVD.<sup>33</sup>

Now I turn to the game. Assume that  $\theta \in (0,1)$  share of the citizens are informed about what policy  $B_C$  picks and what the outcome of that policy is. By contrast, a portion  $1 - \theta$  do not have any information. Assume that a dictator has a binary choice  $\phi$ : he or she can spread hostile news about  $B_C$  or not do so. If the dictator seeks hostility ( $\phi = 1$ ) then  $\iota \in (0,1)$  share of the uninformed population (so agents of mass  $\iota(1 - \theta)$ ) become informants. This means that if they discover that some other citizen is informed about  $B_C$  they report it to the dictator, who duly represses the informed citizen. This repression cost varies between informed citizens and is  $r_i$  for citizen  $i$ ; and follows a distribution with density  $H(r)$ . I assume that each informed citizen receives a small uniform ideological benefit  $b$  from revealing information and thus contributing to increased pressure on  $A_E$ .

Each uninformed citizen can try to find out the truth about  $B_C$  by searching for the information at cost  $c_i$ . This cost of investigating the truth about  $B_C$  is  $c_i$  for citizen  $i$ , and is distributed with density  $F(c)$ . The probability that an uninformed citizen finds out the policy  $B_C$  picked and its success depends on a random match. If the citizen is matched with an informed individual (such a case occurs with probability  $\theta$ ) and this individual is

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<sup>33</sup>South Korean DVD's sell for an estimated \$0.35, while American DVD's are priced at \$3.75 according to recent defectors from North Korea. See <http://content.time.com/time/world/article/0,8599,1933096,00.html>, accessed: 5/2/2014.

willing to reveal him- or herself as an informed citizen then the uninformed citizen becomes informed. Let  $\hat{\theta}$  denote the share of informed individuals at the end of the searching process. Then the domestic pressure on the dictator is  $\mu + \hat{\theta}\gamma$  because the informed individuals are pressing for change with more dedication, given that they have additional information about how to copy the political system of  $B_C$ .

First I derive the share of informed citizens  $\hat{\theta}^p$  when the dictator seeks no hostility. Notice that in this case every informed citizen reveals their information, thus if an uninformed citizen searches for the information then there is a  $\theta$  probability that he or she will find this information out because he or she will be matched with an informed citizen. Each uninformed citizen  $i$  considers that the expected benefit of searching is an additional  $\theta\gamma$  share of the resource (either in transfers or if the citizens take power). Therefore citizens with search cost lower than  $\theta\gamma$  will be searching, which is  $H(\theta\gamma)$  share of the uninformed citizens. Thus the final share of informed citizens is:

$$\hat{\theta}^p = \theta + H(\theta\gamma)(1 - \theta).$$

Notice that the higher is  $\theta$  the higher is this expression for two reasons. First the number of ex ante informed citizens directly increases. Second this increase results in a higher incentive for the uninformed citizens to search because they are more likely to be matched with someone who has private information.

Next if the dictator seeks hostility, what is  $\hat{\theta}^h$ ? In this case not every informed citizen is revealing his or her information. In particular there is an  $\iota(1 - \theta)$  chance of repression. This means revealing information has an expected cost  $\iota(1 - \theta)r_i$  and benefit  $b$  for individual  $i$ . Thus the share of informed agents revealing their information will be those whose cost of repression is less than  $\frac{b}{\iota(1-\theta)}$ . Therefore the chance that a searching uninformed citizen finds out information is  $\theta F\left(\frac{b}{\iota(1-\theta)}\right)$ , making the expected benefit from searching equal:  $\theta F\left(\frac{b}{\iota(1-\theta)}\right)\gamma$ . These benefits are lower than before because some informed citizens withhold their information. Thus a lower share of uninformed citizens have an incentive to search. In

addition  $\iota(1 - \theta)$  proportion of citizens become informants thus by default do not search for information. Putting these parts together results in:

$$\hat{\theta}^h = \theta + (1 - \iota)H\left(\theta F\left(\frac{b}{\iota(1 - \theta)}\right)\gamma\right)(1 - \theta).$$

In summary there are three effects through which hostility reduces information and thus domestic pressure. The first is that some uninformed citizens become informants, thereby reducing the pool of searching citizens. The second effect is that informed citizens for whom repression costs are high will not reveal their information. The third is that uninformed citizens anticipate that fewer informed citizens reveal their information and thus face lower incentives to conduct a costly search for information. Thus the benefit of hostility is

$$(\hat{\theta}^p - \hat{\theta}^h)\gamma = \left(H(\theta\gamma) - (1 - \iota)H\left(\theta F\left(\frac{b}{\iota(1 - \theta)}\right)\gamma\right)\right)(1 - \theta)\gamma.$$

The higher is the number of informants  $\iota$  the bigger the benefit of hostility-seeking is. Interestingly, a higher share of citizens aware of the information ex ante  $\theta$  has opposing effects. First it makes hostility matter less because many citizens are aware of the benefits of the regime of  $B_C$  already. But it also gives higher incentives for the uninformed citizens to search because they are more likely to be matched with some citizen who is informed. Hostility dampens this second effect, thus the effect of a higher  $\theta$  on the benefits of hostility are overall ambiguous.

Finally it is interesting to consider what the number of citizens who become informants  $\iota$  depends on. While many factors play a role, the more threatening  $B_C$  is, the more likely it is that some citizens believe the hate message of  $A_E$  (e.g. Glaeser 2005). Therefore in the two-sided domestic pressure case where not only  $A_E$  faces domestic pressure but so does  $B_C$ ,  $\iota$  can be a positive function of how likely  $B_C$  is to face domestic pressure in the range where a war or hostility against  $A_E$  becomes necessary to avoid regime change. As a higher  $\iota$  increases the benefits of hostility-seeking, this again means that when both sides face potential domestic pressure, mutual hostility and war become more likely to occur.

### 1.9.3 Extension: Domino Theory

Next I increase the number of countries to show that elimination of  $B_C$  by  $A_E$  can be a rational strategy even if  $B_C$  does not directly threaten the rule of  $A_E$ . This occurs when there is a middle ‘domino’ country  $C$  which is related to both  $A$  and  $B$ . If  $C$  falls by turning democratic ( $C_C$  come to power) then  $A_E$  would fall as well. We derive conditions under which in the absence of  $C$   $A_E$  would not fight  $B$  but with its presence war between  $A$  and  $B$  occurs.

Assume that the correlation coefficient between growth in  $A$  ( $g_A(p, t)$ ), growth in  $C$  ( $g_C(p, t)$ ) is  $C_{AC}$ , while between  $g_B(p, t)$  and  $g_C(p, t)$  it is  $C_{BC}$ . These two correlation coefficients force upper and lower limits on  $C_{AB}$ , the correlation coefficient between growth in  $A$  and growth in  $B$ .

Lemma 3. The correlation coefficient between  $g_A(p, t)$  and  $g_B(p, t)$  has the limits:

$$C_{AC}C_{BC} - \sqrt{1 - C_{AC}^2}\sqrt{1 - C_{BC}^2} \leq C_{AB} \leq C_{AC}C_{BC} + \sqrt{1 - C_{AC}^2}\sqrt{1 - C_{BC}^2}.$$

Proof. First let us transform  $g_A$ ,  $g_B$  and  $g_C$  to have mean 0 and variance 1, which will not change the pairwise correlation coefficients. Then let us express  $g_A$  as  $g_A = ag_C + g_{AC'}$  where  $ag_C$  is perfectly correlated with  $g_C$  and  $g_{AC'}$  is perfectly uncorrelated with  $g_C$ . This means that (using the zero mean and the unit variance):

$$C_{AC} = E[g_A g_C] = aE[g_C^2] + E[g_{AC'} g_C] = aE[g_C^2] = a.$$

Now we can express the variance of  $g_A$ , which we know is 1, as:

$$1 = E[g_A^2] = a^2 E[g_C^2] + 2aE[g_C g_{AC'}] + E[g_{AC'}^2] = C_{AC}^2 + 0 + E[g_{AC'}^2],$$

so that

$$E[g_{AC'}^2] = 1 - C_{AC}^2.$$

Similarly we can define  $g_B = bg_C + g_{BC'}$  where  $bg_C$  is perfectly correlated while  $g_{BC'}$  is

perfectly uncorrelated with  $g_C$ . Thus

$$C_{BC} = b.$$

and

$$E[g_{BC'}^2] = 1 - C_{BC}^2.$$

Next express to correlation coefficient  $C_{AB}$ :

$$\begin{aligned} C_{AB} &= E[(C_{AC}g_C + g_{AC'})(C_{BC}g_C + g_{BC'})] = \\ &C_{AC}C_{BC}E[g_C^2] + C_{AC}E[g_Cg_{BC'}] + C_{BC}E[g_Cg_{AC'}] + E[g_{AC'}g_{BC'}] = \\ &C_{AC}C_{BC} + 0 + 0 + E[g_{AC'}g_{BC'}]. \end{aligned}$$

Note that we have placed no restriction indeed on  $E[g_{AC'}g_{BC'}]$ . As both  $g_{AC'}$  and  $g_{BC'}$  have 0 means, and  $\frac{E[g_{AC'}g_{BC'}]}{E[g_{AC'}^2]E[g_{BC'}^2]}$  is a(n unrestricted) correlation coefficient,  $E[g_{AC'}g_{BC'}]$  is between  $-\sqrt{1 - C_{AC}^2}\sqrt{1 - C_{BC}^2}$  and  $\sqrt{1 - C_{AC}^2}\sqrt{1 - C_{BC}^2}$ . Therefore:

$$C_{AC}C_{BC} - \sqrt{1 - C_{AC}^2}\sqrt{1 - C_{BC}^2} \leq C_{AB} \leq C_{AC}C_{BC} + \sqrt{1 - C_{AC}^2}\sqrt{1 - C_{BC}^2}$$

Note that if  $\max(C_{AC}, C_{BC}) \leq \sqrt{0.5} = 0.707$  then  $C_{AB}$  may even be 0.

□

Thus we can assume  $C_{AB} < C_{AC}, C_{BC} < 1$ .

Let us define high domestic pressure in  $A$  as  $\mu_{CA}$  and high domestic pressure in  $C$  as  $\mu_{CH}$ . We assume that both  $A_E$  and  $C_E$  start in power and, for simplicity,  $C$  has no army so that  $C_E$  cannot pick war against  $B_C$  to avoid democratization. For simplicity we assume that high domestic pressure occurs at the same time both in  $A$  and  $C$  (at rate  $h$ ). Under these circumstances the choice of  $B_C$  is simple: if  $\mu_C = \mu_{CH}$  and the revolutionary constraint binds in  $C$   $\mu_{CH} + \gamma_{BC} \geq 1 - \beta(1 - h)$ , then  $C$  will democratize.

To analyze the interesting case we assume  $C_{AB}$  is so low that without  $C$  there would be no democratization. Yet we also assume that  $\mu_{CH} + \gamma_{BC} \geq 1 - \beta(1 - h)$  so that the domino

C would fall (democratize) when  $\mu_C = \mu_{CH}$ .

Note that now the choice of  $A_E$  is again to fight  $B$ . Note that  $C_{AB}$  is low so that  $\mu_{AH} + \gamma_{AB} \leq 1 - \beta(1 - h)$ , so that no war or democratization should occur because of the direct presence of  $B$ . However if the condition  $\mu_{AH} + \gamma_{AB} + \gamma_{AC} \geq 1 - \beta(1 - h)$  holds, so that  $C_{AC}$  is relatively high (the domino is highly culturally related) then the choice of  $A_E$  is again between democratization or fighting  $B$ . War will again occur as long as  $\mu_H \leq 1 - (c_A + c_B)$ .

#### 1.9.4 Extension: Correlation across Policies in Countries

Now in social learning I assume that policies are correlated and this correlation is a decreasing function of distance in policy.  $C(p_B, p'_A) = f(p_B - p'_A)$  with  $\frac{\partial f(p_B - p'_A)}{\partial (p_B - p'_A)} < 0$ . In this case if the policy  $g(p_B)$  is revealed to be bad, there is a trade-off that  $A_C$  is facing: choose  $p_A$  which is now more likely to be bad or some  $p'_A$  that is less likely to be bad but is a less optimal policy.

If  $p_B$  is good then  $p_A = 0$  is picked, whereas if it is bad assume some  $p'_A$  is picked. Then the expected ex ante utility of the citizens is:

$$A_C = 1 + \gamma_I \left( \pi(p, B, t) \left( (\tilde{\pi}(p, A, t) - \pi(p, A, t))(g^H(p, A, t) - g^L(p, A, t)) \right) + \right. \\ \left. (1 - \pi(p, B, t)) \left( (\tilde{\pi}'(p', A, t) - \pi(p', A, t))(g^H(p', A, t) - g^L(p', A, t)) \right) - p'_A \right),$$

where the last term  $-p'_A$  represents the utility loss from moving away from the ideal policy.

Substituting in correlations with  $C' = C(p_B, p'_A)$ :

$$v_{A_C} = 1 + \gamma_I \left( C \sqrt{\pi(p, A, t)(1 - \pi(p, A, t))} \sqrt{\pi(p, B, t)(1 - \pi(p, B, t))} \left( g^H(p, A, t) - g^L(p, A, t) \right) \right. \\ \left. - C' \sqrt{\pi(p', A, t)(1 - \pi(p', A, t))} \sqrt{\pi(p, B, t)(1 - \pi(p, B, t))} \left( g^H(p', A, t) - g^L(p', A, t) \right) - p'_A \right).$$

The trade-off in picking  $p'_A$  is that moving it away from  $p_A = 0$  increases  $p'_A$  but lowers  $C'$ .

Notice that if a policy  $p'_A$  exists that is close to  $p_A$  which is quite correlated with  $p_B$  as a result but is a well-trying out policy so that  $\pi(p', A, t)$  is either very high or very low (little uncertainty) then we are approximating the case with no correlations. Therefore having a good fall-back option for  $A_C$  actually makes  $B_C$  more valuable (and thereby wars more likely).

We also conclude that when policies are quite new, so that they have not been tried before and there are a range of largely uncorrelated possibilities to experiment with then the value of  $B_C$  to  $A_C$  (and therefore the chance of war) increases. So when a new institution enters the world stage or a region for the first time, the model predicts many wars.

At this point it is also worth considering what happens if  $B_C$  could commit to not playing  $A_C$ 's optimal  $p_A$ . Without writing down the analysis, it is clear that just as  $A_C$  faces a trade-off of moving away from  $p_A = 0$ , so does  $B_C$ . So if avoiding war means moving to  $p'_B \leq 0$ , which is far away enough from  $p_A$  that its success reveals little information about  $p_A$ , then peace carries this additional suboptimality, adding to the net benefit of wars.

### 1.9.5 Extension: The Timing of the War

So far the model gives a very rudimentary account of the timing of the war since there is no disadvantage from waiting until  $\mu(t)$  is realized to be high and then planning to eliminate  $B_C$ . However this should not necessarily work this way as it is natural to assume that starting a war with high revolutionary pressure decreases the ability of  $A_E$  to spend on the foreign war. Powell (1993) distinguishes between 'butters' and 'guns', therefore we can think that all that is used as extra spending on butter in good times cannot be spent on wars. Therefore let us assume that wars are less costly in low-pressure periods:  $c_A^L < c_A^H$ . By setting  $c_A^H = c_A$  from before we can compare this modified game's equilibria to our main one.

Before the analysis notice that it could be that  $c_A^L \leq c_A^H$  too, in which case we get back to the original model without loss of generality. The reason is that soldiers recruited from the ranks of  $A_C$  might exactly be the ones that would rebel and raise domestic pressure



$\mu_H$ , thereby limiting resources for the war. In the rwandan genocide a ‘lumpenproletariat of street boys, rag-pickers, car-washers, and homeless unemployed’ was used by politicians to commit the genocide (Mueller 2000), which should be better available in hard times.

First notice that equilibria in the high periods will not change. This is because if a war had started in the high period with  $c_A^L = c_A^H$  then we know that the condition the commitment constraint must be binding:  $\mu_H + \gamma \geq 1 - \beta(1 - h)$  and the war is started to avoid democratization. This choice remains unchanged since if  $A_E$  was hoping to postpone the war to a later low-pressure period, he would be instantly overthrown and earn 0. Similarly, if there was no war in the simple model then there will not be any war now either since all that occurs is now there is an additional better choice of starting a war at some other time.

Now wars may occur in the low period however in addition to the high period wars. The conditions for these wars differ according to whether a war would occur in the high period. If a war occurs in a high period ( $\mu_H + \gamma \geq 1 - \beta(1 - h)$  and  $\mu_H + \gamma \leq 1 - \beta(1 - h)$  and  $\mu_H \leq 1 - (c_A^H + c_B)$ ) then the war will occur in the low period if the discount factor is high and  $h$  is high since then taking the initiative today has greater benefits:

$$\frac{1 - \frac{\beta h(c_A^H + c_B)}{1 - \beta(1 - h)}}{1 - \beta} \leq \frac{1 - (c_A^L + c_B)}{1 - \beta}$$

where the left-hand side is just expected utility of  $A_E$  given that a war has a chance of  $h$  occurring in any of the next periods in an MPE <sup>34</sup> Note that  $\mu_H \leq 1 - (c_A^L + c_B)$  is implied by  $\mu_H \leq 1 - (c_A^H + c_B)$ . This equation can be rearranged to:

$$\beta h c_A^H \geq (1 - \beta(1 - h))c_A^L + (1 - \beta)c_B$$

or:

$$\frac{\beta h}{1 - \beta}(c_A^H - c_A^L) \geq c_A^L + c_B,$$

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<sup>34</sup>We use

$$1 - \beta h(c_A^H + c_B)(1 + \beta(1 - h) + \beta^2(1 - h)^2 + \dots) = 1 - \frac{\beta h(c_A^H + c_B)}{1 - \beta(1 - h)}$$

which has a nice interpretation as the left-hand side is the expected benefits (saved war costs) from starting a war in the low period and the right-hand side is the immediate costs.

Notice that if there is no war in the high period (because transfers solve the externality problem), there is no need for a war in the low period either. However we need to consider the case when in the high period there would be democratization ( $\mu_H + \gamma \geq 1 - \beta(1 - h)$  and  $\mu_H + \gamma \leq 1 - \beta(1 - h)$  and  $\mu_H \geq 1 - (c_A^H + c_B)$ ). The only possible war occurs when a war today prevents democratization tomorrow:  $\mu_H \leq 1 - (c_A^L + c_B)$  so that the war is really costly in the high period but less so in the low period:  $c_A^H \geq 1 - \mu_H - c_B \geq c_A^L$ . This is an intertemporal regime-change prevention war.

All in all, when taking timing into account, in a low pressure period a long shadow of the future (high  $\beta$ ) and a high probability of having high pressure soon (high  $h$ ) makes the war more likely. The war's purpose here is to avoid regime change or an even more costly war later.

### 1.9.6 Additional Mechanism: Modeling Emigration

In this extension, I derive other types of microfoundations for  $\gamma$ . I argue that social learning is the primary mechanism in my model, but it can be complemented by the additional mechanism here. Compared to social learning, the second mechanism is much easier mathematically. It simply stipulates that if  $B_C$  has a higher income, then citizens of  $A$  may leave  $A$  to seek a better life in  $B$ . This mechanism is again is part of the microfoundations of soft power, since the appeal of  $B_C$  is what makes citizens of  $A$  leave. Interestingly, the 'exit' option (Hirschman 1970) increases domestic pressure rather than lowers it. Let us investigate the mechanism.

Assume that citizens have different productivity levels, ranging from low  $y^L$  to high  $y^H$  with some cumulative distribution  $F(y)$ . Citizens' incomes add up to 1:  $\int_{y^L}^{y^H} = 1$  (we assume the elite produces nothing). Now assume that there is some uniform cost  $c$  for each individual of moving or escaping to  $B_C$ , which should increase with cultural distance. For

instance, a Muslim moving to a Christian country might not find a mosque there, might be discriminated against on the job market, and so on.

Assume away all income uncertainty. Then when pressure is high, the expected utility of  $A_C^i$  is

$$V_{A_C^i}^{stay} = \frac{\mu^H}{1-\beta} y^i,$$

while through emigration, the individual can keep their income in all subsequent periods, leading to a utility of

$$V_{A_C^i}^{emigr} = \frac{1}{1-\beta} y^i - c.$$

We assume that it is worth emigrating only for a subset of individuals:

$$\frac{\mu^H}{1-\beta} y^H > c > \frac{\mu^H}{1-\beta} y^L.$$

This means that the individuals who are going to emigrate have the mass:  $1 - F\left(\frac{1-\beta}{1-\mu^H} c\right)$  which means that domestic pressure falls by this amount. However aggregate income in  $A$  falls by more than this as the productive individuals are the ones to emigrate, who we assume only to be more productive in working not generating domestic pressure. Therefore the average income of emigrants is higher than overall average income:

$$\int_{\frac{1-\beta}{1-\mu^H} c}^{y^H} y^i dF(i) \geq \int_{y^L}^{y^H} y^i dF(i),$$

Thus domestic pressure on  $A_E$  falls by more than the rent it earns in a dictatorship. Thus Walter Ulbricht did all in his power to prevent East Germans from fleeing into the West, and even erected the Berlin Wall on August 13 1961 for this purpose.

Through emigration the utility of the elite drops from:

$$V_{A_E}^{stay} = \frac{1-\mu^H}{1-\beta},$$

to

$$V_{A_E}^{emigr} = \frac{1 - \int_{\frac{1-\beta}{1-\mu^H} c}^{y^H} y^i dF(i) - (\mu^H - 1 + F(\frac{1-\beta}{1-\mu^H} c))}{1-\beta}.$$

Notice that just as the elite cannot credibly commit to leave income at its producer, it cannot credible promise not to redistribute income from high-productivity individuals who forego emigration.

Therefore stemming the migration of  $A_C$  is worth a flow benefit of  $\gamma$  to the elite  $A_E$ :

$$\gamma = \int_{\frac{1-\beta}{1-\mu_H}c}^{y^H} y^i dF(i) - (1 - F(\frac{1-\beta}{1-\mu_H}c)) > 0.$$

In words: the benefit of the war in this case is that in periods when the elite takes wealth away as domestic pressure is low, it will benefit from being able to take the income of both high as well as low productivity individuals. The bigger the income difference between  $A$  and  $B$ , the stronger this pressure should be as the bigger is the incentive for high-productivity  $A_C$ 's is to emigrate. Notice that in this mechanism too, cultural proximity leads to a higher  $\gamma$ . This is because lowering the cost of emigration will lead more individuals to immigrate, which again lowers the domestic pressure by less than the potentially taxable income the elite loses.

### 1.9.7 Additional Mechanism: Modeling Altruism

Another additional mechanism besides my main mechanism of social learning through which  $\gamma$  can be captured is through altruistic motives. Again I emphasize that the inspirational power mechanism is primary, and this mechanism acts in addition to that main one. We should think of this in terms of transfers, money, or aid directed at citizens  $A_C$  from  $B_C$  which  $B_C$  cannot commit not to send. This could be because of family ties or cultural closeness. We can model altruism by assuming that for each unit of income consumed by  $B_C$  they have an immediate need to have  $A_C$  consume  $\alpha \in (0, 1)$  units of income. Thus:

$$V_{B_C} = \min(u_{B_C}, \frac{1}{\alpha}u_{A_C}),$$

to which the optimum is found by allocating  $x$  to  $B_C$  and  $\alpha x$  to  $A_C$ . I assume that  $\alpha$  increases in cultural proximity.

Now we can see that a transfer of  $\frac{\alpha}{1+\alpha}S_B$  will be sent from  $B_C$  to  $A_C$ , however notice that this will only occur in high-domestic pressure periods. The reason is the usual commitment problem: any transfer from  $B_C$  to  $A_C$  in low pressure periods would be confiscated immediately by  $A_E$ , not raising the utility of  $B_C$  by anything. On the other hand in high-pressure periods by using the transfers to raise domestic pressure,  $A_C$  can ensure getting more of the pie. But this means that domestic pressure rises exactly by the transfers:

$$\gamma = \frac{\alpha}{1+\alpha}S_B,$$

which increases in  $\alpha$ . Therefore altruism can lead to war in this case and leave the citizens  $A_C$  actually worse off. The reason is again that if the elite's commitment problem can be defanged by destroying  $B_C$ , the costs of this destruction could be outweighed by the benefits.

An example here may be the Korean War 1950-53. Both the leaders of the North (Kim Il-sung) and the South (Syngman Rhee) were fervently nationalistic and wished to rule over the whole of the Korean people, one through communism, the other through authoritarianism (Sandler 1999). Thus the cultural, linguistic and ethnic ties precipitated the Korean War.

## Chapter 2

# Cross-Country Panel Data Analysis

My model has several testable implications. First, cultural similarity makes a country pair more hostile and more war-prone in the presence of institutional differences. My second hypothesis is even stronger: pairs of countries characterized by institutional difference and cultural similarity are the most hostile and the most war-prone out of all possible pairs of countries (after controlling for other causes of war), as I hypothesize that social learning from a culturally-close democracy is a primary channel through which identity matters in wars.

My third hypothesis is that the broad cultural variables act as proxies for the compatibility of political culture with institutions. I show this to be true through correlations between specific World Values Survey question answers and my broad cultural variables.

My fourth hypothesis analyzes the initiator of the dispute. When there is cultural similarity coupled with differences in political institutions, then my hypothesis expects the dictator to initiate a conflict.

My fifth hypothesis concerns my mechanism. As I expect the fear of social learning to be the source of wars, I expect that cultural similarity and institutional differences only lead to war when domestic pressure from social learning is high. I define domestic pressure by measuring excess growth abroad, where I use cultural similarity and institutional difference

to build a spatial weight matrix.

My sixth hypothesis introduces democratization. In my model, democratization and war are alternatives available to the dictator. In particular, the highest domestic pressure leads to democratization, while lower but still high domestic pressure leads to wars. I estimate the occurrence of war and democratization jointly and predict that the triple interaction of cultural similarity, institutional difference, and high domestic pressure is positive for both dependent variables.

My seventh hypothesis investigates domestic repression. My theory predicts that wars occur in high-pressure countries characterized by cultural similarity and institutional difference, and these wars should often occur in conjunction with domestic repression. I use data on government-perpetrated violence against civilians to confirm this hypothesis too.

Finally, my eighth hypothesis probes the frequency of domestic pressure. My model predicts countries to be particularly war-prone where domestic pressure is more infrequent. Using the data on government-perpetrated violence I calculate mean domestic repression over time to confirm this hypothesis on a cross section of my data.

## 2.1 Data Description

### 2.1.1 Conflict Data

I use data on Militarized Interstate Disputes from the Correlates of War project,<sup>1</sup> as is standard in the literature. The unit of observation in the unbalanced panel data set is a country-pair in any given year (between 1816-2008). I include all country pairs in my analysis, even non-contiguous dyads, since geography is a main confounding factor in my analysis. This means that the base data set has 1,610,478 observations, although 258,242

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<sup>1</sup>For the Correlates of War project, see Jones, Bremer and Singer 1996 and [www.correlatesofwar.org](http://www.correlatesofwar.org), accessed: 2012/09/05. For data collection, I use EUGene (Bennett and Stam 2000). Website: <http://eugenesoftware.org>, accessed: 2012/09/05. Tables are generated using the StarGazer package by Marek Hlavac.

observations have missing values for my main dependent variable.

The main dependent variable is the undirected hostility level, which ranges from 0 (no hostility) to 5 (war with at least 1000 battle deaths). Intermediate levels include 1 = no militarized action, 2 = threats to use force, 3 = show of force, 4 = use of force. I use this broad interpretation of conflict because my theory predicts enmity-seeking in rhetoric as well as physical wars. A secondary dependent variable is a binary measure whether there is at least use of force (4 to 5 on hostility level), traditionally defined as war in the conflict literature. War is a rare event, only 0.46% of the (all) dyad-years experience a hostility level of 4 or 5.

### 2.1.2 Cultural Data: Broad Measures

Rather than relying on a single variable of culture, I put together a data set collecting five broad visual cultural proximity measures and 18 narrow ones. I start by introducing my broad measures. All of them change very slowly over time. The advantage of this slow changing characteristic is that it lessens concerns about reverse causation and endogeneity.

The first two broad measures attempt to capture racial proximity. An imperfect measure of racial differences is the genetic distance variable from Spolaore and Wacziarg (2009), who define such a variable between two populations (frequency of allele differences). Genetic proximity is naturally difficult to interpret, but I use it as a measure of racial proximity, an identity dimension that is highly visible. Over the 200-year horizon of my analysis, the genetic proximity variable is largely time invariant.<sup>2</sup> Spolaore and Wacziarg (2009) calculate four measures of genetic distance.<sup>3</sup> For my theory, the best suited is the measure

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<sup>2</sup>I expect change in this variable due to mass migrations, but the main groups comprising a society have been largely unchanged over the last two centuries.

<sup>3</sup>They use a genetic distance measure of 42 populations, which they match to almost all of the 1,120 ethnic groups in Alesina et al. 2003 listed for countries. Genetic distance captures the time which two populations have spent apart (since splitting). The longer this time is, the more random mutations there are, so the greater is the genetic distance. The variable is 0 if and only if the allele distribution in the two populations is the same.



$F_{ST} - weighted$ , which takes all groups into account in the two countries and creates a distance weighted by population share. For each pair of two groups of population,  $F_{ST}$  is a measure of distance to the most recent common ancestor. I construct two proximity measures out of the genetic distance measure: in one version I divide 1 by the distance, in another I subtract the distance from the maximal value observed in the data. Finally, because genetic distance is difficult to interpret, I construct a dummy variable ‘same race’ for the dominant groups in each pair of countries,<sup>4</sup> and show that my results are robust to using this alternate measure.

The third and fourth measures are based on religion. One broad measure is a dummy variable whether the two countries share the same religion. The measure is from Jonathan Fox’s Religion and State Project<sup>5</sup> with levels ‘Christian’, ‘Muslim’ and ‘other’. Although the variable does not parse out other religions, Christianity and Islam are the two biggest religions in the world, Huntington’s clash of civilizations (Huntington 1996) in the post-Cold War world is widely thought to be manifested by Christian-Muslim wars. In addition, this variable is complemented by the civilizational variable below, which has more categories. The other broad religious proximity measure has more variation. I constructed an index similar to the fractionalization index (Alesina et al. 2003), but I define it between countries. Taking Jonathan Fox’s data on religions I calculated the probability that two randomly-drawn individuals belong to the same big religion. The religions I work with are again Christianity, Islam and ‘Other’. Therefore if one country is 75% Christian and 25% Muslim, while another one is 100% Other, the variable takes up the value of 0. If both are 75% Christian, 20% Muslim and 5% Other, then the variable takes up the value of  $0.75^2 + 0.2^2 + 0.05^2 = 0.605$ .

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<sup>4</sup>To construct a race variable that is not an outcome of wars over the last two centuries, I used an 1847 atlas to capture race perceptions, the Atlas Historique Ancien et Moderne, 1847, by Longuet Succ. De Simonneau; printed by Felix Ansart, Mapped Monde pour l’usage des colleges. The atlas color-coded the major racial group in each country: European, African, Asian.

<sup>5</sup><http://www.religionandstate.org/>, accessed:2012/10/10, Fox 2008, version 1.2.2, I use the EMAJREL variable

The final broad cultural measure is an indicator variable whether the main groups in the two countries belong to the same civilization. I code this variable based on the nine civilizations according to Huntington 1996, Map 1.3.<sup>6</sup> When a country is ambiguous (Huntington calls them ‘cleft countries’, e.g. Kenya and Nigeria between Islamic and African), the major civilization is coded, and a separate minor civilization is also coded. A separate variable is created which captures all country pairs with the property that the minor civilization in one of them is the same as the major civilization in the other (therefore at least one of the countries is required to be a cleft country for this variable to take on the value of 1).

### 2.1.3 Cultural Data: Narrow Measures

To understand why broad cultural measures are important for diffusion, I collected 18 finer cultural proximity measures, which come from the World Values Survey (WVS). The advantage of the WVS measures is that they capture more precisely the political culture concept based on beliefs and values that my theory assumes. However using these measures also has a disadvantage: data availability is limited to 1981-2008.<sup>7</sup>

My broad measures have the advantage of being largely time-invariant, while the World Values Survey questions complement them by being more precise, although unfortunately they are less time-invariant, and there is no data from earlier years than 1981. As a result, I do not use the WVS questions the same way as my broad cultural measures. Instead of using them as an independent variable in my regressions in the main analysis, I investigate the correlation between the WVS question answers and the broad cultural measures. Nevertheless, fortunately even these WVS cultural values evolve relatively slowly (Inglehart and Welzel 2005), and the countries where respondents are most likely to give a certain answer to a question are often the same countries where a survey would have most likely found a

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<sup>6</sup>The nine levels are: Western, Latin American, African, Islamic, Sinic, Hindu, Orthodox, Buddhist and Japanese.

<sup>7</sup>The first wave was conducted in 1981-4, the second in 1989-93, the third in 1994-9, the fourth in 1999-2004, the fifth in 2005-8.

similar response decades earlier. For example, for two survey questions, data from all five waves are available (i.e. for roughly 25 years) and the auto-correlation between the first and the fifth wave is 0.97 (for the ‘God is important’ variable), and 0.96 respectively (for the ‘willingness to fight for the country’ variable).

I construct a similarity variable based on each WVS question by calculating the absolute difference between two countries’ average value scores in each of the waves and multiply this difference by minus one (missing values and ‘don’t knows’ are discarded). I compare similarity in answers to these questions to the broad cultural measures to test my hypothesis about the broad measures substituting for compatibility of political culture. In related research, Desmet, Ortuno-Ortin and Wacziarg 2014 find that ethnic identity is indeed a significant predictor of cultural attitudes based on the World Values Survey questions, although they also find that much of cultural variation is within (ethnic) group variation. However even if only a small part of cultural values are accounted for by visible identity markers this small variation could still have large social effects.

The first category of World Values Survey questions ask about respondents’ values and beliefs about different political institution and political actions.<sup>8</sup> There are four questions in the survey that fit this definition: (1) how much respondents value protecting the freedom of speech, (2) how much respondents value having a strong leader who does not have to bother with parliament and elections, (3) how much respondents believe using violence to pursue political goals is never justified, and (4) how important respondents think maintaining order in the nation is. One additional question asks about the importance of God. Although this question is not about political culture, pervasive religious views should have political ramifications in certain periods (e.g. Islamism nowadays). Altogether these five questions probe the expected success of a democratic revolution and a democratic regime in the country.

The second category of specific World Values Survey questions asks what the respon-

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<sup>8</sup>The five questions here are: E10, E114, E198, E007, F063. The exact wording is available in the Supplementary Information and at: <http://www.wvsevsdb.com/wvs/WVSanalyzeSample.jsp> (accessed: 2013/09/10)

dent considers to be essential characteristics of democracy.<sup>9</sup> Each question asks whether the respondent considers a certain aspect to be an essential characteristic of democracy: (1) religious authorities interpreting the laws, (2) people choosing their leaders in free elections, (3) the army taking over when the government is incompetent, (4) civil rights protecting people, (5) the economy prospering, (6) criminals being severely punished, and (7) women having equal rights. If two countries' respondents have different views about, for instance, whether democracy entails religious authorities making laws, social learning should be inhibited due to lack of mutual understanding.

In addition, I collected placebo questions from the World Values Survey that are not about political culture.<sup>10</sup> I expect my broad cultural measures to be less useful in explaining the variation in these variables. Some of these questions are irrelevant to political institutions: whether adventure is important for the respondent, whether the government should reduce environmental pollution or whether leisure or work is what makes life worth living for. Another question asks about the importance of politics to the respondent.

Two final placebo questions are about nationalism. One asks whether the respondent would be willing to fight for their country, another whether they see themselves as a citizen of their country. Nationalism could be an important competing hypothesis for my theory: maybe leaders of two culturally-similar but institutionally-different countries fight to reunite the nation under their own rule. Yet if this were the case then as the two parties fight for national union, leaders should drum up nationalistic feelings. Thus if the nationalism channel operated rather than my political cultural similarity mechanism, I would find that similar responses to the nationalist questions correlate highly with similarity in broad measures.

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<sup>9</sup>The seven questions here are: E225, E226, E228, E229, E230, E231, E233. The exact wording is available in the Supplementary Information and at: <http://www.wvsevsdb.com/wvs/WVSanalyzeSample.jsp> (accessed: 2013/09/10)

<sup>10</sup>The six questions here are: A004, A195, B003, C008, E012, G021. The exact wording is available in the Supplementary Information and at: <http://www.wvsevsdb.com/wvs/WVSanalyzeSample.jsp> (accessed: 2013/09/10)

#### 2.1.4 Institutions and Covariates

I formulated the theory for pairs of countries where one enjoys more freedom than the other, although my theory could be extended to include pairs like Saddam Hussein's secular dictatorship in Iraq and the mullahs' religious dictatorship in Iran. Using the more narrow definition of institutional differences, the institutional variable is proxied by the Polity score,<sup>11</sup> which measures the extent to which a country in a given year is judged to be democratic. I use the combined 'net democracy' Polity IV score, which ranges between -10 and 10. I use two variants of this score. First, I take the absolute value of the difference in the Polity IV scores of the two countries. As a secondary measure, I define democracies as having a Polity score of 7 or higher, as is standard in the literature, and construct a binary variable for institutional difference that captures whether there is exactly one democracy in the country pair. The results are robust to changing this threshold to 6, 9 or 10.

I am controlling for a number of variables frequently associated with conflict in the literature, all coming from the Correlates of War data set. I include the number of peace years since the last war in a dyad as well as a square and a triple of the peace years (Carter and Signorino 2010), military capabilities for both countries separately, major power status for each country in the pair, bilateral exports between the two countries, and whether the two countries are in an alliance (entente)<sup>12</sup>. It is particularly important to control for geographic variables accurately so that we do not confuse culture with physical distance. I constructed a variable capturing whether the two countries are in the same big physical region (5 continents), I included physical distance (between capitals), contiguity on land, contiguity on sea, as well as colonial contiguity.

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<sup>11</sup>Marshall et al. 2002, also Monty Marshall and Keith Jagers (2002): 'Polity IV Project: Political Regime Characteristics and transitions, 1800-2002, College Park, MD: Polity IV Project, University of Maryland. Website: <http://www.systemicpeace.org/polity/polity4.htm>, accessed: 2012/10/01

<sup>12</sup>Coded 3 in the MID database, the closest alliance type.

## 2.2 Descriptive Evidence

Summary statistics and correlations between core variables can be found in Tables ?? and 2.3.

Table 2.1: The model’s predictions and empirics with ‘same civilization’ (binary): average war probabilities, mean war probability: 0.55%

	SAME CIV	DIFFERENT CIV
REGIME SAME	peace 1.01%	peace 0.44%
REGIME DIFFERENT	war 1.73%	peace 0.56%

Table 2.2: Key Summary Statistics on War-Proneness, Cultural Proximity, Institutional Difference, and Geographic Proximity:  $\mathbf{n}$  = number of observations, Min = minimum,  $\mathbf{q}_1$  = first quartile,  $\mathbf{x}_m$  = median,  $\bar{\mathbf{x}}$  = mean,  $\mathbf{q}_3$  = third quartile Max = maximum,  $\mathbf{s}$  = standard deviation, #NA = missing values

Variable	$\mathbf{n}$	Min	$\mathbf{q}_1$	$\mathbf{x}_m$	mean	$\mathbf{q}_3$	Max	$\mathbf{s}$	#NA
Hostility	1352236	0.0	0.0	0.0	0.028	0.0	5.0	0.3	258242
War	1352236	0.0	0.0	0.0	0.006	0.0	1.0	0.1	258242
Initiator	1352236	0.0	0.0	0.0	0.002	0.0	1.0	0.0	258242
Genetic Prox (divided)	1115652	0.0	0.0	0.0	0.007	0.0	1.0	0.1	494826
Genetic Prox (minus)	1115652	0.0	0.6	0.7	0.7	0.9	1.0	0.2	494826
Same Religion	1082780	0.0	0.0	0.0	0.5	1.0	1.0	0.5	527698
Shared Religion (%)	568726	0.0	0.0	0.2	0.3	0.5	1.0	0.3	1041752
Same Civilization	1142488	0.0	0.0	0.0	0.2	0.0	1.0	0.4	467990
Absolute Polity Score Difference	1175190	0.0	2.0	6.0	7.7	14.0	20.0	6.3	435288
Exactly One Democracy	1175190	0.0	0.0	0.0	0.3	1.0	1.0	0.5	435288
Both Democratic	1175190	0.0	0.0	0.0	0.0	0.0	1.0	0.2	435288
Same Region	1610478	0.0	0.0	0.0	0.2	0.0	1.0	0.4	0
Distance	1610478	0.0	2.5	4.5	4.7	6.6	12.3	2.8	0
Land Contiguity	1388908	0.0	0.0	0.0	0.0	0.0	1.0	0.2	221570
Colonial Contiguity	1388908	1.0	6.0	6.0	5.9	6.0	6.0	0.5	221570

Table 2.3: Pairwise correlations between cultural and geographic proximity measures. The columns match the rows.

	Gen 1	Gen 2	Rel 1	Rel 2	Civ	Reg	Dist	Cont	Colon
Genetic Prox (div)	1.00	0.16	0.07	0.06	0.14	0.18	-0.14	0.15	-0.02
Genetic Prox (minus)	0.16	1.00	0.14	0.19	0.34	0.46	-0.43	0.18	-0.10
Same Religion	0.07	0.14	1.00	0.76	0.36	0.26	-0.11	0.11	-0.07
Shared Religion	0.06	0.19	0.76	1.00	0.41	0.24	-0.17	0.11	-0.03
Same Civilization	0.14	0.34	0.36	0.41	1.00	0.42	-0.29	0.20	-0.09
Same Region	0.18	0.46	0.26	0.24	0.42	1.00	-0.53	0.27	-0.05
Distance	-0.14	-0.43	-0.11	-0.17	-0.29	-0.53	1.00	-0.30	0.06
Land Contiguity	0.15	0.18	0.11	0.11	0.20	0.27	-0.30	1.00	-0.04
Colonial Contiguity	-0.02	-0.10	-0.07	-0.03	-0.09	-0.05	0.06	-0.04	1.00

As a first look at the data, let us see how cultural similarity, institutional difference and war incidence are distributed. I calculate the four quartiles of the  $F_{ST}$  – *dominant* genetic distance. From Table ??, you can see that more related populations experience more wars (analogous estimates for hostility in Table 2.5): the most culturally distant (i.e. fourth’s) quartile’s dyads have a war incidence of 0.10%, while the culturally closest quartile’s dyads have one of 1.37%. The institutional difference variable shows a stable, or if anything, an opposite pattern: the genetically most distant dyads are likely to experience regime difference (exactly one democracy as measured by Polity IV) 44.02% of the time on average, while the closest dyads do so only 41.10% of the time.

How does regime mismatch shape the impact of culture on war-proneness? Continuing to use the genetic quartiles, the average number of years at war for countries with a regime mismatch rises from 0.03% for the most distant quartile to 1.63% for the closest quartile. Therefore given institutional differences, the culturally-closest dyads experience regime-mismatch wars about 50 times more frequently than the culturally most distant country pairs. Also note that most variation arises from differences between the first and last quartiles compared to the two middle quartiles. When there is no regime mismatch the analogous estimate is much smaller: only about 8 times. Furthermore, you can see that although dyads with regime mismatch are more war-prone than those with the same regimes, this difference is

nowhere near as drastic as when coupled with different degrees of cultural similarity (0.67% vs 0.59%). Thus it seems that cultural closeness causes many more wars when there is a regime mismatch.

Table 2.4: War-proneness with respect to Cultural Proximity (measured through genetic proximity): the 1st quartile contains the culturally-most-distant country pairs, the 4th quartile holds the culturally-closest dyads. Regime mismatch is defined as having exactly one country with a Polity score of 7 or higher. The grand total mean (0.67%) is different from the global mean of war-proneness (0.55%) because 0.67% is calculated only from datapoints where the genetic distance variable is available.

Cultural Proximity	Mean War	Mean Regime Mismatch	Mean War when Regime Mismatch	Mean War when no Regime Mismatch
1st Quartile	0.10%	44.02%	0.03%	0.15%
2nd Quartile	0.50%	42.10%	0.58%	0.40%
3rd Quartile	0.67%	40.99%	0.55%	0.68%
4th Quartile	1.37%	41.10%	1.63%	1.14%
Grand Total	0.67%	42.03%	0.69%	0.56%

Table 2.5: Hostility with respect to Cultural Proximity (measured through genetic proximity): the 1st quartile contains the culturally-most-distant country pairs, the 4th quartile holds the culturally-closest dyads. Regime mismatch is defined as having exactly one country with a Polity score of 7 or higher. The grand total mean (0.034) is different from the global mean of hostility (0.028) because 0.034 is calculated only for datapoints where the genetic distance variable is available.

Cultural Proximity	Mean Hostility	Mean Regime Mismatch	Mean Hostility when Regime Mismatch	Mean Hostility when no Regime Mismatch
1st Quartile	0.005	44.02%	0.001	0.007
2nd Quartile	0.024	42.10%	0.029	0.017
3rd Quartile	0.036	40.99%	0.031	0.036
4th Quartile	0.070	41.10%	0.083	0.058
Grand Total	0.034	42.03%	0.036	0.0030



Table 2.6 shows individual wars (at least a hostility level of 4 - use of force) that have occurred between culturally-similar (same civilization) and institutionally different (at least a Polity score difference of 10) countries. The table drops observations during the Second World War (between 1939-45). Out of the 25 wars, only 4 happened between non-contiguous countries, even though in the baseline sample a quarter of the wars are between contiguous countries. This finding foreshadows that the wars captured by my theory are more likely to occur between geographically distant countries.

Table 2.6: Wars (at least a hostility level of 4) between culturally-similar (same civilization) and institutionally-different (Polity score difference greater than 10) countries. The years 1939-45 are dropped.

Year	Country 1	Country 2	Land Contiguity
1848	United Kingdom	Germany	no
1919	United Kingdom	Hungary	no
1919	France	Hungary	no
1935	United Kingdom	Italy	no
1936	United Kingdom	Italy	no
1965	China	South Korea	no
1965	South Korea	Vietnam	no
1966	China	South Korea	no
1966	South Korea	Vietnam	no
1967	China	South Korea	no
1967	South Korea	Vietnam	no
1968	China	South Korea	no
1968	South Korea	Vietnam	no
1969	South Korea	China	no
1970	South Korea	China	no
1971	South Korea	China	no
1990	Iraq	Pakistan	no
1991	Iraq	Pakistan	no
1991	Iraq	Bangladesh	no
1998	Namibia	Rwanda	no
1999	Namibia	Rwanda	no
1885	Mexico	Guatemala	yes
1919	Hungary	Czechoslovakia	yes
1990	Turkey	Iraq	yes
1991	Turkey	Iraq	yes

Most of the wars collected in Table 2.6 have complex causes and many form parts of bigger conflicts, but many have anti-diffusional reasons among the chief causes. For instance, the Hungary vs UK and France war in 1919 occurred in the aftermath of the First World War. Hungary was a Communist dictatorship in this period, which the Western European powers wished to eliminate in a bid to stem the flow of Communism. Similarly, Communist dictatorships feared democratization.

## 2.3 Random Forests and Support Vector Machines

As the next step of the exploratory analysis, I turn to non-parametric estimation, instead of immediately running linear regression analysis. First, I use the machine learning method called random forests (e.g. Hastie, Tibshirani and Friedman 2008), which makes far fewer assumptions about the functional form than linear regression. This benefit comes at the cost of more difficulty in interpreting the results, which is why the panel data linear regression analysis will be the main part of my statistical testing. After this, I will use the computer science data mining methodology called support vector machines. This method attempts to separate the data based on war-occurrence and searches for an optimal hyperplane in the feature space (the space of predictors) to do so.

Random forests are an ensemble machine learning tool, which means that I simply fit a high number (500) of regression/classification trees on my data. A great benefit of random forests is that I can measure each independent variable's importance by looking at the average reduction in variance due to the inclusion of each variable.

The idea behind random forests is that it is a collection of regression/classification trees, where these trees are purposefully de-correlated. The de-correlation helps reduce the variance of my predictor. This idea is therefore an improvement over the bootstrap-aggregation (bagging) method. Bagging fits regression or classification trees on different draws (with replacement) of the data, and then predicts out-of-sample data points by averaging each

of the trees' predictions. But bagging does not intentionally make the trees de-correlated. Thus with bagging if one of the independent variables is a very strong predictor of the outcome variable then in each tree that independent variable will be featured highly, making the ensemble of trees highly correlated and thus the original overfitting concern of trees is not much ameliorated. By contrast, random forests only consider a random subset of all independent variables in each split (usually  $\sqrt{p}$  features out of  $p$  features), thereby reducing the problem of overfitting and the variance of the predictor.

The variable importance plot for the binary war variable is in Figure 2.1. I created this plot with 500 classification trees. The plot suggests that the interaction of cultural similarity and differences in political institutions is one of the most influential predictors of war-proneness, even more important than geographic proximity. Naturally, these results need to be interpreted with caution: the many correlated geographic proximity measures could complement each other and could compose a stronger aggregate predictor. However the important finding is that cultural similarity with institutional differences is an important variable in predicting war. If I only take cultural similarity without political institutional differences, that variable is also important although less so than the interaction. In sum, cultural similarity is an important variable in its own right to consider when predicting wars, especially when interacted with differences in political institutions.

Now I turn to the support vector machine analysis. Like random forests, this method is very useful as a first look at the data as it does not make stringent model assumptions. This approach has a more computational flavor. The basic idea is to look for a separating hyperplane in the space of the predictors and decide on how to classify each data point (war / no war) based on which side of this decision boundary the data point lies. The simplest support vector machine uses a linear kernel, which means that the separating hyperplane will be linear in the feature space, whereas more complex versions enhance the feature space by

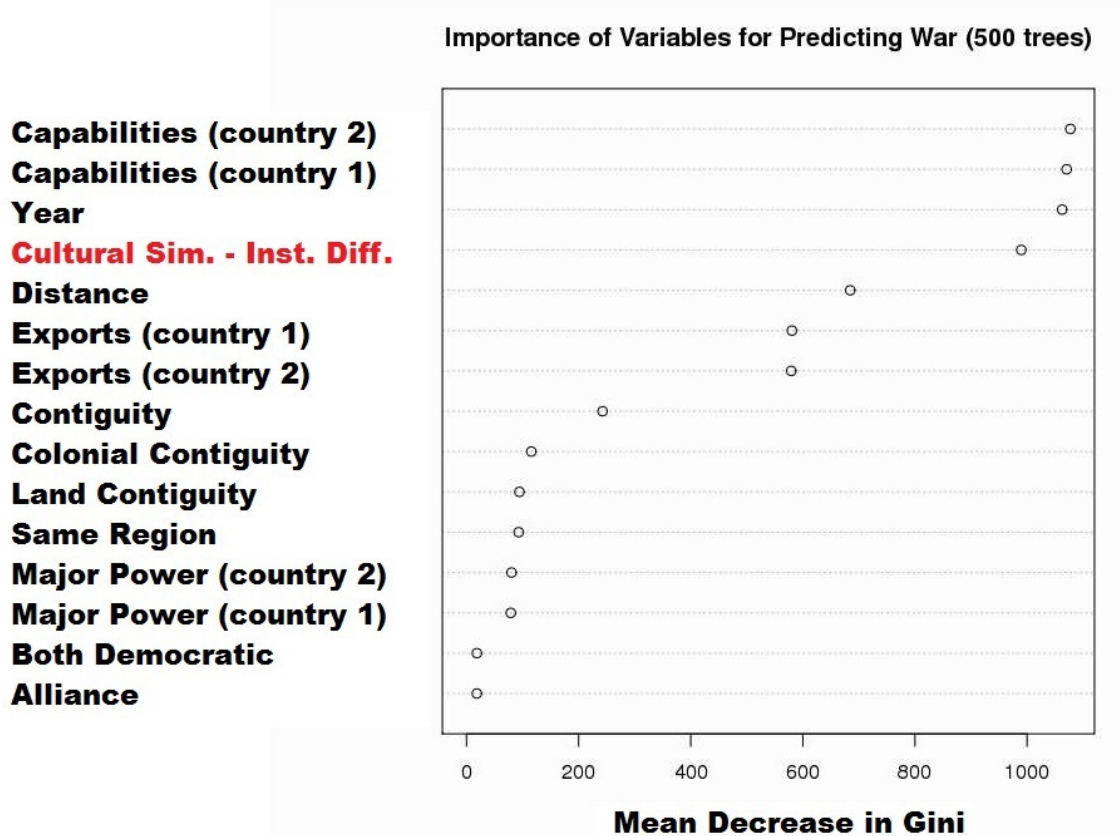


Figure 2.1: The exploration of the data using the ensemble machine learning technique of random forests. It shows that cultural similarity together with differences in political institutions is an important independent variable in predicting the variation in hostility.

adding non-linear terms and search for an optimal linear hyperplane in the enlarged feature space. This hyperplane is non-linear in the original feature space.

I conduct my analysis with both a linear and radial kernel, and report the results for the linear kernel here. Due to data size concerns, I take samples of the 1.6 million datapoints (keeping 1% of the dataset each time), and conduct the analysis separately on each of these samples. In each case I use all the available predictors to predict the binary war / no war outcome. In each case the hyperplane’s coefficient on the cultural similarity - political differences variable is positive. This means that higher values of cultural similarity - political differences lead to a higher probability of war classification. This result is robust to including or excluding cultural similarity and institutional differences on their own. Naturally, the positive coefficient can only be interpreted conditional on all other variables and support

vector machines are difficult to interpret on the whole. However, it is very useful to use them as a first cut at our data because of their easy intuition and the fact that datapoints which help determine the location of the optimal hyperplane are the ones which lie close to the boundary. This means that countries which are very unlikely to go to war play less of a role in the determination of the separating hyperplane than knife-edge cases between war and peace.

## 2.4 Linear Regression Analysis

### 2.4.1 Baseline Estimates (H1 and H2)

My baseline empirical specification is a model that identifies the hostility level  $h_{ijt}$  in a country-pair consisting of  $i$  and  $j$  at time  $t$ :

$$h_{ijt} = c_{ij} + \boldsymbol{\beta}'\mathbf{X}_{ijt} + \gamma C_{ij}I_{ijt} + \delta I_{ijt} + \epsilon_{ijt}, \quad (2.1)$$

where  $c_{ij}$  is a dyadic fixed effect, which captures time-invariant unobserved heterogeneity such as geography.  $\mathbf{X}_{ijt}$  is a vector of usual controls, including year fixed effects. Institutions are time-varying ( $I_{ijt}$ ), while broad cultural similarity in a country-pair is time-invariant ( $C_{ij}$ ). Thus the term  $C_{ij}$  without the interaction of institutions is absorbed by the fixed effect. My first hypothesis expects  $\gamma + 20\delta$  to be positive ( $I_{ijt} = 20$  is the maximal institutional difference<sup>13</sup>).

I start the data analysis with the broad cultural measures: race, religion and civilization. In the main regression the dependent variable is hostility as my theory predicts both war-proneness and less serious hostility. I use both random effects and fixed effects specifications. The advantage of the fixed effects regression is that the dyad fixed effects absorb any unobserved heterogeneity specific to a pair of countries. However, as culture and geo-

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<sup>13</sup>13,000 dyads have this maximal institutional difference value.

geographical proximity are time-invariant, they cannot be included in these regressions, only their interaction with institutional difference can. Thus in the country-pair fixed effects specification identification comes from country pairs where at least one turned more democratic/dictatorial during the two centuries of the data. For instance when a more inclusive government came to power in Buda-Pest in 1848, the Russian Tsar invaded Hungary to stem the democratic flow in Europe. As there is debate in the literature whether random or fixed effects are better suited for the Correlates of War analysis where war is a rare event (Green, Kim and Yoon 2001, Beck and Katz 2001), I run both specifications. In both specifications all geographic variables are also interacted with the Polity score difference. The fixed effects specification includes time fixed effects, the random effects specification includes a time trend. Both include peace years, including squared and cubed terms in order to account for peace persistence.

My first hypothesis is confirmed: Table 2.7 shows my random effects results, while Table 2.8 shows the fixed effects results. Figure 2.2 illustrates the differential effect of cultural similarity depending on institutional similarity with civilization as the cultural measure. Hostility always increases when I add cultural similarity in the presence of institutional differences. In the shared religion case the interaction is not positive but even here there is an overall significant positive effect of cultural similarity when evaluated at high values of institutional differences. Since I am working with interactions, it is also important to emphasize that the coefficient on cultural proximity by itself is negative in three out of the five cases. This means that when two countries have the same polity score, cultural proximity usually decreases war-proneness slightly.

Substantively, the effect of increasing cultural similarity in the presence of institutional differences is large. For instance, changing the dummy civilization variable to the 'same civilization' with maximum Polity score difference (20) adds on average 0.033 points of hostility. For the other variables this increase ranges between 0.002-0.26. These effects are large given that average hostility is 0.034.

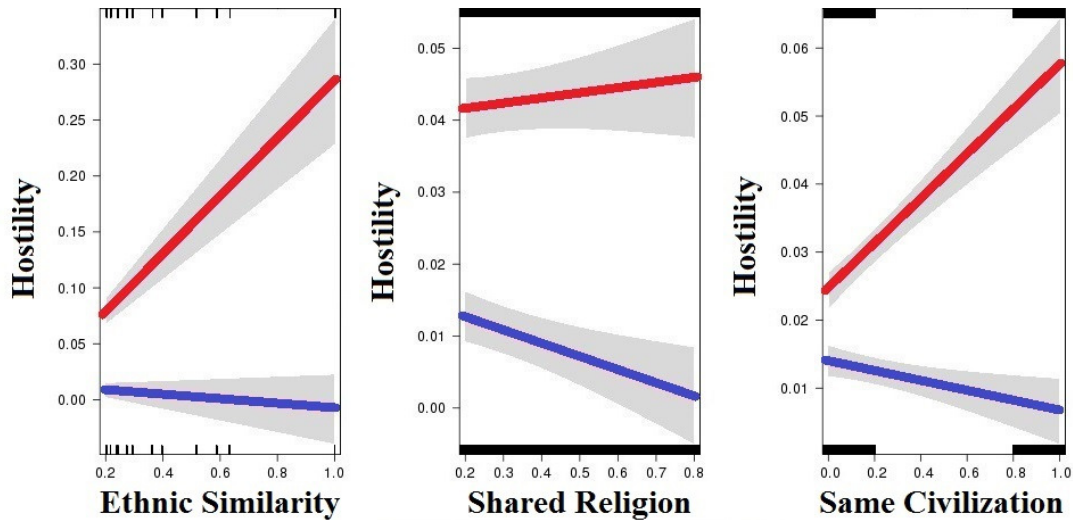


Figure 2.2: Main result graphically ( $H_1$  and  $H_2$ ): increasing cultural similarity raises hostility at high levels of institutional difference (red line; Polity score difference of 20), but has no clear effect at low levels (blue line; Polity score difference of 0). These regressions do not contain country-pair fixed effects, but contain a full set of controls, all of which are held at their mean for evaluation.

The non-fixed effects effects specification allows for testing the second hypothesis too. It is confirmed for all five measures: the most war-prone out of all possible dyad types are the ones that combine cultural similarity and institutional differences. You have seen that a culturally-similar but institutionally-different dyad is more hostile than a culturally as well as institutionally different one. It is also more hostile than an institutionally similar - culturally similar country-pair and an institutionally similar - culturally different one, for all five measures.

The coefficients on most controls are consistent with existing studies' findings. Analyzing the random effects specification (as time invariant variables are absorbed by the fixed effect in the fixed effects specification), there is a positive trend in hostility over time, capabilities increase hostility, as does major power status. Trade-flows are negatively related to hostility,

Table 2.7: Panel regressions (errors clustered by dyads). Standard errors are in parantheses. Increasing Cultural similarity in the presence of large Polity Score differences (15-20) leads to higher average levels of hostility. Peace years (up to cube terms) and covariates omitted to save space.

	Dependent variable:				
	Hostility				
	(1)	(2)	(3)	(4)	(5)
	genetic 1	genetic 2	religion 1	religion 2	civilization
year	0.001*** (0.00002)	0.001*** (0.00002)	0.001*** (0.00002)	0.001*** (0.00003)	0.001*** (0.00002)
Absolute Polity Score Difference	0.049*** (0.002)	0.045*** (0.002)	0.049*** (0.002)	0.059*** (0.003)	0.048*** (0.002)
CULTURAL SIM.	-0.021 (0.016)	0.021*** (0.005)	0.004** (0.002)	-0.018*** (0.006)	-0.007*** (0.003)
CULTURAL SIM.* Abs. Polity Score Diff.	0.014*** (0.002)	0.003*** (0.0004)	-0.0001 (0.0002)	0.001*** (0.0004)	0.002*** (0.0002)
Constant	-0.747*** (0.040)	-0.801*** (0.041)	-0.753*** (0.041)	-2.214*** (0.068)	-0.741*** (0.039)
Observations	939,244	939,244	910,636	468,488	963,790
Log Likelihood	-320,303.800	-320,249.800	-320,806.600	-232,124.800	-322,509.200
Akaike Inf. Crit.	640,663.600	640,555.500	641,669.300	464,305.700	645,074.300
Bayesian Inf. Crit.	640,992.700	640,884.600	641,997.500	464,615.300	645,404.100

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01



Table 2.8: Fixed effects regressions (dyad and time fixed effects). Standard errors, clustered at the dyad level, are in parentheses. In the presence of cultural similarity, larger institutional differences lead to higher hostility levels. Covariates omitted.

	Dependent variable:				
	Hostility				
	(1)	(2)	(3)	(4)	(5)
	genetic 1	genetic 2	religion 1	religion 2	civilization
Absolute Polity Score Difference	0.0628*** (0.00167)	0.059*** (0.0017)	0.0628*** (0.0017)	0.071*** (0.0023)	0.062*** (0.0017)
CULTURAL SIM.* Abs. Polity Score Diff.	0.00354* (0.0017)	0.0044*** (0.00044)	0.00034* (0.00017)	0.0023*** (0.00047)	0.0029*** (0.00024)
Observations	939,244	939,244	910,636	468,488	963,790
Multiple R-squared	0.184	0.184	0.184	0.219	0.183

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

while members of an alliance are less hostile to each other. The dyadic democratic peace (Doyle 1986, Oneal and Russett 1997) result also holds up: two democracies are less likely to fight each other. The geographic variables exhibit a strange pattern: being in the same region enhances hostility, but being contiguous on land, sea or through colonies in fact decreases it, while distance increases it. However, including only one geographic variable at a time brings back the usual coefficient signs, thus the strange result is due to the fact that many similar geographic variables are included simultaneously. Importantly, the interaction of geographic proximity and institutional differences is almost always negative. This points to more evidence that cultural proximity operates through a channel distinct from physical proximity.

### 2.4.2 World Values Survey (H3)

Now I turn to my third hypothesis. Why are individuals likely to learn from culturally-close peers but not from culturally-distant countries? I argue that visible cultural markers allow individuals to make rough inferences about how suitable institutions are for their own

country. Using the finer World Values Survey questions, I find that the visible markers individuals use correlate highly with values people hold about institutions and political actions. However, the correlation is smaller with indicators of mutual understanding.

In particular, I measure the similarity of average answers using any of the five questions about the importance of the freedom of speech, a strong leader, political violence, maintaining order or the importance of god. The correlations are high: on average, 4 of the 5 broad variables have positive correlations with these questions. By contrast, when considering definitional questions about what respondents perceive to be essential characteristics of democracy, the broad variables have a positive correlation with similar answers only 3.6 times on average. This is not much higher than the correlation with the placebo questions (3.3). The placebo questions include the questions on nationality.

For a more sophisticated analysis than correlations, I take similarity in responses to survey questions as my dependent variable and regress each on broad cultural similarity indicators. I count the positive coefficients in the regressions. For the compatibility group of questions, this number is 3.6 (out of a maximal 5), for the definitional questions it is only 2.42, which is even less than the placebo questions' 2.67 positive coefficients.

As a final indicator that shared identity captures compatibility rather than ease of communication, I included linguistic similarity as a measure. The variable is from Rose 2004 and is a binary indicator whether the two countries share a common language. This measure has a positive correlation with only 3 of the 5 visible cultural measures. Furthermore using this measure as a broad cultural variable in the regressions results in insignificant and even negative interactions, indicating that it is not communicational ease that drives social learning in my theory.

As the World Values Survey questions are only available starting from 1981, it is not ideal to use them as measures of cultural similarity in the main regressions because they are outcome variables. However it is also the case that culture only evolves slowly. Thus I run the war regressions using the World Values survey questions as measures of cultural similarity,

with the caveat about the limited validity of these regressions in mind. The coefficients on all 5 questions about compatibility are positive, and all but one are highly significant. For the 7 questions about definitions, one is negative, one is positive but insignificant, the rest are positive and significant.

Next I turn to my placebo World Values Survey questions. Using these measures as my cultural similarity variable, my two main hypotheses should not be confirmed. Indeed the coefficients on five out of the six placebo questions are either negative or insignificant. The only exception is whether the government should reduce environmental pollution. On the whole, the placebo tests indicate that only elements of political culture which reflect attitudes toward institutions matter and the broad visible measures capture these elements.

Another advantage of the specific questions is that they are largely uncorrelated with geography. Unlike my broader cultural measures, calculating pairwise correlations between similarity in question answers and distance or contiguity results in a wide variety of numbers, some negative, some positive, some around 0. This should serve as more evidence that it is not physical proximity that is driving the results.

### 2.4.3 Conflict Initiation (H4)

Next, which leader initiates the conflict? My dependent variable is whether the first country initiates a militarized interstate dispute, and I create an independent variable measuring how much more democratic the second country is. Three caveats apply. First, the quality of the MID data on this variable is less reliable than the undirected hostility level. Second the dictator is not necessarily the initiator of a dispute, even though according to my theory a dictator has the incentive to start the conflict against a democracy. Rational expectations and first-striker advantages (e.g. Chassang and Padroimiquel 2009) imply that the democratic leader recognizes the dictator's incentive to attack and might preemptively strike first. However, if there is uncertainty about the dictator's intentions or the democracy knows the dictator is only likely to seek low-level hostility or the first-striker advantage is

small, my theory implies that dictators are more likely to initiate conflict. Third, at times democracies also fight diffusion (e.g. anti-Communist intervention in Russia after the First World War, or the Bay of Pigs invasion in 1961), although dictators are more prone to insecurity due to democratic ideals. The fact that some anti-diffusionary wars are initiated by the more democratic country means this hypothesis is a tough test for my theory.

Table 2.9: Fixed effects regressions (dyad and time fixed effects). Standard errors, clustered at the dyad level, are in parentheses. The dependent variable is whether the first country initiates a conflict. The positive triple interactions of cultural similarity, institutional differences, and the second country being more democratic than the first shows the dictator is more likely to initiate the wars captured by my theory. Peace years (up to cube terms) and covarites omitted to save space.

	Dependent variable:				
	Conflict Initiation				
	(1)	(2)	(3)	(4)	(5)
Polity 2 - Polity 1	0.00002*** (0.00001)	-0.00004** (0.00002)	-0.00000 (0.00001)	0.00001 (0.00002)	0.00002** (0.00001)
CULTURAL SIM*abs pol diff	-0.0003 (0.0002)	0.0001 (0.0001)	-0.00004* (0.00002)	0.00003 (0.0001)	0.0001*** (0.00003)
CULTURAL SIM*abs pol diff* Polity 2 - Polity 1	0.00001 (0.00001)	0.00001*** (0.00000)	0.00000*** (0.00000)	0.00000 (0.00000)	0.00000 (0.00000)
Observations	939,244	939,244	910,636	468,488	963,790
R <sup>2</sup>	0.085	0.085	0.084	0.098	0.085
Adjusted R <sup>2</sup>	0.063	0.063	0.062	0.072	0.063

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

The initiator test confirms my third hypothesis that dictatorships are more likely to initiate a dispute than democracies in the presence of cultural similarity and institutional differences. I use the triple interactions of cultural similarity, institutional differences (absolute Polity score difference), and whether the target is more democratic (Polity score of the second country minus Polity score of the first country) and find a positive coefficient on the

triple interaction using any of my cultural measures.<sup>14</sup> Thus the dictatorship is more likely to initiate hostility when there is cultural similarity coupled with institutional differences. Interestingly, the triple interaction of land contiguity, institutional differences, and that the target is democratic is consistently negative. Thus it seems dictators are wary about initiating hostility against a democracy if the democracy can easily retaliate, which is consistent with the finding that democracies devote a larger effort to war-fighting (Bennett and Stam 1998, Bueno de Mesquita et al. 1999).

The initiator results also hold up when I restrict the sample to dyads which have experienced any hostility. The sample size is naturally much smaller, thus the  $p$ -values increase but the coefficients stay positive in all 5 cases. I also use the originator variable to explore whether a dictatorship usually joins an ongoing dispute (e.g. Italy joins the Second World War on Jun 10th 1940 against France), or the dictatorship originates the dispute (e.g. Germany attacks France on May 10th 1940). Although again the sample size is small, 4 out of 5 cultural variables have positive triple interactions when the dependent variable is whether the dictatorship originates the dispute. Thus it seems the dictatorship not only is more likely to initiate the dispute, but also without the attack of the dictatorship there would be no dispute.

#### 2.4.4 Testing the Mechanism: Social Learning (H5)

Next I test the fifth hypothesis through a novel variable,  $D_{ijt}$ . For each country in each year, I have a measure calculated as the average excess growth rate (averaged over the previous 5 years) abroad in culturally-similar but institutionally-different countries. I measure cultural similarity through the  $F_{ST}$  cultural proximity variable (the divided version). The results are robust to using the other cultural measures. For institutional difference, once

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<sup>14</sup>This is the correct specification because which country starts the war only matters conditional on having cultural similarity and institutional differences. Thus if I did not include the absolute Polity score in the interaction term then my coefficients would reflect not just my theory but if, for instance, two culturally-similar democracies are less likely to fight.

again I use the absolute difference in Polity scores. As neither this measure nor the cultural similarity variable can take on negative values, negative domestic pressure can only come from higher growth at home than abroad on average. Unfortunately, as data on GDP growth is only available from 1950 I need to restrict my attention to post-World War II data. Fortunately however, this still leaves us with more than half of the data: with 996810 observations.

I introduce domestic pressure in an interaction term with both absolute polity score difference and cultural similarity. The specification is:

$$h_{ijt} = c_{ij} + \beta' \mathbf{X}_{ijt} + \gamma' C_{ij} I_{ijt} D_{it} + \epsilon_{ijt}, \quad (2.2)$$

where  $\mathbf{X}_{ijt}$  includes lower interaction terms.  $\gamma'$  should be positive if culturally-similar and institutionally-different countries are more war-prone when there is domestic pressure. As you can see in Table 2.10 this is indeed what I find. First of all, the coefficient on the interaction of cultural similarity and institutional difference remains positive in two out of the five cultural variables, while the triple interaction term cultural similarity - institutional difference - domestic pressure (in country 1, calculated from divided genetic distance) is positive in all cases. Thus domestic pressure has a consistently positive impact on hostility when there is institutional difference and also cultural proximity. This is robust to using the variable ‘domestic pressure in country 2’ instead of in country 1. When using the other measures of domestic pressure, I get mixed results. However whenever either cultural proximity or domestic pressure is measured by one of the genetic distance variables, which has the most informational detail then the triple interaction is always positive, as is the overall effect of similarity.

The results in this section are also robust to numerous alterations. First note that the theory predicts that domestic pressure needs to be manageable with transfers instead of democratization in case of a war. Since I assume the war either physically or mentally

Table 2.10: Fixed effects regressions (dyad and time fixed effects). Standard errors, clustered at the dyad level, are in parentheses. I calculate domestic pressure as excess growth abroad in culturally-similar but institutionally-different countries. The positive triple interactions of cultural similarity, institutional differences and high excess growth abroad help confirm my social learning mechanism. Covariates omitted.

	Dependent variable:				
	Hostility				
	(1)	(2)	(3)	(4)	(5)
Domestic Pressure (1)	0.571*** (0.153)	0.591*** (0.153)	0.579*** (0.156)	0.658*** (0.219)	0.505*** (0.152)
CULTURAL SIM*abs pol diff	0.008*** (0.001)	0.001** (0.0004)	-0.0001 (0.0002)	-0.0003 (0.0005)	-0.0004* (0.0002)
Domestic Pressure (1)*abs pol diff	-0.030** (0.015)	-0.098*** (0.029)	-0.027 (0.016)	-0.028 (0.024)	-0.032** (0.015)
CULTURAL SIM*abs pol diff *Domestic Pressure (1)	0.283*** (0.060)	0.110*** (0.035)	0.014 (0.019)	0.030 (0.050)	0.106*** (0.025)
Observations	653,749	653,749	633,892	349,847	662,863
R <sup>2</sup>	0.280	0.280	0.280	0.305	0.279
Adjusted R <sup>2</sup>	0.254	0.254	0.254	0.279	0.254

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

eliminates the culturally-similar enemy, a more correct measure of this pressure is when I do not take country 2 into account when calculating domestic pressure for country 1 in the country 1-2 dyad. I first calculate the domestic pressure (genetic distance) not as a mean of the surrounding culturally-similar but institutionally-different countries' excess growth rates but the sum of those. This measure is a little different because now many culturally-similar but institutionally-different countries having very similar growth rates does not imply that a single high neighboring growth rate would not cause higher domestic pressure. Four out of five triple interaction terms remain positive, thus summed domestic pressure also confirms my results, although it works less well than simple domestic pressure. This is in line with the fact that when there is a single inspiring country, war is more effective.

Second, is it not possible that my results are not due to domestic pressure but simply to differential growth? If a country is growing at a slow rate, indicating an economic crisis, could it be an appealing target for other countries to attack? This explanation ignores why it is only an appealing target for institutionally different and culturally similar countries. Indeed as a placebo tests, I should find no effect of raising domestic pressure if there is no combined institutional difference and cultural similarity. This is indeed true. If there is only institutional difference, domestic pressure lowers hostility. If there is only cultural similarity, domestic pressure still raises hostility.

#### 2.4.5 Joint Estimation of War and Democratization (H6)

Next, my theory predicts that war and democratization are related. My model predicts that war occurs when democratization can be avoided through a war but not without it. In terms of domestic pressure on the dictator, domestic pressure increases the probabilities of both a war and democratization. For domestic pressure, I use the same measure that I have already introduced in the previous subsection: excess economic growth over the last five years in culturally-similar but institutionally different countries. For wars, again I use the broader hostility measure. For democratization, I create a variable that captures the



difference in the Polity score from the current year to the next year for the first country.

For my first estimation I use the same regression specification that I used in the previous subsection but change the dependent variable from war to democratization:

$$d_{it} = c_{ij} + \beta' \mathbf{X}_{ijt} + \gamma' C_{ij} I_{ijt} D_{it} + \epsilon_{ijt}, \quad (2.3)$$

where  $d_{it}$  is the Polity score difference in country  $i$  between  $t + 1$  and  $t$  and  $\mathbf{X}_{ijt}$  again includes lower interaction terms not absorbed by the fixed effect. Note that this specification has two weaknesses. First it ignores the effects of wars. Second this is a dyadic regression, where the dependent variable is just one country. All datapoints occur twice in the data set (because variables such as initiator are directed) so there are duplicates which are the same in every respect apart from country 1 and country 2 being changed up. This means there is no need to run the same regressions for country  $j$ . A related problem is that years when there are many countries in the world (and thus in the data set) are overweighted. These are usually later periods. Thus I run a robustness check when I restrict the sample to the post-Cold War period (starting in 1989). The coefficient  $\gamma'$  is positive, which means that democratization is more likely when there is pressure arising from culturally-similar and institutionally-different countries.

Next I turn to structural estimation using Equations 2.2 and 2.3 as a system of simultaneous equations, based on different sets of exogenous predictors. Estimating yields coefficients on the domestic pressure  $\gamma'$  for both the war and the democratization equation. These coefficients are both positive. This result on the positive coefficients holds up even if I change the specification slightly to include the Polity score of the second country minus the Polity score of the first country and calculate quadruple interactions. Thus both the probability of democratization and war-proneness are higher when the domestic pressure arises in the dictatorship and not the democracy.

I also run a different specification where I keep my war equation, but in the democratization equation I add domestic pressure to the regression equation rather than use it in an

interaction. The coefficient is similarly positive on this additive domestic pressure as well, indicating that domestic pressure increases the probability of institutional change, when pressure is measured through excess growth abroad in culturally-similar countries which have different political institutions.

#### 2.4.6 Estimation of Domestic Repression (H7)

Another hypothesis arising from my model is that wars between countries with cultural similarity and institutional differences occur jointly with domestic repression. Testing this hypothesis not only helps me find more robust evidence for my mechanism, but addresses concerns over my dependent variable of hostility and wars - as wars are rare events, their occurrence is difficult to estimate precisely.

I use data from the Uppsala Universitet's One-Sided Violence UCDP data set (Eck and Hultman 2007),<sup>15</sup> which is an actor-year data set with information on intentional attacks on civilians by governments and by formally-organized armed groups. I discard all observations that are not perpetrated by the government, are not domestic, or are not one-sided. The remaining country-year data set starts in 1989, and contains 257 events that range from 25 casualties (Central Africa in 2001) to an outlier 500,000 casualties in Burundi, DR Congo (Zaire), and Rwanda in 1994 (20 observations have higher casualty numbers than 1000). To make sure my results are not driven by a handful of very deadly events, I construct a binary variable that captures whether there is any violent repression event in a given country in a given year and use this dummy variable in my analysis.

First I run my baseline specification with panel fixed effects as well as the cultural similarity and institutional differences interaction, but I change the dependent variable from war to the binary domestic repression variable. The sample is restricted to post-Cold War years because of the UCDP data set's coverage. The results largely hold up, but the coefficients on two interactions (of a cultural similarity variable and institutional differences) out of the

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<sup>15</sup>[http://www.pcr.uu.se/research/ucdp/datasets/ucdp\\_one-sided\\_violence\\_dataset/](http://www.pcr.uu.se/research/ucdp/datasets/ucdp_one-sided_violence_dataset/)

five turn negative. Next I change the specification to the one with the triple interactions of cultural similarity, absolute institutional difference, and domestic pressure in country 1. Using the binary domestic repression in country 1 as the dependent variable, the coefficient on the triple interaction is positive in four out of the five cases (it is negative only for same civilization). Given that the sample size is restricted, these results can be interpreted as largely confirming that there is domestic repression under similar circumstances as when the wars captured by my theory occur.

Finally, I change the dependent variable back to hostility. Does hostility increase increase when there is domestic repression? Plugging in domestic repression instead of domestic pressure into the triple interactions (i.e. together with cultural similarity and absolute institutional differences) shows that the results of the fifth hypothesis hold up for four out of the five cultural variables. Naturally, there are issues of post-treatment bias arising when using repression as an independent variable, however these imperfect results also point to the fact that repression and wars are more likely to occur jointly in the presence of cultural similarity and institutional differences.

#### 2.4.7 Frequency of Domestic Pressure (H8)

My new domestic repression variable allows me to test another subtle prediction of my model: hostility is expected to be higher when domestic pressure arises infrequently. The reason is that the dictator cannot commit to redistribute resources to the citizens in low-pressure periods. The infrequent recurrence of high domestic pressure means that the citizens are difficult to placate in high-pressure periods because they perceive a unique opportunity in these periods to gain power.

To test this hypothesis I calculate the mean of the one-sided violence variable. The resulting variable tells me the relative frequency of events resulting in domestic repression (in country 1). This variable does not have a time dimension: there is one value for each country pair. Therefore to run cross-sectional regressions I collapse all the other variables

including my controls over the time dimension. Thus the regression equation modifies to a cross-sectional specification:

$$h_{ij} = \beta' \mathbf{X}_{ij} + \gamma' C_{ij} I_{ij} D_i + \epsilon_{ij}, \quad (2.4)$$

where  $h_{ij}$  is the mean hostility over time,  $C_{ij}$  is cultural similarity,  $I_{ij}$  is mean institutional differences and  $D_i$  is the frequency of domestic pressure in country  $i$ .  $X_{ij}$  includes lower level interaction terms, as well as the usual controls except for a time trend and peace years, and no time or dyad fixed effects can be included as this is a cross-sectional specification. Note that unfortunately we lose a lot of information with this specification and the regression equation does not contain any information about when institutions change in one country to another, therefore we need to interpret the results with caution.

I find that high frequency of domestic repression reduces hostility in culturally-similar and institutionally different countries. In other words, relatively infrequent domestic repression increases war-proneness, just as predicted by my model. The coefficient is negative on the triple interaction of cultural similarity, institutional differences and high domestic pressure for four out of the five cultural variables. The only positive triple coefficient is in the case of the divided genetic distance. As the data is not as good and detailed as in the previous regressions, the four out of five negative coefficients can be taken as confirming results for my hypothesis.

## 2.5 Geography

You might be worried that cultural similarity is just mismeasured geographic proximity. Although the fixed effects or the time-invariant geographic controls should lessen these concerns, it is interesting to investigate the impact of geography more deeply. Looking at correlation coefficients you can see that cultural proximity variables' correlation varies from -0.11 to -0.43 with distance, from 0.11 to 0.2 with land contiguity and from 0.18 to 0.46

with same region. Generally, the divided genetic distance covaries the least while the minus genetic distance and the same civilization correlate the most.

To have a closer look at geography, I consider only country pairs which do not share the same region: the results in fact strengthen (coefficients rise and  $p$ -values fall even though the sample size decreases) for this subsample. There are five big regions defined in the COW project:<sup>16</sup> Europe, the Middle East, Africa, Asia and the Americas. Compared to the unrestricted sample,  $p$ -values fall for the interaction term of the baseline specification, with all of them retaining their positive sign. This is robust to changing the dependent variable to wars (and robust to including lags). Similarly, results are stronger for non-contiguous dyads than for contiguous ones.

Another way of testing the same result is to include same region as a third interaction variable next to institutional difference and cultural similarity. The result is a negative (significant) triple interaction in four out of five cases (except for minus genetic distance) and an overall negative effect on the double interaction of institutional difference and cultural similarity.

What does the fact that the results are stronger for dyads not sharing the same region say about geography and culture? It means that the positive interaction on cultural similarity and institutional difference should not come from badly measured geographic distance. If cultural similarity was being driven by some residual measure of how easy it is to project power then presumably the mismeasurement should be greater for countries closer around.

It is interesting to consider why results are stronger for geographically-distant dyads. One possibility is that dictators who try to paint a negative image of a culturally-similar democracy prefer to do so when that democracy is further away. This could be because the dictator does not want his or her citizens to learn democratic ideals, while at the same time challenging the distant democracy lowers the risk of the democracy striking back due to the enemy-painting strategy of the dictator. If this is the case, the results for low-level hostility

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<sup>16</sup>The variable we use is 'home region' from the Correlates of War project and Eugene.

without actual use of force should be stronger between physically-distant dyads than the results for actual wars (defined as at least use of force). Interestingly, there does not seem to be a big difference in either coefficients or  $p$ -values between regressions including low and higher level hostility. However, when I focus exclusively on the highest hostility level (5), which is defined as at least 1000 battle deaths, the results for geographically-distant dyads are less strong (only 4 positive coefficients out of the 5 cultural measures, while all 5 are positive for the whole sample). Thus it seems dictators want to challenge democracies and are even prone to use force to do this, however they do not wish to risk a large-scale war in which the dictators themselves could be ousted.

As an example, consider Hungary's wars in the aftermath of the First World War. In March 1919 a Communist dictatorial government came to power in Budapest on the promise of fighting the neighboring newly-born non-Communist countries such as Czechoslovakia and Romania. This Hungarian government also fought against distant Western democracies. Although the war occurred over the question of territorial division in Central Europe in the aftermath of the First World War which Austria-Hungary had lost, there was also an anti-diffusional dimension to the conflict. The war involved not only Romanian and Czechoslovak but also French troops as well as British (and Communist Russian) assistance (Brecher and Wilkenfeld 2000, p.575), although casualties and fighting were constrained to Hungary's immediate neighborhood.

One worry might be that if the theory is better at explaining inter-regional conflict, it captures a relatively rare event. There are two reasons why this is not true. First, although the average number of wars occurring among countries belonging to the same region is higher (0.021) than among those belonging to different ones (0.004), as there are many more inter-regional dyads, there are still 5109 inter-regional conflictual dyad years, compared to 8185 intra-regional conflictual dyad years. Second, it is not the case that I am only explaining non-local conflicts, just explaining them better.

Furthermore, the dictatorship is also more likely to initiate and be an originator of the

geographically-distant disputes. I test this idea by restricting the sample to non-contiguous dyads which experienced any hostility level and run my directed-dyad analysis on this much restricted sample, using initiator and originator as dependent variables. For both dependent variables all triple interactions of cultural similarity, absolute institutional difference, and country 2 being a more democratic country are positive.

## 2.6 Alternative Mechanisms

Having tested all my hypotheses, I now turn to potential alternative mechanisms. My results on geography are also useful in addressing the possibility that a mechanism other than the one specified by my theory is at work. Could it not be that the results are driven by a major power's interest in a raw material source in a different region? The reason why the answer is no is because cultural similarity should not matter in that case at all. Also note that cultural similarity cannot arise from a small settler elite settling over a whole country with a different civilization (e.g. England and India) because I am looking at major civilizations and religions, thus such a dyad would be coded culturally dissimilar.

The fact that country pairs characterized by geographic distance are better explained also helps me address another alternative mechanism: immigration. It could be that the fear of the dictator is not about social learning but about losing valuable work force to an appealing country. Think of the Berlin Wall as an example - East Germany was desperate to prevent a steady flow of workers leaving to the West. However if immigration was the important channel then immigrants can move more easily into countries close-by, whereas information spreads more easily over large distances. As a result, the stronger results over larger geographic distance lend support to the information channel over the immigration channel.

Another related theory is the so-called rally-round-the-flag theory (Mueller 1973). The rally-round-the-flag effect is the phenomenon that a leader's popularity increases during a

foreign crisis either because the leader's citizens patriotically unite to support the leader (Levy 1989), or because the leader's actions reveal information about his or her competence to the citizens (Richards, Clifton Morgan and Young 1993, Downs and Rocke 1994). Most existing arguments which build on the rally-round-the-flag effect link it to so-called diversionary wars: a leader can use a war to divert attention from domestic problems. Yet the empirical evidence on the diversionary war hypothesis is mixed (e.g. James and Oneal 1991, Meernik 1994, Fordham 1998, Johnston 1998, Oneal and Tir 2006, Chiozza and Goemans 2003, Sobek 2007, Pickering and Kisangani 2010, Tir 2010). I propose that a main reason why the diversionary war literature has mixed findings is because a dictator often does not want to simply divert attention away from domestic economic and social troubles but divert his or her public's attention away from social learning. This means the target of a dictator is carefully chosen as the most inspiring country, as long as a war is not too risky and costly against this country. Note that the diversionary war hypothesis would not explain why it is culturally-similar but institutionally-different countries that are hostility-prone.

## 2.7 Endogeneity

You might also be worried about endogeneity issues, which are particularly difficult to handle in research which probes big political questions. Let me address these concerns as far as the data set I work with allows. As in most of the literature on international conflict, I have so far treated the cultural and institutional variables as exogenous to conflict. The first reason is that both my broad cultural measures, and institutions are very time-persistent, although institutions could change as a result of conflict. One way of addressing the concern of either culture or institutions changing as a result of past wars is that I have included a lagged war term as well as peace years (the number of years since the last conflict), as well as non-linear peace year terms. As war incidence is autocorrelated over time, this purges culture and institutions of much of their variation attributable to past wars.



To deal with any remaining endogeneity, I first run the regressions without including any of the obviously endogenous explanatory variables: trade flows and ally membership. Both main hypotheses hold up. Second, I attempt to address the endogeneity of culture by looking for a variable that dates back to earlier periods than the nineteenth century. For this purpose, I can also use a version of the genetic variables that Spolaore and Wacziarg reconstructed for they year 1500. The results hold up. Third, my results also hold up when I change the dependent variable to ‘cultural similarity’ and investigate whether more war-prone dyads over the last 200 years have become more culturally similar. Genetic proximity evolves slowly, however it is easy to think of a few countries that changed religion at least partially (e.g. Christianity in South Korea) or civilization (e.g. due to population movements (Germans in Eastern Europe)). However, the effect of these events is probably small over the two-century frame. If they constituted a problem for my regressions, I would find that war leads to more cultural similarity (e.g. through occupation, population transfers). However there is no sign of this. If anything, the opposite is true: regressing cultural similarity on geographic variables and war/hostility mostly yields a negative coefficient on war/hostility.

To address the potential endogeneity of institutions, I use two strategies. The first is to consider an exogenous wave of democratization. Huntington 1991 argues that the third wave of democratization, which swept the world between 1974 and 1991 had roots that were unrelated to war.<sup>17</sup> The democratization wave swept through Europe, Asia and Latin America. So I restrict the sample to the 1974-91 period and the three regions of Europe, Asia and the Americas. In these regions during this period, democratization can be regarded as having relatively exogenous roots in legitimacy, modernization, a change in attitudes of the Catholic church, snowballing and the sponsorship of democracy by the United States. The first two hypotheses are confirmed for this period too for four out of the five cultural

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<sup>17</sup>Since the US adopted efforts to spread democracy during the Cold War, this reason is endogenous to the Cold War, however only to the global hostility between the US and the Soviet Union, and not to other wars. Also it could be argued that during this period the US was unusually likely to sponsor non-Communist dictatorships because of the Cold War, thus if anything, the Cold War would work against my results.

variables.

The second strategy is to collapse the two-hundred year data to the starting year 1816. I create a variable that captures the maximum hostility level a country pair experienced between 1816 and 2008. I regress this variable on a cross-sectional sample including the time-invariant variables (same region, distance, colonial contiguity, land contiguity, contiguity, and all cultural proximity), and on the interaction of cultural proximity and absolute Polity score difference in 1816. The sample size is greatly reduced as the number of dyads with data in 1816 is 306. Yet four out of five interactions of cultural similarity and (original) institutional difference are positive, although the significance level varies. As the sample is restricted, these results should be interpreted with caution, however it is encouraging that my results mostly hold up.

## 2.8 Robustness

I perform a number of general robustness checks, beyond the ones in the previous subsections. I start by showing that there are enough datapoints with institutional differences and cultural similarity to make valid inferences. Then I change variables: I change the dependent variable from hostility to war, and also to fatality level. I also use Polity subscores. I run ordinal logit regressions, and different lag specifications. I explore whether my results could be confounded by alliances or colonies. I also show that my results are not driven by pairs of countries where a significant minority shares identity with a majority abroad, with the majorities in the two countries being different. Neither are they driven by countries which possess a significant minority different from the majority. I also explore subsamples: I find that the results are the strongest for Europe, but dropping any continent does not significantly change them. I find that stronger dictatorships are more likely to experience hostility against weaker democracies. Next investigating time trends shows that civilization and race are better predictors in the twentieth than in the nineteenth century, while religion

is the opposite. Finally, I explore the World Values Survey questions more deeply: I look at aggregated world values indices and my results hold up with these measures.

### 2.8.1 Data Concerns and Specifications

You might be worried that there are too few dyads which are culturally similar but institutionally different and therefore my results might be driven by only a few observations. This is not the case: institutionally-similar countries cluster among culturally-close ones but the relationship is not overwhelmingly strong. In fact, there are 119,860 country-pair years with institutional difference in the closest quartile, 120,392 in the next quartile, 125,604 in the second-to-bottom and 124,140 in the least similar quartile (quartile based on genetic distance). Therefore there appears to be a negative relationship between cultural similarity and institutional difference as suspected, but the tendency is not overwhelming. Since I use a fixed effects specification, it is also worth noting that the number of dyads that experience regime mismatch following a year with regime similarity is substantial. For instance, among the countries sharing civilization, the number of these is 2395 and 25 (1.04%) out of these pairs experienced war, whereas among the countries not belonging to the same civilization the number of such pairs is 12326, with only 22 out of these pairs experiencing wars (0.18%).

Next I check whether introducing the institutional difference variable and then the cultural proximity variable leads to a statistically better model, through a nested ANOVA test, using the genetic proximity  $F_{st}$ -distance-weighted variable. The models are random effects models with war being the dependent variable, errors are clustered on dyads. Introducing institutional difference leads to a Chi-squared value of 612.09, the F-test is significant at 0.001, introducing cultural proximity gives a Chi-squared of 10415, again significant at 0.001. This means that introducing interactions of my additional variables makes them jointly significant.

Now I turn to variations on the specification. First, I change the dependent variable to *War*, defined as a hostility level of at least 4 (use of force) and estimate a logit model with

dyadic fixed effects. I consider two specifications. The first is a simple model, in the second I include a lagged dependent variable to make sure that I am not capturing simply war length but also the outbreak of new wars. The positive impact of cultural proximity at high democratic difference levels holds up again,<sup>18</sup> and the second hypothesis is again confirmed as well. Substantively the logistic regressions give the following quantities. Using the religion variable in one country to the same religion as in the other country I get that an absolute Polity Score difference of 20 has an impact of an increase of about 7% ( $\exp(0.167-0.1)$ ) of the probability of war. Using the (minus) genetic distance gives an estimate of as much as 80% ( $\exp((1.6+1.5)*0.19)$ ).

In the next specification I change the dependent variable to war onset, which captures new wars only, and then to Fatal which captures how many fatalities the two sides have suffered in any given year (if any). The results remain substantively unchanged. The same is true of changing the dependent variable to the ‘highest action’.

Next I change the institutional variable measure. Instead of the absolute Polity score difference, I take the binary variable that defines ‘exactly one democracy’. Again both hypotheses hold up. The results are robust to changing the definition of ‘exactly one democracy’ to a Polity score cut-point of 6 or 10 (original is 7).

Next I take sub-components of the polity score. Looking at these subscores also helps us see which aspect of democracy seems to be driving our results. It is the case that competitiveness of participation and political competition both yield results that work for four out of the five cultural variables. However, the results hold up perfectly for the executive constraints and the competitiveness of executive recruitment (in each case I again calculate absolute differences). These slight differences could indicate that the executive in power starts the hostility or the war if they feel that their power is under threat.

As the dependent variable *hostility* is ordinal, I also run ordinal logit regressions. For

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<sup>18</sup>The interaction term with shared religion turns negative but the overall positive effects of cultural similarity and institutional difference remain.

two cultural variables the results disappear. However this specification also becomes robust in all five cases once I use specific subscores of the Polity score (constraint on the executive, participation), which should capture institutions more precisely.

To further lessen concerns about reverse causation (institutional differentiation as a result of wars, although for some reason only in culturally similar countries), I run the regressions with a positively lagged war (dependent) variable as well (the dependent variable is one period ahead of the independent ones). All results hold up.

Next I check for non-linearities in the data. Including squared terms for both cultural similarity (tested for all five measures) as well as absolute Polity score difference, using the random effects model. The significance levels on the coefficients vary. In particular, sometimes the cultural variable's interaction with the squared Polity difference seems more significant than the interaction of the levels. Therefore I test the regressions using the squared versions of cultural similarity and institutional difference (separately), and all baseline results hold up regardless of which measure I employ. The fact that the squared version of the absolute Polity scores may be more significant could strengthen the theory in the sense that larger democratic differences lead to proportionally more hostility, rather than small differences driving the results.

## 2.8.2 Subsamples

Next I look at subsamples of the data to explore the differential effects of variables such as alliances and colonies, as well as how much particular regions are driving my results. First, I investigate alliances. A surprising finding in Bueno de Mesquita (1981) is that allies are more likely to fight each other than non-allies. Restricting the sample to allies, I find that both my first two hypotheses hold up. Furthermore, the coefficient on the ally variable in these regressions is consistently negative and significant. Therefore Bueno de Mesquita's results could have been capturing the mere fact that culturally-similar countries are more likely to become allies and also to fight more wars when they have different political institutions.

Next is it possible that my results are driven by dyads like Palestine-Israel, where a significant minority in one country shares the other country's culture? First note that in this case the two countries would not be coded as culturally similar if the coding is correct because my cultural measures capture the biggest cultural group in a country. Furthermore, when I restrict the sample to dyads where the minor civilization in one country is the major civilization in the other, the results weaken (in two out of five cases not even the first hypothesis is confirmed and significance levels drop for the rest). This means that the results are not driven by two unrelated cultural groups sharing a country,<sup>19</sup> which then leads to a war of the majority with the mother-civilization of the unrelated minority. Therefore it is indeed culturally-similar groups, not just dyads, that seem to wage war.

A variant on this robustness check is to check whether results are solely driven by countries where there is a minority, perhaps ruling over a majority. Think of South Africa's wars during the Cold War with neighboring black-led regimes like Zimbabwe (Rhodesian Bush War). I restrict my sample to county pairs where neither has a minor civilization, and again the significant positive coefficient on the cultural similarity-institutional difference interaction hold up for all five cultural measures.

Another concern might be about colonies. Even if my results are stronger between geographically more distant countries, is it possible that most of them are driven by colonial empires (for instance Spanish colonies vs USA in 1898)? The first answer to this concern is that throughout my regressions I control for colonial contiguity (interacted with institutional differences). A second way to address this problem is to restrict the sample to country pairs which are not colonially-contiguous (i.e. whose colonial empires do not share a border). The coefficients on the interaction of cultural similarity and institutional difference remain significantly positive for all measures.

How about major powers? Unfortunately, my data is not perfectly suited for regression analysis because dyads are not completely independent of one another, even after controlling

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<sup>19</sup>For such a theory, see Saideman 2001.

for the covariates. For instance, if a NATO member is attacked, other countries in the military alliance are obligated to join the war. If this is a major problem for me, then when I restrict the sample to countries which are not powerful (i.e. neither of the two countries in a pair is a major power), the results should disappear, as major powers have the largest capability to intervene on behalf of others. Yet what I find is that four out of five interactions are still positive when I restrict the sample to non-major powers.

Furthermore, most of my results seem to arise from wars where one side is clearly stronger than the other. When I interact the variables of institutional difference and cultural similarity with the similarity in capabilities (the absolute distance of the two capabilities values multiplied by minus 1), the resulting triple coefficients are negative and highly significant for all five cultural variables.

Does it matter whether the dictatorship or the democracy is stronger? My theory predicts that the dictatorship initiates the conflict thus a stronger dictatorship should be more likely to be more hostile toward a weaker democracy than the other way around. This is indeed what I find. I interact the cultural similarity variable with two other variables: whether the second country is more democratic than the first (Polity score difference), and whether the first one is stronger than the second (capabilities difference). The resulting triple interactions are all positive: strong dictatorships against weak democracies are particularly war-prone when there is cultural similarity. The 1849 invasion of Hungary by Russia is an example of such a war.

Another robustness check is to compare economic to cultural variables. Is it possible that it is not cultural similarity that drives my results, but similarity in economic development levels? For instance, Inglehart and Welzel 2005 find that cultural values are driven by economic development level. Interestingly, however, when I use similarity of economic development levels instead of the cultural similarity variable, the resulting coefficient on the interaction of development level similarity and institutional differences is negative. The same result holds up if I change similarity in energy levels to similarity in energy levels per capita.

Thus cultural similarity plays a role in wars that is distinct from economic variables, such as the finding that capitalist countries rarely fight each other (Gartzke 2007).

The results are also not driven by any particular continent. I test this by dropping all country pairs in which at least one country belongs to a specific continent. Dropping Asia or the Americas leaves all coefficients significantly positive. Dropping Africa or the Middle East means that the sign of one cultural variable out of the five turns negative. Europe seems the most important because dropping it means that only the genetic distance results hold up, although the sample size also drops by roughly half. Furthermore as inter-regional wars are particularly well-explained by my theory, these tests are particularly tough for my hypothesis to hold up.

### 2.8.3 Subperiods

Also note that even though my data includes all pairs of countries over the last two centuries, I am not claiming that my mechanism explains all wars. My results hold up after controlling for various factors in the causes of war and peace, such as geography, power, trade, and political institutions. My cultural source of wars is also a factor in addition to these other factors, which may not play an important role in every war - yet the statistical analysis here shows that all else equal cultural similarity and institutional difference jointly make war and hostility more likely.

I also look at how much the most extensive war, the Second World War, is driving my results: I drop the Second World War from the observations, and the results largely hold up. But  $p$ -values increase (even though only relatively few data points are dropped) and the civilization measure as well as the Fox religious measure turns negative. Indeed the Second World War (or more precisely the 1939-45 period) is by itself well-explained by my theory. Restricting the sample to this period means that despite the fewer observations, the positive and significant coefficients hold up with all the cultural measures.

Historically, too, my mechanism at least partially explains the alliance system of the



Second World War. The German-Soviet war was one of the bloodiest wars in history. In fact, communists and Jews were “indissolubly” connected in Hitler’s mind (Evans 2003, p.197). As Evans (2009) writes Hitler regarded Bolshevism “as a tool of the world Jewish conspiracy, which had succeeded in enslaving the Slavs and bending them to its will” (p.161). In *Mein Kampf* Hitler described Marxism as “composed exclusively of manual workers under the leadership of Jews.” (Hitler 1939, p250). He also wrote “the international Jew,” was “today the absolute master of Russia” (Hitler 1939, p.505). Nazi thinking was that ‘Marxism, the Russian Revolution and capitalism were all Jewish plots (Mann 2004, p.184). By 1941, Hitler’s demented worldview about Jews and the Soviet Union had spread among many members of the German leadership. Most of his leading generals saw the Soviet Union “as a threat, since its Slav inhabitants were led by what they regarded as ruthless and cunning leaders of the ‘Jewish-Bolshevik’ world conspiracy to undermine the German race and German civilization” (Evans 2009, p.174-5).

Finally, I look at time trends for two reasons. First, the technology of learning from and about the outside world has changed tremendously over the last two centuries, thus I expect different cultural variables to play the central role in diffusion in earlier years than in later years. I test this by putting all my cultural similarity variables in my regression simultaneously. First, the civilization and genetics variables are better at predicting conflict in the twentieth than in the nineteenth century (higher significance, and the genetic variables even turn negative for the nineteenth century). By contrast, the shared religion variable has a lower  $p$ -value in the nineteenth century, pointing to religion playing an important part earlier.

The second reason for focusing on time is because there is some evidence that violence and armed conflict have globally declined over the last few decades (Goldstein 2011, Pinker 2011). However it is crucial to understand new types of conflict, and my mechanism predicts increasing hostility and war as interconnectedness as globalization makes knowing about the outside world easier for citizens. I find that my results are mainly due to twentieth-

century hostility: when I focus on the nineteenth century and use cultural proximity measures individually, some interaction coefficients turn negative, while all are positive and significant for the twentieth century.

#### 2.8.4 World Values Survey

I also address the concern that the questions I picked from the World Values Survey may not be representative. There are two main aggregate indices in the Worlds Values Survey, rational-secular and self-expression values. Rational-secular values de-emphasize religiosity, patriotism, authority, obedience and familism. Self-expression values, on the other hand, emphasize freedom, expression, non-conformity, self-direction and trust. As rational-secular values tap into ideals about the community while self-expression values reflect ideals about the individual, my theory, which is based on social learning, should work better with rational-secular values than self-expression values.

Looking at correlations with broad measures I find that the results are stronger for the rational-secular values. All correlations are positive for the rational-secular values, while two of the five are negative for the self-expression values.

Next I run regressions which include both the rational-secular and the self-expression similarity indicators, again with the caveat about post-1981 data coverage. I measure cultural similarity by simultaneously increasing rational-secular as well as self-expression value similarity by the same amount (of standard deviation). Therefore adding cultural similarity in the presence of institutional difference means that war-proneness increases by the coefficients on rational-secular and self-expression values, the coefficient on their interaction, the coefficients on each one's interaction with institutional difference as well as that on the triple interaction (rational-secular values, self-expression values, institutional difference). The results hold up for four out of five cases, the only one that fails is the first wave with its paltry 22 countries.

As rational-secular values de-emphasize patriotism, you might be afraid that cultural

similarity only causes wars when both countries are low on rational-secular values. There are two reasons why this is not so. First, this concern does not address why cultural similarity is a source of wars in the presence of institutional differences only. Second, I run a robustness check where I restrict attention to country-pairs where one of the countries has an above-average rational-secular value.<sup>20</sup> The results hold up except for the case of the third wave. In sum, there is also aggregate-level World Values Survey evidence for my theory.

In sum, I found robust cross-country panel data evidence for my theory. I tested numerous hypotheses in order to find as detailed evidence for my mechanism as my data allow. I also addressed potential plausible concerns and alternative mechanisms. Although wars are complex and have multi-faceted origins, I hope to have demonstrated evidence that my mechanism is a major explanation for wars which involve shared identity.

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<sup>20</sup>As the values are standardized, this cut-off is 0. Which countries are chosen depends on which wave I am looking at.

## Chapter 3

### Historical Case Studies

The historical case studies in this chapter complement the cross-country statistical analysis. The statistical analysis gave wide-ranging evidence for my theory, however the detail of this evidence has a natural limit due to the cross-country nature of the statistics. Therefore using case studies to find more detailed evidence helps build an even more convincing case that dictators think along the anti-diffusional logic of my model.

The invasion of democratic Hungary by Russia in 1849 serves as an example. The purpose of the Tsar's intervention was anti-inspirational. He wrote in a private letter that he decided to intervene because the Hungarian revolution was led by "the personification of villains, scoundrels, and destroyers, whom we must destroy for the sake of our own tranquility" (Rock 1970, p.185). The Tsar was concerned about social learning from Hungary. Moreover, the Tsar was most worried about his Polish subjects, who were culturally similar to the Hungarians.

There are several further historical examples of anti-diffusional wars. Many of these examples even show that my theory can be extended to domestic institutions other than political institutions. One is the Allied Intervention in Russia (1918-1922), which followed the Communist Revolution in Russia in 1917. Although this war was justified by Western leaders as an attempt to reestablish the Eastern Front against Germany in the First World

War, Allied leaders saw the real purpose of the intervention in fighting off Bolshevism before it could spread around Europe (MacKenzie and Curran 1977, p.157). Similarly, the Iran-Iraq War (1980-88) was started by Saddam Hussein because he was “genuinely concerned that Iran would export its revolution by stirring up trouble among the Iraqi Shi’ite population” (Daniel 2000, p.203). Saddam Hussein thought that the only way to avert the threat of diffusion was by destroying the Khomeini regime (Johnson and Tierney 2011, p.43). In all these cases there was cultural similarity between the two warring countries, which served as a basis for conflict.

### 3.1 Scope

The statistical evidence showed broad support for my theory across space and time. However, as with any theory, there are certain periods and places where it is particularly applicable and where it has less explanatory power.

My theory is applicable to both historical and modern cases. Furthermore, modern communications technology enhances the extent to which the dictatorship’s citizens can be reached by a powerful example (e.g. Dryzek 1999). Since the end of the Cold War, dictators have become more likely to be ousted by popular revolution and less by coups (Kendall-Taylor and Frantz 2014). The parallel rise of transnational social movements, in particular that of human rights organizations, since the end of World War II (Sikkink and Smith 2002) has also made information more readily available to the citizens of dictatorships. A dictator can disrupt the flow of information from abroad (e.g. Pyongyang controlling internet access in North Korea), but he or she cannot control it perfectly.

Another condition that makes my theory particularly applicable is if there had been some history of enmity between the dictatorship and the inspiring country. The dictator uses hostility or war to make his or her citizens believe the inspiring country is an enemy rather than a shining beacon of a better future. For this strategy to succeed, the fear needs

to be rational (de Figueiredo and Weingast 1999), so there must be some probability that the attractive country has ill intentions.<sup>1</sup> The dictator can thus start an anti-inspirational war more easily in case of history of conflict between the two countries, especially one involving past horrors for which the inspirational country did not apologize (van Evera 2001). Any such historical animosity allows actors to use different narratives in order to manipulate the citizens' emotions (Abdelal 2001).

## 3.2 Case Selection

How do I select my three cases? Eckstein (1975) describes most likely cases as cases which are most likely to fulfill the theoretical outcomes, while a least-likely case is a 'tough test' for a theory because the theory is unlikely to produce a good explanation of the case. Eckstein also defined crucial case studies: these case studies must fit one explanation if that explanation is true, and it must not fit any other explanations. A single crucial case study is a most difficult test for an argument (Gerring 2007).

However rather than choosing a single crucial case, I chose three cases to show the diversity of institutions that can inspire other countries' citizens. Diversity is also reflected by the fact that one case is from the mid-nineteenth century, one from the early twentieth century and one from the late twentieth century. The structure of the international environment also varied between my cases (multipolar in the first two cases, bipolar in the Iran-Iraq case).

None of my cases is a most likely case. To be sure, in all of the cases there was a threat of inspiration, there were cultural links between the inspiring country and the dictator's opposition, and the states in question had a common border, which facilitated the projection of force. Yet there were also factors that make these cases tougher tests for my theory. In the case of Russia-Hungary, Russia was neither militaristic, not personalistic, but was a

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<sup>1</sup>Glaeser 2005 argues that ethnic hatred is aroused through hate stories spread by the elite so that citizens wish to pauperize an ethnic group, which they can do through voting for the elite-favored redistribution policies.

monarchical, repressive regime (Sperber 2005). The same is true in the case of Austria-Hungary against Serbia. Furthermore in the Austro-Hungarian case and during the Cold War (Iran-Iraq war), the polarized world with the two alliance systems in place made any invasion dangerous, and thus potentially costly.

Moreover, my cases also allow me to have variation on the dependent variable. In two of my cases (Hungary-Russia, Iran-Iraq) war is triggered by a new institutional system which newly gained power, thus I can show how the presence of the inspiring institution increased the dictator's incentive to destroy the revolutionary information. In the case of Austria-Hungary, Serbia's ethnic Slav institutional system had existed for decades before 1914, but the 1913 Balkan Wars greatly strengthened Serbia's inspiring power, and its concomitant revelatory information. Thus this case allows me to show that my theory applies not just in the aftermath of revolutions (Walt 1996) and not just during periods of transnational ideological polarization (Owen 2010).

Naturally, space limits preclude a full analysis of any of my cases. Great power alliances, geography and personality traits of leaders all were important factors in the leaders' decisions about invasion. But as I show in my case studies, we cannot account fully for the events unless we take the anti-diffusional motives into account, and these motives were among the most important causes for these wars.

### 3.3 The Russian Invasion of Hungary in 1849

In this case study, I show that the Russian Tsar decided to invade Hungary in a bid to stem the flow of liberal revolutionary ideas into his own empire. The 'gendarme of Europe', as Nicholas I came to be known, sent 200,000 troops into liberal Hungary in the summer of 1849 because he was afraid that the revolution could infect his own subjects, especially due to the strong Polish-Hungarian links that existed among the two countries' citizens at the time. Therefore for Hungary's liberals, their attractiveness proved fatal.

### 3.3.1 Russia's Domestic Liberals

The Tsar's citizens showed a tendency to learn liberal ideas from Western Europe. A group of prominent Russian thinkers in Russia's nascent civil society became known as Westernizers (e.g. Herzen, Belinsky, Granovsky). These Westernizers represented most of the intelligentsia and upper classes (Bushkovitch 2012, p.164) and their aim was to copy Western liberal democracies. So-called Petrashevtsy circles also emerged among the less privileged classes including young officials, teachers and students. Many of these circles were leaning toward French socialist ideas (Acton 1995, p.63).

Westernizers had Western European contacts, and wished to adopt Western reforms, although they were aware of the uniqueness of Russia's path too (Evtuhov et al. 2004, p.363). Despite realizing that notions of freedom and individual rights might not work for a mostly illiterate population that had little experience in them, they regarded Western reforms as the way forward for Russian society (Lindemann 2013, p.110). Some even thought that Russia should imitate not existing but nascent Western societies, in particular socialist states (Bushkovitch 2012, p.163). What all Westernizers had in common was that they all argued that Russian history was insolubly linked with Europe due to geography and because it was a Christian power with a civic culture that was European, highlighting the cultural similarity (Hosking 2001, p.277).

Westernizers posed more than an abstract threat to the Tsar's rule. In 1825 there was a revolt in order to achieve British-style constitutional monarchy. As Rapport 2009 writes, the revolutionary upheaval diffused into autocratic Russia because Russian officers who had chased Napoleon all the way to revolutionary Paris absorbed Western ideas of constitutional government and civil liberties (p.15). The Decembrist uprising of 1825 was a warning sign to the Tsar about revolutionary pressure. Two decades later when the 1848 revolution erupted in Paris in February, Russian revolutionaries such as Nikolai Speshnev pressed for revolution as soon as they heard about the events in Paris. Speshnev's plans were revealed to the Tsar in April 1849, who promptly arrested him and his collaborators (Rapport 2009, p.103).



Therefore you can see that in the periods when the opposition could organize themselves, the domestic pressure on the Tsar was high.

Another source of trouble for the Tsar were his restive Polish subjects. In 1830-1 the Tsar's Polish provinces revolted, inspired by an uprising in Paris earlier in 1830. That revolt was closely tied to Western revolutions in multiple ways: it only occurred as the Tsar mobilized the Polish army in response to revolutions in Western Europe (Rapport 2009, p.16), and many revolutionary leaders sought refuge in Paris after the Tsar suppressed the uprising. Given that domestic trouble in the Russian empire was often tied to events in Western Europe, the frequency at which the Tsar faced challenges was low (1825, 1830-1, 1848-9), which is when war happens according to the model.

How did the Tsar react to the news of the 1848-9 revolutions? As soon as the revolutions erupted in Western Europe, the Tsar became intensely afraid of "the spread of political illness into his empire" which he believed to be "very far from being immune from infection" (Rapport 2009, p.101). He thought "that only autocracy could prevent the spread or revolution, liberalism and constitutional government" (Bushkovitch 2012, p.156). Thus when he heard about revolutionary events in Paris on March 10th, the Tsar decided to set up a secret committee and tightened censorship. On April 2nd he addressed the nobility, urging them to lend him their full support and in return he would abandon his embryonic plans to reform serfdom (Roberts 2004). Nicholas I's fears about the spreading of the revolution to Russia increased further as the wave reached Germany and the Habsburg Monarchy. He strengthened censorship even more through the founding of a secret super-censorship office known as the Buturlin Committee, and also reduced the number of university students. However there is also evidence that suppression was costly and inadequate. The Tsar's measures alienated not only revolutionaries but potential supporters of the regime as well (Saunders 2000, p.143). Furthermore, the repression depressed the empire (Saunders 2000, p.153). But the Tsar could take solace in the fact that liberalism was on the defensive across the continent by early 1849. Yet then through a few military successes against the Austrian emperor, the

Hungarian revolution appeared to gain new momentum.

### 3.3.2 Russia's Decision to Repress Abroad in 1849

When the revolutionary flame proved durable in Hungary through the spring of 1849, the Tsar decided to crush the Hungarian revolution. Among the Tsar's chief reasons for invasion was that he was "anxious about the effect that the Hungarian example would have on his perennially rebellious Polish subjects" (Rapport 2009, p.373). Some commanders of the Hungarian forces were Polish, such as Jozef Bem and Henryk Dembinski, along with about 4000 Polish fighters. Bem even became the overall commander of the Hungarian army (Lukowski and Zawadzki 2006, p.172). Thus the Tsar was sincere in believing that the Poles were running the Hungarian revolution and would "carry disaffection north of the Carpathians" (Saunders 2000, p.137). The perceived cultural similarity in-group feeling made the Polish-Hungarian threat even more acute. In fact before the main invasion the Russians had already made a brief foray on the request of the local Austria commander, and this small army had been subsequently beaten by Bem's army.

How about alternative motivations? That the purpose of the Tsar's intervention was anti-inspirational is also revealed by his private letters. In a letter to his general Paskevich, the Tsar admitted he was reluctant to act but he decided to intervene because the Hungarian revolution was led by "the personification of villains, scoundrels, and destroyers, whom we must destroy for the sake of our own tranquility" (Rock 1970, p.185).

As Poles played a key part in the Tsar's fears, it is worth pointing out that many of these Poles fought in the revolution because of the attraction of the cause of Hungarian liberalism. These soldiers were not mere fighters, but political activists too. Most of them participated in the Polish rising of 1830-1, and Dembinski was in fact the supreme commander of that uprising. The Poles' motto in 1848-9 in Hungary was "Za wolnosc nasza i wasza! A mi szabadsagunkert es a tietekert!" which translates as "For our freedom and for yours". Jozef Wysocki, a leading Pole in the Hungarian army, had been a military commander in Cracow

during an uprising in 1846 and in March 1848 had joined the Polish national committee. General Bem's reasons to take part in the Hungarian revolution were in particular political. He had democratic sentiments and saw in the Hungarian revolution a people fighting against an old elite (Kovacs 1979, p.253). Polish youths arrived in droves in Hungary as they saw Hungarian freedom as the best guarantee of their own freedom (Kovacs 1954, p.217). Thus it was Hungarian attractiveness that appealed to Poles and that horrified the Tsar.

Finally, it was Hungary's inspiration, not any Hungarian plan to project hard power that made the Tsar to act. Although the Hungarian leader Kossuth welcomed Polish generals because he realized that Polish generals had sympathy for the Hungarian revolution (Kovacs 1979, p.29), he did not want to provoke Russia. When Polish soldiers offered their services to the Hungarian revolutionary leader Lajos Kossuth in late 1848, Kossuth decided to disperse them in the Hungarian army rather than use them in a single legion precisely because he did not want to pose any threat to the Tsar (Kovacs 1979).

In sum, Hungary was becoming a central source of ideas, not hard power, undermining the Tsar's rule in Russian Poland, especially due to the presence of Polish freedom fighters in the revolt. The military successes in Hungary in the spring of 1849 started to have "a disturbing effect on the population of Russian Poland" (Roberts 1989, p.54). As a result, the Tsar invaded and defeated the Hungarian revolution by the end of the summer of 1849.

### 3.4 The Austro-Hungarian Invasion of Serbia In 1914

Some sixty-five years later the same region provides another case study to test my theory: on June 28 1914, Archduke Franz Ferdinand, heir to the Austro-Hungarian throne, was assassinated by a South Slav activist. A month later Austria-Hungary invaded Serbia, and within a few weeks Europe was enmeshed in the First World War. Why did Austria-Hungary start the war? I show that the dual monarchy's fear of domestic pressure from its Slavs, inspired by an independent Serbia led to the war. Where is the cultural similarity in this

case? The Slavic ethnic link that tied domestic pressure in the dual monarchy to Serbia played the decisive role to start the war.

### 3.4.1 Slavs in Austria-Hungary

What drove Austria-Hungary against Serbia? It was Serbia's appeal to the Slavs of the dual monarchy. Slavs made up the single biggest component of the monarchy's ethnic mosaic. Czechs were the biggest subgroup (13%), followed by the Polish (10%), the Ruthenians (8%), the Croats (5%), the Slovaks (4%), the Serbs (4%) and the Slovenes (3%). The Austro-Hungarian Foreign Minister Count Berchtold was afraid that Serbian nationalist inspiration would sooner or later lead to the break-up of the monarchy itself (Keegan 1999, p.51). As Joll and Martel (2007) write "[t]he Austro-Hungarian government believed that the establishment of some form of control over Serbia was essential for the survival of their state" and "the decision for war in 1914 was the result of a mistaken belief that only vigorous action against Serbia could solve the problem of the Slav nationalities within the empire." (pp. 154-5). In sum, the pressure in Austria-Hungary from the domestic ethnic opposition, mainly composed of Slavs, was high.

Serbia was inspiring to the monarchy's Slavs because these Slavs regarded Serbia as the beacon of Slav freedom. Serbia was not a fully liberal country, but Slavs enjoyed more freedom there than across the border in Austria-Hungary. The 'Young Bosnia' movement, which was involved in the assassination of Franz Ferdinand, was in fact a revolutionary movement, opposed to the Habsburg monarchy's conservatism. Their program contained nationalism, Yugo-Slavism and Pan-Slavism, as well as a revolutionary element. The movement stood against conservatism and authoritarianism, the Jesuit school system, and borrowed from Russian anarchists such as Bakunin. The important political figure in the movement was a Serbian colonel, called Dragutin Dimitrijevic, who was "a revolutionary as well as a soldier" (Keegan 1999, p.50).

It is essential to understand that the case here is not simply about irredentism or Serbian

nationalism, but about Serbia's appeal to a broader category of citizens in the dual monarchy. The threat of Serbia was so great to the inner peace of Austria-Hungary because it inspired a large swathe of Slavs, especially South Slavs, which included Croats and Slovenes, not just Serbs. As a result, a new movement, Yugoslavism arose in the late nineteenth century. A cultural link (similar languages, traditions) played a key role in the transmission of inspiration as cultural networks are often a primary highway through which soft power travels (Nye 2004, p.44).

Yet 'Yugoslavia' (literally the land of the South Slavs) needed to be constructed as an idea and it was constructed as a result of Serbia's appeal. Serbs were in many ways different from Croats and Slovenes: they were Orthodox, while Croats and Slovenes were Western Christians and Serbs were generally less literate and less educated. Yet Croatian and Slovenian national leaders decided to exploit Serbia's inspirational power. They calculated that the Slavic hinterland in the Balkans could help them secure greater recognition within the Austro-Hungarian empire (Djokic 2003 p.18). As a result, by the early twentieth century, "Yugoslavism had been assimilated, adopted and co-opted by a range of Serb, Croat, and even Slovene national ideologies and programs that were originally and philosophically its competitors and denials" (Djokic 2003 p.25). Yugoslavism was born to accommodate Serbia's attractiveness in opposition to Vienna and Budapest.

### 3.4.2 Austria-Hungary's Decision to Repress Abroad

Serbia was a thorn in Austria-Hungary's side, but was Austria-Hungary's not simply a German puppet when it came to a decision about invasion? The answer is no: recent research has shown that Austria-Hungary was an independent actor in triggering the First World War. Mulligan (2010) writes: "[f]or decades, the role of Austria-Hungary in the origins of the war has been underplayed in general accounts" (p.19). Recent research by Williamson (1991), and Kronenbitter (2003) show that the Austro-Hungarian leadership, especially the Habsburg Chief of Staff Conrad von Hoetzendorfer, constituted an aggressive and important

actor in the crisis. From 1913 Austria-Hungary took the initiative by adopting a unilateral approach and consulting Berlin less frequently (Mulligan 2010 p.211), and Berlin's response was to allow Vienna to make its own decisions. Historical records show that Austrian policy-makers perceived of themselves as a great power, and rather than fearing alienating Germany, they feared the consequences of not exploiting Germany's backing (Williamson 1991, p.179).

Why was Berlin so cooperative? Because Germany relied on Austria to avoid isolation and politicians in Berlin also feared that the dual monarchy was on the verge of collapse - a prospect that greatly troubled them. Berlin gave Vienna free rein because the German leadership also believed that Austria-Hungary's survival was threatened by an independent Serbia inspiring domestic Slavic opposition. Austria-Hungary's importance and this fear of collapse even made the German leadership encourage their Austrian counterparts not only to "come to a firm resolution about what it wanted to do" in the July crisis (Keegan 1999, p.54) but even to "take drastic action to rescue the creaking empire" (Mulligan 2010 p.212).

Therefore the Austrian government used the assassination as a pretext to destroy the beacon of Serbia. This case also illustrates well that a government is never in full control of its inspiration. Although not fully democratic, Serbia was ruled by a liberal monarch, and the Prime Minister Pasic's government was cautious about provoking Austria-Hungary. It is not clear whether Pasic knew about the assassination plot and what he could do to prevent it from taking place (Clark 2014). In fact Austro-Hungarian leaders did not worry about the government's behavior as much as about the shadier elements including secret societies and Yugoslavian ideas that made Serbia a beacon for Slavs (Clark 2014). During the July crisis, Pasic proved accommodating to Austrian demands, even though some of those demands were formidable. Nevertheless, Austria-Hungary invaded his country and thereby triggered the First World War.

## 3.5 The Iran-Iraq War (1980-8)

In my final case study I show that religious fundamentalism is also subject to diffusion and anti-diffusional wars.<sup>2</sup> A war that fits the case of diffusion of religious fundamentalism is the Iraq-Iran War (1980-8). The causes of the war were varied, including “fear, ideology, emotion, and crass political opportunism on both sides” (Daniel 2000, pp.202). However, a main reason behind the war was that “Saddam Hussein was genuinely concerned that Iran would export its revolution by stirring up trouble among the Iraqi Shi’ite population” (Daniel 2000, pp.203). As my theory expects, the war was started by Saddam Hussein, a secular dictator afraid of diffusion (Axworthy 2008) after the Islamist regime came to power in Tehran in 1979. Islam as a religion or a civilization (?) made Iraq and Iran culturally-similar, even though naturally there were cultural differences between the two countries too. However, Iran and Iraq shared many cultural features that Iran and for instance North Korea did not share due to the cultural and historical commonalities between the two countries.

### 3.5.1 Iraq’s Shia Population

The source of the diffusional link between Iraq and Iran was the common shared Shia identity between the new Iranian regime and Iraq’s Shia population. This was an important threat to Saddam Hussein because by the late 1970s the Shia population became the main concern for the Sunni-dominated regime in Baghdad (Marr 2004). Iraqi Shias composed about 70 percent of the Arab population of the country, which in turn was around 80 percent of the total Iraqi population, the rest being Kurds (Hiro 1991, p.25). This heterogeneity made the regime fear the break-up of the country (Baram 1983).

A top Iraqi Shia leader, Ayatollah Mohammad-Baqir Sadr was associated with Khomeini. He led a fundamentalist movement known as Al-Dawa al-Islamiya which was active in Iraq

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<sup>2</sup>Religious identity and conflict are related. Religion is one of the determinants of Huntington’s civilizational concept (Huntington 1996) and Seul (1999) argues that religion is particularly powerful in serving the identity-related needs of individuals and groups and is thus particularly related to conflict.

for decades, but gained new life after Iran's support in 1979 (Walt 1996, p.239). Khomeini had resided in the Iraqi city of Najaf for thirteen years before the revolution (Marr 2004, p.174). The Iraqi leadership was insecure because it realized the questionable loyalty of much of their country's population (Tripp 2002, p.230). Without religious ties between Iran and Iraq, anti-diffusionary motives could not have played a role in the decision to start the war. The oppression of the Shia majority by a secular regime along with the existence of six Shia holy shrines in Iraq made Saddam Hussein's country a prime target for Tehran's revolutionary export (Hiro 1991, p.28).

An alternative explanation is that Iran was fully responsible for the conflict because it attempted to incite Iraqi Shias against Saddam's regime. There are two problem with this type of reasoning explanation. First, it fails to explain why the Shias in Iraq cooperated in Iran's revolutionary export project. Second, the Iranian Shia regime was not in full control of the inspirational links between Iraqi Shias and the new regime in Iran. Even though Iran was ready to export revolution abroad, the regime in Tehran could not have overthrown Saddam Hussein on its own. Iraqi Shia leader Sadr publicly congratulated Khomeini when he took power in February 1979 (Johnson and Tierney 2011, p.36). and a wave of enthusiasm swept the Shia community in Iraq. Furthermore, Sadr published several essays on the projected new Iranian constitution (Marr 2004, p.174). The Saddam regime regarded Sadr "as a focus for ideas of an alternative political order in Iraq" (Chubin and Tripp 1991, p.25). After numerous Shia demonstrations, the regime arrested Sadr in June 1979 and also executed several hundred Shia activists. The Baghdad regime later released then rearrested him, and finally executed him in April 1980.

Nevertheless, Khomeini publicly advocated that the revolution should spread to Iraq (Johnson and Tierney 2011, p.40), even though he occasionally denounced the use of force to spread the revolution (Walt 1996). Baghdad's suspicions were heightened when an assassination attempt was made on Deputy Prime Minister Tariq Aziz in April 1980 by an assailant described as "an Iraqi of Iranian origin" (Chubin and Tripp 1991, p.26). But Khomeini also



wished to avoid war with Saddam, and the Iraqi offensive in September 1980 surprised him (Chubin and Tripp 1991, p.39). When Sadr announced in May 1979 that he was going to visit Khomeini, the Iranian leader asked the Iraqi Shia leader to remain in Baghdad (Marr 2004, p.175). Nevertheless Khomeini regarded a war with Iraq as inevitable because of the the “threat posed by militant Islam to unbelievers and the corrupt” (Chubin and Tripp 1991, p.41).

What are the religious institutions that Saddam Hussein was afraid of spreading? Was it different from Iraq’s Baathist secular regime? Although originally Khomeini appointed a largely secular provision government under the nonclerical Mehdi Bazargan, Bazargan was forced to share power with the Revolutionary council, which was a group of clerical advisers (Walt 1996, p.216). Khomeini also built up more powerful clerical institutions (Keddie 2003, p.241). Khomeini wanted to achieve full-blooded Islamic rule based on sharia and saw himself “as an architect raising a grand monument in the name of Islam out of the ashes of decadence and foreign domination” (Moin 2000, p.210). The clergy played a direct and active role in the new political system (Walt 1996, p.213), and Khomeinists came to dominate most new institutions, such as the judiciary, the armed forces and the universities (Keddie 2003, pp.246-50), and Bazargan’s position was undermined from all sides and he eventually resigned in November 1979 (Moin 2000, p.215-22). The new Iranian constitution “laid the foundation for a theocracy and for a legal system based on Islamic jurisprudence” (Moin 2000, p.224).

### 3.5.2 Iraq’s Decision to Start a War

In Saddam Hussein’s view, the only way to avert the threat of diffusion and the possibility of civil war in Iraq was by destroying the Khomeini regime (Johnson and Tierney 2011, p.43). The excuse for the war was provided by a dispute over the control of the Shatt al-Arab, the river formed by the confluence of the Euphrates and the Tigris. Saddam foresaw a limited war that would demonstrate that the new and threatening regime had been brought to heel

(Tripp 2002, pp.232-3).

The war also focused minds on the nationalist aspect of the Iranian revolution. Universalist claims about exporting the revolution were just one facet of Iran's behavior during the war. Saddam Hussein also used the war to rally citizens against an enemy regime, that of the 'mad mullah' or the anarchy of a revolution (Johnson and Tierney 2011 pp.8-9).

Leading up to the war, Saddam Hussein tried to avoid fighting. He made a personal tour of Shia regions and announced new economic improvements and even hinted at Shias sharing power. His aim was to keep Iraqi Shias isolated from the Iranian revolution (Johnson and Tierney 2011, p.41). However Saddam could not fully isolate his population from the revolutionary ideas emanating from Iran.

There was also fear of diffusion on Iran's side before the war. Supporters of the Shah's regime were permitted to stay in Iraq and broadcast anti-Khomeini propaganda (Johnson and Tierney 2011, p.42). Before the war, Iraq also tried to destabilize Iran through the use of former leaders under the shah such as Shahpur Bakhtiar, who orchestrated a few failed coup attempts (Marr 2004, p.183). Thus both sides inspired the respective oppositions of the enemy regime, heightening the benefits of war.

An alternative explanation is that Saddam Hussein was opportunistic and attempted to exploit Iran's temporary weakness in the wake of the fall of the shah. Although the war occurred against a background of ongoing territorial disputes and Saddam's fear of Iranian regional hegemony, the conflict would have been unlikely to occur if the shah had remained in power, and it was the triumph of Islamist ideology that shifted Saddam Hussein's calculations (Marr 2004, p.182). In 1980, Saddam thought the regime in Tehran was weak, disorganized and isolated, while he was confident in his own strength and power (Tripp 2002, p.232). Although opportunism was important in Saddam's decision to start the war, this only explains the timing: from the later months of 1979, Saddam Hussein started to consider not the question whether to invade but when to do so (Hiro 1991, p.37).

It is also worth investigating how other Arab countries were affected by the Iranian

revolution. There were disturbances among Shias in Saudi Arabia, who were inspired by events in Iran. There were also pro-Khomeini demonstrations in Kuwait and Bahrain. As a result, Saudi Arabia and Kuwait provided Saddam with extensive financial support during his war against Iran (Walt 1996, p.244). Iran also targeted Lebanese Shia fundamentalists with ideological as well as material support. The Lebanese Shias were particularly receptive to Iran's message. A main reason for this was that Lebanese Shiites were already radicalized (Walt 1996, p.246). The revolution also inspired Islamic fundamentalist movements by Sunni Arabs, but these movements were less unified and modified the Shia program, so the Iranian impact was smaller because of the larger cultural distance (Walt 1996, p.248).

## Chapter 4

# Text Analysis of Dictatorial Propaganda

The cross-national panel data analysis has allowed me to find broad support for my theory. Complementing this analysis with the case study analysis helps find more detailed evidence for my mechanism. The historical cases helped me find out the thought process of dictators, as relayed to us by primary and secondary evidence like the Tsar's correspondence and historians' analysis. However, one new question props up: how does the dictator paint an enemy image of a nation that could serve as an example for the dictator's citizens? The best way to answer this question is to look at dictatorial propaganda. Our statistical toolkit of text analysis and sentiment analysis are well-suited for such an analysis.

I chose two East-Asian cases in this section. First, North and South Korea are an immediate example to test my theory on. Since the example of these two countries fits the assumptions of my theory well (a divided nation is culturally-similar and they had two very different political regimes), the finding about North Korean propaganda can be relatively easily attributed to my theory. Naturally, North Korea is a closed country, where it is difficult to know a lot about the situation on the ground, but that is not a problem as the North Korean propaganda (toward the North Korean citizens) has been collected and even translated by the American authorities during the Cold War.

My second case is China and Japan. In this case the immediate application is less

apparent than in the case of the two Koreas: the two countries are less culturally-similar, although again shared history and interactions make these two countries more culturally proximate than for instance China and Poland. The recent case of the Diaoyu island dispute gives an opportunity for us to analyze the way Japan is portrayed in the Chinese media, and I can contrast it with other countries' portrayal of Japan, which have similarly troubled history with Japan but are democratic: in particular South Korea.

## 4.1 Analysis of the North Korean Propaganda (1978-96)

What accounts for North Korea's frequent belligerence toward the outside world, and in particular against South Korea? In this section I argue that North Korean hostility toward South Korea occurs because Pyongyang wants to discourage North Korean citizens from learning from a culturally-similar democracy. I use North Korean propaganda from the official news media in Pyongyang. I analyze the period surrounding the democratization of South Korea in 1987 and show that Southern democratization increased Pyongyang's enemy depictions and the regime's emphasis on the low quality of life in South Korea. To approximate a difference-in-difference framework, I use Japan and the Philippines: Japan as a culturally more similar country to North Korea which did not experience regime change around 1987, and the Philippines as a culturally more distant country which underwent regime change around the same time. I show that there is no similar increase in negative terms after 1987 in the North Korean articles which mention these two other countries.

For the analysis in this section I use the North Korean articles produced by the state news agency in North Korea, the Korean Central News Agency (KCNA).<sup>1</sup> I use an archive available online for the years before and after 1987: I analyze reports aggregated in the Foreign Broadcast Information Service (FBIS) database. Although the articles are written in English, they are produced by the same agency that writes articles in Korean. Furthermore

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<sup>1</sup>Official website: <http://www.kcna.co.jp/index-e.htm>

many articles report on pieces that appear in the Rodong Sinmun, the official newspaper of the Central Committee of the Workers' Party of Korea. The theme of the articles are varied. Many address North Korean foreign and domestic policy, while some are less pertinent to North Korea itself.

#### 4.1.1 North Korean Ideology

Historical research reveals that the nationalist ideology in North Korea, Juche, is a by-product of the division of the Korean peninsula. This case study thus also highlights the strong relationship between culture and nationalism. In the existing qualitative literature, for instance, Gellner (1996) writes that “nationalism is a political principle which maintains that similarity of culture is the basic social bond” (p.3).

The North Korean nationalist ideology is built from above as the regime needs to create an artificial division between South Koreans and North Koreans in the minds of North Koreans. The regime achieves this by painting a negative enemy image of South Korea, thereby hoping to discourage social learning. In the early decades of North Korean existence, social learning of economic institutions (capitalism) threatened the regime, over the last three decades the main threat comes from learning about democracy.

The Juche idea (national self-reliance) was developed by Kim il-Sung in the mid-1950s, although it only became fully-developed in the 1960s (Bluth 2008 p.23). It reflects what the North Korean elite view as an ideal society of North Korea. It has been designed to help the ruling elite solidify its power base and integrate the political community, as well as to achieve national consensus (Park 1996, p.10).

Is South Korea relevant to the creation of the Juche ideology? In fact the security threat from South Korea with its 36,000 US troops led the North Korean regime to integrate the system around the official ideology (Park 2002, p.14). It has been an “effective means to secure public compliance to government policies and to generate a broad base of support for the regime” (Park 1996, p.10).

A look at Kim Il Sung's speech in Jakarta in 1965 indicates that one of Juche's main purposes is to create an enemy image of the South. Kim states that "North Korea, where the people took power into their own hands, has vigorously advanced along the road of national independence and progress, while South Korea, under the domination of the U.S. imperialists, has once again fallen into the road of colonial slavery and reaction." (1972, p.23). Note the dual aim of contrasting the 'progressive' Northern regime with the 'reactionary' Southern one and linking the South to the US. In fact the ideology of Juche evolved in the process of legitimization of the regime as the antithesis of the South Korean institutions (Park 2002, p.124).

The late 1980s and the early 1990s brought intensified efforts of promoting Juche. One reason was the demise of the Soviet Union in 1991 which "intensified the Pyongyang regime's obsession with shielding its people and society from external influences." (Park 2002, p.14). Another reason was that by the 1990s South Korea adopted Western institutions such as democracy, which contrasted with the indigenous Juche ideology (Park 2002, p.121). Thus the nationalism of North Korea is contrasted with democracy in South Korea. Pyongyang knows it cannot risk the basis of regime legitimacy by adopting reform policies since they would negate its ideological legitimacy (Park 2002, p.124). In an article in 2014 the official North Korean newspaper Rodong Sinmun describes "Western-style "democracy"" as the "most reactionary and unpopular politics mercilessly trampling down the aspiration and demand of the popular masses for freedom and democracy."<sup>2</sup> In contrast, North Korea is building "Korean-style socialism", a nebulous concept characterized by "firm independen[ce]" and "single-minded unity".<sup>3</sup>

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<sup>2</sup><http://www.kcna.co.jp/item/2014/201401/news15/20140115-11ee.html>

<sup>3</sup><http://www.kcna.co.jp/item/2014/201401/news03/20140103-06ee.html>

#### 4.1.2 KCNA Articles 1978-96: South Korea's Democratization

Is a reason behind North Korea's negative propaganda and hostility toward South Korea to discourage North Korean citizens from learning democratic ideals? South Korea's democratization date provides me with a framework to test my ideas more closely. The current (sixth) republic of South Korea started with the election of Roh Tae-Woo as president in 1987. If the North Korean dictator (Kim Il-Sung until 1994) genuinely feared democratic diffusion, then I should see an increase in hostility toward South Korea following 1987. This is indeed what I find.

The new South Korean democratic regime replaced a dictatorship that had lasted a decade and a half. This democratization was part of the third global wave of democratization (Huntington 1991) thus the sources were both international and domestic, but largely independent of North Korea's politics. Mass protests occurred in June 1987, involving students and universities.

I find that even though around 1987 South Korea became much more democratic and less repressive, and the military had less influence, after 1987 South Korea is more frequently described in terms such as 'repressive', 'fascist', and 'military'. Furthermore, what exhibits an even bigger change, are expressions that associate a miserable life with South Korea, such as 'poor', 'crime', 'misery', 'unequal', 'unhappy', 'suicide', 'failure' or 'hopeless'. The South Korean regime itself is disparaged more frequently. The North Korean press starts to associate the words 'corrupt', and the expression 'rights violations' with it. Therefore, the North Korean regime was more keen on depicting life in South Korea in a negative light after the South's transition to democracy.

The North Korean regime attempted to portray South Korea's democratization as fake and deceptive. The North Korean dictator gives a new year's address on January 1st of every year, generally praising North Korea's achievements and development of socialist culture and slamming the performance and aggressiveness of its enemies. Following the tumultuous changes in South Korea in 1987, the 1988 new year's address analyzes how "people from all



walks of life in South Korea fought determinedly to end the military fascist dictatorship”. But “[i]n spite of the desire of the overwhelming majority of the people to abolish military rule and establish civilian government, the military fascist dictatorship is still reigning over the people of South Korea.”<sup>4</sup> The 1989 new year’s address continues to talk about the efforts of “courageous young people and students in South Korea” which met “harsh fascist suppression”. It presses that “[t]he endeavours for national reunification in South Korea are now developing into a movement of the majority, not of the minority.”<sup>5</sup> The 1990 new year’s address still displays “continued harsh fascist suppression.”<sup>6</sup>

Pyongyang attempts to convince its readership that South Korea is a sham democracy: “[a]lthough the Yusin dictatorial regime and the dictatorial regime of the Fifth Republic have been denounced in South Korea as fascist military dictatorial regimes that totally obliterated the people’s freedom, rights, and human rights, today’s dictatorial regime of the Sixth Republic led by the No Tae-u ring far surpasses its predecessor dictators in terms of its tyrannical nature.”<sup>7</sup>

It is also important to understand the content of North Korean hatred toward the South:

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<sup>4</sup>Daily Report. East Asia, FBIS-EAS-88-001 on 1988-01-04, p.6: [http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p\\_product=FBISX&p\\_theme=fbis&p\\_nbid=E63F5FGTMTM4NDUzMTk4OC4zNjk3OTQ6MToxNDoxMjguMTAzLjE0OS41Mg&p\\_action=doc&s\\_lastnonissuequeryname=10&p\\_queryname=10&p\\_doref=v2:11C33B0D5F860D98@FBISX-120825EC463F9C00@2447165-120825EEDC11F960@9&p\\_docnum=2](http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p_product=FBISX&p_theme=fbis&p_nbid=E63F5FGTMTM4NDUzMTk4OC4zNjk3OTQ6MToxNDoxMjguMTAzLjE0OS41Mg&p_action=doc&s_lastnonissuequeryname=10&p_queryname=10&p_doref=v2:11C33B0D5F860D98@FBISX-120825EC463F9C00@2447165-120825EEDC11F960@9&p_docnum=2)

<sup>5</sup>Daily Report. East Asia, FBIS-EAS-89-001 on 1989-01-03, p.11: [http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p\\_product=FBISX&p\\_theme=fbis&p\\_nbid=E63F5FGTMTM4NDUzMTk4OC4zNjk3OTQ6MToxNDoxMjguMTAzLjE0OS41Mg&p\\_action=doc&s\\_lastnonissuequeryname=13&p\\_queryname=13&p\\_doref=v2:11C33B0D5F860D98@FBISX-1206561831E4BC50@2447530-1206561C96977A50@15&p\\_docnum=3](http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p_product=FBISX&p_theme=fbis&p_nbid=E63F5FGTMTM4NDUzMTk4OC4zNjk3OTQ6MToxNDoxMjguMTAzLjE0OS41Mg&p_action=doc&s_lastnonissuequeryname=13&p_queryname=13&p_doref=v2:11C33B0D5F860D98@FBISX-1206561831E4BC50@2447530-1206561C96977A50@15&p_docnum=3)

<sup>6</sup>Daily Report. East Asia, FBIS-EAS-90-001 on 1990-01-02, p.11: [http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p\\_product=FBISX&p\\_theme=fbis&p\\_nbid=E63F5FGTMTM4NDUzMTk4OC4zNjk3OTQ6MToxNDoxMjguMTAzLjE0OS41Mg&p\\_action=doc&s\\_lastnonissuequeryname=14&p\\_queryname=14&p\\_doref=v2:11C33B0D5F860D98@FBISX-1205E29907F87378@2447894-1205E29D005BB490@14&p\\_docnum=1](http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p_product=FBISX&p_theme=fbis&p_nbid=E63F5FGTMTM4NDUzMTk4OC4zNjk3OTQ6MToxNDoxMjguMTAzLjE0OS41Mg&p_action=doc&s_lastnonissuequeryname=14&p_queryname=14&p_doref=v2:11C33B0D5F860D98@FBISX-1205E29907F87378@2447894-1205E29D005BB490@14&p_docnum=1)

<sup>7</sup>Daily Report. East Asia, FBIS-EAS-88-048 on 1988-03-11, p.9: [http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p\\_product=FBISX&p\\_theme=fbis&p\\_nbid=E63F5FGTMTM4NDUzMTk4OC4zNjk3OTQ6MToxNDoxMjguMTAzLjE0OS41Mg&p\\_action=doc&s\\_lastnonissuequeryname=375&p\\_queryname=375&p\\_doref=v2:11C33B0D5F860D98@FBISX-12062ED854F9B870@2447232-12062EDC75351800@12&p\\_docnum=3](http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p_product=FBISX&p_theme=fbis&p_nbid=E63F5FGTMTM4NDUzMTk4OC4zNjk3OTQ6MToxNDoxMjguMTAzLjE0OS41Mg&p_action=doc&s_lastnonissuequeryname=375&p_queryname=375&p_doref=v2:11C33B0D5F860D98@FBISX-12062ED854F9B870@2447232-12062EDC75351800@12&p_docnum=3)

life in the South is painted in negative terms. Writing of North Korean citizens who escaped to the South, the KCNA reports that they are disillusioned. While they were “dreaming a dream of ‘freedom’ and ‘wealth and rank’,” they are suffering instead “maltreatment, non-rights and poverty.” The article also attempts to alienate North Korean citizens from defectors, stating that nearly all of them “committed crimes and defected to the South for fear of punishment.”<sup>8</sup> Although the reason behind such articles might be to discourage North Korean defectors, that would not explain why native South Koreans are also described as suffering. A South Korean defector supposed to have said that his motive for defection was “his longing for the society of the North where the soul of the nation is alive and genuine justice prevails.”<sup>9</sup> Another article describes violations of human rights, illegal arrests and trials, medieval torture, terrorism and murder committed ceaselessly “in South Korea under the cloak of ‘democratization’”.<sup>10</sup> In a vivid portrayal, South Korea is depicted as “a living hell in which a tiny handful of haves enjoy all powers and luxury while the toiling masses who account for an overwhelming majority live in poverty, sorrow and penury.”<sup>11</sup>

Naturally these are arbitrary examples. But is there also a tendency for the North

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<sup>8</sup>Daily Report. East Asia, FBIS-EAS-96-139 on 1996-07-18 p.19: [http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p\\_product=FBISX&p\\_theme=fbis&p\\_nbid=T66O61SVM4NDYxMjg1OS42MzZMDc6MToxNDoxMjguMTAzLjE0OS41Mg&p\\_action=doc&s\\_lastnonissuequeryname=6&p\\_queryname=6&p\\_doref=v2:11C33B0D5F860D98@FBISX-11FEF4F97076AD60@2450283-11FEF500136C1390@23&p\\_docnum=106](http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p_product=FBISX&p_theme=fbis&p_nbid=T66O61SVM4NDYxMjg1OS42MzZMDc6MToxNDoxMjguMTAzLjE0OS41Mg&p_action=doc&s_lastnonissuequeryname=6&p_queryname=6&p_doref=v2:11C33B0D5F860D98@FBISX-11FEF4F97076AD60@2450283-11FEF500136C1390@23&p_docnum=106)

<sup>9</sup>Daily Report. East Asia, FBIS-EAS-91-188 on 1991-09-27 p.11: [http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p\\_product=FBISX&p\\_theme=fbis&p\\_nbid=T66O61SVM4NDYxMjg1OS42MzZMDc6MToxNDoxMjguMTAzLjE0OS41Mg&p\\_action=doc&s\\_lastnonissuequeryname=7&p\\_queryname=7&p\\_doref=v2:11C33B0D5F860D98@FBISX-120846E3B360F440@2448527-120846E8A0EB75B0@15&p\\_docnum=51](http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p_product=FBISX&p_theme=fbis&p_nbid=T66O61SVM4NDYxMjg1OS42MzZMDc6MToxNDoxMjguMTAzLjE0OS41Mg&p_action=doc&s_lastnonissuequeryname=7&p_queryname=7&p_doref=v2:11C33B0D5F860D98@FBISX-120846E3B360F440@2448527-120846E8A0EB75B0@15&p_docnum=51)

<sup>10</sup>Daily Report. East Asia, FBIS-EAS-89-203 on 1989-10-2, p.19: [http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p\\_product=FBISX&p\\_theme=fbis&p\\_nbid=M64D5EOSMTM4NDczMzI1OC4xOTM0OTE6MToxNDoxMjguMTAzLjE0OS41Mg&p\\_action=doc&s\\_lastnonissuequeryname=52&p\\_queryname=52&p\\_doref=v2:11C33B0D5F860D98@FBISX-12069E46C002AB98@2447823-12069E4EBB498168@22&p\\_docnum=45](http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p_product=FBISX&p_theme=fbis&p_nbid=M64D5EOSMTM4NDczMzI1OC4xOTM0OTE6MToxNDoxMjguMTAzLjE0OS41Mg&p_action=doc&s_lastnonissuequeryname=52&p_queryname=52&p_doref=v2:11C33B0D5F860D98@FBISX-12069E46C002AB98@2447823-12069E4EBB498168@22&p_docnum=45)

<sup>11</sup>Daily Report. East Asia, FBIS-EAS-93-005 on 1993-01-08, p.19: [http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p\\_product=FBISX&p\\_theme=fbis&p\\_nbid=M64D5EOSMTM4NDczMzI1OC4xOTM0OTE6MToxNDoxMjguMTAzLjE0OS41Mg&p\\_action=doc&s\\_lastnonissuequeryname=53&p\\_queryname=53&p\\_doref=v2:11C33B0D5F860D98@FBISX-11FF1F264C8CF788@2448996-11FF1F2CF79946C0@22&p\\_docnum=341](http://infoweb.newsbank.com.ezp-prod1.hul.harvard.edu/iw-search/we/HistArchive/?p_product=FBISX&p_theme=fbis&p_nbid=M64D5EOSMTM4NDczMzI1OC4xOTM0OTE6MToxNDoxMjguMTAzLjE0OS41Mg&p_action=doc&s_lastnonissuequeryname=53&p_queryname=53&p_doref=v2:11C33B0D5F860D98@FBISX-11FF1F264C8CF788@2448996-11FF1F2CF79946C0@22&p_docnum=341)

Korean news agency to increase hostile rhetoric toward the South Korean regime around 1987, especially in terms of welfare, after the democratization? I collected all the articles the KCNA put out and were reported in the Foreign Broadcast Information Service. I searched for all the articles that mention ‘South Korea’ and also a given keyword in the same article. The period under investigation is the dictatorial years contrasted to the democratic years. The Polity scores moves from -5 in 1986 to 6 in 1988 and stays at that level through the end of the FBIS database in 1996. For symmetry I take an equal length of 8 years preceding democratization 1978-86 and contrast it with the democratic 1988-96 years. I drop 1987 as the first half of that year was dictatorial, while in the second repression was eased.

Table 4.1: Summary Statistics of the Korean Central News Agencies’ Word Frequencies (1978-96)

Word	1978-86 (total count)	1988-96 (total count)	1978-86 (out of all ‘South Korea’ articles)	1988-96 (out of all ‘South Korea’ articles)
South Korea	4689	9861		
corrupt	59	134	1.26%	1.36%
crime	169	542	3.6%	5.5%
failure	48	149	1.02%	1.51%
hopeless	11	46	0.23%	0.47%
miserable life	5	15	0.1%	0.15%
misery	3	14	0.06%	0.14%
poor	64	191	1.36%	1.94%
rights violations	6	35	0.13%	0.35%
suicide	14	33	0.3%	0.33%

The number of KCNA articles increased from 1978-86 to 1988-96 (by 66%) as did the number of those that mention South Korea (by 53%). I assume there was an independent increasing trend and only look at the share of articles where South Korea appears with some other word out of the total number of articles including South Korea. Therefore my numbers tell me the share of the articles that mention South Korea in a particular context out of all those that mention South Korea.

The results are that after 1987 South Korea is more frequently portrayed as more repressive, corrupt and as a place where life is hard (see Table 4.1 and Figure 4.1). The share of

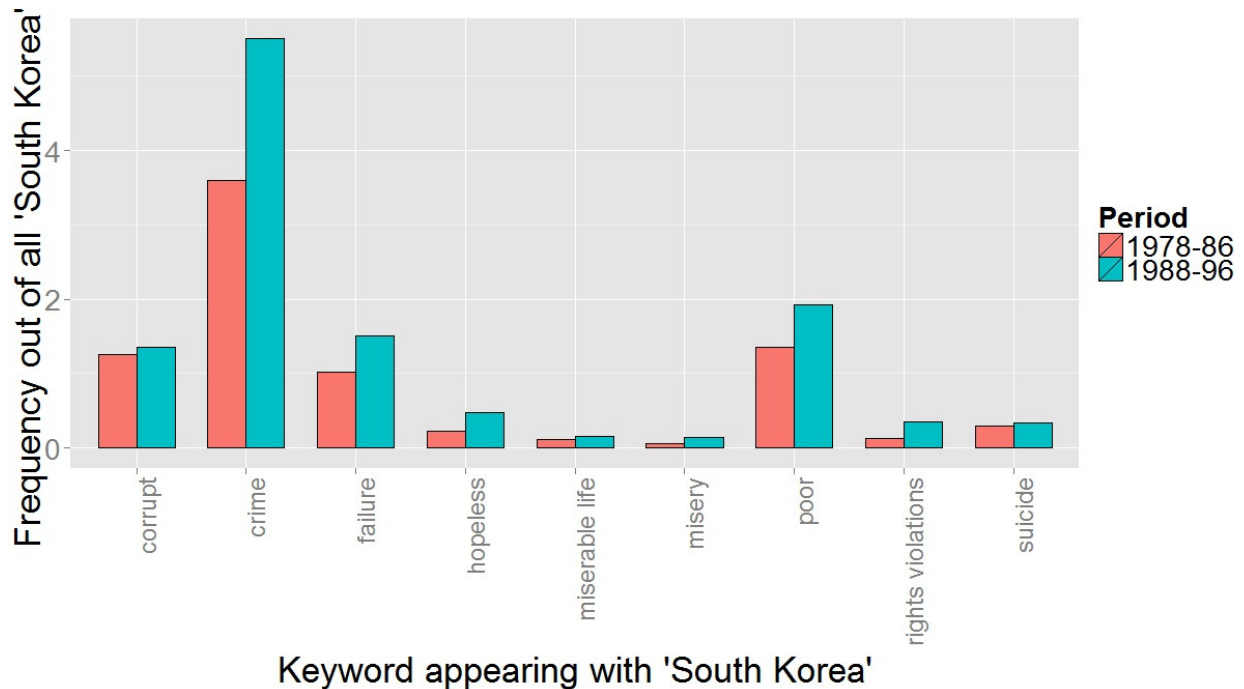


Figure 4.1: Proportion of articles containing certain expressions appearing alongside ‘South Korea’ in an article, out of all articles written by the Korean Central News Agency (1978-96).

articles that mention the words corrupt, crime, failure, hopeless, misery, poor, and suicide alongside South Korea rise, as do articles using combinations miserable life and rights violations. Interestingly, although the total number of articles mentioning fascist, repressive, military, and dictatorial alongside South Korea also go up after democratization, the share of these articles out of all those mentioning South Korea does not increase. This finding could mean that the North Korean news agency cannot produce absolutely blatant lies, as the citizens might not believe such lies, but can distort the truth to the extent that it is still plausible.

I run a few robustness checks on my results. Some placebo words referring to everyday life in South Korea such as working, busy, religious, church, agriculture, industry, education and child are also checked, and the share of articles mentioning South Korea alongside these words falls rather than increases, as these words do not describe hardness of life in South

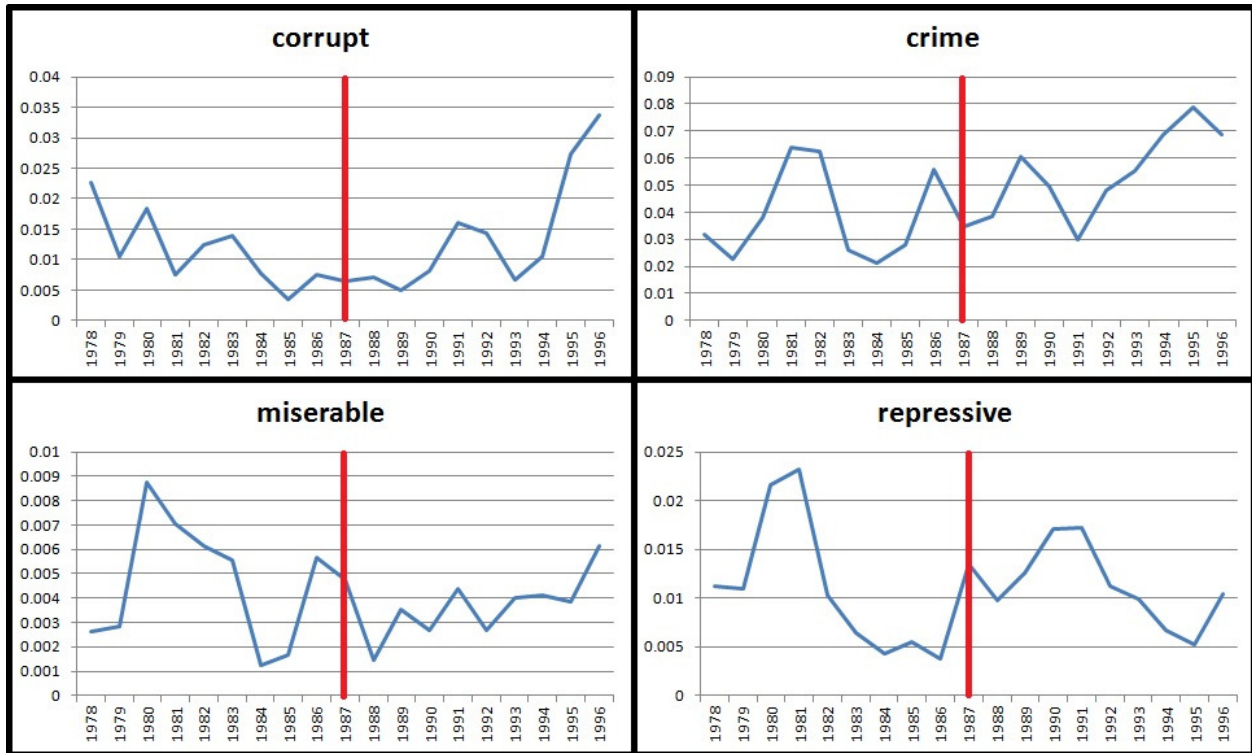


Figure 4.2: Proportion of articles containing certain expressions appearing alongside ‘South Korea’ in an article, out of all articles written by the Korean Central News Agency (1978-96). Notice the general increase in word frequencies around 1988-91, and the lack of a general time trend across the graphs.

Korea. Furthermore the results are not driven by negation. For instance none of the post-1987 articles include not corrupt or isn't corrupt as expressions. The results also do not seem to be driven by a time trend. Looking at a sample of negative words (corrupt, crime, miserable) and even repressive for which I did not find an increase after 1987, Figure 4.2 shows the time series of these words between 1978-96. There is a noticeable increase in all four word categories around 1988-91, and there is no secular linear time trend visible that could be driving the results.

In order to establish a difference-in-difference framework, I also look at some placebo countries. For instance, for Japan the corrupt word appearing with Japan roughly halved after 1987 rather than increased.<sup>12</sup> Countries which are not culturally-similar but underwent democratization around the same time as South Korea also serve as a placebo test. The Philippines is a good test: it is not mentioned together with the word corrupt after 1987.<sup>13</sup> These findings also show that an alternative mechanism is invalid: that the change in the North Korean press is due to the end of the Cold War - if the end of the Cold War was driving my results then there would be a change in word frequencies for countries other than South Korea too.

In sum, my analysis suggests that an important source of hostility between the two Koreas is the North Korean regime's desire to discourage social learning of democracy. Naturally, other facets of power relations combine with this mechanism to produce the outcomes we observe on the peninsula. Beijing's fear of the spread of democratization and US influence leads to the protection of the North Korean dictator. In addition, South Korean activists attempt to help their North Korean counterparts through information. Nevertheless, Pyongyang's hostile rhetoric and actions have a deep political motivation and my theory predicts that unless North Korea democratizes, this hostility will not cease.

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<sup>12</sup>For 1978-86: 35 out of 3758; for 1988-96: 39 out of 7064.

<sup>13</sup>For 1978-86: 3 out of 230; for 1988-96: 0 out of 193.

## 4.2 The East China Sea Dispute

In this quantitative case study, I analyze the Sino-Japanese relationship and territorial dispute over the Diaoyu island. I am particularly interested in the way the Chinese media portrays domestic Japanese politics during the crisis. The dispute has complex origins, therefore I am not arguing that it is solely caused by a Chinese motivation to portray Japan as an undemocratic enemy. However, China is partially responsible for the escalation of the dispute<sup>14</sup> and by showing that this dispute is exploited by the Chinese government in the way the model predicts gives evidence that the model captures a facet of the behavior of dictatorships. The negative portrayal of the other side in a dispute exacerbates the situation and leads to increased hostility, even if the dispute does not escalate into a full-blown war.<sup>15</sup>

First I discuss the background of the dispute. Then I proceed to analyze the Chinese portrayal of Japan, and in particular that of Japanese Prime Minister Shinzo Abe.<sup>16</sup> Finally, in order to try to isolate the impact of political institutions from confounding variables such as historical animosity and geographic proximity, I contrast the Chinese and the South Korean media's description of Shinzo Abe. China is a dictatorship, therefore the theory predicts that the centrally-controlled Chinese media depicts Japan in more threatening terms than the free Korean media. I also predict that the Chinese media to be more motivated to label the Japanese regime undemocratic.

China is a dictatorship that is predicted by my theory to be prone to anti-diffusionary wars. First, China has a democratic opposition, even if this opposition is weak and its ideas about democracy might not be exactly the same as the Western concept (Nathan 1986,

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<sup>14</sup><http://www.independent.co.uk/voices/editorials/turbulent-waters-the-escalating-row-between-japan-and-china-over-the-senkakudiaoyu-islands-has-implications-for-us-all-8967620.html>

<sup>15</sup>Following the negative Chinese reaction to Shinzo Abe's visit to the Yasukuni Shrine in December 2013, the Japanese and the Chinese delegations to the United Nations mutually accused each other of destabilizing the region. The dispute also threatens business relations between the two countries. Anti-Japanese protests in China in recent years have led to hundreds of millions of dollars of damage for Japanese firms (<http://www.businessspectator.com.au/article/2014/5/19/china/ugly-face-rising-asian-nationalism>).

<sup>16</sup>Shinzo Abe was Prime Minister of Japan from 2006-7, and again from 2012-4.

Nathan 2013). Second, democratic pressure only arises infrequently, but when it arises it threatens the regime. Threatening democratic pressure arose most recently in the late 1980s, and culminated in the Tiananmen massacre in June 1989. But as Nathan 2013 writes: “[t]he consensus is stronger than at any time since the 1989 Tiananmen crisis that the resilience of the authoritarian regime in the People’s Republic of China (PRC) is approaching its limits” (p.20).

The Diaoyu/Senkaku<sup>17</sup> island dispute is over a group of uninhabited islands in the East China sea. Although the islands sit atop natural resources, simple bargaining theory (Fearon 1995) predicts that peaceful division of these resources should occur.<sup>18</sup> Nevertheless, heated debate between China and Japan (and even South Korea) arose over the possession of the islands. Although both sides are interesting to analyze in the dispute, I concentrate solely on the dictatorial side and leave Japanese motivation for escalation aside, given my theory.

The long-simmering low-key dispute became dangerous around 2012. The number of Chinese ships entering the area of the islands in 2012 sky-rocketed.<sup>19</sup> The dispute over the group of islands has raised nationalism in both China and Japan. There were large-scale protests in China in 2012. In November 2013 Beijing set up the ‘East China Sea Air Defense Identification Zone’ around the islands, requiring all aircraft in the zone to report to the Chinese mainland. The US, Japan and South Korea denied China’s right to do so and flew military aircraft through the identification zone without filing a report to China.

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<sup>17</sup>The Chinese side call the islands the Diaoyu Islands, while the Japanese call them the Senkaku Islands. Without taking sides in the dispute, I call them the Dioyu Islands in this book as I analyze the Chinese media.

<sup>18</sup>Analysts of the East China Sea dispute have recognized this puzzle: e.g. James Holmes in *The National Interest* on January 6th 2014, <http://nationalinterest.org/commentary/asias-ultimate-nightmare-china-japan-war-9662>

<sup>19</sup><http://www.kaiho.mlit.go.jp/senkaku/index.html>



#### 4.2.1 The East China Sea Dispute in the Chinese Media

How does the centrally-run Chinese media talk about the East China Sea dispute? One recurrent theme is the islands' contentious history.<sup>20</sup> The archipelago has been controlled by Japan since 1895, aside from the period of 1945-72 when it was under US administration. China argues that the islands had belonged to the Chinese Qing Empire before 1895, a claim that Japan disputes. China considers the islands to have been conquered by a militaristic and expansionary Japan that embarked on the politics of *Fukoku kyohei* ('enrich the country, strengthen the military') after the Meiji restoration in 1868. This militaristic journey later culminated in fascism in Japan.<sup>21</sup> The first stage of Japanese militarism included the annexation of Taiwan, the Ryuku islands as well as the 'stealing' of the Diaoyu islands in 1895. The second stage involved invading Korea in 1905, and China in 1937. The third stage was the expansion into the Pacific in 1941.<sup>22</sup> A documentary<sup>23</sup> on the CCTV 4 channel aired on December 20th 2013 analyzed the Diaoyu island dispute and evoked images of imperial Japan in the Second World War: the Cairo declaration, signed by the Allies, stated that territory taken by Japan from China, the Diaoyu islands included, belonged to China. Thus the Chinese media talks about the Diaoyu island dispute by analyzing Japan's militarist and fascist past.

By linking Japan's claim over the Diaoyu islands to militarism and fascism, China can downplay Japan's democratic appeal. One of the headlines in the People's Daily proclaims: "Japan contends it supports democracy, human rights and respect for freedom, but how could a country that has not faced up to history be qualified to talk about democracy, human rights and the rule of law?"<sup>24</sup> The Chinese government's strategy builds on the

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<sup>20</sup>E.g. <http://world.people.com.cn/n/2014/0113/c1002-24105593.html>

<sup>21</sup><http://world.people.com.cn/n/2014/0105/c1002-24024362.html>

<sup>22</sup><http://world.people.com.cn/n/2014/0105/c1002-24024362.html>

<sup>23</sup><http://tv.cntv.cn/live/cctv4/> CCTV 4, 10:10pm 12/20/2013, name of program: 'International Depth'

<sup>24</sup><http://military.people.com.cn/n/2013/1221/c1011-23905812.html>

Chinese public's perception that the Japanese have not come to terms with their militaristic past, and that especially the younger generation is not fully aware of the horrors the Japanese army committed.<sup>25</sup>

#### 4.2.2 Shinzo Abe's Yasukuni Shrine Visit in December 2013

Tensions rose further when the Japanese Prime Minister Shinzo Abe decided to visit the Yasukuni shrine on December 26th 2013. The shrine honors Japan's 2.5 million wartime dead, including those convicted of committing atrocities during imperial Japan's invasion of Asia in the Second World War.<sup>26</sup> Abe was the first serving Japanese Prime Minister for seven years to make a visit. His reasons could have been defiance in the East China Sea dispute or seeking to raise his opinion poll numbers, but this is unimportant for the present analysis. The more relevant question is: how did China react to the Yasukuni visit?

As expected, after Shinzo Abe's visit to the Yasukuni Shrine, the Chinese government escalated its hostile rhetoric. The Chinese foreign ministry stated that no direct talks between Japan and China could occur unless Shinzo Abe apologized to the Chinese people for the visit.<sup>27</sup> The Chinese ambassador to the UK, Liu Xiaoming, wrote an angry column in the Telegraph on January 1st 2014,<sup>28</sup> stating that: "[r]egrettably, what Mr Abe did has raised the spectre of militarism rising again in Japan."

The Chinese government's description of Japan is also not limited to the period surrounding the Yasukuni visit. Six months later, in early June 2014, the description still persisted. China's reaction to a speech by Shinzo Abe at the Shangri-La Dialogue Security Summit shows the same pattern of enemy-image painting. In the speech, Abe expressed that Japan

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<sup>25</sup><http://military.people.com.cn/n/2014/0106/c1011-24033499.html>

<sup>26</sup><http://world.time.com/2013/12/25/japans-hawkish-pm-abe-visits-controversial-shrine-that-honors-war-criminals/>

<sup>27</sup>[http://www.bbc.co.uk/zhongwen/simp/world/2014/01/140106\\_abe\\_yasukuni.shtml](http://www.bbc.co.uk/zhongwen/simp/world/2014/01/140106_abe_yasukuni.shtml)

<sup>28</sup><http://www.telegraph.co.uk/comment/10546442/Liu-Xiaoming-China-and-Britain-won-the-war-together.html>

wished to play a stronger role in maintaining the peace of the Asia-Pacific region.<sup>29</sup> The Chinese media interpreted Abe's words as attempting to stoke militarism at home through painting a threatening image of China.<sup>30</sup>

The People's Daily articles also point to the reason why the Chinese government worries about foreign influence. Not only national sovereignty and security, but social stability needs to be safeguarded from foreign influence according to an article analyzing Xi Jinping's new year's speech.<sup>31</sup> The article argues this is because social stability is a prerequisite for development, thus the internal political security needs to be resolutely protected in the face of foreign influence. The concept of Great Unity or Great Harmony goes back to long before the Chinese communist victory in 1949, and is a key part of Chinese political culture (Ogden 2002, p.1).

### 4.2.3 Alternative Hypotheses

An alternative hypothesis about China's belligerent response is that rather than painting a negative image of Japanese domestic institutions, the Chinese leadership simply rallies their people around the national flag. Yet looking more closely into the perspective the Chinese leadership wished to convey to the Chinese citizens shows that this is untrue. In fact Beijing stresses the deterioration of domestic Japanese institutions in its rhetoric. The foreign ministry spokesperson emphasized that the Yasukuni Shrine commemorates war criminals from the Second World War, calling them war-mongers and fascists, and "Asia's Nazis,"<sup>32</sup> even talking about "Japan's Hitler"<sup>33</sup>. He drew a connection between the fascist Japanese and the Abe government by saying that Abe's visit aimed at overturning the Tokyo Trial

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<sup>29</sup><http://www.bbc.com/news/world-asia-27630604>

<sup>30</sup><http://world.people.com.cn/n/2014/0603/c1002-25097078.html>

<sup>31</sup><http://politics.people.com.cn/n/2014/0103/c1001-24009653.html>

<sup>32</sup><http://world.people.com.cn/n/2013/1230/c1002-23980716.html>

<sup>33</sup><http://world.people.com.cn/n/2013/1231/c1002-23989035.html>

that condemned these criminals, as well as beautifying Japanese military aggression and negating the results of the anti-fascist Second World War.<sup>34</sup>

Another article states Germany before the Second World War and Japan today are very similar: after sluggish economic growth, right-wing forces emerge, which attempt to destroy democracy by challenging the international order.<sup>35</sup> The People's Daily emphasizes that like in the 1930s, Japanese leaders never make ad hoc decisions, but rather act in a well-calculated manner.<sup>36</sup> The newspaper accuses the Japanese leader of deliberately fomenting the deterioration of Sino-Japanese relations in order to rally public opinion and revive the military ideology in Japan.<sup>37</sup> The newspaper reminded its readers that deputy Prime Minister Taro Aso suggested that Japan could learn from the way in which Nazi Germany revised its constitution,<sup>38</sup> without mentioning that Aso retracted the remark and said he was quoted out of context.<sup>39</sup> In sum, as the Chinese government portrays the Diaoyu dispute as a ploy by Japanese forces to destroy democracy at home, the more belligerent Japan is, the less Chinese citizens will want to learn democracy from it.

The Chinese government also draws attention to a difference between the Abe government and the Japanese citizens. If the rally-round-the-flag hypothesis was true then there would be no need to do this: a single enemy of the whole Japanese society would suffice. On the other hand, by stressing how much the Japanese citizens disapprove of their regime discourages the Chinese citizens' social learning. The People's Daily argues that Abe's visit to the Yasukuni Shrine went against the will of not only the Chinese citizens but the Japanese citizens too.<sup>40</sup>

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<sup>34</sup><http://world.people.com.cn/n/2013/1230/c1002-23980716.html>

<sup>35</sup><http://world.people.com.cn/n/2014/0118/c1002-24157428.html>

<sup>36</sup><http://world.people.com.cn/n/2013/1231/c1002-23989035.html>

<sup>37</sup><http://world.people.com.cn/n/2013/1231/c1002-23984282.html>

<sup>38</sup><http://world.people.com.cn/n/2014/0106/c157278-24035364.html>

<sup>39</sup><http://edition.cnn.com/2013/08/02/world/asia/japan-politician-nazi-comment>

<sup>40</sup><http://world.people.com.cn/n/2013/1230/c1002-23980716.html>

It emphasizes that the Japanese media also criticized Abe's move.<sup>41</sup> An article even mentions that a Japanese news anchor bluntly said that he wants China to know that many Japanese citizens have opposed Abe's Yasukuni visit.<sup>42</sup> By contrast, the Abe government is described as sharply rightist (right-wing).<sup>43</sup> The People's Daily emphasizes that the state secret acts passed by the Abe government led to wide-spread protests.<sup>44</sup> These measures raised concern about the possibility of muzzling the media and allowing officials to hide misdeeds.<sup>45</sup>

For more evidence to show that the alternative national-rallying hypothesis is not true, consult Figure 4.3. The figure shows a regional breakdown of the People's Daily articles. I have used all the provinces for which a search engine for the regional edition of the newspaper was available.<sup>46</sup> I am examining in what percentage of the articles the word 'fascist' is mentioned alongside Shinzo Abe in different regional versions of the People's Daily.

In particular I look at provinces which have a significant Han minority and compare it to provinces with no minorities. Unfortunately, the Tibetan regional website does not have a search function, so in my data only Xinjiang is a province where a national minority forms a provincial majority.<sup>47</sup> The percentage of articles which mention the word 'fascist' alongside Shinzo Abe is 4.7% in Xinjiang, compared to the 7.3% overall overage. The other two provinces in my dataset which have a significant minority are Heilongjiang and Inner

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<sup>41</sup><http://world.people.com.cn/n/2014/0104/c157278-24021942.html>

<sup>42</sup><http://world.people.com.cn/n/2014/0124/c1002-24216469.html>

<sup>43</sup><http://japan.people.com.cn/n/2013/1230/c35469-23978359.html>

<sup>44</sup><http://japan.people.com.cn/n/2013/1230/c35469-23978359.html>

<sup>45</sup><http://www.reuters.com/article/2013/12/09/us-japan-politics-idUSBRE9B807120131209>

<sup>46</sup>I have dropped the provinces of Gansu, Hunan and Hubei because the search engines produce only a handful of articles as opposed to the hundreds of articles in the other provinces which have a functioning search engine. All searches were conducted on July 23rd 2014.

<sup>47</sup>See: [http://www.asiareport.com/ChinaReport/Sources/China\\_Maps/Demographic/Map-China-Ethno-Linguistic-1967AD-1A.html](http://www.asiareport.com/ChinaReport/Sources/China_Maps/Demographic/Map-China-Ethno-Linguistic-1967AD-1A.html).

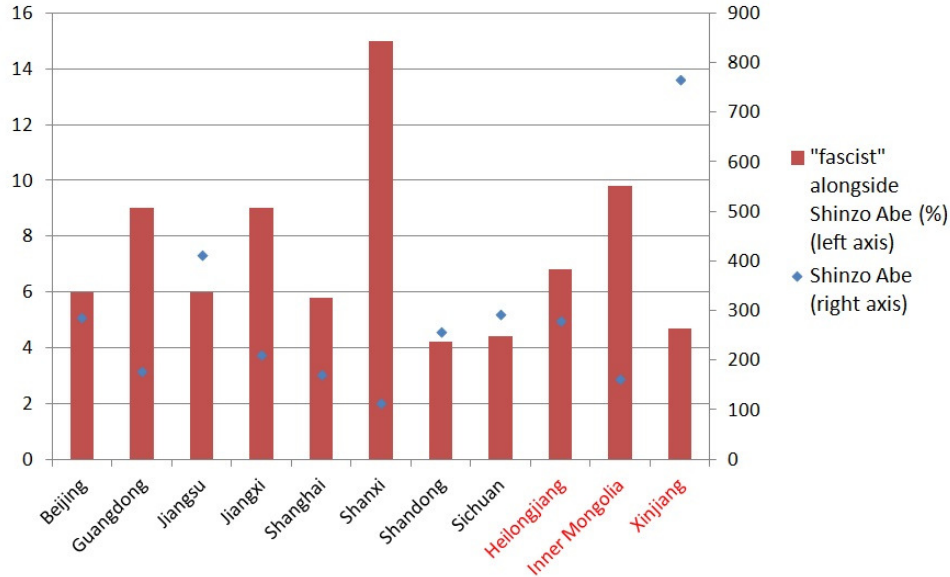


Figure 4.3: Word frequencies in the Chinese People’s Daily (2005-14) broken down by provinces. Each red column shows the percentage of articles that mention the word ‘fascist’ alongside Shinzo Abe (the incumbent Japanese Prime Minister). The blue diamonds correspond to the overall number of articles mentioning Shinzo Abe (scale on the right).

Mongolia. The average of Heilongjiang, Inner Mongolia and Xinjiang is 5.3, which is again lower than the overall average. This is evidence against a national rallying effort because if the central government wished to rally the Chinese citizens around the national flag then in provinces where there is a strong ethnic presence this effort would need to be greater in order to convince more skeptical ethnic minorities.

Another alternative explanation for the Chinese propaganda is that the Chinese government wishes to shift the blame from itself to the Japanese government when it comes to differences in the East China Sea dispute. This alternative mechanism would thus explain the use of ‘militarism’ in the Chinese press having nothing to do with domestic Japanese politics. However, this alternative explanation fails to explain why the Chinese press emphasizes that Abe’s growing militarism and revision of the constitution threatens democracy in Japan. For instance, on July 3rd an article writes that Abe’s actions change not only the Post-Second World War pacificism of Japan but also its democratic politics.<sup>48</sup>

<sup>48</sup><http://opinion.people.com.cn/n/2014/0702/c1003-25227978.html>

If the Chinese government's aim with the dispute is simply to gain the natural resources in the sea around the islands then presumably the provinces which are the closest to the islands would be the most aggressive in their media. This is because these provinces could have the largest benefit to gain if the islands were exclusively controlled by China. Using Figure 4.3 again, I calculate the average percentage of articles which mention 'fascist' alongside Shinzo Abe. This percentage is 4, which is almost half of the average across all provinces (7.3%). This is evidence against regarding China's behavior in the crisis as solely driven by material considerations.

#### 4.2.4 China's The People's Daily vs South Korea's Chosun Ilbo

However, is it possible that the unrepented historical atrocities run so deep that Beijing has no choice but to escalate? To exclude this possibility, I contrast the Chinese media's articles to those in the media of South Korea. I find that although the South Korean media also describes a right-wing lurch in Japan,<sup>49</sup> the domestic regime is not painted in similarly fascist terms in the democratic South Korea, even though the Koreans suffered similarly to the Chinese during fascist Japan's rule.

In concrete numbers, in the South Korean Chosun Ilbo,<sup>50</sup> 395 articles mention Shinzo Abe, but only 4 (1%) of them mention Shinzo Abe and Nazi in the same article. None of them mentions Shinzo Abe and fascism or fascist together. By contrast, the People's Daily<sup>51</sup> mentions Shinzo Abe 37769 times. Out of these 686 also mention Nazi (1.8%), 793 also mention fascist (2.1%) and 58 mention fascism (0.2%). Similarly Shinzo Abe and militarism are only used together in 8 (2%) of the Chosun Ilbo articles about Shinzo Abe,

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<sup>49</sup>[http://english.chosun.com/site/data/html\\_dir/2013/12/27/2013122701743.html](http://english.chosun.com/site/data/html_dir/2013/12/27/2013122701743.html)

<sup>50</sup>I conducted the searches on 12/30/2013 8am EST: <http://english.chosun.com/search/search.html?category=english&keyword=&x=31&y=12> and [http://search.people.com.cn/rmw/GB/rmwsearch/gj\\_search\\_pd.jsp](http://search.people.com.cn/rmw/GB/rmwsearch/gj_search_pd.jsp). The first mention of Shinzo Abe is in 2005.

<sup>51</sup>Key words used: Shinzo Abe = 安倍晋三, Nazi = 纳粹, Fascist = 法西斯, Fascism = 法西斯主义, threat = 威胁, ally = 盟友.

while in 4187 (11%) of the People’s Daily articles. This result is not driven by negation: searching for Shinzo Abe and ‘is not Nazi’<sup>52</sup> yields only one and ‘is not fascist’<sup>53</sup> yields no articles.

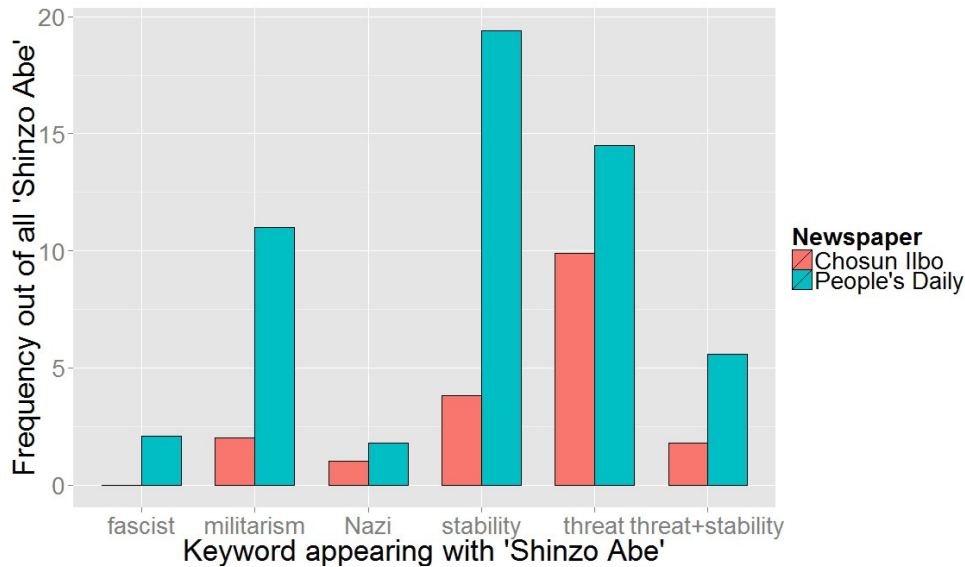


Figure 4.4: Word frequencies in the South Korean Chosun Ilbo and in the Chinese People’s Daily (2005-13). Each column shows the percentage of articles that mention certain words alongside Shinzo Abe (the incumbent Japanese Prime Minister).

In a similar vein, alongside the keyword ‘threat’ Shinzo Abe appears in 39 (9.9%) of the South Korean and 5474 (14.5%) of the Chinese articles mentioning Shinzo Abe. There is also some indication that the regime itself is connected with the threat rather than the whole country: ‘threat’ appears only in 6.4% (85620 out of 1339580) of the Chinese articles mentioning Japan, and 4.3% (681/15850) of the Korean articles mentioning Japan. Furthermore, Shinzo Abe is mentioned in the same article as democracy in 6.1% of the Shinzo Abe articles in the Chinese press, but only 1.5% of them in the Korean press. There is also evidence that a threat to stability is connected with Shinzo Abe in the Chinese press: 19.4% of the

<sup>52</sup>不是纳粹

<sup>53</sup>不是法西斯



Shinzo Abe articles mention stability<sup>54</sup> in China, and only 3.8% in South Korea. Threat and stability together appear in 5.6% of the Chinese and 1.8% of the Korean articles about Shinzo Abe. A small number of Chinese articles (7: 0.02%) even mention threat, social stability alongside Shinzo Abe, while no Korean one does so.

Some placebo tests give further evidence that the Chinese government's aim is to paint an enemy regime of the Japanese government. For instance, using the word ally together with Shinzo Abe as a search term yields 23 (5.8%) of the Chosun Ilbo articles, and 2108 (5.6%) of the People's Daily articles.

As a robustness check, I have also compared the People's Daily with other South Korean newspapers. For Shinzo Abe and Nazi, Dong-A Ilbo's<sup>55</sup> percentage is high (3.1%) but fascism (0%), fascist (0%) and threat (9.3%) are not. And even for Nazi, the most recent article mentioning this word is from September 2013, and not from the time of the Yasukuni visit.

A feature in the People's Daily search function also allows me to find further evidence that the Chinese government wishes to use an enemy image of Japan for domestic purposes. The search engine not only gives us the number of articles containing the word fascist and Shinzo Abe, but also which website these words appear on. On the website of the military the word fascist appears less frequently alongside Shinzo Abe than overall. By contrast, on the website entitled Chinese Communist Party News,<sup>56</sup> the word fascist appears with Shinzo Abe much more frequently (around 1 in 10 articles about the Japanese Prime Minister contain the word fascist). Thus it seems the Communist Party's propaganda contains the most rhetoric about anti-democratic Japan.

Other countries in the region also reacted as predicted by the theory. I also analyzed Taiwan's press as Taiwan is also partially involved in the East China Sea island dispute. The results are as follows: out of the 1083 mentions of Shinzo Abe, Nazi occurs just 1 time

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<sup>54</sup>Stability = 稳定

<sup>55</sup>[http://search.donga.com/search\\_foreigne.php](http://search.donga.com/search_foreigne.php)

<sup>56</sup>中国共产党新闻

(0.1%), fascist also occurs 1 time (0.1%), fascism is never mentioned (0%) and threat occurs 76 times (7%). Thus, if anything, Taiwan seems to be painting even less of a threatening regime image of Japan than South Korea. By contrast, Vietnam and Singapore, two other East Asian dictatorships, were the only countries to express concern about Shinzo Abe's visit to the Yasukuni Shrine, while other South-Asian countries remained silent.<sup>57</sup>

The timing of the articles can also be exploited. On November 23rd 2013 China established an Air Defense Identification Zone over the disputed Diaoyu/Senkaku islands, thereby escalating the conflict. If the conflict is started/exploited by the Chinese government for painting an enemy image of Japan then after this time there would be an intensification of hostile rhetoric. This is indeed the case: between November 23rd and December 30th the share of articles mentioning Nazi beyond Shinzo Abe has a share of 1.9% (46 out of 2410), higher than the 1.8% global average in the People's Daily. The word threat together with Shinzo Abe appears in 22.4% of the articles starting with November 23rd (542 out of 2410), higher than the 14.5% global average. Thus the period after November 23rd was particularly belligerent.

Also with regard to timing, my theory expects the dictator to paint an enemy image of a democracy when domestic pressure in the dictatorship is high. This pressure is probably the highest today it has been for two and a half decades (Nathan 2013). Indeed in the first half of 2014<sup>58</sup> the share of Shinzo Abe articles containing the word Nazi is twice as large as the rate over the whole period (3.8% in the first half of 2014 vs 1.8% from 2005-13).<sup>59</sup>

Is it possible that the results are due to the fact that the Chinese-language People's Daily articles talk to a domestic audience, while the English articles of the Chosun Ilbo address the international community? To address this concern, I use the China Daily, a newspaper in English run by the Chinese government, which allows me to compare the description of

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<sup>57</sup><http://opinion.people.com.cn/n/2014/0105/c1003-24025675.html>

<sup>58</sup>From January 1st to June 30th.

<sup>59</sup>For the first half of 2014, this ratio is 702 out of 18606.

Shinzo Abe in Chinese to that in English. Here Shinzo Abe is labeled Nazi 1.4% of the time, fascist 1.1% of the time, and occurs together with fascism 1.1% of the time. His name appears together with threat in 11.3% of all appearances. Thus Japan is not painted in such negative terms as in the Chinese-language press, which is understandable given the different intended audiences (domestic/foreign), but the fact that even English-language Chinese newspapers are more negative than English-language South Korean newspapers also shows that the language difference is not sufficient to explain the belligerence of the Chinese press.

## Chapter 5

### Extension to Domestic Politics

My main theory applies to the case of two countries, where one has inspirational power for the other. The question naturally arises about how to extend the analysis to the case of a single country, where two elites fight over influence of a middle group. This chapter explores this question through a model of domestic politics and a case study confirming the findings of the model. Interestingly, once I take the inspirational other country to be a domestic actor, new considerations arise about the size of the domestic redistribution, and the decision between repression (war) or peaceful redistribution is different. My focus here is less on cultural similarity as a continuous variable, but on specific binary identity dimensions (German/Non-German; Muslim/Non-Muslim).

Fierce fighting gripped Austrian-ruled Milan between March 18-22 1848. Like their counterparts in Paris, the revolutionaries demanded liberal reforms. But rather than being of middle or lower-class origin, the ‘children of the barricade’ in Milan were mostly Italian-speaking aristocrats. And they are not the sole example of disgruntled nobles in Central Europe fighting for reforms to help the lower classes. For instance, Polish aristocrats similarly rose up for liberalism and democratic reforms two years earlier in Galicia. Even more puzzling was the response of their peasants, who duly massacred them. What explains these actions, which are in such contrast to rational economic interest? The answer, I argue, lies

in identity, which has multiple (class, national, religious) dimensions, and this multiplicity plays a key part in the regime change of divided societies.

Under what conditions is a regime change successful and/or violent in complex (multi-ethnic/multinational) societies?<sup>1</sup> This question is of great current importance. Take the ongoing Syrian Civil War as an example: identity dimensions, such as religion (Shia, Sunni, Alawite, Druze, Christian), ethnicity (Arab, Kurd), ideology (liberalism, secularism, Islamism) all interact in the ongoing struggle. Or think of the recent Ukrainian developments, where language (Russian, Ukrainian), ideology (pro-West, pro-Russian) and regional identities (Eastern Ukrainian, Western Ukrainian, Crimean) act jointly to produce regime change and violence.

Yet when it comes to identity's effect on regime transitions, there is a gap in the literature. Current research largely disregards subnational identity as a factor in regime transitions,<sup>2</sup> and the overlap between different dimensions of identity in particular. A notable exception is Posner 2005, who assumes identity to be multi-dimensional, but even his work does not concentrate on violence and regime transition probabilities.<sup>3</sup>

How can we answer the question of identity's impact on regime change? A game-theoretic model is useful for disentangling and clarifying the complex effects of identity. In my model, I consider two separate identity dimensions (e.g. religion, ethnicity, class) and assume that society can be organized along either one of them. If the two dimensions overlap then some

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<sup>1</sup>The literature investigating the links between ethnicity and political violence is substantial (e.g. Horowitz 1985, Montalvo and Reynal-Querol 2005, Sambanis and Shayo 2013).

<sup>2</sup>The related literature on identity and democratization includes Mainwaring 1987, who analyzes Brazil's democratic transition in the 1980s, and Jourde 2001, who investigates Mauritania in the 1990s. Moreover Dunning and Harrison 2010 investigate the role of ethnicity in Mali's democracy, while Chandra 2004 and Chandra 2005 analyze the role of religion and caste in India. Chandra and Boulet 2012 explore the recombination of multi-dimensional identity in already existing democracies. Qualitative work on multinational democracies include Lipset and Rokkan 1967, Lijphart 1977, Horowitz 1994, and Gagnon and Tully 2001. The few game-theoretic studies touching on the question (without multidimensional identity) are Acemoglu and Robinson 2006 pp.109-13 and Roemer 1998.

<sup>3</sup>Research on peripheral nationalism (Hechter 2000) and separatist nationalism (Breuilly 1985 p.90) are encompassed by my theory - but my model is more generally applicable. In the nationalism literature Plamenatz 1976 and Gellner 1996 are related, although they do not consider the multiplicity of identity.

members of society belong to both the old as well as the new elite. The size of this overlap can influence both the probability of regime change and democratization, and the amount of violence that accompanies it. Take the Austrian empire during the 1848-9 revolutions as an example, when social organization shifted from class to nationality. Members of the old ruling elite were German aristocrats, who faced national (but also potentially liberal) new elites in the homelands of the empire's eleven nationalities. Thus in the Hungarian and Italian areas for instance there was a small overlap between the old rulers and the potential new elite, while German areas had a large overlap.

The two main findings of this chapter are that societies which have a larger overlap (more shared members) between the old elite and the new elite are both less likely to use repression, and also less likely to undergo regime change.<sup>4</sup> A smaller overlap means that each revolutionary citizen has more per capita income to expect from a regime transition because fewer members of the old elite would share the post-revolutionary wealth with them. As a result, revolutionary pressure from these citizens is higher. Thus it is also more likely that the regime transition succeeds, and it is also more likely the elite decide to repress the revolutionary citizens. In the Austrian empire, regions which witnessed the most pressure and the most violent repression by the Viennese court were the ethnically homogeneous Hungarian, Italian and Czech areas. In these ethnic areas, ruled by a German aristocracy and administration, the overlap between the old elite and the new local national elite was small. By contrast, German areas, where the overlap was big, were relatively peaceful.

I derive two further findings, which highlight inclusivity's ambiguous impact on regime transition. First, I find that the more likely that the regime transition will be democratic, the less likely are both repression and the regime transition. In Bohemia, where there was a higher probability that rich Germans from the old elite would participate in a new winning coalition, the revolution was less intensive and less violent than in the Italian or the Hungarian provinces, where the members of the old elite were less likely to share in a new

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<sup>4</sup>The regime change result contrasts with Beissinger 2008.

regime. Second, what happens when some citizens do not benefit from either the old or the new regime? In this case, these ‘permanent citizens’ can in fact contribute to the repression by the old elite.<sup>5</sup> They do so as long as the rule of the new regime is even worse for them than the rule of the old elite. In terms of the Austrian Empire, Croatian, Serbian, Romanian, and some Slovakian liberals turned against the Hungarian liberals from April 1848 onward, because they feared that Buda-Pest would try to destroy their national identity.

The implications of the model complement the findings of the international model. A larger overlap between elites are less likely to result in violence or regime change. For instance in the case of Iraq during the Iraq-Iran 1980-8 war, the old secular elite had little overlap with the potential new Shia elite that was inspired by Iran, and the country descended into a war with violence on both the international and the domestic side.

This chapter is organized as follows. First, I discuss my main assumptions and the scope of my theory. Then I build a model, deriving the key comparative statics. Afterward, I turn to my case studies. I exploit that the areas where the eleven nationalities of the Austrian empire lived experienced different levels of upheaval and repression in the 1848 revolutions. I also compare the Italians, the Germans and the Romanians to their respective counterparts beyond the border of the monarchy, where they were ruled by their own national elite.

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<sup>5</sup>This mechanism fits with the finding of Rabushka and Shepsle 1972 that in plural societies extremist entrepreneurs often undermine democratic politics.

	<b>LARGE OVERLAP</b>	<b>SMALL OVERLAP</b>	<b>SMALL OVERLAP +MINORITIES</b>
	<b>Austria (Germans)</b>	<b>Lombardy-Venetia (Italians)</b> <b>Hungary (Hungarians)</b>	<b>Croatia (Hun-Croats)</b> <b>Vojvodina (Hun-Serbs)</b>
		<b>Bohemia-Moravia (Czechs)</b>	<b>Slovenia (Hun-Slovenes)</b> <b>Galicia (Poles-Ruthenes)</b>
	<b>Piedmont (Italians)</b> <b>Serbia (Serbians)</b> <b>Romania (Romanians)</b>		<b>Transylvania (Hun-Romanians)</b>
		<b>Upper Hungary (Slovakians)</b>	
<b>DEMOCRATIC PRESSURE</b>	<b>LOW</b>	<b>HIGH</b>	<b>MODERATE</b>
<b>REPRESSION</b>	<b>LOW</b>	<b>HIGH</b>	<b>HIGH</b>
<b>REPRESSOR</b>	<b>ELITE</b>	<b>ELITE</b>	<b>ELITE + MINORITY</b>

Figure 5.1: The predictions of the model in the Austrian Empire (and in neighboring states where rulers shared nationality with the lower classes).

## 5.1 Concepts, Key Assumptions and Scope

### 5.1.1 Concepts and Assumptions

My first key assumption is that identity<sup>6</sup> is multidimensional (e.g. Chandra 2012). An identity dimension can be cultural<sup>7</sup> including shared traditions, language, ethnicity or religion. But cultural dimensions are not the only ones to think about: class or urban-rural divide can also act as a dimension. Thus my multidimensional identity concept can capture the interaction of economic and cultural identities, or the interaction of different types of cultural identities.

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<sup>6</sup>I define identity following Abdelal et al. 2006: a collective identity is a social category that varies along two dimensions - content and contestation. Content describes the meaning of the identity and encompasses four types. These types are as follows and are not mutually exclusive: constitutive norms, which define the formal and informal rules of group membership; social purposes, which define the goals of a group; relational comparisons, which define a group by referring to what it is not; and cognitive models, which define the worldview of a group. Contestation captures the degree of agreement within a group over the content of a shared identity.

<sup>7</sup>I use culture similar to Geertz 1973 here who defines it as “a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and their attitudes toward life” (p.89). Johnston 1995, reviewing different definitions of culture, finds that the way culture affects behavior is by “presenting limited options and by affecting how members of these cultures learn from interaction with the environment.” (p.35). So the decision is whether to pick religious/ethnic/class/etc symbols for this limiting task.



My second assumption is that each country is organized along some dimension (economic / cultural / regional) at any given point in time. Why is society organized along any one cleavage? This is a simplifying assumption based on a public-goods argument (e.g. Alesina and Spolaore 1997 and Bolton and Roland 1997): for instance, having a national language in all schools could have economic benefits by creating lower transaction costs. As nationalism produces a main state language used by bureaucrats and entrepreneurs, those who do not speak this language will be at a disadvantage through this communication disadvantage (Gellner 1996, p.66). Thus language and communication became an important fissure during early industrialization. Similarly, Laitin (2007) argues that the role of language in later periods of state formation became important as states provided services such as primary education and built up a bureaucracy (pp. 90-1). A different explanation for why society needs to be organized along a certain identity axis is that in order to mobilize individuals to fight for regime transition, these individuals need to have a concrete idea about who would be part of the new winning coalition. Nationalism as it arose in the nineteenth century serves as an example. It placed its emphasis not on individual rights but community, which helped coordinate collective action: nationalism entailed the idea that people with a common language and historical past should be joined together (Jelavich 1983, p.174).

The third key assumption is about political incentives.<sup>8</sup> Along any dimension, some agents constitute an elite (e.g. rich along the class dimension, Hungarian-speakers along the language dimension), while the rest are citizens. As holders of power, the elite have tools at their disposal to try prevent shifts to different identity dimensions. This assumption is similar to the one made by Posner 2005. I am adding the possibility of transition and repression to his theory, as well as a game-theoretic framework.<sup>9</sup>

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<sup>8</sup>This third assumption is a constructivist assumption. The constructivist identity research assumes that facts are the products of some human attempt at creation and interpretation (Chandra 2012, p.18; see Posner 2004, Posner 2005, Chandra 2004, and Chandra 2005).

<sup>9</sup>A similar assumption is used by Glaeser 2005 and Hauk and Mueller 2013, who both argue that uncertainty and political actors can lead to intergroup violence.

### 5.1.2 Scope

My model is particularly applicable to periods when there is uncertainty over which political organization dimension of a country is ideal. John Owen (2010) calls such instances periods of transnational ideological polarization: times when it is uncertain which ideological system leads to the best economic outcomes.<sup>10</sup>

My theory is also important during times when nationalism or ethnicity becomes a salient issue due to historical processes. Today's ethno-national revival (e.g. Smith 1995) makes my theory currently relevant. Similarly, many so-called modernist scholars (e.g. Geertz 1973, Tilly 1975, Gellner 1983, Anderson 1983, Hobsbawm 1990, Greenfeld 1992, Mann 1993, Brubaker 1996, Wimmer 2002) argue that modernization and the need for education during the eighteenth and nineteenth centuries also resulted in increased national consciousness.<sup>11</sup> This concept of national consciousness arose in Western Europe and then spread as national movements in Central-Eastern Europe often learned from their Western counterparts (e.g. Szechenyi 2002), thus my case study from ethnically heterogeneous Central Europe during 1848-9 is a case which should show the dynamics of my model.

A necessary feature of any cleavage for which my model applies is that the cleavage is clearly recognizable by actors so that these cleavages can serve as a basis of determining membership in the winning coalition (i.e. elite). At different points in history, different identity dimensions are salient, depending on the communications technology available<sup>12</sup>

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<sup>10</sup>Owen (2010) argues that during 1520-1650 Catholic and Protestant institutions competed with each other; between 1770-1850 republican, constitutional-monarchical, and absolute-monarchical regimes did so, while since 1919 democracy, communism and fascism were promoted.

<sup>11</sup>Naturally, my theory is also relevant if we take a different (e.g. perennialist) perspective that cultural identity has been politically relevant throughout history (Horowitz 1994, Smith 1995, Gat 2013).

<sup>12</sup>Anderson 1983 argues that the printing press was essential for the appearance of national consciousness.

the international environment,<sup>13</sup> and social/economic development<sup>14</sup>. These channels often interact with each other. For instance, in the late nineteenth century, working class consciousness arose in the industrial revolution and spread around the developed world. Today important cleavages include ethnic (e.g. Bates 1983, Posner 2004), religious (e.g. Wilkinson 2004), class (e.g. Acemoglu and Robinson 2006) or civilizational (e.g. Huntington 1996) ties.

## 5.2 Model

### 5.2.1 Setup

I assume that there is a continuum of actors, the mass of whom I normalize to 1. Each actor  $i$ 's type is given by two attributes, social status along an old identity  $i_o \in \{C, E\}$  and a new identity  $i_n \in \{C, E\}$ , both of which can take on the value citizen (C) or elite (E). Following the Acemoglu and Robinson 2006, I call the rulers the elite, and those without power the citizens. Elite members have power over the division of a country's resources, while citizens have no such power but have the ability to revolt.

In the baseline version of the model, there are no actors who would not belong to either the new or the old elite, which means there are three types of actors altogether: those who are only part of the old elite and so would become citizens under the new regime ( $\sigma_{EC}$ ); those who are only part of the new elite and so are citizens under the old regime ( $\sigma_{CE}$ ); and finally those who belong to the overlap of the two elites ( $\sigma_{EE}$ ). Let  $e_o$  and  $e_n$  denote the mass of agents that belong to the elite along the old and the new dimensions respectively. Let  $e_{no}$  denote the mass of agents belonging to the overlap ( $e_{no} \leq e_o, e_n$ ). Thus the new elite are

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<sup>13</sup>States may copy each other's dominant cleavages. On social learning between states see: Simmons, Dobbin and Garrett 2006. As an example of the diffusion of cleavages, consider the aftermath of the First World War, when the Russian Bolshevik revolution inspired many "radical-socialist experiments" in central and eastern Europe (Mommsen 1996, p.106). Similarly, in the wake of the French Revolution of 1789, much of western and central Europe experimented with liberal ideas as a result of French influence (Walt 1996).

<sup>14</sup>Classic works in this respect are Lipset and Rokkan's books (1967 and 1990) who analyze four cleavages arising from social development.

composed of the old citizens ( $\sigma_{CE}$ ) and the overlap of the two elites ( $\sigma_{EE}$ ):  $e_n = (1 - e_o) + e_{no}$ .

Actors need to share the wealth of the country. Assume that the total income which can be achieved under the rule of the old elite is  $y_o$  and the income under the new elite is  $y_n$ . Income is shared uniformly by members of the elite, and each elite member can make an individual transfer to the citizens. Any such transfer is shared uniformly by the citizens. The motivation for the elite to make transfers is to avoid a revolution by the citizens. A revolution is assumed to be costly. This is modeled through the de facto power of the citizens, which is  $0 \leq \mu_n \leq 1$ . The total cost of a revolution is  $y_n(1 - \mu_n)$ , so income of size  $y_n\mu_n$  would be left for the citizens to share after a revolution. For simplicity, a revolution always succeeds and leads to the new elite coming to power.

Now I define the utilities of different actors under the old and the new regimes respectively. Under the old regime, the utility of member  $i$  of the old elite is:

$$U_{\sigma_{EC} \cup \sigma_{EE}}^i = \frac{y_o}{e_o} - \tau^i,$$

because income  $y_o$  is distributed equally among  $e_o$  agents and  $\tau^i$  is the transfer by agent  $i$  toward the citizens. Citizen  $k$ 's utility is:

$$U_{\sigma_{CE}}^k = \frac{\int_{i \in \sigma_{EC} \cup \sigma_{EE}} \tau^i}{1 - e_o}.$$

What are the utilities under the new elite? Let a binary  $\rho \in \{0, 1\}$  signify whether the new elite have come to power through a revolution.  $\rho = 0$  means the old elite yielded power peacefully. Then the utility of each new elite member is:

$$U_{\sigma_{CE} \cup \sigma_{EE}}^i = \frac{(\rho\mu_n + (1 - \rho))y_n}{1 - e_o + e_{no}},$$

as income amounting to  $(\rho\mu_n + (1 - \rho))y_n$  needs to be divided between members of the new elite, who number  $1 - e_o + e_{no}$ . Members of the old elite who fall out of power receive nothing:

$$U_{\sigma_{EC}}^j = 0.$$

For simplicity, I make the assumption that members of the overlap between the old and the new elite prefer the old system as long as it does not cost anything for them to keep it:

Assumption 3.

$$\frac{y_n}{1 - e_o + e_{no}} \leq \frac{y_o}{e_o},$$

On the left-hand side  $y_n$  is the total income left after a costless revolution, which needs to be divided between individuals with mass  $e_n = (1 - e_o) + e_{no}$ . On the right-hand side stands  $\frac{y_o}{e_o}$ , which is simply the per-capita share of any old elite member without any transfers when the old regime is holding the reins of power.

The structure of the game is as follows. First, the old elite may decide to yield power to the new elite peacefully. I assume they prefer yielding power peacefully to being overthrown in a revolution.<sup>15</sup> If they decide not to give up power, the old elite need to decide whether they wish to placate the citizens through transfers or use repression to suppress them. In reality repression and transfers might occur in conjunction but I assume them to be perfect substitutes in order to keep the model tractable.

A  $\bar{\tau}^i$  level can be calculated for each member of the old elite, which captures the maximum amount of transfer he or she is willing to make in order to avoid a revolution. Members of the overlap between the old and new elites are less willing to pay high transfers as they stand to lose less from a transition. I do not model the decision-making process about individual transfer contributions. I assume that the minimum amount of total transfers needed to avoid a revolution is divided up equally among members of the old elite, unless such a division means that some members need to pay more than they are willing to. In the latter case, those members who have lower willingness  $\bar{\tau}^i$  than the ‘fair share’<sup>16</sup> pay  $\bar{\tau}^i$ , while the rest of the old elite divide up the remainder of the total transfer burden equally among themselves.

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<sup>15</sup>Technically assume a small  $\nu > 0$  cost for each old elite member resulting from a revolution.

<sup>16</sup>By fair share I mean total transfers divided equally among all members of the old elite:  $\frac{\tau}{e_o}$ .

The old elite also have a repressive tool in their hand (e.g. armed forces, torture, forced exile) that can be used as a substitute of transfers in order to avoid a revolution. However, I assume this tool is costly to use (e.g. economically, morally, international reputation-wise). All the power of the old citizens can be eliminated at an exogenously-given total cost of  $c$ . Any member of the old elite can contribute to repression by paying  $c^i$ . If  $\int_{i \in \sigma_{EC} \cap \sigma_{EE}} c^i \geq c$  then repression will be used. In words, if there are enough agents of the old elite  $n$  who are willing to pay the total repression cost, then the old elite can stay in power and keep all the resource to themselves. This means a payoff of  $\frac{y_o}{e_o} - c^i$  to agent  $i$ .

If the old elite choose repression then the (old) citizens cannot revolt successfully. On the other hand, if the old elite choose transfers then the citizens still need to decide whether they accept this transfer or start a revolution.

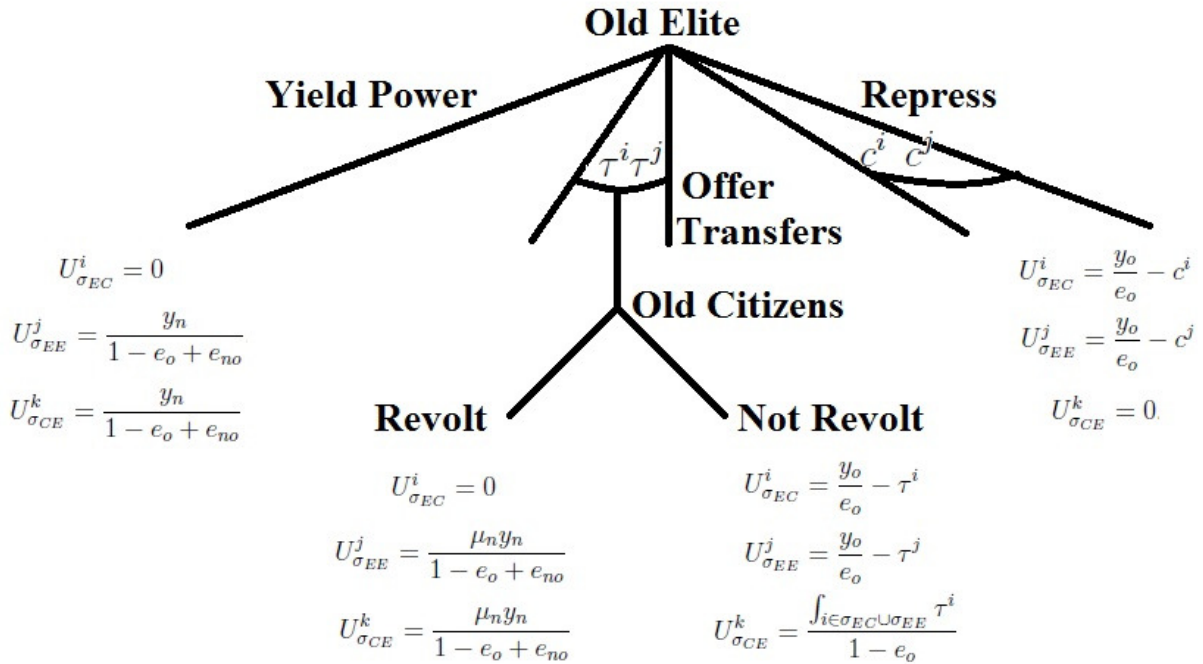


Figure 5.2: The game tree of the baseline version of the game. I omit nature's move at the start of the game (the realization of domestic pressure) because that is only part of the game in the infinitely repeated version. The utilities of members of only the old elite, members of the overlap of the two elites, and members of only the new elite are shown at the terminal nodes.

Figure 5.2 depicts the game tree. Overall, the timing of the one-shot game (which will become the stage game in the infinite extension) is as follows:

1. In the infinite version only: domestic pressure  $\mu(t) \in \{\mu_n, 0\}$  is realized.
2. Members of the old elite may yield power peacefully (they choose  $\psi \in \{0, 1\}$ )<sup>17</sup> to the new elite, in which case power shifts to dimension  $n$  and the stage game is over. Alternatively, the old elite can repress ( $\phi \in \{0, 1\}$ ).<sup>18</sup> For repression, members of the old elite simultaneously state how much  $c_i$  they are willing to pay in order to repress all citizens. If there are enough members of the old elite paying  $c^i$  such that  $\int_{i \in \sigma_{EC} \cap \sigma_{EE}} c^i \geq \bar{c}$ , then repression is used and the stage game is over. Finally, If the old elite do not repress or yield power then members of the old elite each make a redistributive offer  $\tau^i \geq 0$  to the citizens simultaneously, with each citizen promised  $\frac{\int_{i \in \sigma_{EC} \cap \sigma_{EE}} \tau^i}{1 - e_o}$  in case of no revolt.
3. If the citizens receive an offer  $\frac{\int_{i \in \sigma_{EC} \cap \sigma_{EE}} \tau^i}{1 - e_o}$  each, then they decide either to accept or refuse this offer. Rejection by any one citizen leads to a revolution. If any one of the citizens refuses the offer, the citizens revolt and power shifts to dimension  $n$ .

You can see that the bargaining framework over the sharing of transfers and repression costs is very simple, as it is not the focus of this section. The assumption that any one citizen rejecting the offer and trigger a revolution is simplistic and does not capture the subtleties of organizing collective action (Olson 1965, Tullock 1971), but keeps the model clean and tractable and does not drive my results.<sup>19</sup> For mathematical convenience I assume that agents do not use weakly dominated strategies, so they assume they are pivotal in a vote.

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<sup>17</sup>Technically, assume that a single individual old elite member voting for peaceful transfer of power leads to such a transfer.

<sup>18</sup>Technically the decision to repress  $\phi = 1$  is a function of the decision to yield power  $\psi$  because the two variables cannot take on the value of 1 simultaneously.

<sup>19</sup>Also it is convenient to assume that all agents of the same type use the same strategy.

## 5.3 Analysis

Contrast my framework with Acemoglu and Robinson 2006, where a revolution redistributes power to the citizens forever. In my model some members of the old elite stay in power after a revolution (cannot be disenfranchised). This assumption has two implications. First, citizens have less to gain (per capita) from a revolution. Second, the new elite may not oppose the revolution as much if they know they will be able to hold on to power afterwards.

I will solve my game using subgame perfect equilibrium as a solution concept because my game is sequential.<sup>20</sup> I derive my results for repression and then analyze the Markov Perfect Equilibrium in the infinitely repeated version of my model.

### 5.3.1 Repression

I start with the one-shot version of the game and investigate whether repression will be chosen in the first step. Repression and transfers are substitutes, thus if transfers are relatively costly, repression will be used. If repression is chosen, the overall cost of repression is  $c$  and enough agents need to be willing to pay this cost together for repression to occur.

Proposition 3. In the Subgame Perfect Equilibrium of the one-shot game the old elite use either transfers or repression. Repression will only be used as long as its overall cost is below a certain boundary:

$$c \leq \bar{c} = y_n \mu_n \frac{1 - e_o}{1 - e_o + e_{no}}, \quad (5.1)$$

otherwise transfers occur from the elite to the citizens. Revolution or regime change never occurs.

Proof. First I need to calculate the amount of transfers in equilibrium if repression is not used. I solve the game using backward induction. I first consider what happens if the old

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<sup>20</sup>Technically, I will look for strategy combinations such that the strategies are best responses to each other in all proper subgames. For each member of the old elite a strategy consists of  $\psi$ ,  $\phi$ ,  $c^i$  and  $\tau^i$ , while for members of the old citizens a strategy consists of a binary revolution decision  $\rho$ , which is a function of the elite's actions.



elite had not chosen to repress and now needs to grant just enough transfers to citizens to make them not revolt. The following lemma calculates the overall post-transfer utility of the old elite.

Lemma 4. Optimal transfers lead to the following utilities among the old elite members. There are two cases:

- If

$$\frac{y_n \mu_n}{y_o} - (1 - e_o) \leq e_{no}, \quad (5.2)$$

then all members of the old elite pay the same transfers  $\frac{y_n \mu_n}{1 - e_o + e_{no}} \frac{1 - e_o}{e_o}$ . This means all members of them have post-transfer payoffs of:

$$U_o^{tr} = U_{no}^{tr} = \frac{y_o - \frac{y_n \mu_n}{1 - e_o + e_{no}} (1 - e_o)}{e_o}. \quad (5.3)$$

- On the other hand, if

$$\frac{y_n \mu_n}{y_o} - (1 - e_o) > e_{no}, \quad (5.4)$$

then elite agents who would also be part of the new elite are not willing to pay the same amount of transfers as members of only the old elite. Old elite members who would fall out of power have utility:

$$U_o^{tr} = \frac{y_o}{e_o} - \frac{y_n \mu_n - \frac{y_o}{e_o} e_{no}}{e_o - e_{no}}, \quad (5.5)$$

and members of both elites achieve utility:

$$U_{no}^{tr} = \frac{y_n \mu_n}{1 - e_o + e_{no}}. \quad (5.6)$$

In both cases the overall utility of the old elite is:

$$\int_i U_o^{tr} di + \int_i U_{no}^{tr} di = y_o - \frac{1 - e_o}{1 - e_o + e_{no}} y_n \mu_n. \quad (5.7)$$

Proof. How much wealth  $y_o$  will the members of the old elite redistribute to the citizens? First notice that whoever is not in the new elite will not need to be promised anything.

Second, since any one dissatisfied member of a potential new elite can start a revolution, each member of this new elite needs to be given exactly their outside option (i.e. the payoff from the revolution). Since a revolution would lead to an income of 0 to those members of the old elite who are citizens in the new elite and  $\frac{y_n \mu_n}{e_n}$  to the new elite, each of the  $1 - e_o$  citizens needs to be promised exactly  $\frac{y_n \mu_n}{e_n}$  in order to avoid a revolution. We also know that  $e_n = 1 - e_o + e_{no}$ . Therefore the elite taken together will be able to keep  $y_o - \frac{y_n \mu_n}{1 - e_o + e_{no}}(1 - e_o)$  units of income. This leads to equal payoffs to each member of the old elite:

$$U_o^{tr} = U_{no}^{tr} = \frac{y_o - \frac{y_n \mu_n}{1 - e_o + e_{no}}(1 - e_o)}{e_o}, \quad (5.8)$$

However, notice that those members of the old elite who are members of the new elite too may not be better off after paying the transfer than if they had just waited for a revolution. Therefore for this kind of equilibrium to hold, where each member of the old elite pays uniformly, we need to impose the condition that members of both elites are willing to pay the uniform transfers. This condition says that after a revolt the member of both elites are no better off:

$$\frac{y_n \mu_n}{1 - e_o + e_{no}} \leq \frac{y_o - \frac{y_n \mu_n}{1 - e_o + e_{no}}(1 - e_o)}{e_o}, \quad (5.9)$$

which can be rearranged to:

$$\frac{y_n \mu_n}{1 - e_o + e_{no}} \leq y_o, \quad (5.10)$$

if this condition holds, then every member of the old elite makes the same transfers.

However, if (5.10) does not hold, members of the both elites will be making smaller transfers and the shortfall will need to be made up by members of only the old elite. In this case, the members of both elites pay just enough to get their outside option. The maximal transfer to achieve their outside option can be written as:

$$\frac{y_o}{e_o} - \frac{y_n \mu_n}{1 - e_o + e_{no}}, \quad (5.11)$$

where the first term is what they would get without transfers and the second term is the outside option. The rest of the old elite make up for the short fall of transfers to avoid a

revolution. Members of  $e_{no}$  gather a sum of transfers equal to:

$$\frac{y_o}{e_o}e_{no} - \frac{y_n\mu_n}{1 - e_o + e_{no}}e_{no}, \quad (5.12)$$

which means that the rest of the elite need to pay:

$$\frac{y_n\mu_n}{1 - e_o + e_{no}}(1 - e_o) - \left( \frac{y_o}{e_o}e_{no} - \frac{y_n\mu_n}{1 - e_o + e_{no}}e_{no} \right) = y_n\mu_n - \frac{y_o}{e_o}e_{no}. \quad (5.13)$$

What is the payoff of these elite members, who would fall out of power?

$$U_o^{tr} = \frac{y_o}{e_o} - \frac{y_n\mu_n - \frac{y_o}{e_o}e_{no}}{e_o - e_{no}}, \quad (5.14)$$

which as long as it is non-negative the elite will make the transfers. By construction, members of  $e_{no}$  receive their outside option (what they would get if they waited for a revolution):

$$U_{no}^{tr} = \frac{y_n\mu_n}{1 - e_o + e_{no}}. \quad (5.15)$$

□

Now consider repression. In the uniform transfer case, which is described by the condition:

$$\frac{y_n\mu_n}{y_o} - (1 - e_o) \leq e_{no}, \quad (5.16)$$

each member of the old elite ends up with the same utility in case of transfers. The benefits of repression are that no transfer needs to be paid to the citizens. Repression will be used by all of them as long as

$$\frac{y_o}{e_o} - \frac{c}{e_o} \geq \frac{y_o - \frac{y_n\mu_n}{e_n}(1 - e_o)}{e_o} \quad (5.17)$$

or

$$c \leq \frac{y_n\mu_n}{1 - e_o + e_{no}}(1 - e_o) \quad (5.18)$$

Notice that the higher is  $e_{no}$ , the less appealing repression becomes because without it the transfers the elite need to make are lower, as citizens find it less appealing to revolt.

In the second case we have that  $e_{no}$  is low:

$$\frac{y_n \mu_n}{y_o} - (1 - e_o) > e_{no}, \quad (5.19)$$

and so transfers lead to different utility levels to members of only the old elite and members of both elites. Members of both elites are only willing to pay  $c_r$  given by:

$$U_{no}^{tr} = \frac{y_n \mu_n}{1 - e_o + e_{no}} = \frac{y_o}{e_o} - c_{no}, \quad (5.20)$$

which leads to:

$$c_{no} = \frac{y_o}{e_o} - \frac{y_n \mu_n}{1 - e_o + e_{no}}. \quad (5.21)$$

Members of the old elite only have different outside utilities, so they are willing to pay only up to:

$$U_o^{tr} = \frac{y_o}{e_o} - \frac{y_n \mu_n - \frac{y_o}{e_o} e_{no}}{e_o - e_{no}} = \frac{y_o}{e_o} - c_o, \quad (5.22)$$

which means:

$$c_o = \frac{y_n \mu_n - \frac{y_o}{e_o} e_{no}}{e_o - e_{no}}. \quad (5.23)$$

Therefore repression will only be paid by the two types of agents as long as:

$$c \leq \bar{c} = c_{no} e_{no} + c_o (e_o - e_{no}) = y_n \mu_n \frac{1 - e_o}{1 - e_o + e_{no}}, \quad (5.24)$$

and the right-hand side is decreasing in  $e_{no}$ , which means that as  $e_{no}$  increases repression becomes less appealing.

□

Notice the simplicity of this result even though we have two cases to consider: when members of the old elite make uniform transfers, and when they do not. Both lead to this same simple condition, although the individual sharing of the redistributive burden among old elite members is different.

Proposition 3 gives us a main result of this section: the higher is the size of the overlap

$e_{no}$ , the less repression will be used.<sup>21</sup> The reason here is that a higher overlap means the citizens face smaller incentives to mount a revolution in order to come to power because they would need to share the post-revolutionary income with more members of the old elite. As a result, cheaper transfers placate them, and there is no need to use repression.

As any change that raises  $\bar{c}$  makes repression more attractive, repression will be more likely to be used if either  $y_n$  or  $\mu_n$  is higher. In words, the higher the income under the new elite, or the less destructive a revolution is, the more likely repression will occur. This is because in such a case transfers are more costly, so repression, which can avoid these transfers, is a more attractive option to the old elite.

### 5.3.2 Regime Change

Now I extend the game to the infinite horizon. I will focus on Markov Perfect Equilibria. The common discount factor is  $\beta$ . Domestic pressure ebbs and flows over time: there is an  $h$  ( $h \in (0,1)$ ) probability in each period  $t$  that pressure will be high in a dictatorship:  $\mu(t) = \mu_n$ . In all other periods pressure is 0 (i.e. in these periods revolution is completely unattractive to the citizens as it would destroy all their income). This feature captures the transitory nature of the ability of the citizens to organize themselves for a revolution (Acemoglu and Robinson 2006).

The time-varying nature of domestic pressure means that a commitment constraint plays a key part in the results. When pressure turns high, the citizens know that the elite cannot commit to implement redistribution in future periods when pressure is going to be low again, whereas a revolution today locks in  $y_n\mu_n$  forever.<sup>22</sup> Therefore larger transfers are needed to placate the citizens than in the one-shot game. In fact the size of the transfers required

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<sup>21</sup>

$$\frac{\partial \bar{c}}{\partial e_{no}} = -y_n\mu_n \frac{1 - e_o}{(1 - e_o + e_{no})^2} < 0 \quad (5.25)$$

<sup>22</sup>See Powell 2004 for a general treatment of the lock-in problem.

to avoid a revolution could be so large that even the largest transfers that the old elite are able to make in the current period do not suffice to placate the citizens. In other words, the commitment constraint on the old elite binds and they need to give up power.

Proposition 4. In the Markov Perfect Equilibrium of the game described above, no transfers are offered by the elite when  $\mu(t) = 0$ . Furthermore:

- If repression is not too costly:

$$c \leq \frac{y_n \mu_n}{1 - \beta} \frac{1 - e_o}{1 - e_o + e_{no}}, \quad (5.26)$$

then the old elite use repression in every high period and no revolution or regime change occurs.

- Otherwise:

- If the commitment constraint binds:

$$y_n \mu_n \geq y_o (1 - \beta(1 - h)) \frac{1 - e_o + e_{no}}{1 - e_o}. \quad (5.27)$$

then regime change cannot be avoided and will occur as soon as pressure is high.

- Otherwise the old elite make transfers in every high-pressure period and no revolution or regime change occurs.

Proof. I start by deriving the commitment constraint:

Lemma 5. The commitment constraint binds and transfers cannot avoid a revolution if and only if:

$$y_n \mu_n \geq y_o (1 - \beta(1 - h)) \frac{1 - e_o + e_{no}}{1 - e_o}. \quad (5.28)$$

In this case regime change occurs in the MPE.

Proof. With a revolution the utility of the citizens would be:

$$U_c^r(\mu = \mu_n) = \frac{y_n \mu_n}{1 - \beta} \frac{1 - e_o}{1 - e_o + e_{no}}, \quad (5.29)$$

so the elite altogether need to give a transfer  $\hat{\mu}_H$  today which brings the citizens to an expected utility of  $\frac{y_n \mu_n}{1-\beta} \frac{1-e_o}{1-e_o+e_{no}}$ . Is the elite able and willing to do this?

The maximum transfer that the elite together can offer is  $\hat{\mu}_H = y_o$ . If the citizens accept then they know that the elite are not able to commit to give any transfer at all in non-revolutionary periods, which means that the citizen's utility is:

$$U_c^{tr}(\mu = \mu_n) = \frac{y_o(1 - \beta(1 - h))}{1 - \beta}, \quad (5.30)$$

where from the next period onward in a proportion of  $1 - h$  periods the citizens get nothing and in the rest they get everything. Since no more than  $y_o$  can be transferred to the citizens, buying the citizens off is not always possible. Whenever the citizens cannot be bought off because of the finite size of  $y_o$  ( $U_c^r(\mu = \mu_n) \geq U_c^{tr}(\mu = \mu_n)$ ) I will say that the 'commitment constraint' binds if:

$$\frac{y_n \mu_n}{1 - \beta} \frac{1 - e_o}{1 - e_o + e_{no}} \geq \frac{y_o(1 - \beta(1 - h))}{1 - \beta}, \quad (5.31)$$

or

$$y_n \mu_n \frac{1 - e_o}{1 - e_o + e_{no}} \geq y_o(1 - \beta(1 - h)), \quad (5.32)$$

In this case transfers cannot avoid regime change.  $\square$

Next what happens if the commitment constraint does not bind? This means that transfers can avoid a revolution. How big are the transfers that citizens need to receive not to revolt?

Lemma 6. When the commitment constraint does not bind:

$$y_n \mu_n \frac{1 - e_o}{1 - e_o + e_{no}} \leq y_o(1 - \beta(1 - h)). \quad (5.33)$$

then the minimal transfers that each citizen needs to receive is:

$$\tau = \frac{\mu_n y_n}{1 - \beta(1 - h)} \frac{1 - e_o}{1 - e_o + e_{no}} \quad (5.34)$$

Proof. The minimum transfer to avoid a revolution is  $\hat{\mu}_H = \frac{y_n \mu_n}{1 - \beta(1 - h)} \frac{1 - e_o}{1 - e_o + e_{no}}$ . This is not

simply  $y_n \mu_n$  because the citizens know that they have some de facto power in the future  $h$  share of the time. The elite wants to give the citizens so much transfers  $\tau$  to get the citizens' utility to  $\frac{y_n \mu_n}{1-\beta} \frac{1-e_o}{1-e_o+e_{no}}$ , knowing that (we are looking at MPE's) they will give the same  $\tau$  in any high period in the future:  $\frac{\tau}{1-\beta} - \frac{\beta(1-h)\tau}{1-\beta} = \frac{y_n \mu_n}{1-\beta} \frac{1-e_o}{1-e_o+e_{no}}$ , from which:

$$\hat{\mu}_H = \tau = \frac{y_n \mu_n}{1-\beta(1-h)} \frac{1-e_o}{1-e_o+e_{no}}.^{23}$$

□

The transfer depends on how frequently high pressure will return in the future. If frequently ( $h$  is high), lower transfers suffice today. Given that citizens are kept at their outside option, which is the revolution, transfers yield utilities:

$$U_{e_o}^{tr}(\mu = \mu_H) = \frac{y_o - y_n \mu_n \frac{1-e_o}{1-e_o+e_{no}}}{1-\beta} \frac{1}{e_o}, \quad (5.35)$$

which is the same as (5.7), apart from the  $\frac{1}{1-\beta}$  multiplier. Therefore in case regime change can be avoided, the same analysis applies then before, if we multiply the costs of repression with  $\frac{1}{1-\beta}$  too.

Comparing the options of transfers/regime change to repression completes the proof.

□

In sum, there is a negative relationship between the size of the overlap  $e_{no}$  and the probability of regime change. A smaller overlap  $e_{no}$  means the citizens will have bigger incentives to advocate regime change, which also makes the commitment constraint more likely to bind. This means regime change is more likely, as long as repression is costly.

This result is interesting to contrast with the role of the middle class in Acemoglu and Robinson 2006 (Chapter 8). Acemoglu and Robinson's argument is that a larger middle class makes the aristocracy less afraid of democracy as the median voter is richer, and so prefers

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<sup>23</sup>If there is no future high period ( $h = 0$ ), this transfer is logically  $\frac{y_n \mu_n}{1-\beta}$ , if there are always high periods in the future then it is  $y_n \mu_n \frac{1-e_o}{1-e_o+e_{no}}$ , so that the higher is the probability of having high revolutionary pressure in the future, the lower this transfer needs to be because there is a higher chance in the future that the citizens will demand transfers again.



less redistribution. Here if I reinterpret my overlap as the middle class, its role is opposite: with a larger middle class poor agents will press less for regime change as they need to share more of the benefits of a revolution with the middle class.

My result also contrasts with the role of the winning coalition in Bueno de Mesquita et al. 2003. Their winning coalition is analogous to the overlap in my model in some ways.<sup>24</sup> Bueno de Mesquita et al. 2003 argue that if the winning coalition is sufficiently large<sup>25</sup> then it will advocate the further enlargement of itself so that the incumbent leader makes higher transfers to them as that leader attempts to dissuade any members of the winning coalition from defecting (p.334-6). Thus a bigger winning coalition propitiates democratization, whereas in my model, pressure comes from below, so a bigger overlap discourages citizens from taking power and thereby inhibits regime transition.

### 5.3.3 Democratization: Uncertainty over Inclusivity of the Old Elite

Next consider what that happens if the regime shift can occur not just to one identity dimension but to another one too. For instance, in the wake of the Arab Spring, countries may turn away from kleptocratic dictators and either toward liberalism or Islamism. Assume that in both cases the citizens come to power after a revolution. After a revolution, with probability  $p_n$ , the citizens need to share resources with the overlap (of mass  $e_{no}$ ) as before. However with probability  $1 - p_n$ , the citizens need to share with a smaller overlap ( $e_{nn}$ ):  $e_{nn} < e_{no}$ . In either case the income under the new elite is  $\mu_n y_n$  or  $y_n$  as before.

Let us see how the results change. Given the probabilities of the two new dimensions I can calculate the size of the transfers needed to placate the citizens.<sup>26</sup> Then similar steps as

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<sup>24</sup>The difference is that members of the overlap in my model may be part of two different winning coalitions (the new or old elite).

<sup>25</sup>Technically, the size of the winning coalition needs to reach a threshold level so that the value of private goods from the leader is low.

<sup>26</sup>

$$T = \left( p_n \frac{\mu_n y_n}{1 - e_o + e_{no}} + (1 - p_n) \frac{\mu_n y_n}{1 - e_o + e_{nn}} \right) (1 - e_o), \quad (5.36)$$

before lead us to the conclusion that repression will only be used if this transfer is greater than the cost of repression:

Proposition 5. In the Markov Perfect Equilibrium, repression will only be used as long as its cost is below a certain boundary:

$$c \leq \left( p_n \frac{\mu_n y_n}{1 - e_o + e_{no}} + (1 - p_n) \frac{\mu_n y_n}{1 - e_o + e_{nn}} \right) \frac{1 - e_o}{1 - \beta}. \quad (5.37)$$

Otherwise regime change will occur as long as the modified commitment constraint binds:

$$\left( p_n \frac{\mu_n y_n}{1 - e_o + e_{no}} + (1 - p_n) \frac{\mu_n y_n}{1 - e_o + e_{nn}} \right) (1 - e_o) \geq y_o (1 - \beta (1 - h)). \quad (5.38)$$

Revolution never occurs in equilibrium.

Consider the effect of changing  $p_n$ , the probability that more members of the old elite will be included in the new regime (liberal transition). As  $\frac{\mu_n y_n}{1 - e_o + e_{no}}$  is lower than  $\frac{\mu_n y_n}{1 - e_o + e_{nn}}$ , an increase in  $p_n$  means both regime transition and repression become less likely. This is because if the probability of a more inclusive transition increases then the private payoff from a revolt is lower for each citizen. This results in repression being less used but also means that regime transition is less likely to occur. If, on the other hand, there is a higher chance that a restrictive regime would come to power, repression will be more likely to be used, but transition will also be more likely. So democracy might emerge best when citizens revolt believing they can keep the old regime out of power but then ‘accidentally’ a liberal, more encompassing, transition occurs. The democratization of South Africa in 1994 serves as an example.

### 5.3.4 Democratization: Uncertainty over Inclusivity of the New Elite

Another extension to consider is what happens if a subset of citizens may never come to power. I assume that a subset of the citizens may lose out not just along the old but the

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new dimension too. This gives these ‘probably always losers’ less of an incentive to push for regime change. However there is an opposing effect too: the remaining winning citizens benefit more from the regime change in per capita terms. Which effect is stronger?

Let  $p_n$  be the probability that the identity dimension will shift to  $n$  and every member of the old citizens and the overlap (i.e. of measure  $1 - e_o + e_{no}$ ) will be included in the new elite. However, with probability  $1 - p_n$  citizen members of mass  $e_{pc}$ , the permanent citizens, do not become members of the new elite, so only  $1 - e_o - e_{pc} + e_{no}$  citizens share the post-revolutionary benefits.<sup>27</sup>

Proposition 6. In the Markov Perfect Equilibrium, repression is only used as long as its cost is below a certain level:

$$c \leq \frac{\mu_n y_n}{1 - \beta} \left( p_n \left( 1 - \frac{e_{no}}{1 - e_o + e_{no}} \right) + (1 - p_n) \left( 1 - \frac{e_{no}}{1 - e_o - e_{pc} + e_{no}} \right) \right). \quad (5.40)$$

Otherwise regime change occurs, as long as the modified commitment constraint binds:

$$\mu_n y_n \left( p_n \left( 1 - \frac{e_{no}}{1 - e_o + e_{no}} \right) + (1 - p_n) \left( 1 - \frac{e_{no}}{1 - e_o - e_{pc} + e_{no}} \right) \right) \geq y_o (1 - \beta (1 - h)). \quad (5.41)$$

Revolution never occurs in equilibrium.

A rise in the number of permanent citizens  $e_{pc}$  has similar effects on repression and regime transition: it decreases the probability of both. The reason is that given a higher number of ‘permanent citizens’, who do not fight in a revolution, the relative amount of resources the revolutionaries need to share with members of the old elite increases. This lessens the revolutionaries’ incentives to fight.

A perturbation on this game is when ‘permanent citizens’ even have to bear an extra cost  $c_{pc}$  if the revolution takes place. For instance, in 1848 some Hungarian revolutionaries

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<sup>27</sup>Thus the transfers from the old elite to the (old) citizens need to be as high as:

$$T = \left( p_n \frac{\mu_n y_n}{1 - e_o + e_{no}} \right) (1 - e_o) + \left( (1 - p_n) \frac{\mu_n y_n}{1 - e_o - e_{pc} + e_{no}} \right) (1 - e_o - e_{pc}), \quad (5.39)$$

wanted to turn ethnic minorities into Hungarians, something that the Austrian court did not plan to do. In this case, the old elite is naturally in a better position. Overall transfers from the elite can be lower.<sup>28</sup> What is more permanent citizens are willing to make transfers to the other citizens to avoid a revolution.<sup>29</sup> Alternatively, they are willing to bear some share of the repression costs.<sup>30</sup> The regime pays less of the repression's cost and the 'permanent citizens' repress alongside the regime. Since pressure is lower on the old elite now, regime change becomes less likely.

In sum, it seems that repression-prone as well as democratizing societies are going to be the ones which have a more all-encompassing dimension among the citizens in addition to societies having a low  $e_{no}$ . So societies which are the most repression-prone and most regime-change-prone are relatively homogeneous ones ruled by an elite whose members have little in common with the disenfranchised citizens.

## 5.4 The 1848 Revolutions in the Habsburg Empire

I analyze the events of the 1848 revolution and the preceding reform period in the Habsburg Empire. The Habsburg Monarchy in the mid-nineteenth century is a good case to evaluate my theory on because it is diverse, which means there is ample variation in the overlap of the old and new elites across different parts of the empire. At the same time, it is a single state, therefore potentially important variables such as the ruler's personality, his or her resources and his or her advisers do not confound my analysis. Stretching from

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$$T = \left( p_n \frac{\mu_n y_n}{1 - e_o + e_{no}} \right) (1 - e_o) + (1 - p_n) \left( \frac{\mu_n y_n}{1 - e_o - e_{pc} + e_{no}} (1 - e_o - e_{pc}) - c_{pc} e_{pc} \right). \quad (5.42)$$

<sup>29</sup>This is the case as long as:

$$(1 - p_n) c_{pc} \geq p_n \frac{\mu_n y_n}{1 - e_o + e_{no}}. \quad (5.43)$$

<sup>30</sup>Namely:  $e_{pc} \left( (1 - p_n) c_{pc} - p_n \frac{\mu_n y_n}{1 - e_o + e_{no}} \right)$  altogether

the Swiss Alps to the Eastern Carpathian mountains, and from the Vistula to the Adriatic sea, the state that formed the core of the post-Napoleonic peace settlement was ruled from Vienna. No fewer than eleven nationalities composed the empire, all living in homelands in different regions. The empire was ruled by a mainly German court relying on a largely German-speaking administration, although a few rich non-German families were also part of the old elite.

Unfortunately, different territories had widely different economic development, education levels and institutional heritage. But fortunately, many of the nationalities spilled over the monarchy's borders into neighboring states, making comparisons to them possible. For instance, Italians in Piedmont and Italians in Lombardy-Venetia were similar in development levels, education and institutional history, but the Piedmontese were ruled by native Italians whereas the Lombards and the Venetians were ruled by Germans. The nationalities that had outside states ruled by their compatriots were the Germans, the Italians, the Romanians, and the Serbs. These can be compared to their co-ethnics abroad. The nationalities that only existed in the Austrian Empire are the Hungarians, the Czechs, the Slovaks, the Croats and the Slovenes. Finally, nationalities that were divided but did not have their independent kingdom were the Poles and the Ukrainians.

Space constraints preclude a full discussion of events. I will show that my assumptions, my model's mechanism and my results are all supported in this case study. My first assumption was that multi-dimensionality of identity plays a key role. Indeed in the whole Habsburg empire, the 1848-9 revolution was "complex and confusing" due to the many different identities and many foci of political actions (Sperber 2005, p.140). Just as my model assumes, the revolutions of 1848 brought forth a number of dimensions, and it was difficult to predict along which lines a post-revolutionary victorious regime would organize itself. Nationalism was one of them, and radicalism (class) was another. Furthermore, liberalism was also important, thus the inclusivity of a potential transition was uncertain (Roessler and Miklos 2003, pp.130-1).

Furthermore, these identities had emerged before 1848. The Habsburg state before the revolution was a feudal one, which developed some absolutist and constitutional features (Breuilly 1985, p.91). Thus rich Germans constituted the old elite. Liberal pressure arose from the Enlightenment and the French Revolution (Owen 2010, pp.130-2). The national dimension rose to prominence throughout the empire in the first half of the nineteenth-century, with the appearance of literary and linguistic movements (Sperber 2005, pp.98-101). Radicalism also had roots in the region: for instance Martinovics, a member of the Hungarian Jacobin movement, led an uprising against Vienna in 1795. In sum, durable identity cleavages had been created by historical forces, and social learning from abroad.

My second assumption was that identity dimensions compete with each other because society will be organized along any one of them. This is indeed the case in 1848 in the empire. The prominence of class and nationality ebbed and flowed over the two years of the revolution. At first, for instance, Czech and German liberals celebrated liberal reforms together in Prague. Later German liberals convened the Frankfurt National Assembly, but Czech liberals declined to join. Eventually, tension rose in Prague, which resulted in clashes between Czechs and Germans, both turning more nationalistic (Sperber 2005, p.139).

My third assumption was that the old elite have repressive tools at their disposal to prevent the identity shift. As the Viennese court deployed armies in its own empire (e.g. in Italy and Hungary) and enlisted the Russian Tsar's help as well to suppress the Hungarian revolution (Saunders 2000, p.137), this assumption also clearly holds.

The theory predicts that different areas of the Austrian Empire should experience both different amounts of revolutionary movement and repression. I will designate areas by the majority nationality (e.g. I write Czech lands for Bohemia, Moravia and Silesia, which had a Czech majority and a German minority). In particular, there are three different types of regions. The rulers were primarily rich Germans (administration, bureaucracy) everywhere, but the ruled nationalities varied.

First, the most violent and most revolutionary areas are predicted to be the ones where

there is a simple distinction between the ruled and the ruler. There are three such areas: the Hungarian, the Italian and the Czech lands. As the rulers are largely rich Germans, the overlap is small. Thus violence is predicted to be plenty and revolutionary pressure should be high. In addition, the Czech territories had the most Germans out of the three and least clear national movement, thus given the uncertainty over inclusivity of the old elite, the Czechs should be the most peaceful out of the three nationalities in this category.

Second, less upheaval and pressure is predicted to occur when the lower-class nationality coincides with the ruling-class nationality. This is true of Germans living in the Austrian provinces. Both revolutionary pressure and repression should be relatively low.

Third, the most complicated areas are Transylvania, Croatia, the Serb lands, Galicia, and (to a lesser extent) Slovak lands. In addition to being ruled by Austria, these territories had landowners of a different nationality than peasants. The theory predicts that given the uncertainty over the inclusivity of the citizen regime, the pressure on Vienna should be low, and the possibly permanent citizens might join Vienna. So pressure on the emperor should be lower in these areas but political violence should be high. Out of these minorities, the Slovaks not only shared a homeland with the Hungarian landowners but religion too, so they should be less active against the Hungarians.

Because of space constraints I chose one case out of each of the three categories to analyze in detail, while I only touch upon the rest of the nationalities. I chose the nationalities which share co-ethnics beyond the border of the empire, so that I can contrast their fates with their foreign brothers. For the first category this means Italians, for the second, Germans,<sup>31</sup> and for the third, Romanians. I also need to discuss Hungarians in the first case because their behavior is relevant to Romanians' actions.

The Habsburg case is also interesting to evaluate from an economic development perspective. Was pressure and violence the highest in the economic periphery of the empire, where

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<sup>31</sup>Unfortunately, Austrian Germans and Germans outside the empire were both ruled by a German administration.

rich areas did not witness as much revolution because the destructive cost of revolution would have been high? The answer is no. The Italian areas (Lombardy and Venetia), for instance, were wealthy (and taxed heavily by Austria), yet witnessed plenty of violence and pressure (Sperber 2005). Similarly the Czech areas were relatively rich, benefiting from early industrialization and a thriving textile industry (Kann 1974, p.286). Thus economic variables without the question of nationality and political institutions do not suffice to explain variation in revolutionary experience.

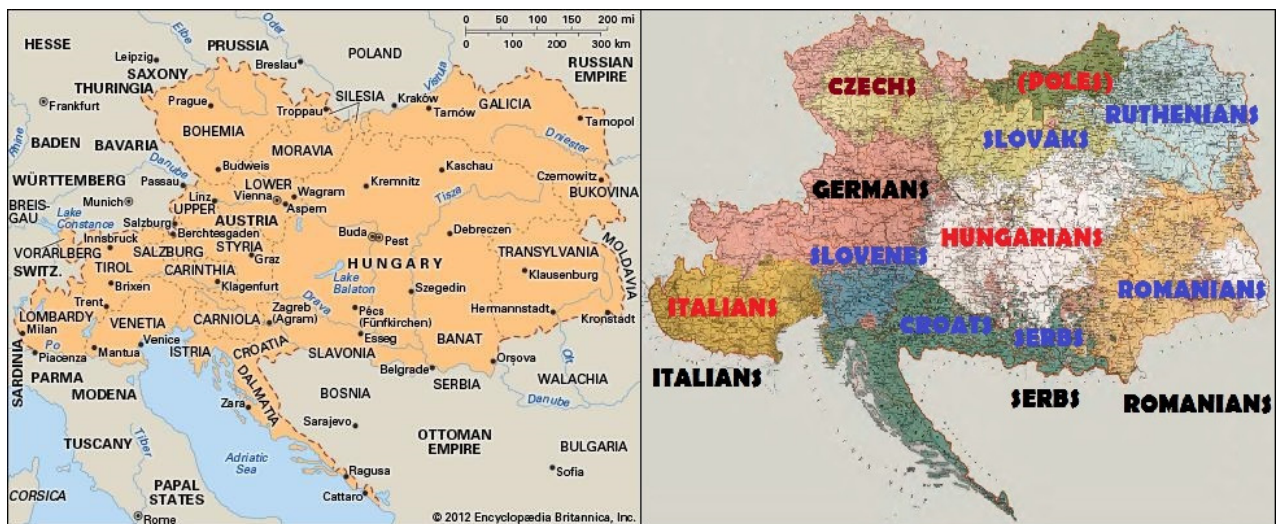


Figure 5.3: The geography of the Habsburg-ruled Austrian empire in 1848 and the nationalities of the empire.

### 5.4.1 Contrast between Ruled and Ruler

The Hungarian, the Italian, and (to a lesser extent) the Czech lands had the smallest overlap, and these were indeed the most combative and longest-lasting revolutions. Berenger (1994) writes that in 1848 it was these three nationalities, which had a program of claims that brought into question the existence of the monarchy (p.157). Violence followed as I will show in more detail.



## Hungarians

The Hungarian revolution was one of the most successful and violent not only in the monarchy, but in the whole of Europe. The 'Springtime of the Peoples' reached Hungary on March 15th 1848, resulting in the liberal April Laws. Voting rights were extended, feudalism was abolished, religious toleration to all Christian sects extended, and economic reforms were implemented. However the reform movement also seemed to take on a Hungarian national flavor, although there were attempts to reach out to minority reformers. However all these efforts were futile as the Hungarian side could not commit to upholding ethnic rights. The revolution broke down in a year-long civil war from September 1848-August 1849. Eventually, it was not the Austrian army, but the Russian tsar's army that defeated the Hungarian liberals, together with local ethnic nationalities (Rapport 2009). Nevertheless, the Hungarian revolution was the longest-lasting revolution of 1848-9.

The revolution was as much against repression as against German hegemony (Schulze 1990, p.71). The Hungarian lower classes and the poorer nobility were resentful of what they saw as German dominance and overbearing Habsburg authority (Rapport 2009, p.7). Thus Germans would lose out in both a liberal and a nationalistic revolution too. Non-Hungarian old elite members were excluded from the new regime: Hungary was to have her own army, militia, administration and judiciary (Sugar, Hanak and Frank 1990, p.214).

It was not only the old rich German elite, but ethnic minorities as well, who became sidelined (became 'permanent citizens'). The leader of the Hungarian revolution, Lajos Kossuth, thought that 'Magyardom' should be imposed on minorities by force if necessary (Cartledge 2011, p.168). The Hungarian language became symbolic and the willingness to learn the language by minorities a touchstone of loyalty to the nation. In 1838 Hungarian became the official language of the legislature, the Diet; in 1844 it became the official language of secondary education.

Actors in the revolution were conscious of their multiple identities. The few Hungarian magnates had torn identities. Even though they belonged to the old elite, they mostly

decided to join the revolution as it took on a more national characteristic. Among the richest Hungarians joining were Stephen Szechenyi and Miklos Wesselenyi. In particular, Szechenyi was an interesting character. Being a member of one of the most eminent magnate families in the country, he had a brooding, conflicted mind. He had a profound love for Hungary and progress, yet was a devout Catholic and loyal to the aristocratic class (Cartledge 2011, p.163). He had a nationalist streak too, believing Hungarian should be the official language in the whole multi-ethnic kingdom. But he remained a staunch supporter of Vienna as well.

## Italians

The revolutions of 1848-9 also confirm the model's predictions in the Italian peninsula. Austria's Italian provinces of Lombardy-Venetia also experienced high revolutionary pressure as well as repression. Furthermore, The fact that the peninsula was divided up between Italian-ruled kingdoms as well as foreign-occupied states helps me find variation in terms of the overlap of the elite, while neighboring states were all similar to each other in many respects, such as the economy, society and culture.

Lombardy-Venetia was the only state in 1848 in the Italian peninsula to be under clear foreign domination. Educated Lombards and Venetians were resentful of the fact that Austrians occupied some 36,000 government posts, which prevented Italians from receiving a fair share of patronage (Rapport 2009, p.8). Especially the higher state positions were reserved for Germans (Rapport 2009, p.44). As a result, the revolutionaries in Italy were mainly upper-class Italians (Sked 2001, p.61). Metternich in Vienna recognized the problem, yet there were the double problems of few Italians speaking German, and that he thought any concessions might be perceived as weakness (Sked 2001, p.62-4), so no reform was implemented.

The model predicts pressure for regime change to be the highest in Lombardy-Venetia in the Italian peninsula. Yet as the revolutionary wave swept the peninsula from Palermo and Paris in early 1848, all major Italian monarchs granted constitutions to their citizens except

for Lombardy-Venetia (Di-Scala 1998, p.84). But a closer look reveals that the reason was not that citizens of Lombardy-Venetia were not demanding such reforms, but harsh Austrian repression (Di-Scala 1998, p.84). In fact on March 18, the pressure grew so high in Milan, that the Austrian general Radetzky's 13000 men withdrew from the town after five days of street fighting which resulted in hundreds of casualties (Whyte 1965, p.56). Long fighting was to follow that lasted into 1849.

The Kingdom of Sardinia (including the eponymous island and Piedmont on the mainland) was the most indigenously Italian state in the sense that its ruling class and king were Italian, which made its ruling regime the opposite of Lombardy-Venetia (Sked 2001, p.63). In the other states there was some Austrian influence of various degree: Tuscany was ruled by a Habsburg grand duke, Parma and Modena were governed by relatives of the Emperor, the Austrians could garrison a fortress in the Papal States, and the Bourbon King of the Two Sicilies had a military alliance with Vienna (Rapport 2009, p.13). As expected, the revolutionary events in Sardinia were relatively benign: the king Carlo Alberto passed a constitution-like 'statute' on February 8, although not due to intense pressure. Rather than suppressing liberalism in Piedmont-Sardinia, he later fought the Austrian emperor in Lombardy-Venetia, supporting the Italian liberals there (Duggan 2008, p.171).

Briefly, the Czech areas also experienced pressure and repression, but less than Hungary or Lombardy-Venetia. This is because these areas were much more mixed with Germans, especially around the borders of the lands of the Bohemian crown. After initial cooperation, the Czech nationalists decided not to support the German liberal movement and convened their own Pan-Slavic congress in Prague. Consequently, relations with German nationalists became strained. (Sperber 2005, p.94).

#### 5.4.2 Homogeneity between Ruled and Ruler: German Areas

Present-day Austria is predicted to have relatively little repression and revolutionary pressure as the overlap is big between the old German elites and the new liberal/national

German regime. This prediction holds true.

In contrast to the Hungarian and Italian areas, counterrevolution had prevailed in Vienna by the end of 1848. What is more, the middle classes were often fighting on the counter-revolutionary rather than on the revolutionary side (Schulze 1990, p.75). Most liberals cooperated with monarchical regimes, hoping these would undertake reform. This wish is directly linked to the model: as German nationalists thought of incorporating the old elite in their system, fighting to change it would be more costly.

In addition, liberal revolutionaries were moderate in their demands (Sked 2001, p.55). They were not well-organized, and the object of their hatred turned out to be not the government, but the Jewish population (Sked 2001, p.83). The emperor was able to ride out in his carriage among the Viennese at the height of the revolution to the applause of all (Sked 2001, p.83). Citizens reacted to the elections for the Austrian parliament in July 1848 with indifference and few of them exercised their voting rights (Berenger 1994, p.164). Austrian peasants were also cool to the idea of liberalism.

Even the second Viennese uprising on October 6th 1848 only occurred as a result of inspiration from Hungarian events. Viennese students and radicals needed the example of Hungarian revolutionaries to coordinate them (Sugar, Hanak and Frank 1990, p.224). The masses again remained indifferent and wished for calmness rather than upheaval (Berenger 1994, p.168). The middle classes in Vienna were also unwilling to fight (Kovacs 1954, p.249). In fact of all the national movements, the German movement was the most peaceful (Sperber 2005, p.147). Both the German events in the Confederation and the Austrian events were relatively peaceful.

Nevertheless, Vienna was an important center of the early revolution. This is understandable since it was the capital of the monarchy and the seat of the emperor. But the regime that followed the fall of Metternich was only modestly liberal (Sperber 2005, p.138). Furthermore, the fall of Metternich in March 1848 was as much a result of weakness on the emperor's side as a signal of the Austrian opposition's strength.

Finally, note that the alternative argument that German areas were peaceful because the German court did not feel comfortable repressing co-ethnics cannot be right. First, the Habsburg army consisted of many different nationalities, although some of these non-German soldiers defected. More importantly, if repression had been less likely in Austria, there would have been more concerted efforts toward liberalism by German liberals as they could have attained liberal rights more easily. But the opposite happened.

### 5.4.3 Contrast Between Ruled, Ruler and Would-be Ruler: Minorities in the Hungarian Revolution, and in Galicia

A final category contains areas where Hungarians were fighting for a revolution but which had a non-Hungarian majority among the peasants. These ethnicities were less likely to fight in the revolution, even though their economic interest would require them to do so. In fact the pressure from them on Vienna ‘turned negative’: these torn revolutionaries (ethnic liberals) ended up fighting on the side of the emperor rather than against him.

Liberal reformers of ethnic minorities were conflicted. Initially, they were enthusiastic about the liberal reforms in Buda-Pest. These nationalities (Croats, Serbs, Romanians, Slovaks) had undergone a national reawakening in the 1830s and 1840s, reviving languages, literature and historical traditions (Sperber 2005, p.100). Celebrating liberalism, Serbs rallied on 21 March in Ujvidek in support of the Hungarian liberal demands, as did the Romanians in Transylvania and the Slovaks in the north west (Cartledge 2011, p.197). But as the minorities could not achieve guarantees from Buda-Pest about their future rights, their support started to falter (Cartledge 2011, p.199). Eventually, minority liberal leaders decided to fight against Hungarian liberals, fearing for their ethnic rights (Hermann 1996). The Romanian Cipariu and Barit fought against the Hungarian liberal revolution, as they wished for Romanian schools and courts and freedom of religion for Orthodox Christianity, which the Hungarians could not credibly guarantee.

The Romanians had semi-autonomous coethnic-ruled states: Moldavia to the East and

Wallachia to the South. These provinces were touched by the revolution, as Western political ideology was more widespread among radicals, many of whom had been studying in Paris (Jelavich 1983, p.271). However the revolts in Moldavia and Wallachia were mild and lacked peasant backing (Jelavich 1983, pp.272-3). The revolutionaries did not even have an armed force, so the Ottoman empire and Russia easily suppressed it (Jelavich 1983, p.273). By contrast, events in Transylvania were more dramatic and violent. A similar analysis can be conducted of the Serbs in the empire (e.g. Jelavich 1983, p.244).

Finally, I should mention Galicia briefly. Just as Hungarian nobles were opposed by ethnic peasants, a similar situation arose in Galicia in 1846, where nobles were of Polish origin, while most peasants were of Ukrainian stock. An uprising, started in the free city of Cracow quickly spread to Galicia. Polish nobles demanded democratic rights for the peasants. But those peasants mistrustfully slaughtered their liberal-minded nobles (Sked 2001, p.65). The peasants who killed their Polish aristocrats regarded themselves as not Poles, but ‘imperial peasants’. They also believed that reforms were coming from the almost mythical figure of the emperor rather than revolutionary assemblies (Sugar, Hanak and Frank 1990, p.218).

## 5.5 Conclusions

I presented an extension of my international theory to domestic politics. I built a model and used historical case study evidence on how multi-dimensional identity affects violence and regime transition probabilities. The theory presented here should be applicable in most circumstances, but its explanatory power should be greater in countries with a complex identity landscape.

My theory has current relevance. The violence and the length of the Syrian Civil War, where the Shia-Alawite ruling minority would fall out of power is a straightforward application. It also raises important questions about China’s democratization movement. Will

Tibetan and Uighur separatists cooperate with Han Chinese democratic activists in a democratic revolution or fear being suppressed by them? These issues are important to be raised and analyzed.

Finally, my theory has implications for institutional design in societies with a complex identity landscape. In particular, federalism is often argued not to work well in such countries (e.g. Brubaker 1996, Bunce 1999, Mozaffar and Scarritt 1999), although ethno-federalism can reduce opportunities for the central government to exploit minorities in the regions (e.g. Bermeo 2002, Lijphart 1977, Kohli 1997). My theory predicts that overlaps in identity need to be added to this analysis: countries with regions including small overlaps are particularly prone to violence, which an ethno-federal structure may help mitigate. It is especially encouraging that an ethno-federal structure appears to reduce violence if no one group is united in a single core ethnic region (Hale 2004).<sup>32</sup>

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<sup>32</sup>Nevertheless, any such policy advice comes with the caveat that ultimately institutional arrangements are chosen endogenously.

## Chapter 6

# Extension to International Democratization

Does the threat of democratization lead to wars, or do wars lead to democratization? Random experiments are impossible at the macro-political level, so I used second-best identification strategies like the fixed-effects panel regression and the historical/quantitative case studies to show that at least some of the causation is running from the threat of democratization to wars. However, macro-politics is highly complex, and certainly the other causal direction is also existent, just at different times and places. So far I have focused on the fear of democratization leading to wars because the time horizon I looked at was short: the 1848 revolutions, for instance, led to conflict in 1849. However over a much longer century-long horizon, the legacy of wars can influence identity and thereby processes such as democratization. This is the topic of this chapter.

What makes some countries models of democracy for others? Existing research argues and empirically shows that shared identity between two countries enhances diffusion of institutions and policies. This shared identity may result from geographic proximity (Gleditsch and Ward 2006 and Weyland 2006) or cultural similarity along a visible dimension (e.g. Rose 1993, Simmons and Elkins 2004, Zhukov and Stewart 2013). In the extant literature all these dimensions are assumed to be constant over time. Yet recent constructivist research



(Chandra 2004, Posner 2005, Abdelal, Yoshiko Herrera and McDermott 2009)<sup>1</sup> suggests that different nominal identity categories may be activated or even created by actors and events. Thus it is possible that citizens of country *A* are more likely to learn democracy from country *B* than from country *C* at time  $t_1$ , whereas at time  $t_2$  the same citizens are more prone to look toward country *C* for democratic ideals than toward country *B*. What makes *A* switch from *B* to *C*?

This chapter argues that any dramatically-visible event that activates or creates a shared identity category between two countries makes diffusion more likely between them later. In particular, wars are dramatic and visible and thus are events that can create a shared identity and in-group feeling between states fighting on the same side against a common enemy.

What is shared identity? I use the definition of Abdelal et al. 2006: a collective identity is a social category that varies along two dimensions - content and contestation. Content describes the meaning of the identity and encompasses four types. These types are as follows and are not mutually exclusive: constitutive norms, which define the formal and informal rules of group membership; social purposes, which define the goals of a group; relational comparisons, which define a group by referring to what it is not; and cognitive models, which define the worldview, the way of thinking of a group. Contestation captures the degree of agreement within a group over the content of a shared identity.

War creates or reinforces shared identity by reducing contestation across all types of content of the identity between two countries fighting on the same side. War focuses attention on alliance partners and thus makes the citizens of both countries recognize commonalities between the two countries. Thus more citizens realize common constitutive norms and shared cognitive models. The war also provides a common social purpose. Finally, it is straightforward that a common enemy can enhance the common identity in terms of relational comparisons. In addition, a lot of research in social psychology suggest people are

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<sup>1</sup>Following Chandra 2012 I define an identity category to be activated all “identities from among the nominal set that are used to describe an individual, by choice or assignation” (Chandra 2012, p.101).

social creatures and are prone to promptly set up in-group and out-group categories.<sup>2</sup> In sociology and political science it is an old idea that conflict with an outside group solidifies ingroup cohesion (Coser 1956, Simmel 1955, also: Stein 1996).<sup>3</sup>

The shared identity created through a common war remains preserved through focal points. The war creates focal points such as war heroes that both sides revere, battles in which both sides participated, or any concrete place or memorial, which both sides connect to the war. These focal points preserve increased attention to the other country.

The preserved shared identity can serve as a source of subsequent diffusion of institutions.<sup>4</sup> Shared identity is related to diffusion because of the ‘reference group theory’: individuals emulate those whom they regard as their peers. When analyzing the diffusion of Latin American welfare institutions, Weyland (2006) focuses on three cognitive shortcuts that agents use: availability, representativeness, and anchoring (Kahneman, Slovic and Tversky 1982). The availability heuristic captures people’s tendency to “place excessive importance on information that - for logically accidental reasons - has special immediacy, strikingness, and impact, that grabs their attention” (Weyland 2006, p.47). Due to the representativeness heuristic, people draw excessively clear and confident conclusions based on the available information. Finally, due to anchoring they fail to adapt the copied information to their specific needs. The most important mental shortcut to understand here is the availability heuristic (Kahneman and Tversky 1973). With its wide-ranging consequences, news about wars reach citizens, capture their attention and make any similarity between allies more striking and focus citizens’ attention on the ally countries.<sup>5</sup>

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<sup>2</sup>Seminal studies include Sherif et al. 1961 and Tajfel and Turner 1979.

<sup>3</sup>Some recent field experiment evidence is in Gilligan, Pasquale and Samii (2013), Bellows and Miguel 2009 and Blattman 2009.

<sup>4</sup>Following Strang 1991, I define diffusion as any process in which “prior adoption of a trait or practice in a population alters the probability of adoption for remaining non-adopters”. On democratic diffusion see Starr 1991, Huntington 1993, Strang 1991, Gleditsch and Ward 2006.

<sup>5</sup>Ordinary citizens are often exposed to information about a war through entertainment-oriented soft news media Baum 2002.

On the empirical side, I present a case study as well as statistical analysis on democratization between 1950-2010. The case of Poland and Hungary illustrates my mechanism. In 1848-9, 5000 Poles participated in liberal Hungary's fight against the conservative Austrian court and then later against the Russian Tsar. As Polish generals had good reputation and experience, they reached high ranks in the Hungarian army. The common war experience strengthened Polish-Hungarian shared identity. Polish general Jozef Bem in particular became popular among Hungarians. Bem was a veteran of the Polish independence fight in 1830-1 against Tsarist Russia. When he joined the Hungarian fight in 1848, he became the leader of the Hungarian army in Transylvania. As a result of his success on the battlefield, he became a bi-national hero - a focal point. A statue was erected for Bem in Budapest in 1934. A century after the 1848-9 war, in the summer of 1956, there was a Polish uprising against Soviet rule, demanding liberalizing reforms. The hardliners gave in in October 1956. This led to reforms known as the Polish October. News of this event reached Hungarians between October 19-22 and emboldened the simmering discontent. However, this discontent needed to be coordinated before it could translate into a revolution. On October 23rd, the Hungarian Revolution started by 20,000 protesters aggregating at the foot of Bem's statue. The revolutionaries carried Polish and Hungarian flags and succeeded in briefly overthrowing the Soviet-backed government.

My statistical analysis shows that shared previous war experience against a common enemy has made countries more likely to turn democratic over the 1950-2010 period. My main specification includes country and year fixed effects as well as a set of usual control variables. I also show that citizens are more likely to copy democracy if they have lower income, indicating that social learning is not automatic, but occurs only if a country has room to catch up with other countries. I also find evidence that social learning and not imposition of democracy by an ally occurs: diffusion based on common wars is less likely between contiguous allies than non-contiguous ones. If regime imposition was at work, countries would be more easily controlled by another one with a shared border. I also address

the concern that participation in a war is endogenous. I run dyad-year regressions where dyad fixed effects capture any unobserved heterogeneity between two countries which makes diffusion more likely. The coefficient on shared war experience is positive and significant under this specification too.

I make contributions to three bodies of literature. First it highlights that ties that lead to diffusion can be created by visible and dramatic events. Second, I explore novel benefits of alliance formation. Most realist models assume that an alliance serves only rational state interests (Riker 1962, Walt 1987, Powell 1999, Chapter 5, Christia 2012 Weitsman 2013, Horowitz and Potter 2014, Benson, Meirowitz and Ramsay 2014). In subsequent work, it would be interesting to explore whether actors join wars precisely to ensure subsequent institutional diffusion. For instance, Georgia provided the third-largest contingent in the Iraq War in 2003 with the aim of more integration into the Western democratic world.

Third, this section adds to the literature on the consequences of wars. The recent bargaining literature emphasizes the costs of wars (e.g. Fearon 1995, Powell 1999), and neglects the benefits. The extant literature on the benefits of war emphasizes material factors. Tilly (1990) famously argued that war has a state-building effect.<sup>6</sup> But the state-building research direction emphasizes the fiscal consequences of war-making, which is separate from identity ties. War can also lead to imposed institutions (Acemoglu et al. 2011, Simmons and Elkins 2004). This article explores a constructivist consequence of war in terms of shared identity. In extreme cases, this shared identity can even lead to political integration, as in the case of the thirteen colonies following the American Revolutionary War (1775-83), or in the case of Prussia and Southern German states in the wake of the Franco-Prussian War (1870-1). My work is thus related to the literature on ‘security communities’ (Deutsch 1957 and Adler and Barnett 1998). But at the heart of the Deutschian pluralistic security community is communication, whereas I am emphasizing attention and focus. Peaceful identity connections such as in a security community paradoxically arise from wars.

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<sup>6</sup>See also Besley and Persson 2009 Gennaioli and Voth 2014.

My theory is more general than just international wars and democratization. In particular it applies to civil wars, as long as fighting groups are clearly delineated and possess some institutional capacity. One example is decolonization struggles against a common colonizer which creates an in-group feeling between the colonies. Second, the institution which spreads is not necessarily democracy, but can be other political institutions, religious institutions (e.g. Islamism) or economic institutions (e.g. communism).

This chapter consists of three parts: a simple bargaining model, a brief case study on diffusion between Poland and Hungary, and statistical analysis. In the model, I describe the mechanism that shows how war creates shared identity through more focus on allies. Afterwards, I present statistical evidence using the change in the Polity score as the dependent variable and data on all hostility since the Second World War (COW MID data). Finally, a brief discussion of diffusion between Poland and Hungary serves as an illustration of my mechanism.

## 6.1 Game-Theoretic Model

This section develops a bargaining model of war that is similar to my main model in many respects. War has two intertwined effects. First it makes citizens discover similarities between their own country and the ally. Second it creates shared identity that is transmitted through common focal points to the future. Heroes and common memorial days respected in all countries which fight together are examples. Whenever citizens of one country organize themselves later to fight for political institutions that the other country has or is similarly fighting for, citizens' attention is turned toward the former ally country. In addition, the shared heroes and memorials serve as a focal point for diffusing the citizen movement between the countries. For instance, in 1848 Polish general Bem died for liberalism in Hungary. He became a dual hero of Hungary and Poland and thus in 1956 the Polish demonstrations diffused to Hungary through students gathering at Bem's statue. In

another example, George Washington's figure helped bring the thirteen colonies together in the Constitutional Convention.

### 6.1.1 Setup

Suppose there are two countries,  $A$  and  $B$ . For simplicity, there are only have three actors altogether: elite of  $A$  ( $A_E$ ), citizens of  $A$  ( $A_C$ ), and citizens of  $B$  ( $B_C$ ), each aggregated into a representative actor. Assume that the citizens of  $A$  are unsure about how similar  $B_C$  is to them. The measure of this similarity  $C$  captures the correlation between policy outcomes in  $A$  and  $B$ . Thus  $C$  is a measure of how much information about how well democracy would work in  $A$  is revealed by democracy in  $B$ .  $C$  is a random variable and assume for simplicity that it is binary: ex ante  $C = C_L$  with probability  $1 - p_H$  and  $C = C_H$  with probability  $p_H$ , thus  $p_H$  captures the probability that the two countries citizens are highly similar to each other.

The game consists of two periods. In the first period each citizen  $i$  of  $A$  ( $A_C$ ) makes a decision about whether to invest time into finding out how similar  $B_C$  is. Call this binary variable investment  $I_i$ . Investment is costly, but different citizens face different search costs: making the total investment cost of exploring  $B_C$  equal  $c_i$ . The types of citizens follow a continuous cumulative distribution  $F$ , with support  $[\underline{c}, \bar{c}]$  where  $F'(c) > 0$  for all  $c \in (\underline{c}, \bar{c})$ .

At the start of the game, citizens are not aware that  $B_C$  is similar to them so they can learn institutions from them. This means that unless they investigate the similarity between  $B_C$  and  $A_C$ , they are less likely to look toward  $B_C$  as an example. The reason for this assumption is that most citizens are unaware that they should look abroad at all, thus if they go to  $B_C$  and find that it is indeed not similar, that simply confirms their expectations. For instance, when Russian soldiers followed Napoleon over Germany to Paris, they were exposed to liberal ideas that they did not think about.

The benefit of investing time into investigating is that the posterior distribution of  $p_H$  will be higher, and thus closer to the truth. For simplicity suppose that if nature chooses  $B_C$

to be similar then a citizen  $i$  who pays the search cost discovers this perfectly: his posterior is  $\hat{p}_H^i(C = C_H) = 1$ , whereas if  $A_C$  and  $B_C$  are not similar then the view of the citizen does not change:  $\hat{p}_H^i(C = C_L) = p_H$ . In words, citizen  $i$  does not believe ex ante there is much similarity between a different country  $B$  and his own country  $A$ . But if this citizen is exposed to country  $B$  and country  $B$  is similar then citizen  $i$  will recognize this similarity. However, the converse is not true: a lack of observation of similarity does not lead  $i$  to conclude the two countries are dissimilar, it just confirms his prior view that the two countries are likely to be dissimilar, but maybe further investigation would reveal some similarity. Thus uncertainty can be reinterpreted as a belief that any country can teach  $A_C$  anything.

Assume  $A$  and  $B$  can have some exposure to each other by fighting on the same side. This is because war is highly visible and dramatic, driving the attention of the citizens to the other country. This means that  $w$  proportion of randomly drawn individuals find out whether  $B_C$  is similar to them even without paying any cost. First nature picks the type of  $B_C$  then if there is war exposure then picks which citizens get exposed to the truth about  $B_C$ . Afterward the remaining citizens may decide whether they want to investigate the similarity between  $A_C$  and  $B_C$ .

Institutions are modeled simply. They describe which group's representative agent is in power and gets to pick their country's policy in a given period  $t$  ( $I_A(t) \in \{A_E, A_C\}, I_B(t) = B_C$ ).  $A_E$  is in power at the start of the game in  $A$ , and  $B_C$  rules  $B$ .

I normalize the size of countries resources to 1 for both of them:  $S_A = 1$  and  $S_B = 1$ . The two actors  $A_E$  and  $A_C$  need to divide their unit resource up among themselves. Utilities are given by:

$$V_{A_E} = \sum_{s=t}^{\infty} \beta^{s-t} p_A(t),$$

$$V_{A_C} = \sum_{s=t}^{\infty} \beta^{s-t} p_C(t) = \sum_{s=t}^{\infty} \beta^{s-t} (1 + g(I_A, t) - p_A(t)),$$

The common discount factor is  $\beta$ .  $g(I_A)$  is a random variable that captures the uncertainty about how much higher income would be under the rule of  $I_A$  in  $A$ . Assume that under

the rule of  $A_C$ , ex ante this variable has an expected value of  $E[g(A_C)] = 0$ . But observing the income in  $B$  under the rule of  $B_C$ ,  $g(B_C)$  can reveal information to  $A_C$  about how high  $g(A_C)$  is.  $g(B_C)$  can be observed by  $A_C$  before the citizens need to make a decision whether to revolt or not. The utility of  $B_C$  is given by:

$$V_{B_C} = \sum_{s=t}^{\infty} \beta^{s-t} (p_B(t) + g(B_C, t)), \quad (6.1)$$

where  $p_B(t)$  is the policy chosen and  $g(B_C, t)$  is the random variable which captures the success of democracy in  $B$ .

The important assumption about policy is that each country has a single policy to pick over which  $A_E$  and  $A_C$  have opposing preferences. My model is similar to the Acemoglu-Robinson (2006) model, which builds on the Meltzer-Richard (1981) framework,<sup>7</sup> whereby the decision is over a linear tax rate (with lump-sum redistribution). Since the elite's representative agent is richer (or more productive) than the citizens', he or she would opt for less redistribution. But when it comes to international conflict this kind of issue indivisibility may not always be over fiscal policy between the rich and the poor, so my framework is more general. There is a growing literature on how a single public good should be decided over and the further apart preferences are in a given country, the less it will be supplied and the more likely secession will be (e.g. Alesina and Spolaore 1997, Alesina, Baqir and Easterly 1999). On balance, policy difference may be over any division of some valuable resource between  $A_E$  and  $A_C$

In the Acemoglu-Robinson (2006) framework the domestic interaction is determined by the threat of revolution (de facto power of  $A_C$ ) which ebbs and flows. Let this be captured through  $1 - \mu$ , the amount of total income destroyed through the revolution, which at any time  $t$  may be high or low. This parameter captures how easy it is to organize collective action. It is modeled as being  $\mu_H \in (0, 1)$  with probability  $h$  and  $\mu_L = 0$  with probability

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<sup>7</sup>Which in turn builds on (Romer, 1975). Distortionary taxation arises from labor-leisure choice of agents of different productivity and preferences satisfy the single crossing property over the redistributive tax rate.



$1 - h$  (i.e. no threat). After a revolution, all income in the economy is forever taken over by the citizens but as  $1 - \mu$  is destroyed,  $\frac{1-\mu}{1-\beta}$  is the effective cost of a revolution.  $\mu(t) \in \{\mu_H, 0\}$  is therefore a measure of domestic pressure at time  $t$  in  $A$ .

The game is infinite. At the start of the game the following sequence of actions takes place:

1. Nature draws the type of  $B_C$  (similar/dissimilar).
2. If there is a war, a randomly drawn  $w$  proportion of individuals learn whether  $B$  is similar to  $A$ .
3. Each citizen  $i$  of  $A_C$  needs to decide whether he or she wants to pay the cost  $c_i$  of investigating whether  $B$  is similar to  $A$ .

Afterward a stage of the game is repeated infinitely. The timing of each stage is as follows.

1. Either  $A_E$  or  $A_C$  is in power in  $A$  ( $I_A(t) \in [A_E, A_C, \emptyset]$ ).  $I_A$  is allocated  $S_A = 1$ .
2. The shock  $\mu(t)$  ( $\in \{\mu_L, \mu_H\}$ ) is realized in  $A$  (no shock in  $B$ ). The triple consisting of the shock  $\mu(t)$ , the agent in power in  $A$  and  $B$  build the state vector:  $\{\mu(t), I_A(t), I_B(t)\}$ .
3. Whoever is in power in  $A$  may transfer political power to the other domestic actor ( $A_E$  may democratize in order to avoid a revolution).
4. Agents in power make domestic decisions: whoever is now in power in  $A$  ( $I_A$ ) makes an allocative decision  $p_A$  (offer).
5. The citizens of  $A_C$  decide whether to revolt or not.<sup>8</sup> If they decide to revolt, there is a revolt that has a  $p_r$  probability of succeeding.

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<sup>8</sup>Notice that a citizen that learns about the similarity of  $B_C$  has a higher incentive to revolt than one that does not. The reason is that the former expects a higher income under democracy and is thus more likely to fight for power than the latter. Thus technically, assume that both types of citizens have a representative agent acting on their behalf. If either of these two agents decide to revolt, there is a revolution.

6.  $g(B_C, t)$  is revealed to all actors.
7. If there was a successful revolt,  $A_C$  becomes  $I_A$  and picks policy  $p'_A$  (i.e. allocates the resource).

Finding out similarity about  $B_C$  thus increases the domestic pressure and the probability of revolution in  $A$ . However notice that the success of  $B_C$  is only revealed after the revolution. But the expectation of  $B_C$  revealing information about which policies work is sufficient to raise domestic pressure in  $A$ .

### 6.1.2 Modeling Social Learning

Now I turn to social learning. The analysis in this section is very similar to my standard model introduced earlier. I assume that cultural learning takes place because cultural proximity is a convenient shortcut for judging how relevant information from one country is for another.

Recall that growth  $g(A_C, t)$  denotes the extra available income under democracy in  $A$  beyond the unit-sized resource.  $A_C$  is allowed to observe  $B_C$ 's policy success before choosing his or her own, and thus  $B_C$ 's success as well as failure will reveal information to  $A_C$ . I will derive how much information  $B_C$  reveals to  $A_C$ . Recall that there is uncertainty over the correlation coefficient between  $A$  and  $B$ .

Actors assume that different policies lead to different income levels under different cultural systems.<sup>9</sup> This might be a wrong assumption but for actors with limited cognitive resources, it is a convenient mental shortcut. If North Korean citizens look at South Korea, they think it reveals more information to them about the success of democracy in their own country than if they look at the US. I will make a host of non-essential unrealistic assumptions to keep the model sharp and clean. First, assume that the country's income level given a policy

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<sup>9</sup>The approach is related to Mukand and Rodrik (2005) and Brender and Drazen (2007), who both have a one-country model.

$p_A$  only depends on culture, but not on institutions:  $g(p_A, A_C) = g(p_A, A_E)$ . So it is the information  $A_C$  gets from  $B_C$ 's adopted policy that makes citizens abroad valuable, therefore no matter whether that information will be bad or good, the ex ante expected income rises for  $A_C$  knowing that  $B_C$  will be there and will have started 'experimenting' with the expected ideal policy of  $A_C$ . If that policy is confirmed to work,  $A_C$  will be able to adopt it, while if it is shown not to work,  $A_C$  will be able to choose a different policy.

Next assume that growth  $g_A(p_A, t)$  and  $g_B(p_B, t)$  are random variables that can take up only two values:  $g^H(p_A, A, t)$  or  $g^L(p_A, A, t)$  and  $g^H(p_B, B, t)$  or  $g^L(p_B, B, t)$ . Also assume that only the variance of policies differ:  $E[g_I(p_I, t)] = E[g_I(p'_I, t)] = 0, \forall p_A, p'_A \in [0, 1], I \in \{A, B\}$ . and that  $g_I(p_I) \forall I \in \{A, B\}$  is a martingale over time:  $E[g(p_I, t + 1) | g(p_I, 1), \dots, g(p_I, t)] = g(p_I, t)$ , where  $g(p_I, t)$  is finite  $\forall t$ . So a similar democratic country only conveys information in the time period of the revolt. Assume that policies within countries are uncorrelated, so if  $g(p_B)$  is revealed to be bad then  $g(p_B - \epsilon)$  still has the same expected value.

Let the correlation coefficient between  $g_A(p, t)$  and  $g_B(p, t)$  be  $C(p, t) \geq 0$  and constant across policies and time ( $C(p, t) = C$ ). Let  $\pi(p, A, t) = \text{Prob}(g_A(p, t) = g^H(p, A, t))$  and  $\pi(p, B, t)$  be the prior probabilities that growth is high at time  $t$  for policy  $p$  in  $A$  and  $B$ , while  $\tilde{\pi}(p, A, t)$  is the posterior probability conditional on growth being high in  $B$  for the same policy  $p$ :  $\tilde{\pi}(p, A, t) = \text{Prob}(g_A(p, t) = g^H(p, A, t) | g_B(p, t) = g^H(p, B, t))$ .

Lemma 7. The posteriors relative to the priors are given by:

$$\tilde{\pi}(p, A, t) - \pi(p, A, t) = \frac{C}{\pi(p, B, t)} \sqrt{\pi(p, A, t)(1 - \pi(p, A, t))} \sqrt{\pi(p, B, t)(1 - \pi(p, B, t))}.$$

The lemma says the information from high growth next door is greater when there is higher correlation between the two growth rates, when there is greater uncertainty over the growth rate of  $A$  and less over that of  $B$ . Note that uncertainty is greatest when  $\pi(p, A, t) = \frac{1}{2}$ . Therefore if  $B$  is expected to have a high growth rate with a very high probability ( $\pi(p, B, t)$  is high) then  $B$  is less valuable to reveal information (in fact  $\lim(\tilde{\pi}(p, A, t) -$

$\pi(p, A, t) \rightarrow 0$  as  $\pi(p, B, t) \rightarrow 0$ ). It is not a high expected growth rate that makes  $B$  poisonous for  $A_E$  but an uncertain growth rate that ex post carries a lot of information for  $A_C$ .

After the revolt  $A_C$  will have already had time to observe the outcome of  $B_C$ 's policy. Given the constraint on  $B$   $S_B = 1$   $B$  simply picks  $p_B = 1$ . Thus having  $B_C$  next door reveals information about good growth strategies (or even about what not to try).

Given the success of the policy chosen by  $B_C$ ,  $A_C$  can expect the same policy to be more effective. The expected probability of  $B_C$  being beneficial to  $A_C$  is thus  $\pi(p, B, t)$ . Therefore the expected total income in  $A$  under the rule of  $A_C$  is equal to:<sup>10</sup>

$$v_{A_C} = 1 + \pi(p, B, t) \left( (\tilde{\pi}(p, A, t) - \pi(p, A, t))(g^H(p, A, t) - g^L(p, A, t)) \right),$$

plugging in Lemma 7 we get

$$v_{A_C} = 1 + C \sqrt{\pi(p, A, t)(1 - \pi(p, A, t))} \sqrt{\pi(p, B, t)(1 - \pi(p, B, t))} \left( g^H(p, A, t) - g^L(p, A, t) \right),$$

instead of 1. Thus  $B_C$  is overall more useful for  $A_C$  if cultural similarity is higher so that policies have similar outcomes and if there is greater uncertainty over  $p = 1$  in either  $A$  or  $B$ .

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<sup>10</sup>

$$\begin{aligned} v_{A_C} = 1 + \pi(p, B, t) & \left( (\tilde{\pi}(p, A, t)g^H(p, A, t) + (1 - \tilde{\pi}(p, A, t))g^L(p, A, t)) \right) \\ & + (1 - \pi(p, B, t)) \left( (\pi(p, A, t)g^H(p, A, t) + (1 - \pi(p, A, t))g^L(p, A, t)) \right), \end{aligned}$$

and use  $\pi(p, A, t)g^H(p, A, t) + (1 - \pi(p, A, t))g^L(p, A, t) = 0$ .

Therefore domestic pressure is enhanced in  $A$  by the following amount:<sup>11</sup>

$$\gamma = C\sqrt{\pi(p, A, t)(1 - \pi(p, A, t))}\sqrt{\pi(p, B, t)(1 - \pi(p, B, t))}\left(g^H(p, A, t) - g^L(p, A, t)\right).$$

Thus  $\gamma$  inspirational-leadership support to  $A_C$  is increasing in the correlation of policy outcomes (and cultural connections and communication between  $A_C$  and  $B_C$ ). And interestingly  $\gamma$  is higher the higher the uncertainty about policy outcomes either in  $A$  or  $B$  is.

Now we can calculate the expected rise in domestic pressure in  $A$  given different expectations about how similar  $B$  is to  $A$ . For citizens who are uncertain about similarity, this quantity is:

$$\gamma_u = (p_H C_H + p_L C_L)\sqrt{\pi(p, A, t)(1 - \pi(p, A, t))}\sqrt{\pi(p, B, t)(1 - \pi(p, B, t))}\left(g^H(p, A, t) - g^L(p, A, t)\right).$$

In contrast, for citizens aware of the similarity:

$$\gamma_c = C_H\sqrt{\pi(p, A, t)(1 - \pi(p, A, t))}\sqrt{\pi(p, B, t)(1 - \pi(p, B, t))}\left(g^H(p, A, t) - g^L(p, A, t)\right).$$

You can see that  $\gamma_c > \gamma_u$ . The higher the number of citizens aware of similarity, the more valuable a similar country  $B_C$  is. Also the more information is available, the more useful  $B_C$  is.

### 6.1.3 Analysis

I look for the Markov Perfect Equilibrium (MPE) in the infinitely-repeated game. Let us have a look at how  $A_E$  behaves when revolutionary pressure is high in the present ( $\mu(t) =$

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<sup>11</sup>Observe that in high periods of revolt pressure (when collective action can get organized),  $A_C$  would demand at least

$$\frac{\mu_H + C\sqrt{\pi(p, A, t)(1 - \pi(p, A, t))}\sqrt{\pi(p, B, t)(1 - \pi(p, B, t))}\left(g^H(p, A, t) - g^L(p, A, t)\right)}{1 - \beta} = \frac{\mu_H + \gamma}{1 - \beta}$$

instead of  $\frac{\mu_H}{1 - \beta}$ .

$\mu_H$ ). If revolutionary pressure is instead low then  $A_E$  does not need to redistribute anything to  $A_C$ . I investigate the case of cultural similarity. In the other case the dictator faces the same pressure if there is a war than if there is no fighting.

Notice that a dictator does not give up power unless pressure is so high that a democratic revolution is unavoidable and is likely to succeed. Whether this is the case can be captured by a ‘commitment constraint’ that describes whether the dictator in power can transfer enough resources to the citizens so that he or she can stay in power, even though he or she cannot commit to implement redistribution in low pressure periods in the future. The commitment constraint binds if the citizens wish to lock in<sup>12</sup> their current high-pressure advantage by taking power this period because the dictator cannot commit to implementing redistribution in the future when pressure is low.

Pressure from citizens who have observed  $B_C$  is higher than the pressure from the other citizens. Thus citizens have an incentive to find out whether  $B_C$  is similar to them because it reveals information about potential growth under democracy, which leads to higher payoffs even in case of not overthrowing the dictator.

Consider first how much a citizen needs to be offered who does not get exposure to  $B_C$ . This transfer needs to be  $\mu(t) + \gamma_u$  as these citizens are uncertain about the similarity. Now consider how much citizens with exposure to the similarity to  $B_C$  need to be given for placation. These citizens know with certainty that they can learn a lot from  $B_C$ , whatever the policy outcome in  $B$  is going to be, so they need to be given  $\mu(t) + \gamma_c$ . This means that each citizen is willing to pay the search cost  $c_i$  for finding out the information about  $B_C$  as long as  $p_H(\gamma_c - \gamma_u) > c_i$  as for these citizens the expected benefits outweigh the time investment cost. Thus the mass of citizens who find the information out in the absence of war is given by:

$$\bar{H} = H \left( (p_H(1 - p_H)(C_H - C_L)) \sqrt{\pi(p, A, t)(1 - \pi(p, A, t))} \sqrt{\pi(p, B, t)(1 - \pi(p, B, t))} \right).$$

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<sup>12</sup>For a general discussion of lock-in problems see: Powell 2004.

$$\left( g^H(p, A, t) - g^L(p, A, t) \right).$$

If war occurs, then this mass is greater by  $w$ , and also those citizens who are in the war are not going to search again, therefore those citizens that search have a mass  $(1 - w)\bar{H}$ . Thus the total mass of citizens who need to be given higher transfers is  $w + (1 - w)\bar{H}$ . This expression is increasing in  $w$ . The more people are exposed to war, the more of them find out the similarity between  $A$  and  $B$ .

Each citizen is small on their own, so that they do not expect to be pivotal in the downfall of democracy. Thus if pressure is high in period  $t$  each citizen needs to be paid just enough to discourage revolution. Therefore the pressure on the dictator in the absence of war is:

$$\mu_{peace} = \mu_H + \gamma_u + (\gamma_c - \gamma_u)\bar{H}.$$

However with war the pressure is higher:

$$\mu_{war} = \mu_H + \gamma_u + (\gamma_c - \gamma_u)(w + (1 - w)\bar{H}) = \mu_{peace} + (\gamma_c - \gamma_u)w(1 - \bar{H}).$$

When will the dictator give up power? Only in the case when pressure is so high that a revolution would be unavoidable in the absence of democratization.

Proposition 7. If there is a war democratization becomes more likely. In the absence of a war democratization occurs in the Markov Perfect Equilibrium if:

$$\mu_H + \gamma_u + (\gamma_c - \gamma_u)\bar{H} \geq 1 - \beta(1 - h), \quad (6.2)$$

whereas after a war democratization occurs in the Markov Perfect Equilibrium if:

$$\mu_H + \gamma_u + (\gamma_c - \gamma_u)(w + (1 - w)\bar{H}) \geq 1 - \beta(1 - h). \quad (6.3)$$

Therefore war extends the range in which democratization occurs by:

$$(\gamma_c - \gamma_u)w(1 - \bar{H}) \quad (6.4)$$

Proposition 7 shows that common war experience makes two countries more likely to democratize. You can also see that the difference between a war and no war depends on  $(\gamma_c - \gamma_u)w(1 - \bar{H})$ . Thus the bigger the discrepancy between an uncorrelated and a correlated country is, the more an alliance matters. Thus the model predicts that an alliance matters more for subsequent diffusion for countries which have a unique culture. Also the bigger the difference between number of agents who get exposed to the other country in a war and who investigate the other country without a war, the more the alliance matters.

It is interesting to consider the impact of  $\bar{H}$  on the results. Recall that  $\bar{H}$  is higher if more citizens have an incentive to investigate the other country in the absence of war. Interestingly, the higher the probability of low similarity  $p_L$ , the more citizens investigate without a war because if they find similarity, the bigger is the difference in their compensation. Thus a low initial likelihood of similarity makes an alliance matter less. This is another reason why a high initial likelihood of similarity makes a bigger difference for the diffusionary impact of an alliance.

Notice that although this is a model of democratization, it can be reinterpreted as any model of diffusion of political institutions. An inspiring dictatorship (e.g. Islamist dictatorship in Iran after 1979, or Communism after 1917) is also described by the model.

#### 6.1.4 Empirical Predictions

I will test not only my model's mechanism but also the following hypotheses arising from my theory:

1. Two countries fighting on the same side makes subsequent diffusion of democracy more likely.
2. Two countries fighting on the same side makes subsequent diffusion of dictatorship more likely too.
3. Underlying cultural similarity makes diffusion between two countries fighting on the



same side more likely.

4. The mechanism through which war creates long-lasting shared identity that leads to diffusion is through the creation of shared focal points such as binational war heroes and memorials.

Now I turn to testing these predictions on both a case study and statistical data.

### 6.1.5 Poland and Hungary

In this section I use the example of the spreading of the 1956 uprisings from Poland to Hungary to show my mechanism at work. I also show similar dynamics for the spread of democratization in 1989. For my second I hypothesis, I use the recent example of dictatorial tendencies spreading from Hungary to Poland.

### 6.1.6 The 1848-9 Revolutions

There was a war that the two sides fought together that created focal points. This war was the 1848-9 Hungarian Revolution. The European liberal revolutionary wave reached Budapest in March 1848. Soon the liberal Hungarian government was fighting the Austrian Habsburg court. Over 1848-9 about 3-4000 Polish soldiers joined the Hungarian army. Some rose to the rank of commanders, most notably Jozef Bem and Henryk Dembinski. Bem even became the overall commander of the Hungarian army (Lukowski and Zawadzki 2006, p.172).

These soldiers were not mere fighters, but political activists too. Most of them participated in the Polish rising of 1830-1 that the Tsar had suppressed, Dembinski was in fact the supreme commander of that uprising. Their motto in 1848-9 in Hungary was “Za wolnosc nasza i wasza! A mi szabadsagunkert es a tietekert!” which translates as “For our freedom and for yours”. Jozef Wysocki, the leader of the Polish Legion was a military commander in the 1846 Cracow rising and in March 1848 joined the Polish national committee. Polish

youths arrived in droves in Hungary as they saw Hungarian freedom as the best guarantee of their own freedom (Kovacs 1954, p.217). The Hungarian leader Kossuth counted on Polish generals because he realized that Polish generals had sympathy for the Hungarian revolution, partially because the Austrian monarchy was the common enemy of Polish and Hungarian freedom fighters (Kovacs 1979, p.29).

Cultural similarity between the two countries helped form the alliance. Bem's reasons to take part in the Hungarian revolution were in particular political. He wrote to a friend that the Hungarians and the Poles have always been friends, and since Slavic minorities such as the Croats turned against Hungary, the presence of the Slavic Poles could bring about peace among them (Kovacs 1979, p.33-4). He planned to persuade the Hungarians to extend constitutional rights to Slavic minorities (Kovacs 1954, p.212). He also had democratic sentiments and saw in the Hungarian revolution a people fighting against an old elite (Kovacs 1979, p.253).

Bem became a symbol of Polish-Hungarian friendship that had a long tradition going back centuries (Kovacs 1979, p.350). Hungarians warmly welcomed him and other Poles, and Kossuth's pro-Polish attitudes were well-known and talked about the interconnected fates of the two peoples numerous times (Kovacs 1954, p.272). The Poles and the Hungarians also understood each other well. Polish volunteers stayed with the local Hungarian population and in the evenings the Hungarian and Polish soldiers danced together (Kovacs 1979, p.277).

In sum, although an underlying shared identity was crucial in Polish soldiers joining the Hungarian revolution, the war against a common enemy enhanced those ties. Thus the war had an independent effect on the possibility of subsequent diffusion.

Shared identity is witnessed by the decades that followed. The binational focal points remained preserved. When Poland was fighting Russia in the Polish-Soviet War (1919-21), the Hungarian government offered to send 30,000 troops to Poland. This offer was never realized because Czechoslovakia, which lay between the two countries, did not allow troops through its territory. Nevertheless, the Hungarian-Polish friendship survived and a statue

was erected for Bem in Budapest in 1934.

When Hitler invaded Poland in 1939, the Hungarian government refused to allow German troops through its territory into Southern Poland. Budapest also allowed the Polish government and tens of thousands of soldiers to flee through Hungarian territory.

### 6.1.7 The 1956 Revolutions

Did shared identity also create long-lasting ties that lead to diffusion? The 1956 revolutions proves that the answer is yes. Both Poland and Hungary were part of the Soviet block at this time, with Soviet troops stationed in their territories. They were the only two countries which experienced an uprising for political reform in 1956. Poland experienced an uprising in July 1956 which was suppressed, but eventually resulted in a reformist coming to power in mid-October. The news of this event reached Hungary and coordinated the uprising there. The democratic uprising succeeded briefly as Soviet troops withdrew from Hungary by October 30th. On November 4th Soviet troops reentered Hungary and suppressed the revolution.

In the summer of 1956, there was a Polish uprising against Soviet rule, demanding liberalizing reforms. The hardliners relented in October 1956 and the reformist Gomulka made a triumphant comeback (Lendvai 2008, p.6). As a result, significant reforms were enacted in the framework of the Polish October.

News of this event reached Hungarians between October 19-22. Gomulka's victorious speech was printed in full in all Hungarian newspapers. Gomulka's success served as an example and emboldened the simmering discontent (Király and Jonas 1978, p.48), leading to grassroots organization of demonstration. Mass demonstrations were unprecedented in communist Hungary. The demonstrations were started out of solidarity with the oppositional movement in Poland (Sugar, Hanak and Frank 1990, p.379). The discontent was coordinated through the focal point provided by the Polish success. As Lendvai writes: "[t]he spark that ignited the tinderbox of old grievances was the breakthrough of the reformers in Poland"

(Lendvai 2008, p.6). On October 23rd, the Hungarian Revolution started by 20,000 protesters aggregating at the foot of Bem's statue. They carried Hungarian and in some cases Polish national flags (Lendvai 2008, p.9).

How did the uprising spread from Poland to Hungary? On October 21st, news about Soviet troops surrounding Warsaw reached Hungary. As a result, Hungarian students decided to organize a demonstration in solidarity with their Polish counterparts. Bem's statue was a convenient focal point for their demonstration.<sup>13</sup> The song that the demonstrators were singing recalls the impact of the 1849 war. They sang: "People of Father Bem and Kossuth / Together we go hand in hand; / Poland sets the example, / Let us follow the Hungarian way!"<sup>14</sup> (Romsics 2007, p.142).

#### 6.1.8 1989

The fall of communism in the Warsaw Pact countries occurred in the late 1980s. Soviet leader Mikhail Gorbachev played a key role in allowing East European countries to democratize. In December 1988 Gorbachev announced that he would not defend communism in the satellite states by force, which precipitated changes in the region.

The first mover in the region was Poland, where the oppositional trade union Solidarnosc had been active during the 1980s. April and May 1988 witnessed a wave of strikes. Solidarnosc initiated round-table talks with the communists in power, which was formally accepted by the communists in January 1989. The so-called Round Table Talks lasted from February 6 to April 5. The final agreement legalized independent trade unions, and a free election to 35% of seats in the Sejm and all seats in the Senate was announced for June 4th. Solidarnosc was swept to victory in the election.

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<sup>13</sup>[http://elib.kkf.hu/edip/D\\_15641.pdf](http://elib.kkf.hu/edip/D_15641.pdf)

<sup>14</sup>In Hungarian: "Bem apo es Kossuth nepe / Egyutt megyunk kez a kezbe; Lengyelország peldat mutat, / kovessuk a magyar utat!"

Hungary was the first Eastern block country to follow Poland.<sup>15</sup> Even if Hungary did not fully copy the Polish path (Renwick 2006), there were a number of similarities, like elite defection (O'Donnell and Schmitter 1986). In particular Hungary also started its own round table talks, inspired by the Polish model. Information between East European movements spread through Samizdat's (secretly smuggled photocopies of information from the outside). In fact Hungarian Samizdats were started based on Polish example. Romsics 2007 writes that Hungary followed Poland, regardless of whether Warsaw wanted this (p.142).

### 6.1.9 2014

There is also evidence that diffusion occurs both ways: not just from Poland to Hungary but vice versa. In 2010 Hungary elected Viktor Orban to be Prime Minister with an unprecedented number of seats in Parliament. As a result of his supermajority, the new Prime Minister changed the constitution. Many of his actions were anti-democratic. He eroded away media freedom,<sup>16 17</sup> and passed a new constitution. Human Rights Watch issued a 29-page report finding that “the new constitution and other legal changes have curbed the independence of the judiciary and the administration of justice, forced nearly 300 judges into early retirement, and imposed limitations on the Constitutional Court's ability to review laws and complaints.”<sup>18</sup>

Will the dictatorial tendencies spread to Poland? Poland has already copied some illiberal policies of Hungary, like the nationalization of the private pension system.<sup>19</sup> Poland has similar right-wing authoritarian nationalist groups. The Law and Justice (PiS) party, which

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<sup>15</sup><http://www.nybooks.com/blogs/nyrblog/2009/dec/09/1989-poland-was-first/>

<sup>16</sup><http://www.freedomhouse.org/sites/default/files/Overview%20Essay.pdf>

<sup>17</sup>[http://www.hrw.org/sites/default/files/reports/hungary0513\\_ForUpload.pdf](http://www.hrw.org/sites/default/files/reports/hungary0513_ForUpload.pdf)

<sup>18</sup>[http://www.hrw.org/sites/default/files/reports/hungary0513\\_ForUpload.pdf](http://www.hrw.org/sites/default/files/reports/hungary0513_ForUpload.pdf)

<sup>19</sup><http://www.forbes.com/sites/realspin/2013/11/12/how-the-hungarian-disease-is-spreading-across-central-europe/>

was in power in Warsaw from 2005-7, in particular sees an example in Orban.<sup>20</sup> Given the fractiousness of the Polish right-wing, activists look with admiration at the strength and unity of Orban.<sup>21</sup>

The 1848-9 war also plays a part in the potential diffusion of dictatorial tendencies. About a 1000 right-wing Polish activists participated in the Hungarian national memorial day on March 15th 2014.<sup>22</sup> March 15th is the national memorial day celebrated every year in remembrance of March 15th 1848 when the liberal uprising started in Hungary. The banners the Polish activists were carrying had religious overtones, and one wrote “Lord, protect Hungary and Poland! Protect Europe from the left-liberal plague and rainbow-colored gangrene.”<sup>23</sup> Thus the anniversary of the outbreak of the Hungarian revolution serves as a focal point for organizing Polish activists in order to copy Hungary’s political tendencies.

## 6.2 Statistical Analysis

### 6.2.1 Data Description

My dependent variable is change in political institutions in any given country in any given year. Although my theory is more general, here I use a more narrow definition of institutions by focusing solely on democracy. I use the Polity score<sup>24</sup>. More specifically, I use the combined ‘net democracy’ Polity IV score, which ranges between -10 (least democratic) and 10 (most democratic). This score is assembled through various subcomponents such

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<sup>20</sup><http://hungarianspectrum.wordpress.com/2012/03/16/polish-visitors-to-the-hungarian-national-holiday-in-support-of-viktor-orban/>

<sup>21</sup><http://hungarianspectrum.wordpress.com/2012/03/16/polish-visitors-to-the-hungarian-national-holiday-in-support-of-viktor-orban/>

<sup>22</sup><http://www.hirado.hu/2014/03/15/cof-csaknem-ezer-lengyel-volt-a-muzeumkerti-megemlekezésen/>

<sup>23</sup><http://www.168ora.hu/itthon/itt-vannak-orban-lengyel-baratai-124680.html>

<sup>24</sup><http://www.systemicpeace.org/polity/polity4.htm>, Marshall and Jaggers 2002

as the competitiveness of participation and openness of executive recruitment. I analyze unbalanced panel data, where each observation is a given country in a given year. The Polity scores are available starting in 1816.<sup>25</sup> I use country and time fixed effects to control for time-invariant unobserved heterogeneity at the country level, as well as the impact of global shocks in a given year which affect each country similarly.

The main dependent variable is democratization. I measure this as the change in the Polity score for a given country in a given year. For each year, I calculate how much higher the Polity score is the following year for a given country. An alternative measure is simply the Polity score of a country in a given year. I lag this measure ahead one period in the regressions in order to reduce concerns about reverse causation.

For wars, I use data on Militarized Interstate Disputes from the Correlates of War project. The unit of observation in this dataset is a country-pair in any given year (between 1816-2008). I include all country pairs in my analysis, even non-contiguous dyads. This means that the base dataset has 1,610,478 observations. The main dependent variable in this dataset is hostility level, which ranges from 0 (no conflict) to 5 (war with at least 1000 battle deaths). I define war as a hostility level of at least 4 (use of force), as is standard in the literature. War is a rare event, only 0.46% of the (all) dyad-years experience a hostility level of 4 or 5.

Using the conflict dataset, I created a variable common enemy for each country-pair in each year. This binary variable takes on 1 if the two countries simultaneously experienced a war against a third enemy in a given year. Then I construct a variable for each dyad-year, which measures whether two countries had a common enemy in the preceding 10 years. I chose 10 years because it is neither too short, nor too long. Over 10 years war memories are still fresh and focal points can be easily activated. However it is long enough after a war that we can be confident that I am not capturing the immediate results of the war.

Finally, I define democratic pressure for each country in each year. I use the existence

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<sup>25</sup>This is the Polity IV variable, downloaded from the Correlates of War project (see Jones, Bremer and Singer 1996 and [www.correlatesofwar.org](http://www.correlatesofwar.org)). To put together the dataset, I use the EUGene Software (Bennett and Stam 2000). Website: <http://eugenesoftware.org>

of a common enemy over the preceding 10 years variable as a weighting matrix for excess democracy abroad. Let me illustrate this variable with an example. Suppose there are three countries,  $A$ ,  $B$ ,  $C$ ,  $D$  in a given year, with Polity scores  $-5$ ,  $0$ ,  $4$ ,  $8$  respectively. Assume  $A$ ,  $B$  and  $C$  fought a common war against  $D$  5 years before. Thus democratic pressure on  $A$  is  $\frac{5+9}{2} = 7$  because  $B$ 's democracy is 5 units above  $A$ 's and  $C$ 's democracy is 9 units above  $A$ 's, while  $D$ 's excess democracy receives no weight. Democratic pressure on  $B$  is  $\frac{-5+4}{2} = -0.5$  due to  $A$  and  $C$ . Democratic pressure on  $C$  is  $\frac{-9-4}{2} = -6.5$ . Democratic pressure on  $D$  is 0 because it had no common enemy with any other country.

I also construct control variables which capture democratic pressure with weighting matrices based on other variables than having a common enemy. Each variable is constructed similarly to my main variable. The first group of these variables is based on geographic proximity. It is especially important to control for these variable because diffusion can occur due to physical proximity (Gleditsch and Ward 2006, Weyland 2006), and wars are also more likely to occur between countries with physical proximity. I use geographic proximity variables to construct separate controls for democratic pressure. The geography measures are whether the two countries are in the same big physical region (5 levels), physical distance (between capitals), contiguity on land, contiguity on sea, as well as colonial contiguity.

The second set of democratic pressure measures are based on cultural proximity. Diffusion often occurs through cultural closeness (Rose 1993, Simmons and Elkins 2004, Zhukov and Stewart 2013) and as the Poland-Hungary case shows, culturally-similar countries can form an alliance against a common enemy. I use four different types of cultural proximity measures, all visible to capture diffusion. The first is a genetic distance variable from Spolaore and Wacziarg (2012), who define such a variable between two populations (frequency of allele differences). Genetic distance captures the time which two populations have spent apart (since splitting). Genetic proximity is naturally difficult to interpret, but I use this variable to capture visible similarity in race or ethnicity. For my theory, the best suited is the measure  $F_{ST} - weighted$ , which takes all groups into account in the two countries and creates



a distance weighted by population share. To measure genetic proximity, I divide 1 by the genetic distance. A second measure is from Jonathan Fox's Religion and State Project<sup>26</sup> and is a binary variable whether two countries share the same big religion. The big religions are 'Christian', 'Muslim' and 'other'. Although the variable does not parse out other religions, Christianity and Islam are the two biggest religions in the world, Huntington's clash of civilizations (Huntington 1996) in the post-Cold War world is widely thought to be manifested by Christian-Muslim wars. A third cultural measure is an indicator variable whether the main groups in the two countries belong to the same civilization as defined by Huntington 1996. I code this variable based on the nine civilizations according to Huntington 1996, Map 1.3.<sup>27</sup> When a country is ambiguous (Huntington calls them 'cleft countries', e.g. Kenya and Nigeria between Islamic and African), the major civilization is coded, and a separate minor civilization is also coded. The final binary proximity measure captures whether two countries share a language (source: Rose 2004).

I include additional control variables that could affect democratization. The first group of variables are from the Correlates of War project. One is the ethno-linguistic fragmentation, a second is population, a third is energy consumption, and I also include the growth in energy consumption. I also include data on GDP: I include the log of per capita GDP. Unfortunately this measure, which comes from the Penn World Tables<sup>28</sup> is only available starting 1950, which restricts the sample size. However the restricted sample covers roughly the television age, and voters' information source about foreign policy is often from this medium (Baum 2002, Baum and Potter 2014).

In a robustness specification, I include additional controls from Acemoglu 2008. The disadvantage is that these variables are only available in a 5-year-panel (i.e. there is one

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<sup>26</sup><http://www.religionandstate.org/>, Fox 2008, version 1.2.2, EMAJREL variable

<sup>27</sup>The nine levels are: Western, Latin American, African, Islamic, Sinic, Hindu, Orthodox, Buddhist and Japanese.

<sup>28</sup>[https://pwt.sas.upenn.edu/php\\_site/pwt\\_index.php](https://pwt.sas.upenn.edu/php_site/pwt_index.php)

observation every 5 years). The additional controls here are age structure,<sup>29</sup> total years of schooling for the population of age 25 and older, labor share to capture inequality, the saving rate, whether the country was under socialist rule in a given year. The final two variables here are world income and world democracy, and both use a trade-weighted distance matrix.

Table 6.1 contains descriptive statistics for the main variables.

Table 6.1: Descriptive Statistics

Variable	Observations	Mean	Std.Dev.	Min	Max
Democratization	12479	0.045	1.571	-19	19
Polity Score	12542	-0.7697	7.111	-10	10
Allies' Excess Democracy	10770	0.000074	0.933	-8.89	8.086
Democratic allies	11569	0.017	0.0448	0	0.4426
Real GDP	6583	7808.378	9642.367	160.8	109972.6

## 6.2.2 Data Analysis

As a first look at the data, I look at the democratization variable for countries which experienced democratic pressure based on the common enemy measures and countries which did not do so. The unconditional mean of the democratization measure is 0.045, which captures the fact that the world has become more democratic over the last two centuries. By contrast countries which experience positive democratic pressure are exhibit a mean democratization measure of 0.22. By contrast, countries with negative democratic pressure (i.e. former allies are more dictatorial) experience a mean democratization of -0.11.

To capture potential omitted variable bias, I run regressions with democratization as the dependent variable. Table 6.2 shows the results. The first column is a mixed effects model without any covariates, which includes full panel fixed effects. The second column is a fixed effects model with covariates included. The third column drops adds a lagged dependent

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<sup>29</sup>These include median age and variables corresponding to the fraction of the population which belong to the following age groups: 0-15, 15-30, 30-45, and 45-60.

variable to this model to capture persistence in democratization. The final column is a mixed effects model with covariates.

The coefficient on the democratic pressure coming from alliance members is positive and highly significant. The coefficient is 0.11-0.15. This means that having a more democratic common ally raises the democracy score of a given country by about 11%-15% of the difference between the two countries. For instance, a fully-democratic ally (Polity score: 10) of an anocracy (Polity score: 0) raises the Polity score of the anocracy by 1.1-1.5 in a given year. Other variables are not significant conditional on the fixed effects. The fragmentation variable has a negative coefficient, as does population. Log GDP per capita and energy consumption are positive but insignificant, while log GDP is negative and insignificant, indicating no strong effect of GDP on democratization (Acemoglu 2008).

Next I control for democratic pressure measured based on geographic and cultural proximity. Adding these variables into the regression still results in a positive coefficient on the democratic pressure based on allies variable, but it loses its significance. However, this could be because I am not testing for my more precise mechanism that an alliance focuses attention but learning only occurs if the other country appears more successful.

I now turn to testing my posited mechanism more precisely. Is information transmission the main mechanism? My hypothesis is that citizens of a former ally are more likely to turn to the other country and notice if it is an example. This means that democratization only spreads if the country copying the democratic ideals finds the democratic system in the other country more appealing. A common war turns the attention of the citizens toward the ally, but if the country is doing well, there is no need to learn from other countries.

To test my mechanism I interact the common-enemy democratic pressure variable with GDP. I find a negative interaction on this variable, regardless whether per capita or total GDP is in the interaction. Lagged GDP (over 5 or 10 years) also has a negative interaction.

Table 6.2: Country-year mixed effects regressions. Standard errors (clustered by countries in the first and fourth models) are in parentheses. Fixed country and year effects are suppressed to conserve space.

	Dependent variable:			
	Democratization			linear mixed-effects
	linear mixed-effects	fixed effects	linear mixed-effects	
(1)	(2)	(3)	(4)	
Fragmentation		-0.009 (0.010)	-0.009 (0.010)	-0.009 (0.010)
Log GDP per cap		0.077 (0.106)	0.077 (0.106)	0.077 (0.106)
Population		-0.00000 (0.00000)	-0.00000 (0.00000)	-0.00000 (0.00000)
Log GDP		-0.00001 (0.00001)	-0.00001 (0.00001)	-0.00001 (0.00001)
Energy_1		0.001 (0.002)	0.001 (0.002)	0.001 (0.002)
Democratization (lag)			0.001 (0.014)	0.001 (0.014)
Democratic Pressure (ally)	0.106*** (0.018)	0.154*** (0.045)	0.154*** (0.045)	0.154*** (0.045)
Constant	0.059 (1.591)	-0.288 (1.167)	-0.291 (1.168)	-0.291 (2.120)
Observations	10,770	5,275	5,274	5,274
R <sup>2</sup>		0.037	0.037	
Adjusted R <sup>2</sup>		-0.003	-0.003	
Akaike Inf. Crit.	41,026.410			21,201.840
Bayesian Inf. Crit.	43,619.700			22,601.360
Residual Std. Error		1.734 (df = 5065)	1.734 (df = 5063)	

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

This means that countries that have lower GDP are more likely to look for examples, thus diffusion is not automatic, but based on imperfect consideration. The interaction of pressure and population is negative, which shows that bigger nations are less likely to look abroad for examples.

Another way of exploring whether information acquisition is the mechanism is through the interaction of cultural democratic pressure variables. When allied with a culturally-similar country, is the diffusion more pronounced? The interaction of pressure from racial proximity and ally pressure is positive, as is the interaction of pressure from religion and ally pressure. This points to the information channel: an alliance reveals similarities if they exist to members of the alliance, and those similarities might have otherwise been overlooked. However, the interaction of the civilization pressure and ally pressure is negative, so this result is not completely robust. Adding all cultural and physical distance terms together into my regression with each interacted with ally pressure, I find that race, religion and common language all have positive interactions, and only civilization is slightly negative. In contrast, although same region and geographic proximity have a positive interaction, the contiguity interaction is highly significantly negative. Thus information about cultural proximity is more important than physical proximity.

An alternative mechanism is imposition: maybe a more/less democratic system is imposed by a more/less democratic ally. To test for this, I interact the hostility level with the ally democratic pressure. The coefficient on the interaction is negative, which indicates that diffusion is less likely to occur during conflict, which is evidence against the imposition theory. Additional evidence against imposition is given by interacting contiguity and ally democratic pressure. The interaction is negative and highly significant, which indicates that the results do not emerge from intervention in neighboring countries, even though force is easiest to use with a common border.

When I add the complete set of controls from Acemoglu 2008, the results hold up, although the  $p$ -value on ally democratic pressure drops. However here there are fewer obser-

vations due to the 5-year-interval of the panel. Education is positive and significant as is labor share.

Next I change the dependent variable to the Polity score so that it is the democracy score and not democratization that I investigate. I lag this dependent variable forward by one period. I also add a contemporaneous Polity score into the regression. The coefficient on the democratic pressure remains positive but turns insignificant. However, this is a less preferred specification because of simultaneity bias. Also when I investigate interactions of cultural variables the results are significant as Table 6.3 shows.

Table 6.3 also shows that the results are enhanced when I restrict the sample to the third wave of democratization. This wave started in Portugal, swept through Latin America, East Asia and Central-Eastern Europe between 1974-89, and demonstration effects are a main mechanism behind the falling dictatorial dominoes (Huntington 1991). As you saw the 1989 Poland-Hungary diffusion of democracy occurred according to my mechanism and Table 6.3 indicates this is a more general phenomenon.

A natural concern is that countries which enter an alliance share some underlying identity which is not captured by any of my control variables. To address this concern I change the unit of analysis from country-year to dyad-year. Using fixed dyad and fixed time effects means that any unobserved heterogeneity that makes two countries more likely to learn democracy from each other is controlled for. Table 6.4 shows the results of these regressions. Common war experience (again measured over 10 years) is positive and significant. Interacting this variable with the excess Polity score of the second country is positive. Interestingly, a contemporaneous alliance between the two countries makes them less likely to experience diffusion, which again speaks against the imposition hypothesis. For the source of the set

Table 6.3: Country-year fixed effects regressions. Standard errors are in parentheses. Fixed country and year effects and the same controls as in Table 6.2, as well as lagged dependent variables are suppressed to conserve space. So are democratic pressures for region, distance and contiguity, as well as their interaction with alliance.

	Dependent variable:			
	Democratization	Polity	Democratization	Polity
	(1)	(2)	(1974-89)	(1974-89)
Dem Pressure (ally)	0.179** (0.086)	0.159* (0.086)	0.783*** (0.233)	0.780*** (0.233)
Dem Press (race)	-0.378 (0.613)	-0.148 (0.621)	-3.484 (2.145)	-3.201 (2.165)
Dem Press (religion)	-0.149*** (0.045)	-0.132*** (0.045)	-0.125 (0.124)	-0.117 (0.124)
Dem Press (civilization)	-0.151 (0.096)	-0.166* (0.097)	-0.008 (0.268)	-0.054 (0.272)
Dem Press (language)	0.094** (0.042)	0.090** (0.042)	-0.141 (0.110)	-0.151 (0.111)
Ally x Race	0.661 (1.368)	0.831 (1.370)	3.743 (5.090)	3.664 (5.090)
Ally x Religion	0.183*** (0.061)	0.171*** (0.061)	0.607*** (0.152)	0.612*** (0.152)
Ally x Civilization	-0.016 (0.119)	-0.007 (0.119)	-0.354 (0.330)	-0.352 (0.330)
Ally x Language	0.027 (0.051)	0.027 (0.051)	-0.010 (0.116)	-0.003 (0.117)
Constant	2.163 (1.338)	2.059 (1.338)	4.070 (2.945)	-1.916 (6.850)
Observations	4,703	4,703	1,704	1,704
R <sup>2</sup>	0.108	0.952	0.225	0.954
Adjusted R <sup>2</sup>	0.066	0.950	0.149	0.949
Residual Std. Error	1.694 (df = 4491)	1.694 (df = 4490)	1.736 (df = 1550)	1.736 (df = 1549)

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 6.4: Dyad-year fixed effects regressions. Standard errors are in parentheses. Dyad and year fixed effects are suppressed. I also control for major power status, bilateral trade and fragmentation for both countries. Time invariant geographic and cultural controls are suppressed. Geographic controls' interaction with Polity suppressed.

	Dependent variable:	
	Polity Country1 (lagged forward)	
	(1)	(2)
Polity Country 1	0.897*** (0.0005)	0.896*** (0.001)
Contemporeneous Alliance	-0.105*** (0.023)	-0.004 (0.039)
(Polity 2 - Polity 1)		-0.029*** (0.010)
(Polity 2 - Polity 1) x Race 1		0.039*** (0.008)
(Polity 2 - Polity 1) x Race 2		-0.027*** (0.003)
(Polity 2 - Polity 1) x Religion 1		-0.016*** (0.002)
(Polity 2 - Polity 1) x Religion 2		0.011*** (0.003)
(Polity 2 - Polity 1) x Civilization		0.013*** (0.002)
Common War Experience	0.032*** (0.010)	-0.020 (0.014)
(Polity 2 - Polity 1) x Common War Experience		0.003** (0.001)
Observations	953,483	357,536
R <sup>2</sup>	0.953	0.959
Adjusted R <sup>2</sup>	0.951	0.957
Residual Std. Error	1.628 (df = 921477)	1.567 (df = 345403)

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01



of controls in these regressions, see the Correlates of War project's Militarized Interstate Dispute website.<sup>30,31</sup>

### 6.2.3 Conclusions

Highly-visible, dramatic shared events such as a war on the same side against a common enemy creates ties for subsequent institutional diffusion. The mechanism I proposed has two parts. The first part is about shared experience, which turns attention to each other in the two countries. This experience makes them realize similarities in their underlying cultural systems. The second complementary part is about coordinating collective action. The shared war experience creates focal points such as heroes and memorials that preserve the shared identity between the two countries for subsequent diffusion.

An interesting implication of my theory and evidence is about culture and shared identity. My theory predicts that common war exposure matters most for culturally-similar countries because these are the ones where citizens have no incentive to investigate cultural similarity in the absence of war. The focal points created by the alliance means that common war experience for groups fighting on the same side enhances existing cultural similarity. Therefore a war against a common enemy creates larger cultural differences globally as it drives culturally-close nations even closer together.

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<sup>30</sup><http://www.correlatesofwar.org/COW2Data/MIDs/MID310.html>

<sup>31</sup>Race 1 is the divided genetic distance, race 2 is genetic distance multiplied by minus one; Religion 1 is Jonathan Fox's variable from earlier, while Religion 2 is a more fine-grained measure capturing the probability that randomly drawing an individual from each country results in matching religions.

# Concluding Thoughts: Macro-Level Social Science in the Age of Data

This book has laid out an economic analysis of how cultural relations affect macro-level questions in Political Economy, and in particular in international politics. High macro-level topics are difficult to analyze with a single tool, so I have used both quantitative and qualitative methods to find strong support for my ideas.

My theory and evidence suggest that cultural space should be prominently regarded as a fundamental factor in the causes of war and peace and an important consideration in international democratization. My empirical results are stronger for physically-distant pairs of countries and some of my cultural similarity measures are not highly correlated with physical proximity, which means that cultural space is important on its own accord. My statistical analysis is complemented by historical case studies and quantitative text analysis.

A primary contribution of my book is that I consider the interaction of culture and political institutions. I dig deeper than existing work and use survey questions beyond broad cultural measures to capture similarity. My results are also more robust than existing papers as the interaction terms allow the use of dyadic fixed effects in the regressions, so I can control for unobserved heterogeneity.

My work contains tentative policy advice. To the extent that inspiration can be controlled, the model shows that it is usually beneficial to wield it toward dictatorships where the domestic opposition and thus popular mobilization is weak. War only occurs when the

domestic opposition of the dictator is strong enough that it poses a vital threat to the ruling regime. Therefore my model suggests that attractiveness is beneficial when it is used against stable dictatorships. Unfortunately, global public attention is often commanded by events which take place in unstable dictatorships. Yet inspirational help in these countries can be counter-productive as it can lead to international war. My model also predicts that inspirational countries against whom a war would be excessively costly are safer in their choice of social learning. In sum, understanding the dark side of social learning is of particular importance for conducting foreign policy successfully.

My work sheds new light on dictatorial foreign policy.<sup>32</sup> Dictators sometimes try to choose enmity against a culturally-similar democracy without a physical war in order to achieve a rally-around-the-national-flag effect.<sup>33</sup> Recent North Korean provocations against South Korea (e.g. Cheonan sinking in 2010) are probably not aimed at starting a real war, just at keeping a hostile atmosphere reminiscent of the Cold War. Recent events in Crimea also highlight the importance of my theory. The political change in Kiev resulted in a dramatic shift from an authoritarian regime to one with liberal aspirations in a country that is culturally-similar to Russia.<sup>34</sup> Perhaps Putin views this change as a threat because a more democratic Ukrainian government may serve as an example to Russian citizens of how culturally-similar people can be alternatively governed.<sup>35</sup> As history shows, a dictator with an army does not wait for this to happen.

Beyond analyzing macro-political questions, my dissertation sheds light on how to explore the boundaries of social science in the age of data. Many important and policy-relevant questions in the world today are vital to analyze, but so complex that we still lack straightforward

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<sup>32</sup>The little nascent literature on this question includes Weeks 2014 and Weiss 2014.

<sup>33</sup>e.g. Mueller 1973

<sup>34</sup><http://www.theguardian.com/commentisfree/2014/feb/23/protesters-ukraine-priceless-benefits-european-union>

<sup>35</sup>For instance, read the historian Timothy Snyder's arguments on the conflict: <http://www.nybooks.com/blogs/nyrblog/2014/mar/07/crimea-putin-vs-reality/>

ways and adequate data to find precise answers to them in all respects.

The data revolution already provides us with a lot of data on these questions. But this data is not simply ‘big data’ but rather a ‘bag of data’. It is not unitary, but comes in various shapes and sizes, some cover certain time periods and geographic locations, while other data is available for other times and places. Some of the data is extremely detailed, while some are very high-level. How can we try to gain leverage of this ‘bag of data’ to answer the questions that excite us? I have found that such questions are best answered using an applied theorist approach in conjunction with multiple complementary empirical tests of the theory’s implications.

First, an applied game-theoretic model helps us establish clarity and internal consistency in our ideas about complex phenomena. A model by definition is populated by actors who interact with each other in a clean framework and act according to some well-defined objective function. Without such a model in mind, it is difficult to build complex ideas on solid foundations because we often do not know why actors act in the way they do. In physics, electrons do not think, but in society, humans act purposefully, so having a concrete idea about how subjects interact is vital. Naturally, the model should not be inward-looking and self-serving but should seek to establish clarity in our ideas. The art of modeling is in finding the right balance between abstraction and plausibility.

The model and the data collecting process are closely related. When data can arrive from various sources, a model helps us pinpoint what data we need to test the theory, and what kind of qualitative evidence about human subjects would support our ideas, and what plausible alternative explanations we need to disprove in order to convince ourselves that we understand the phenomenon we study.

Second, any complex question where a clean experimental framework is almost impossible to achieve can still be analyzed precisely and shown to hold true robustly. I have found that macro-level statistical evidence across time and countries is readily complemented by detailed historical case studies, as well as by quantitative case studies. The strategy on how to choose

qualitative evidence in combination with quantitative evidence is crucial. The objective is to make sure that any pressing concern can be assuaged by either considering the quantitative or the qualitative evidence.

In sum, analyzing complex big-picture social science questions benefits from model building as well as a broad range of empirical methods, which is guided by the model's findings. The empirical methods are ideally employed so that the different empirical parts complement and thereby strengthen each other. This makes the whole greater than the simple sum of its parts, and ultimately pushes the boundary of our understanding of human societies forward. It gets us closer to ultimate answers to questions that have fascinated humanity for many centuries.

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# Appendix A

## Supplemental Material

### World Values Survey Questions

#### Valuing Institutional Systems:

- Question about free speech (E10): I will read you some goals which different people consider more or less important for this country. Could you please tell me how important you consider each one of these goals to be: would you say it is very important, important, not very important or not at all important for this country? Protecting freedom of speech. Possible answers: -5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2 No answer; -1 Don't know; 1 Very important; 2 Important; 3 Not very important; 4 Not at all important. Available: 3rd wave
- Question about strong leader (E114): I'm going to describe various types of political systems and ask what you think about each as a way of governing this country. For each one, would you say it is a very good, fairly good, fairly bad or very bad way of governing this country? Having a strong leader who does not have to bother with parliament and elections. Possible answers: -5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2 No answer; -1 Don't know; 1 Very good; 2 Fairly good; 3 Bad; 4 Very bad. Available: 3rd, 4th, 5th waves
- Question about political violence (E198): E198. Here's one more statement. How strongly do you agree or disagree with it?. 'Using violence to pursue political goals is never justified'.

Possible answers: -5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2 No answer; -1 Don't know; 1 Strongly agree; 2 Agree; 3 Disagree; 4 Strongly disagree. Available: 3rd, 5th waves

- Question about maintaining order in the nation (E007): I will read you some goals which different people consider more or less important for this country. Could you please tell me how important you consider each one of these goals to be: would you say it is very important, important, not very important or not at all important for this country? Maintaining order in the nation. Possible answers: -5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2 No answer; -1 Don't know; 1 Very important; 2 Important; 3 Not very important; 4 Not at all important. Available: 3rd wave
- Question about importance of God (F063) How important is God in your life? Please use this scale to indicate- 10 means very important and 1 means not at all important. Possible answers:-5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2 No answer; -1 Don't know; 1 Not at all important; 2 2; 3 3; 4 4; 5 5; 6 6; 7 7; 8 8; 9 9; 10 Very important. Available: all (1st-5th) waves

Subjective Understanding of Institutions. All questions read: Many things may be desirable, but not all of them are essential characteristics of democracy. Please tell me for each of the following things how essential you think it is as a characteristic of democracy. Use this scale where 1 means 'not at all an essential characteristic of democracy' and 10 means it definitely is 'an essential characteristic of democracy' ((Read out and code one answer for each)): Possible answers: -5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2 No answer; -1 Don't know; 1 Not an essential characteristic of democracy; 2 2; 3 3; 4 4; 5 5; 6 6; 7 7; 8 8; 9 9; 10 An essential characteristic of democracy. Available: 5th wave. Questions:

- Religious authorities interpret the laws (E225)
- People choose their leaders in free elections (E226)
- The army takes over when government is incompetent (E228)
- Civil rights protect people's liberty against oppression (E229)

- The economy is prospering (E230)
- Criminals are severely punished (E231)
- Women have the same rights as men (E233)

Placebo Questions not pertaining to the mechanism:

- Importance of politics (A004): For each of the following aspects, indicate how important it is in your life. Would you say it is: Politics Possible answers: -5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2 No answer; -1 Don't know; 1 Very important; 2 Rather important; 3 Not very important; 4 Not at all important. Available: 2nd-5th waves
- Adventure and risks are important (A195): Now I will briefly describe some people. Using this card, would you please indicate for each description whether that person is very much like you, like you, somewhat like you, not like you, or not at all like you? (Code one answer for each description): Adventure and taking risks are important to this person; to have an exciting life. Possible answers: -5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2 No answer; -1 Don't know; 1 Very much like me; 2 Like me; 3 Somewhat like me; 4 A little like me; 5 Not like me; 6 Not at all like me. Available: 5th wave
- Government should reduce environmental pollution (B003): I am now going to read out some statements about the environment. For each one read out, can you tell me whether you agree strongly, agree, disagree or strongly disagree? (Read out each statement and code an answer for each) The Government should reduce environmental pollution, but it should not cost me any money. Possible answers: -5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2 No answer; -1 Don't know; 1 Strongly agree; 2 Agree; 3 Disagree; 4 Strongly disagree. Available: 2nd, 4th, 5th waves
- Leisure (C008): Which point on this scale most clearly describes how much weight you place on work (including housework and schoolwork), as compared with leisure or recreation? A It's leisure that makes life worth living, not work B Work is what makes life worth living, not leisure Possible answers: -5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2

No answer; -1 Don't know; 1 It's leisure that makes life worth living, not work; 2 2; 3 3; 4 4; 5 Work is what makes life worth living, not leisure. Available: 3rd, 4th, 5th waves

- Willingness to fight for the country (E012): Of course, we all hope that there will not be another war, but if it were to come to that, would you be willing to fight for your country? Possible answers: -5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2 No answer; -1 Don't know; 0 No; 1 Yes; 2 Depends. Available: all (1st-5th) waves
- Feel like citizen (G021): People have different views about themselves and how they relate to the world. Using this card, would you tell me how strongly you agree or disagree with each of the following statements about how you see yourself? ((Read out and code one answer for each) statement): I see myself as citizen of the [country] nation. Possible answers: -5 Missing; Unknown; -4 Not asked in survey; -3 Not applicable; -2 No answer; -1 Don't know; 1 Strongly agree; 2 Agree; 3 Disagree; 4 Strongly disagree. Available: 5th wave