Colonial Policy, Social Trust, and Economic Resilience: The Long-term Impacts of Imperial Russian Settlement in Southern Kazakhstan

Nora Webb Williams

A dissertation
submitted in partial fulfillment of the
requirements for the degree of

Doctor of Philosophy

University of Washington

2019

Reading Committee:

Victor Menaldo, Chair

John Wilkerson, Chair

Scott Radnitz

James Long

Program Authorized to Offer Degree:
Political Science

University of Washington

Abstract

Colonial Policy, Social Trust, and Economic Resilience: The Long-term Impacts of Imperial Russian Settlement in Southern Kazakhstan

Nora Webb Williams

Co-Chairs of the Supervisory Committee:
Associate Professor Victor Menaldo
Department of Political Science

Professor John Wilkerson
Department of Political Science

Almost every country on the planet has a colonial past as colonizer or colonized. Yet scholars still do not fully understand how differential experiences of colonialism affect social and economic processes in the long-term. In this dissertation, I focus on the impacts of colonialism on two linked outcomes: social trust and rural resilience. How do colonial legacies shape social trust in the long-run? And how does the level and type of social trust present in a community affect the resilience that community will demonstrate in the face of unexpected disasters? I address these two broad research questions by analyzing the politics, economics, and history of Kazakhstan, which experienced settler colonialism under Russian Imperial rule. Bringing to bear a wide variety of data sources, including historical records, surveys, images shared on social media, nighttime lights satellite imagery, and interviews, I find that geographic patterns of social trust in southern Kazakhstan are linked to Imperial Russian policy decisions about colonial settlement. In Almaty oblast, where 19$^{\text{th}}$ and early 20$^{\text{th}}$ century colonial settlement was relatively intense compared to neighboring Jambyl oblast and was coupled with higher rates of Kazakh land displacement, I find lower rates of social trust in the early 21$^{\text{st}}$ century. In particular, Almaty oblast has lower vertical social trust in formal state institutions. Those social trust patterns also map on to variation in rural

village resilience after the collapse of the Soviet Union. Communities in Almaty oblast were better able to rebound after the dissolution of the Soviet Union in 1991, suggesting that lower vertical trust may be a boon for rural community resilience.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGMENTS

The acknowledgements section is one of my favorite parts of any piece of writing. We get to show that difficult tasks are made easier with support and friendship. Victor Menaldo has been a fantastic advisor. I am grateful for his support through every step of the graduate program and for his championing of this dissertation project. I will never think about the micro-foundations of social trust the same way again. John Wilkerson joined the committee as co-chair at the same time that he became chair of the Department of Political Science – I am constantly astounded that he finds the time to read and comment on so much of my work (both from the dissertation and from our fascinating, shared, and often pleasantly distracting side projects). It is a substantially significant understatement to say that I have learned a lot from working with you both. Thank you.

Rounding out the reading committee, Scott Radnitz and James Long have consistently provided clear (and challenging) feedback on this project and on my scholarly trajectory in general. Scott's frequent invitations to have lunch with visiting speakers, courtesy of the Ellison Center, kept me from experiencing dissertation-writing isolation. James has shown up for me in myriad ways, intellectually and professionally, and I am willing to bet there are many instances that I do not know about. I am lucky to have Katy Pearce as my dissertation GSR and am grateful for her support and willingness to answer questions about all things academia and post-Soviet sphere.

I am also grateful for the feedback and support I have received from a whole host of faculty members who were instrumental in my intellectual and professional

development: Susan Whiting, Chris Adolph, Rachel Cichowski, Margaret Levi, Jim Caporaso, Aseem Prakash, Mark Smith, Sophia Jordan Wallace, Tony Gill, Caitlin Ainsley, Bill Fierman (aka Fiermanbashi), Gardner Bovingdon, Ron Sela, Devin DeWeese, Kerry Krutilla, Kevin Moss, Greg Vitercik, and Nadia Horning. They will probably never see this, but they deserve my thanks all the same, as do the majority of my teachers from elementary school through high school. The University of Washington Department of Political Science staff also deserve my thanks, particularly Susanne Recordon, Ann Buscherfeld, and Steve Dunne.

For feedback on conference and seminar paper versions of portions of the dissertation, I thank Elena Campbell (who as GSR also provided fantastic comments on the dissertation prospectus), Susan Whiting, Tom Flores, and Joan Ricart-Huguet. Sarah Wilson Sokhey and Scott Gehlbach also provided helpful feedback on the project.

This project was supported by two grants: a Dissertation Research Grant from the Association for Slavic, East European, & Eurasian Studies and a Presidential Dissertation Fellowship from the University of Washington. I am grateful for both. Without the Peace Corps program, which first sent me to Kazakhstan in 2006, this dissertation would not exist. The four host families who I have lived with over the years in Kazakhstan were incredibly generous with their time, resources, and affection. I had institutional support for my fieldwork at KIMEP University through the Central Asian Studies Institute (CASI), with thanks to Nargis Kassenova. The 2017-2018 survey in Kazakhstan was made possible by research funds from Alexander Diener. Caren and Kim Stelson generously lent me their home in Lanesboro, Minnesota for a dedicated summer writing session in 2017.

Four research assistants did excellent work on the project and I thank them: Tural Alisker, Yermek Abilgaziyev, Vasiliy Lakhonin, and Ayana Akhatayeva.

My graduate student colleagues from the University of Washington, Indiana Uni-

versity, and beyond are astounding human beings. Thank you for your collegiality and genuine friendship (starting with co-authors to whom I owe a particular debt for their patience): Andreu Casas, Kristoffer Rees, Kevin Aslett, Calvin Garner, Wesley Zuidema, Emma Rodman, Margaret Hanson; Kylie Clay, Aaron Erlich, Emily Kalah Gade, Will Gochberg, David Lopez, Beatrice Magistro, Paige Sechrest, Joanie Tremblay-Boire, Vanessa Quince (best grad mentor ever!), and Daniel Yoo.

Eliah McCalla deserves a full paragraph of his own in gratitude for his many years of support and for being the kind of person you can go through a divorce with but still retain as a close friend. So here is that paragraph. Thank you, Eliah, and thanks also to our dogs Sheera and Cairo who are fluffy wonders.

Friends new and old have made life in graduate school rich beyond imagining. In Seattle, I have received lots of moral support from Kela Wanyama, Ailey Hughes, and Yashar Shayan. Thanks are due to my GLUMC supporters, who helped me keep it together during some difficult times. Outside of Seattle, I am thankful for the nourishing friendships of Gaea Dill-D'Ascoli, Megan Osterhout Brakeley, Emily Hayes, Alyssa Jumars, Suzanne Nagi, Beth Stelson, Geoff Sheagley, Nick Plimpton, Elliott Turley and Duncan Cooper.

I am lucky to have a family that has always been a source of strength and support. Thank you, Kathy Webb, Tony Williams, Thomas Webb Williams, Evelyn Webb Williams, and John Henkel. Thank you to my grandparents, Thelma and John Webb and Don and Rhode Williams, who highly valued education and passed those values along. Oh, and thanks to my niece Hazel who at age 18 months showed me how she did a push-up. The future is in good, strong hands.

It is a privilege to attempt to create new knowledge in a fraught world. All errors in what follows are mine, but any new thoughts that this work sparks are yours (should anyone ever read this!).

DEDICATION

To the four families in Kazakhstan who always made me feel welcome, with extra thanks to the Kudlaev family.

Chapter 1

INTRODUCTION: COLONIAL RULE, SOCIAL TRUST, AND RESILIENCE

How do colonial legacies shape social trust? The long-term impacts of colonial policies on social trust in colonized areas has received increased attention in the political economy literature over the past decade (e.g. Nunn and Wantchekon 2011). However, many gaps remain in our understanding, and much of the literature relies on studies of colonial powers more generally familiar to Western academics, such as Great Britain and France. I extend theoretical expectations on colonial policy and social trust to an understudied sphere: Russian colonialism in Central Asia, specifically to areas now part of Kazakhstan. How do the long term effects of Russian colonial policy in Kazakhstan challenge and confirm theoretical expectations for social trust drawn primarily from the experiences of Western European colonies in Africa, Asia, and the Americas? Answering this question requires an analysis of what Russian colonial polices were in Central Asia, and how those policies could conceivably have shaped social trust in the long run.

Social trust is a driver of many important political and economic processes and outcomes. Trust underpins most transactions in a free-market society, allowing for a greater capture of gains-from-trade (Arrow 1972). Trust is a key component in the perceived legitimacy of government (Levi 1988) and can "ease coordination among citizens and with government actors, reduce transaction costs, increase the probability of citizen compliance with government demands, and contribute to political support of the government" (Levi and Braithwaite 1998, p. 5). Trust undergirds social capital and civil society (Putnam 1993). Trust on a societal level is arguably associated with higher levels of economic development (Knack and Keefer 1997) and with a "nation's well-being" in general (Fukuyama 1995, p. 7). In the service of

understanding these outcomes, social scientists continue to debate both the nature of what trust is and its origins. The degree to which colonial processes have impacted social trust is therefore crucial for social science research, especially given the large number of peoples who experienced some form of colonial rule.

Similar to the scholars who have gone before me, I have a particular outcome in mind that drives my interest in social trust. How does the level and type of social trust present in a community affect the *resilience* that community will demonstrate in the face of unexpected disasters? By resilience, I mean the ability of communities to bounce back after shocks. Why do some rural communities survive after shocks, while others disappear? How do some maintain economic activity while others dissolve, with individuals migrating to greener pastures (sometimes literally)?

Resilience is an outcome of increasing interest to social scientists, especially in the face of pressures from climate change. Which communities are more likely to recover in the face of natural disasters? Scholars are also concerned about the abilities of communities to rebound after disasters such as terrorism and civil war. I do not take a normative stance on resilience — whether or not communities *should* rebuild after a hurricane given rising sea levels is beyond the scope of this project, though these are important questions. My contribution is in trying to understand the factors that shape resilience without judgment about the rightness of that resilience.

To summarize the main thrust of the dissertation, I argue that community resilience can be explained by variation in social trust, and that different levels of social trust arise as a function of the long-term institutional and cultural legacy of colonial rule. I bring together literature on the long-term impacts of colonial policy and the role of social trust in economic resilience, theorizing both on the origins of social trust and on the impacts of social trust on resilience. To clarify on what social trust is and how it functions in society, I conceptualize trust along three dimensions: vertical, horizontal, and ethnic (described in more detail in Chapter 2). Which aspects of social trust will explain resilience varies based on the nature of the disaster to which a community must react; in this project my focus is on community

reactions to political and economic collapse.

1.1 Conceptualizing Social Trust

Political scientists, economists, and scholars from many other disciplines have long wrestled with the concept of social trust. Delhey and Newton (2003) identify six broad classes of theory that claim different conceptions of social trust. While Chapter 2 provides detail about varieties of trust, here I address two major conceptual and definitional questions with an eye to how other scholars have engaged with this thorny idea. The first question is: what is social trust? And second, where does it come from?

1.1.1 Defining Social Trust

Bridging psychological and rationalist approaches (Mercer 2005) while also incorporating cultural perspectives (Guiso, Sapienza, and Zingales 2006), the concept of social trust advanced in this work includes components of both belief and behavior. At its heart, trust is a feeling – a sense that another individual, organization, or institution has your best interests at heart. If you trust someone or something, you have faith that they will act in a way that you would expect them to and that they will act in a way that is to your benefit.

Though I argue for an essentially rationalist or cognitive conception of trust,[1] one in which individuals decide whether or not to trust someone based on the information and experience they have on hand, this is not incompatible with my use of the word "belief" to describe trust. A feeling is the body and mind's way of reacting to information and experience. The information one thinks one has about an individual, which shapes whether or not one believes they should be trusted, might emerge in a general feeling of warmth and affection.

Social trust, arising from information and expressed as a feeling, also shapes behavior. In particular, if you trust another individual, organization, or institution, you are less likely

[1] As opposed to conceiving of trust as a psychological predisposition, to borrow the term used by Glanville and Paxton 2007 (p. 231) for this school of thought.

to invest in monitoring and enforcement (Levi 1996). Many are familiar with the phrase, "trust, but verify." The implication of the phrase that if you do trust, you are less inclined to verify (the warning of the aphorism is that if you have misplaced your trust, you are out of luck, so perhaps you should maintain a small amount of verification even if you do trust). If you trust someone, you do not spend your time and energy tracking their behavior. Instead you are able to delegate a task without worrying whether or not it will get done.

Trust that is not freely given is not trust. Coerced faith or belief in the intentions of another is not the same as voluntary feeling that my money is in good hands if I give it to you to invest. This component of the trust conception is particularly relevant in the light of the Soviet history of Kazakhstan. The current project skims only lightly over the Soviet period to emphasize the colonial and post-Soviet periods in Kazakhstan. But the concept of trust in the Soviet Union has drawn scholarly attention, including references to "forced trust" (Tikhomirov 2013; Tikhomirov 2017). Putting faith in a totalitarian state where there is no outside option is not trust in a true sense. It cannot be trust if the robber puts a gun to your head and says, "Trust me, I mean you no harm." A profession of trust from the coerced in this scene should not be taken as an indicator of faith in the robber's intentions.[2]

The robber anecdote, while illustrating the necessity of true trust to be voluntary, not coerced, also raises a practical measurement concern. As empiricists rarely know the true emotion behind speech, words alone are not indicative of trust. For that reason, I leverage survey and interview data along with a more behavioral measure of posing for and posting images online in order to evaluate differences in social trust between individuals and geographical regions. Section 1.5 introduces these data in more detail.

Trust as a belief and a behavior might vary depending on the organization, individual, or institution under consideration. Even if every person has a baseline degree of willingness or ability to trust, the faith that they have in their friends and family might be different than the faith they have in their national government. As discussed in more detail in Chapter

[2]A similar example and point is made in Hardin (2002) and Farrell (2002)

2, social trust can be conceived of as varying along three dimensions: vertical, horizontal, and ethnic (or in-group/out-group). Colonial Russian policies towards settlement in Kazakh areas could conceivably impact social trust along all three dimensions. And the location of a given community along the three axes has significant implications for the ability of the community to respond to crises such as the collapse of the USSR.

1.1.2 The Origins and Transmission of Social Trust

The proposed theory, that Russian colonial rule in the 19th and early 20th centuries affects social trust and resilience in the late 20th and 21st century, implies that something about the experience of colonialism is sticky. This raises a series of fundamental questions: Where does trust, as an individual belief and behavior, come from? Is it a state, meaning it is fairly mutable, or a trait, meaning it is fairly stable (Crepaz 2008, pp. 96-100)[3]? Does it transmit through generations, and if so, how? I identify three broad perspectives on how trust arises. First are explanations that tie variation in social trust to fairly stable individual characteristics (e.g. personality profile, genetics, or early childhood experiences). Second are perspectives that derive from microeconomic first principles and a game theoretic framework, which stress structural aspects[4] in creating trust (or mistrust) over time. Finally, cultural approaches emphasize the role of informal social norms in setting beliefs and providing information heuristics.

At times, these perspectives are at odds with one another. For example, the individual characteristics approach suggests that humans do not change in their capacity for social trust after a certain age (Uslaner 2000), meaning that after a period of early learning, the degree of trust that a person holds is relatively fixed. In direct contrast, the structural approach relies on the ability of individuals to learn throughout their lives and update their strategies to punish untrustworthy behavior, meaning that individuals can become less trusting or

[3]See also Glanville and Paxton 2007

[4]What might also be referred to as institutional aspects, see for example Farrell (2005)

more trusting over time.[5] However, often the perspectives are complementary. In particular, the structural and cultural explanations are closely linked – one might easily make the point that culture is a set of social structures, or that cultural norms provide foci to solve trust coordination games. My conception of how social trust arises borrows from all three perspectives but with an emphasis on microeconomic and cultural explanations.

The three broad theoretical perspectives on social trust have implications for if and how trust might transmit intergenerationally. Within the individual characteristics approach, some scholars have described trust as innate to personality, a trait set by genetic propensity or childhood experiences very early on in life (Uslaner 2000). If genetics determine trust, then the origins of trust are essentially biological and inherently intergenerational – we trust or we do not as a function of the base pairs in our DNA, which is a function of the genes of our biological parents. Spolaore and Wacziarg (2013) survey a wide range of literature on the long-term transmission of concepts, including trust, that have a potential impact on economic development. They highlight the overlap between biological and cultural explanations for transmission of social trust. Importantly for the biological angle, they emphasize the potential role for both genetics and epigenetics (or the differential expression of genes based on a wide range of factors).

The idea that trust might have a genetic component is intriguing, and there is some evidence that there are genetic factors associated with the propensity to trust and an individual's trustworthiness. Cesarini et al. (2008) find, for example, that identical twins behave more similarly in a trust game than non-identical twins. As Spolaore and Wacziarg (2013) point out, there are also cases to be made for the interaction of genetic and cultural forces. Most of us are used to thinking about genetic effects occurring over very long time periods through the process of natural selection. And indeed there are examples in the literature of the ways that trust might appear in communities over the long run as combination of genetics and social experimentation in a rational choice framework (Gintis et al. 2003). Given

[5] In a test of these two competing hypotheses, Glanville and Paxton (2007) find that the the social learning model is a better fit to the available survey data than the psychological predisposition.

the previous literature, for the story at hand it may be hard to believe that the shock of colonial expansion into Kazakhstan could have had a genetic effect on trust. However, recent literature suggests that there may be more epigenetic transmission of trauma than was previously thought (Yehuda et al. 2016; Costa, Yetter, and Desomer 2018). These are relatively new findings, and testing the genetic and epigenetic effects of colonial rule on social trust is beyond the scope of this dissertation. Nevertheless, if it is true that the origin of trust is biological, there are reasons to believe that historical traumas might induce changes in social trust via epigenetics.

From a microeconomics perspective, the origins of trust are best thought of in a game theoretic framework, where actors (players) make choices to maximize their utility. Trust comes from the structure and payoffs of the game, the interests of the players, and the information that players have. At the heart of this perspective is the idea that people make rational decisions to the best of their ability in their everyday interactions and that those decisions over time are what make up a society's level of trust. Trust is a belief that another player will not act in an untrustworthy fashion. Or, to put it another way, trust is the understanding that the other player has no incentive to defect from an understood arrangement or contract. Table 1.1 summarizes four types of untrustworthy behavior that a player might encounter: opportunism, strict adverse selection, moral hazard, and broad adverse selection.

Table 1.1 also includes classic political-economic solutions to the problems of mistrust (Axelrod 1984; Macy and Skvoretz 1998; Klein, Crawford, and Alchian 1978). In this framework, information is often a key component in solving situations of potential mistrust. How well do players know the preference set of the other players? Do they have the means to monitor behavior?

With perfect information, third-party intervention can change the payoffs, turning a Prisoners' Dilemma-type game (PD), where defection is the expected play, into a coordination

Table 1.1: Microeconomic Sources of Mistrust

Source	Description	Mostly like when...	Solutions
Opportunism	Renegotiating a contract unexpectedly, changing the terms of an agreement	Opportunities for rents, incomplete contracts	Third party enforcement for contracts, vertical integration
Strict adverse selection	Incentive structure makes contracting appealing to exactly the type of people it would be detrimental to contract with	Hidden attributes	Information, prescreening, coercion to expand pool
Moral hazard	Individuals taking risks that are not in the best interest of someone they have contracted with, involving an element of insurance	Hidden behaviors	Monitoring, contracting
Broad adverse selection	Uncertainty about the type of person I'm playing	Imperfect information, different types in a population	Signalling, updating with multiple rounds of play

game, where cooperation is expected.[6] If there is no third-party enforcer, as Axelrod (1984) demonstrated, playing a PD game for multiple rounds allows for strategies that punish defection and reward cooperation – in effect showing that repeated interactions can support trust where it otherwise would not exist. Macy and Skvoretz (1998) similarly use computer simulations to show that even without repeated play, trust can emerge when players have the option to exist or if the game is embedded in larger social structures.

In the absence of perfect information, costly signals may serve to differentiate those who can be trusted from those who are not trustworthy. To a degree, repeated play can also help players learn who can be trusted and who cannot – each round is an opportunity to gain new information about the other players. The closer the game gets to perfect information, the easier it becomes to know who should be trusted and who should not. However, to gain

[6] Assuming there is some form of coordination device (or focal point).

information, individuals pay a transaction cost. In low information environments, players may be more reliant on easy mental heuristics that may not comport with reality.

The cultural perspective, as noted previously, can complement the classic microeconomic approach to trust, particularly when it comes to heuristics. Here the main idea is that each subsequent generation of players does not start playing the game from scratch. Instead, by the time they reach the metaphorical gaming tables, their knowledge and set of potential plays been shaped by what they were taught by the previous generation about the rules, about the norms of game play, and about the other actors (Guiso, Sapienza, and Zingales 2006; Algan and Cahuc 2010). Recognizing the possibility for intergenerational transmission of beliefs and expectations via culture helps explain some of the gaps in a strict rational-choice framework. To a degree, culture is another set of institutions surrounding the game, or another factor to consider when modeling how trust will (or will not) emerge between two individuals or within a community.

Culture in this sense provides a heuristic when information about the trustworthiness of another individual is low (Nunn and Wantchekon 2011). Expressing the cultural perspective in a rational choice framework, individuals rely on heuristics because they face high transaction costs of acquiring more information. One can imagine that culture can also make it less likely that someone will even consider the idea of actively seeking out more information. If "everyone knows" a certain stereotype is "true," then why would I make the cognitive effort to find out for myself whether or not that is the case?

There are many theories of how cultural norms, including social trust (or mistrust), are transmitted from individual to individual, spanning generations (Darden 2019; Guiso, Paola, and Zingales 2004; Tabellini 2010). One way that trust transmits is through stories, whether those stories are narratives of past historical events or simply the relation of something that happened in everyday life. Trust can also be transmitted through offhand remarks and non-verbal communication indicating what types of people are worthy of trust. We learn from people we already trust (e.g. family, close friends) who we else we should trust. Communication about what someone else is like provides information that shapes our trusting, or

mistrusting, reaction.

A personal anecdote illustrates the mechanism of the casual prejudiced remark. In the course of my life in the United States, I occasionally encounter those who have some experience in Kazakhstan. In one such random meeting, I was talking to a stranger about my work when I learned that she had grown up in Almaty, Kazakhstan. She had left many years ago. I told her how much I love the city of Almaty, and she reacted to this statement with extreme skepticism, noting how polluted the city has become, in part because of the rise in traffic jams. She then said something along these lines, "You know, it's so annoying when you fly in to Almaty, because you see all these fields that are brown, where nothing is growing. The Kazakhs are so lazy, they have all this land but they don't know how to take care of it."

If you fly into almost any city surrounded by agricultural areas you will see some fields that are brown (there are different harvest times for different products, some fields are left fallow intentionally, etc.). Note also that many of the fields around Almaty are likely owned by non-Kazakhs. What struck me about the comment about "lazy Kazakhs unable to take care of their land" was the faint echo of an imperial Russian settler perspective. Here was all of this land, but (as the colonial logic went) the Kazakhs used it poorly for animal husbandry. The land should be given to settlers who could use it for settled agriculture or the Kazakhs should settle themselves and learn how to farm. If I were a child hearing the story of Kazakh laziness, I might have believed the comment about the poor work ethic of Kazakhs when it comes to the land. This would shape my beliefs about the efficacy and efficiency of an ethnic outgroup, and may make me less likely to trust someone from that group, even if I had many interactions with members of the group over time.

Colonial rule could conceivably have an impact on trust in the long run from any of the three overlapping perspectives on trust – individualistic, microeconomic, or cultural. For example, one way that trust might be impacted in the long-run by colonialism is through the different formal institutions that arise under different types of rule and are reinforced over time – from the microeconomic perspective this suggests that perhaps there was no

incentive to develop fair third-party enforcement.[7] Examining the long-term impacts of different types of imperial rule in Poland, Grosfeld and Zhuravskaya (2015) find that long-term cultural differences after imperial rule are more common than differences in formal institutions. In the case that I examine, there is very little formal institutional continuity (between the Imperial period and the present day stands the creation and dissolution of the USSR). Thus, if the shock of colonialism is to have had a long-term impact on social trust, the most likely pathway is through cultural norms and beliefs.

1.2 Theories of Trust and Resilience

The ultimate economic outcome of interest in this dissertation is resilience, or the ability of communities (particularly rural communities) to bounce back after shocks. Development scholars and practitioners are increasingly interested in the resilience of rural communities, though the topic is not new (see Norris et al. 2008; Skerratt 2013 for useful reviews of the literature). Climate change is one catalyst for the interest, as communities are forced to adapt or disband in the face of increasingly extreme weather patterns, such as floods, droughts, and hurricanes. Buzzwords describing the issues include "socio-ecological resilience" (W. Neil Adger 2000; W Neil Adger et al. 2005) and "rural resilience" (McManus et al. 2012). There are many complex factors that could affect resilience. Whiting et al. (2019), for example, identify ecology, governance, and markets forces as key to the long-term resilience of the Chengdu Plain in China. Trust, or social capital, has also been identified as an important factor in resilience, where more trust is associated with more resilience (McManus et al. 2012; Smith, Anderson, and Moore 2012; Skerratt 2013; Randell 2018).[8] This dissertation builds from these prior explorations, but takes the ideas in a new direction. The shock of interest here is explicitly political (as opposed to more environmental), and concerned with formal state institutions (as opposed to an analysis of resilience in the face of anti-state insurgency).

[7]See Nunn and Wantchekon (2011) and Grosfeld and Zhuravskaya (2015) for discussions of additional formal channels of long-term colonial impacts.

[8]Though see Aldrich (2011) for a discussion of how some marginalized communities may become more marginalized post-shock where there are strong social capital networks.

In addition, the project innovates by linking resilience outcomes and trust mechanisms along multiple dimensions to colonial practices.

1.3 Kazakhstan as Colonial Case

One would be hard pressed to find a better country than Kazakhstan in which to study resilience after political and economic collapse. That rural communities faced existential crises after the collapse of the USSR is readily visible. Figures 1.1 and 1.2 below show two nearby communities in Kazakhstan to demonstrate what variation in survival looks like when comparing satellite images: the village in Figure 1.1 has almost completely disappeared, while the village in Figure 1.2 appears to be thriving. In Chapter 5, I analyze how small towns in rural Kazakhstan fared after the collapse of the Soviet Union in 1991, using nighttime lights imagery to trace which towns survived and which disappeared from the map. Chapter 6 provides qualitative evidence of both the challenges of collapse and strategies of resilience that are underpinned by social trust.

Figure 1.1: Two Rural Communities in Kazakhstan: Village 1

Source: Google Earth

Figure 1.2: Two Rural Communities in Kazakhstan: Village 2

Source: Google Earth

The collapse of the USSR is just one of many shocks in the history of Kazakhstan. The territory of Kazakhstan, currently comprising 1.05 million square miles, or roughly four times the size of France, has experienced multiple waves of dramatic, externally imposed societal change, including the creation of the Soviet Union, the famine in the early 1930s, the World Wars, and the Soviet collapse. During the Imperial Russian period, Kazakh territory underwent military conquest and experienced colonial rule. The arrival of settlers from other areas of the Russian empire was one of the notable colonial shocks (see Chapter 3 for a detailed history of Imperial colonial rule in Kazakhstan).

Understanding the role of Russian colonial rule in shaping trust and resilience outcomes in Kazakhstan is a challenging proposition due to data limitations and historical distance. However, prior scholars have made significant advances in explaining Russian colonial processes in Kazakhstan. Drawing on prior scholarship and primary accounts, I find that some Russian Imperial policies were more likely to *attract settlers* to the Kazakh regions of interest (in the south of contemporary Kazakhstan), more likely to *displace Kazakhs* from their land, and more likely to *create violent interactions* between ethnic groups. I find that differences

in the initial interactions between settlers and local populations, which varied as a function of Imperial Russian policies, translate into different levels and types of lingering social trust (measured using surveys, interviews, and an analysis of images shared on social media), which in turn affects the abilities of communities to withstand economic and political shocks.

Foundational political economy research on the long-term impacts of colonialism suggest that more European settlers translate into better institutional arrangements (Acemoglu, Johnson, and Robinson 2001) and stronger social trust in the long run as citizens see the positive benefits of institutions such as the rule of law. Acemoglu, Johnson, and Robinson (2001) focus only on Western European colonial powers, however, and their cases of settler colonialism had genocidal settler-indigenous interactions.[9] In the case of Kazakhstan, where larger portions of the indigenous population survived colonialism, I find a *negative relationship* between the intensity of Russian settlement and modern social trust. Consider Figures 1.3 and 1.4, which show the relationship between Russian settler patterns as of 1916 in Kazakhstan and generalized social trust in 2011, as measured by the World Values Survey (World Values Survey Association 2014).[10] Figures 1.3 and 1.4 show a negative relationship (albeit weak) between historic patterns of Russian settlement and generalized social trust in Kazakhstan.

[9]Not completely successful at erasing all indigenous populations, of course. Laidlaw and Lester (2015) highlight many cases and strategies for indigenous survival after intensive British settler colonialism.

[10]Russian settler patterns from the 1916 census, as reported by Demko (1969). Demko reported the number of Russians and Kazakhs in 6 Imperial oblasts in 1916, with about 4 uyezds per oblast. I matched each reported 1916 uyezd (now called raions) to a 2011 oblast. For more detail on the World Values Survey data, see Chapter 4

Figure 1.3: Raw Russian Settlers in 1916 and General Rural Trust in 2011

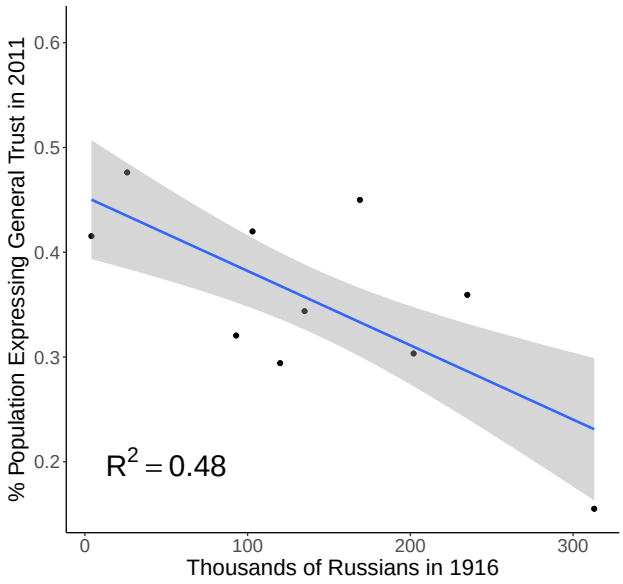
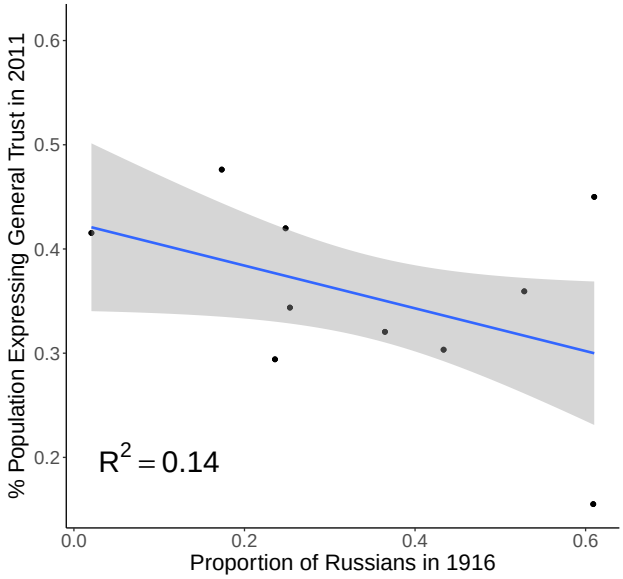


Figure 1.4: Proportion Russian Settlers in 1916 and General Rural Trust in 2011



Findings from the Russian colonial experience complicate established political economy theories by forcing scholars to consider the details of how settlers interacted with indigenous

populations.[11] Earlier scholars have considered the impact of policy expectations that colonizing settlers brought with them from their homelands (Acemoglu, Johnson, and Robinson 2001), or on how settler policy expectations were shaped by the geographies they found after arriving (Easterly and Levine 2003). I highlight instead the way that colonial policies regarding settlement and land displacement shaped interactions between settler and indigenous populations. That is, as opposed to placing settlers in the center of the analysis, I instead center the *interactions* between settler and indigenous groups, how those interactions are explained by colonial policy, and the long-term impacts of those interactions on social trust.

1.4 General Research Design

Colonial policy, social trust, and economic survival are all endogenously linked phenomena. To untangle these knots, I treat the dissolution of the USSR as a plausibly exogenous shock. The shock reset formal state policies and was a "treatment" imposed relatively uniformly across the local units of interest. How the differentially-situated communities responded to these shocks acts as a resilience test of the characteristics and history of each village. In other words, I am interested in subgroup effects of the collapse treatment, or heterogeneous treatment effects on different regions.

Figure 1.5 presents the main argument of the dissertation with reference to research design. I focus mainly on the upheavals resulting from Russian expansion into rural areas in the south of present-day Kazakhstan, into what are now called Almaty and Jambyl oblasts.[12] These two oblasts were chosen for analysis because they border one another and have many

[11] Of course, studying the impacts of colonialism on colonized peoples is not new to social science, nor is my focus on interactions. But these interactions are neglected in the political economy literature, and are instead more in the realm of sociology, anthropology and critical theory. For some examples that highlight settler colonialism and trust, see Horowitz 2010; Hwang 2017; White 2011.

[12] There are fourteen oblasts (large administrative regions) in Kazakhstan, and three special administrative zones for the largest cities, Nursultan (formerly Astana), Almaty, and Shymkent. Oblasts are further subdivided into districts (called a raion in Russian or audan in Kazakh, these are comparable to a United States county). These unit names have changed somewhat since Imperial times. For consistency I will use the more modern terminology of oblast and raion. "Jambyl" is also commonly transliterated as Zhambyl, Dzhambul, or other slight spelling variations. I use Jambyl throughout for consistency. Similarly, Almaty is sometimes spelled as Alma-Ata.

similar underlying features (landscape, rainfall, etc.). They were also both colonized relatively late in the expansion of Russia onto the steppe (from roughly 1850 through the 1917 revolution), allowing me to neutralize concerns about the highly differential lengths of colonial activity in the northern oblasts. During Imperial times, Jambyl oblast was (most often) in the Syr Darya administrative region, while Almaty oblast was in the Semirechiye region (see Figure 1.6 for a general sense of colonial borders, with modern Central Asian borders shown in green). The border between Syr Darya and Semirechiye in Kazakhstan became the border between Almaty and Jambyl oblasts. According to official Kazakhstani statistics, at the start of 2017 Almaty oblast had 16 raions and 731 villages, while Jambyl oblast had 10 raions and 373 villages. Many of these villages are essentially suburbs or peri-urban areas, having been swallowed up by the expansion of the major cities in the oblasts, which include Almaty and Taldykorgan in Almaty oblast and Taraz in Jambyl oblast.

Figure 1.5: Full Proposed Process

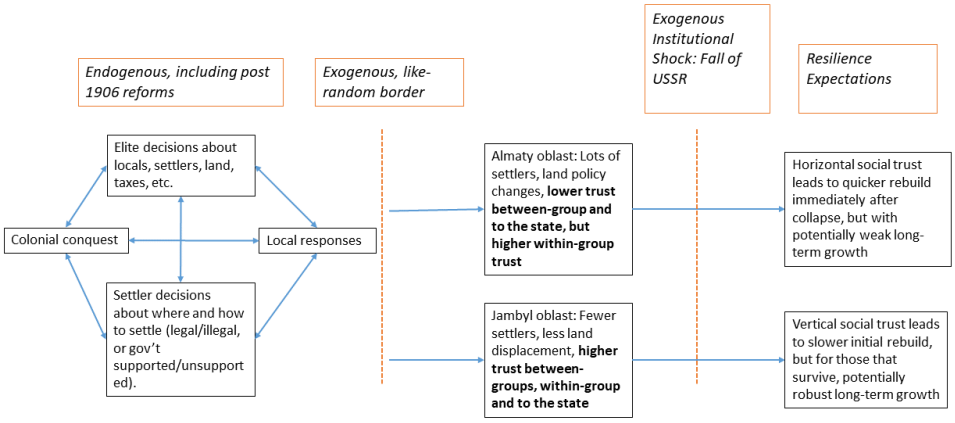


Figure 1.6: Imperial Oblasts and Governorships

Modern borders in green. Source: `https://commons.wikimedia.org/wiki/File:Turkestan_1900-en.svg`, Creative Commons Attribution-Share Alike 3.0 Unported license

The two Imperial regions which became the oblasts under analysis took different policy positions towards settlers and migration. Though there were shifts in policies over time, Imperial policies on the Semirechye side of the border tended to be more attractive for colonial settlement, which facilitated the migration of a higher number of settlers from other regions of Russia. In the early 1900s, statistical formulas for land ownership in Semirechye were changed to make more land available for settlers by reducing land available for Kazakh nomads (Pahlen 1964; Campbell 2011; Morrison 2015). In Syr Darya, conversely, settlement policies were more consistent and limiting, which reduced the overall number of settlers and the rate of land displacement. The differences in policy led to different rates of conflict and cooperation between settlers and indigenous populations.

Variation in land and settlement policies impacted the interactions and and subsequent trust between population groups in the regions. Areas with more settlers would have de-

veloped strong horizontal trust networks within their immediate ethnic communities, as Russian migrants could not always rely on state institutions for social and economic support and Kazakh groups drew together in the face of increasing pressures over land. In addition, where there was high land displacement and high rates of settlement, indigenous populations may have found the influx of settlers a reason to distrust the colonial authorities.

In essence, I argue that colonial experiences created a compound treatment of settlement, land displacement and conflict. That treatment affects social trust in the long-term, which is a potential mechanism in explaining variation in economic resilience.

1.5 Measurement Innovations

As mentioned previously, the dissertation introduces a novel method to measure social trust and considers it alongside more standard measures, such as survey data. I use images from geographically-linked Twitter accounts as a source of information on relative degrees of social trust in areas that received disparate colonial treatments. Taking pictures and posting them online falls under the social trust operationalization rubric of "concrete actions or behaviors as indicators of trust" (Whiting 1998, p. 168) whether in government or neighbors. In leveraging this measurement strategy, the dissertation joins a growing movement in computational and "big data" political science by treating digitized images, particularly images shared on social media, as an important new source of data (Casas and Webb Williams 2018; Mebane et al. 2017; Anastasopoulos et al. 2016). Images from official government accounts that picture state personnel and civilians working or celebrating together are indicative of vertical trust, while images of multi-ethnic celebration indicate horizontal inter-ethnic trust. I provide a validation of these new measures by comparing them to survey-based social trust measures. The images analysis trust results, from 2018, fit with and diverge from 2011 World Values Survey data and survey data collected in 2017 and 2018 in intriguing ways. The image analysis and survey data show similar results in terms of variation in vertical trust between the two oblasts of interest. The measures diverge on the horizontal dimension, however.

Pictures taken from space of the earth at night, also referred to a nighttime lights satellite

imagery, is an increasingly common source of data in fields such as geography and economics. Scholars have found that the nighttime brightness of countries and regions is closely correlated with economic development (W D Nordhaus and Chen 2016). Thus, nighttime lights have begun to be used as a proxy for economic development – they provide a useful measure especially where other forms of economic data are scare. Despite the usefulness of these data, they have rarely been used in political science (for an exception, see Min et al. 2013). In part, this is likely due to the unconventional nature of the data for political scientists, and the corresponding need for software tools and programming skills that are not usually part of a political science toolkit. As I demonstrate, however, there is great potential for using nighttime lights imagery for political and economic research. In particular, the release of an annual time-series of global nighttime lights imagery by the United States government makes it possible to track remote areas (like rural Kazakhstan) over time.

1.6 Broad Findings

Overall, I show that there are significant differences in contemporary social trust patterns between two Kazakhstani oblasts that received disparate Russian colonial "treatments." While the results comparing rates of modern horizontal trust between the two oblasts are inconsistent across measurement strategies, there are clear and consistent patterns in terms of vertical trust. Almaty oblast, which had higher rates of Russian settlement and higher rates of Kazakh land displacement, now has lower rates of vertical trust. While this result is intriguing in its own right, it also has potentially important effects on a range of social, political, and economic outcomes. For example, I find that rural communities in Almaty oblast were, on average, more resilient after the Soviet collapse than communities in Jamybl oblast.

Of course, testing the long-term impacts of colonialism on resilience via the mechanism of social trust is a difficult proposition. The results presented in this dissertation are compelling, but they are also subject to many possible alternative explanations. Perhaps foremost among these explanations is the impact of Soviet policies. Could the effects of Russian imperial rule

on social trust linger, even with all the changes wrought by the USSR? These include (among other changes) the forced movement of people to and from Kazakhstan (Germans, Koreans, Ukrainians, etc.), the creation of state-run farms, and the spread of public education. Policy and government changes contributed to a dramatic series of events throughout the 1900s in Kazakhstan, from famine to nuclear testing. Even so, many scholars have noted the continuity of pre-Soviet social features throughout the 20th century (Schatz 2004; Natkhov 2015). Narrative accounts from individuals who lived through these times, such as Mukhamet Shayakhmetov's memoir of famine in the 1920-30s, describe a weakening of social norms throughout difficult periods, but also emphasize that only the preservation of social norms allowed for some semblance of survival (Shayakhmetov 2006). For example, Shayakhmetov notes that typical Kazakh practices of hospitality towards family and strangers were often ignored during the famine. However, he also relates that he himself would not have survived without social support from family, friends, and strangers.

Accounts of settler colonialism in the Americas have often found a positive effect between increased settlement and "good" societal outcomes, such as economic development (e.g. Acemoglu, Johnson, and Robinson 2001). Other scholars note the detrimental effects of extractive colonialism (e.g. Nunn and Wantchekon 2011). I find that more intensive settler colonial policies in Kazakhstan had a long-term, negative impact on social trust. This suggests a need to reappraise prior theories of settler colonialism with a wider range of cases, including the experiences of regions that were under Russian colonial rule. In places like Kazakhstan where settlers partially displaced locals (as opposed to cases like the U.S.A or Australia, where local populations were almost completely annihilated), what impacts social trust in the long-term are the policy-shaped interactions between populations. In these instances, settler colonialism might look more like extractive colonialism over the long run in terms of shaping social trust. The key feature determining the long-term impacts of colonial rule may not be how many settlers arrived but how colonial policies affected interactions between settlers and indigenous populations. If all of the indigenous population were killed, for example, there are very different implications for how colonial policies might affect social

trust on vertical, inter-ethnic, and intra-ethnic dimensions.

The next chapter wrestles with these broad theoretical concerns and presents expectations for patterns of social trust and resilience after experiences with Russian settler colonialism. Chapter 3 contains an abbreviated history of colonial rule in Kazakhstan, with a focus on the two main oblasts of interest. Chapter 4 and Chapter 5 test the two halves of the theory with quantitative data: Chapter 4 links colonial rule to contemporary social trust, while Chapter 5 evaluates community resilience after the Soviet collapse. To further flesh out the mechanisms of resilience, Chapter 6 presents qualitative data from villages in Almaty and Jambyl oblasts, considering the variation between villages that rebounded from the collapse and those that struggled. Chapter 7 concludes and suggests broader conclusions that can be drawn from the theory and analyses.

Chapter 2

THEORIES OF COLONIALISM, SOCIAL TRUST, AND LONG-TERM ECONOMIC OUTCOMES

2.1 Introduction

Why should we care about social trust, as a belief and a behavior,[1] and where it comes from? For political scientists and political economists, social trust is an important mechanism that helps to explain a variety of important social outcomes, from democracy (for just a few: Putnam 1993; Jamal and Nooruddin 2010) to judicial independence (La Porta et al. 1997) and collective action (Ostrom 2000). In this project, social trust (and its variation along multiple dimensions) is the proposed mechanism that explains economic resilience after the collapse of the Soviet Union in southern Kazakhstan.

In some of the cases where social trust is connected as a mechanism to economic or political outcomes of interest, the direction of the causal error is unclear – it may be that higher economic development and more democracy is what leads to greater social trust, not the other way around (Catterberg and Moreno 2005). By considering colonial policies as a potential origin of new patterns of social trust, I am attempting to ensure that trust comes before resilience, lending credence to a causal argument.

The literature on social trust is rich and diverse, capturing the attention of scholars from every social science discipline. The prior literature shapes the theory and expectations of this dissertation. I highlight here a sampling of these writings, focusing on those that address (1) varieties of social trust, (2) the role of colonial policy in shaping trust, and (3) the impact of social trust on economic outcomes, particularly economic resilience.

Drawing on the experiences of Russian colonialism in Kazakhstan, I then extend these

[1] See the Introduction for a discussion of the my working definition of social trust.

prior ideas to theorize about the potential impacts of colonial policy affecting population interactions at the new edges of empires, and the way these conditioned interactions with the state and between social groups shapes social trust and economic resilience in the long run.

2.2 Varieties of Trust

Scholars increasingly acknowledge the multi-dimensional nature of social trust, noting the importance of disaggregating trust into sub-components (Colletta and Cullen 2000; Whitley and McKenzie 2005). In keeping with this multi-dimensional understanding of social trust, I examine the long-term effects of colonial policy on vertical and horizontal dimensions, as well as on variation in inter- and intra-ethnic trust.

The decision to decompose social trust into these three dimensions (horizontal, vertical, ethnic) stands in contrast to and in conversation with work that relies on a definition of social trust often referred to a "generalized trust" (c.f Delhey, Newton, and Welzel 2011).[2] Generalized trust is, as the name suggests, a broad understanding about how much overall trust a person has. That is, either how innately trusting they are of others or how trusting they have learned to be. Often this concept is operationalized on surveys using a binary choice question: "Do you think other people can be trusted, or do you need to be careful with others?"

Generalized trust can fit into the broad conception of social trust as a belief and behavior laid out in the Introduction. The danger is in assuming that generalized trust perfectly reflects trust in all types of "other." Can we assume that generalized trust is distributed across sub-components in the same way for all people? An individual might have a high level of generalized trust, but when broken down into components, we might find that their trust is composed of an incredibly high rate of vertical trust but almost no horizontal trust. Another individual might have the same rate of generalized trust, but composed of high

[2]Or in some fields, "interpersonal trust."

horizontal trust and almost no vertical trust.

The deficiencies of the generalized trust measure are also apparent in its operationalization on surveys. Who does the survey respondent think about when asked about how much they trust "other people?" Are they thinking about bureaucrats or buddies? As researchers we cannot be sure based on one survey question alone. This measurement concern partially drives my conceptualization and definitions here. Instead of using a broad measure of interpersonal, generalized trust, we would do well to clearly define and measure the dimensions along which trust might vary.

Generalized measures of social trust have been linked to numerous political and economic outcomes of interest (Braithwaite and Levi 1998), including democracy (Putnam 1993), economic development (Bjørnskov 2018; La Porta et al. 1997; Greif, Milgrom, and Weingast 1994), general well-being (Helliwell, Huang, and Wang 2016) and community resilience (Aldrich and Meyer 2015). But variation in vertical trust in the government, for example, could conceivably have very different implications for economic development than variation in the trust that individuals have in their next-door neighbors. More precise expectations require an understanding of how different types of trust might vary in their importance in explaining outcomes of interest. This in turn requires an understanding of the origins of variation in social trust, which is the focus of this chapter and of the dissertation as a whole. Before addressing this larger theoretical question, I define horizontal, vertical, and ethnic trust dimensions. I also address the aggregation of social trust from individuals to communities.

2.2.1 Horizontal Trust

Horizontal social trust is conceived of as trust between community members, people with whom one might frequently interact on a day-to-day basis, or who are thought to have a similar level of power in the formal state system. Horizontal trust is conceptually similar

to the idea of social capital.[3] However, the term social trust has experienced significant conceptual drift since its initial formulation (Leonard 2004). Social capital is about the ways that individuals can leverage their social networks for personal benefit, which is a much more instrumental concept than social trust. True, more social trust may be associated with increased social capital. But while social networks where there is high social trust and norms of reciprocity may be easier to leverage,[4] social trust and social capital should not be treated as equivalent concepts, as they occasionally are in the literature. Social capital tends to focus more on the number of instrumental connections an individual has, while my conception of horizontal trust reflects beliefs and behaviors.

Another way to differentiate between social capital and horizontal social trust is to think about how the concepts have been operationalized. On surveys, for example, questions about social trust might bluntly ask, "Do you trust your neighbors?" Or, more subtly, they might ask about beliefs (e.g. "Do you think your neighbors have your best interests at heart?" or "Do you have warm, comfortable relations with your neighbors?"). In contrast, questions about social capital might ask more about the size of networks or their instrumental use. For example, "How many different people do you have dinner with each week?" or "List the groups you could go to to borrow a short-term loan." Answers to these capital questions could be motivated by the depth of trust someone has in their neighbors, but not necessarily.

2.2.2 Vertical trust

Vertical social trust, in contrast to horizontal trust, is between community members and those holding state-sanctioned power above them, including bureaucrats, elected officials, the police and the military. My conception of vertical trust, then, is very similar to how others have descried political trust (Levi 1996). The risk in using the label of "political trust"

---

[3]See Welch et al. (2005, pp. 455-457) for a useful treatment of the differences between social trust and social capital.

[4]That is, we would expect to observe a strong and positive correlation between social trust and social capital.

is that it implies that other forms of social trust are non-political, when in fact horizontal trust is also an important driver of political behavior (collective action, voting, etc.). And, as I argue in this dissertation, horizontal trust can also be shaped by political institutions.

Standard definitions hold that trust in state institutions and organization comes from the efficacy and legitimacy of those institutions and organizations (Levi and Stoker 2000; Citrin and Stoker 2018). These elements also fit into the definition of social trust used in this project, in that we can think of an individual's vertical social trust updating based on how efficient the government is and the legitimacy ascribed to it.

The idea that efficacy inspires trust applies for all three dimensions of social trust. I trust someone who is able to do the things that they say that can do, or who does far more than expected. Efficiency is also a part of the efficacy calculation. All else equal, an organization, institution or individual that gets something done on my behalf with less waste is best. If I know (or think I know) that they are working more efficiently, I am more willing to trust them with my resources.

The slippery concept of legitimacy certainly contains elements of belief or faith. A government is legitimate when individuals believe in its "rightness," or in its willingness to do the best thing. There is a potential for tautology here – trusted systems are those that are legitimate, and we know a system is legitimate when it is trusted. Which comes first, the trust or the legitimacy? Likely they are developed hand-in-hand (Levi 1988).

In terms of operationalization, survey measures of vertical trust often derive from questions about how much a respondent trusts a specific state institution, office, organization, or individual. "How much do you trust the president to do the right thing?" for example, or "How much do you believe that the court system has your best interests at heart?" Often a measure of *confidence* in government institutions is substituted for direct questions about trust, likely reflecting the fact that major cross-national surveys such as the World Values Survey have repeatedly asked about confidence as opposed to trust. Confidence is not the same as trust, but it is arguably driven by the same underlying beliefs in efficacy and legitimacy.

2.2.3 Ethnic Trust

Ethnic trust is particularly relevant in Central Asia, especially in Kazakhstan. Kazakhstan is the home to many different ethnic groups. In the field, the term more likely to be used to describe ethnicity is "natsional'nost'," or nationality. It reflects a conception of identity heavily influenced and constructed by Imperial, Soviet, and post-Soviet policies (Hirsch 2014; Rees and Webb Williams 2017). In this dissertation, I use the terms nationality and ethnicity interchangeably. Nationality is codified on passports, and state-sanctioned holidays often include concerts with participants in "national" costumes. Official organizations such as the Assembly of People are intended to promote inter-ethnic harmony while also clarifying the boundaries of identity and national practices (e.g. explaining which foods are Belarussian national dishes, promoting the Tatar language, etc.). The existence of an organization like the Assembly of People speaks to both the multi-ethnic make-up of Kazakhstani society and the state's interest in controlling ideas of identity and interactions between different ethnic groups (for more on the complexities of ethno- and civic-nationalities in Kazakhstan, see Rees and Webb Williams (2017)).

Variation is ethnic trust is along intra-ethnic and inter-ethnic axes. Intra-ethnic trust is the faith that an individuals has in individuals, organizations, and institutions that are dominated by their own national identity grouping. Inter-ethnic is the trust that an individual has in individuals, organizations, and institutions that are associated primarily with an ethnic group to which they do not belong. This between-group trust is similar to the concept of bridging social capital (Putnam 2000). Horizontal trust may vary on an ethnic dimension, meaning there could be differing levels of horizontal trust when looking between or within given ethnic groups living side-by-side and experiencing similar levels of power. Vertical trust can also vary on an ethnic dimension. Individuals may be more trusting of the state, for example, if it is made up of co-ethnics.

2.2.4 Aggregating and Interacting Types of Trust

Community trust is an aggregation of individual trust. This is not to say that there are not network effects or that individuals drawn randomly from a community meet strict independence assumptions. But it is to say that if we want to know how much trust there is in a town, oblast, or country, we can ask individuals about their rates of trust and aggregate or average their responses to build a larger picture of community trust.

I join others in arguing that the described varieties of social trust are complements, not substitutes (Bahry et al. 2005). Thus, a community might have high vertical trust as well as high horizontal trust between and within ethnic groups. Or it might have low vertical trust combined with high trust within a given ethnic group but low trust between ethnic groups.

2.3 Colonialism and Varieties of Trust

What are the origins of different levels of community trust on the three dimensions of interest? One theme in the literature is the lingering impacts of historical political institutions, events, and practices (Putnam 1993). Colonialism, as an incredibly socially disruptive set of events, political institutions, and practices, surely qualifies as a potential historical factor in determining trust. The idea that colonial rule has hugely disruptive implications for social and political life is not new, of course. Nor is it new to think about how different types of colonial rule (e.g. direct versus indirect rule) may have different effects on the ruled. For example, Hechter (2013) describes how "alien rule" can become trusted and perceived as legitimate (or not), depending on the fairness and effectiveness of that goverment (see in particular pages 14-15 for a discussion of the link between trust and legitimacy).

However, there is still more work to be done to evaluate the long-term impacts of the varieties of colonial rule on varieties of social trust. In an important paper addressing this gap, Nunn and Wantchekon argue that colonial practices (slavery in their case) can have long term impacts on social trust (Nunn and Wantchekon 2011). For these authors, social trust contains both horizontal and vertical elements, though the distinction is not fully drawn out

in the work. Borrowing from cultural anthropology, they argue that colonial disruption of social patterns can last for generations. Other scholars have come to similar conclusions about the long-term impacts of colonial policy on various political and economic outcomes of interest (Acemoglu, Johnson, and Robinson 2001; Engerman et al. 2002; Nunn and Puga 2012; Lee and Schultz 2012; Lowes et al. 2015; Hariri 2012).

Theories like those put forth by Nunn and Wantchekon complicate our existing understanding of social trust by addressing the effects of colonial institutions. The theory of ethnic cooperation set out by Fearon and Laitin (1996), for example, relies on local institutions (both formal and informal) capable of diffusing small scale infractions to explain peaceful relationships between ethnic groups. In the case of Kazakhstan, however, formal colonial institutions themselves created tensions between groups. As I describe in more detail in the next chapter, with reference to historical accounts, initial inter-ethnic relations between Kazakhs and Russian settlers in Almaty and Jambyl oblasts proceeded fairly peacefully.[5] According to historians and observers at the time, the spark for inter-ethnic violence in Semirechiye (now Almaty oblast) in 1916 was top-down changes to land policy (Sokol 1954). To put the theoretical question into the terms of Fearon and Laitin, then: could colonial policy be the original source of an unhappy, spiral equilibrium of distrust between groups? Some prominent scholars answer this with a resounding affirmative. Mamdani (2002), for example, points to colonial policies as the source of ethnic tension that led to the Rwandan genocide.[6] Inter-ethnic relations in Kazakhstan have been mainly peaceful throughout the Soviet and post-Soviet periods, but the 1986 protests in Almaty over the appointment of a non-Kazakh as First Secretary of the Communist Party point to a mistrust of an ethnic out-group even after years of "Soviet man" messaging.[7]

---

[5]Not all areas in Kazakhstan have the same history of colonization. See for example Malikov's accounts of borderlands interactions, including the Kenesary Rebellion, in northern Kazakhstan (Malikov 2005; Malikov 2011).

[6]See also Lange (2017, pp. 114-121), though I disagree with Lange's characterization on Russian/Soviet colonialism outside of Russia proper (e.g. in Central Asia) as "internal colonialism."

[7]To be fair, the degree to which the protests were motivated by anti-Russian animus are unclear. If the Soviet press noted that there were "nationalistic" elements to the protest, this may only be indicative of

From the perspective of social contact theories, a finding that increased interaction between groups in the presence of loss or expropriation decreases trust would not be surprising. After all, this literature suggests that when groups have increased contact with one another, tensions decrease (see for example Kasara 2013; Scacco and Warren 2018), but only if distribution of resources are perceived to be equal.[8] As many authors from this school of thought would readily agree, the relationship between contact and trust is not always linear and it can be mitigated by other factors, including the social-economic hierarchies and the type of interaction. Varshney, for example, notes that contact through civil society groups is a better predictor of peace than simple every-day contact in a marketplace (A. Varshney 2001).

Allport (1954) notes that deprivation and loss can complicate the positive effects of social contact. With very low levels of interaction, individuals from two groups have very little reason to trust one another. As repeated interactions in different settings occur, however, the individuals have an chance to know one another better, to possibly offer reciprocity for past good behavior, and to put in place mechanisms that punish untrustworthy behavior. But if the interaction tips over into an overwhelming presence of the other, or if that influx comes with a tangible loss, there may come an inflection point after which more interaction leads to less trust.

In the Kazakhstan case, interactions between ethnic groups and with the state are filtered through a lens of displacement that was initially set by colonial land and settlement policies. From the perspective of Kazakhs living in the region during colonial expansion, a few Russians may have been interesting, if they saw that the settlers were good neighbors who showed willingness to rent land and perhaps hire laborers (Pahlen 1964, p. 178). A wave of Russians taking all the land was a less appealing prospect, and if there was a governing system that seemed to favor that group, the local population would likely not be disposed to trust any of the lot (colonial government or colonial settlers). The next section expands this argument with reference to the historical record of colonialism in Kazakhstan and describes

propaganda attempting to discredit the events.

[8]For the canonical explanation of this thesis, see Allport (1954).

the expected present-day implications of the theory for social trust.

Before theorizing about the long term effects of Russian colonialism in Central Asia, however, it is worth noting how the Russian example may differ from other examples of colonialism. Any attempt to link Russian Imperial policies to more recent outcomes must also reckon with the extreme societal interventions of the Soviet Union. Of course, former Russian colonies are not the only colonial states to have experienced upheaval significant upheavals during and after colonial rule. Even so, Russian colonies do not have the same degree of formal institutional continuity as other setter colonial state, such as the United States of America or Australia. However, one can still find examples in the prior literature of institutional continuity from colonial times in the Central Asian region. For example, a conception of variation between Kazakh zhuzes and an idea of a Kazakh Muslim identity survived the totalitarian instincts of the USSR (see Schatz 2004). One can also find examples of social patterns surviving the institutional upheaval of the Soviet collapse (see for example Jones Luong 2002; Fierman 1991; Zhukov and Talibova 2018).

In many respects the Russian colonial processes and logics were quite similar to those imposed by other European colonial powers (Khodarkovsky 2002).[9] It seems fair to wonder how Russian colonialism might appear through the eyes of numerous other scholars who have analyzed how colonial institutions interacted with preexisting human structures and geographies, and therefore impacted the long-term development of societies (see for example Engerman et al. 2002; Nunn and Puga 2012; Lee and Schultz 2012; Lowes et al. 2015; Hariri 2012, and going ever farther back see Gaikwad n.d.). For example, Nunn and Puga use variation in geography and the slave trade to tease out how colonial institutions of slavery continue to impact the economic development of African communities even after the upheaval of independence (Nunn and Puga 2012). Hariri argues that variation in initial, pre-colonial institutional strength and colonial reactions to that variation has had long term impacts on the level of democracy in modern states (Hariri 2012). Boone similarly describes the

[9]Russian colonies may have been less genocidal, on the whole.

"topographies" of African states as being influenced by colonial responses to initial conditions (Boone 2003). These results from African and Asian colonial legacies have strong parallels in Central Asia.

2.4 Trust and Economic Outcomes

The study of the link between historical events, social trust, and economic outcomes stands on impressive intellectual shoulders (La Porta et al. 1997; Knack and Keefer 1997; Levi 1988; Glaeser 2001; Putnam 1993; Tabellini 2010; Bowles and Gintis 2004). I build on this prior work, with a focus on the effects of horizontal, vertical, and ethnic trust. Considering variation in social trust along these lines allows for more detailed and precise predictions about economic outcomes such as economic development or economic resilience.

For an antecedent of this line of thought of how varieties of social trust differentially affect economic development, one might turn to the work of Avner Grief and coauthors (Greif and Tabellini 2010; Greif, Milgrom, and Weingast 1994). Grief argues that trading groups with a high degree of horizontal social trust will eventually be surpassed (in terms of economic development) by trading groups with a high degree of vertical social trust.[10] The ability to trust that a higher institutional power is supporting contracts with unknown others greatly facilitates exchange and development. In a fascinating new finding, Charnysh (2019) demonstrates that diversity and mistrust between groups can lead to higher reliance on political institutions and, ultimately, to higher rates of economic development.

While others have considered the effect of social trust as a mechanism for economic development throughout the upheavals of pre-Soviet, Soviet, and post-Soviet transitions in Russia (O'Brien, Patsiorkovski, and Dershem 2000; Twigg and Schecter 2003; Moran 2001; Dennison and Ogilvie 2007; Golovina et al. 2014), I have yet to see analyses along these lines applied to Central Asia.[11]

---

[10]Though Grief and co-authors use different terminology, their concepts match my definitions of vertical and horizontal trust.

[11]Though there have certainly been studies of social trust in Central Asia, see for example Radnitz,

2.5 The Impacts of Russian Colonialism on Trust and Resilience

Informed by the prior work described above, I theorize that differences in the interactions in Southern Kazakhstan between settlers and local populations, which varied as a function of Imperial Russian policies, translate into different levels and types of social trust that linger long beyond the initial period of colonization. This variation in social trust, in turn, explains the resilience of rural communities after the collapse of the Soviet Union.

How did different colonial experiences shape different constellations of social trust, from faith in neighbors to faith in state organs? I argue that regions that experienced high rates of Russian colonial settlement coupled with high rates of Kazakh land displacement will have lower rates of vertical trust, lower rates of inter-ethnic horizontal trust, and higher rates of horizontal intra-ethnic trust in the post-Soviet era.

In short, historical events and policies are hypothesized to have a long-term impact on social trust and civic activism. Russian colonial policies brought about a series of major societal upheavals in Central Asia. The administrative policies selected regarding Russian settlements and Kazakh land displacement triggered resentments and conflict. Populations that have been displaced from their land by the state have gained a valuable piece of information – the state cannot be trusted to have their best interest at heart. Policies that took land from Kazakhs and gave it to Russians[12] indicate that, if you are Kazakh, the government does not have your best interests at heart.

Displacement and inequality can also mitigate the generally positive effects of social contact between groups, shaping ethnic trust on a horizontal dimension (K. R. Varshney et al. 2015; Allport 1954). If the contact between two groups is accompanied by the raising of one group above another, resentments and negative stereotypes can easily arise, with long term negative effects on trust of the outgroup. In case of Central Asia, places with higher

---

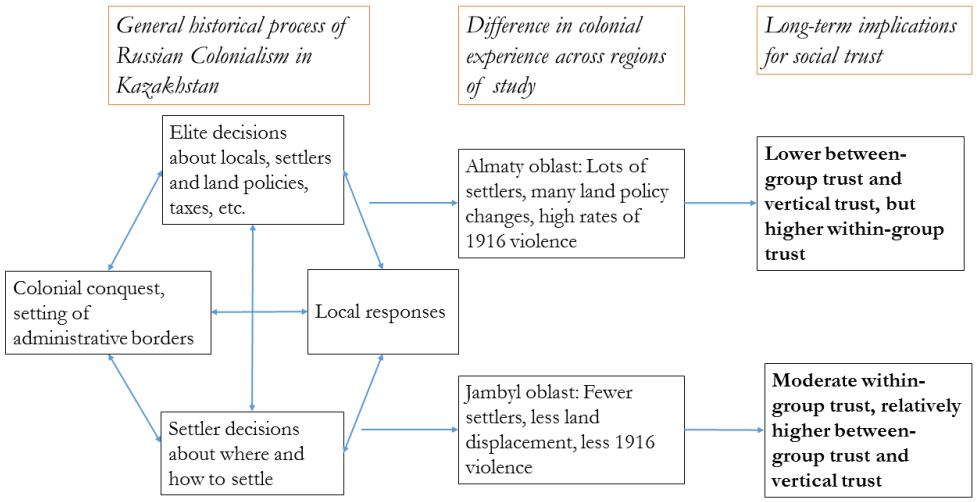
Wheatley, and Zürcher 2009

[12]And then, in the early Soviet period, took land from Russians for Kazakhs, and then went through another reversal to ultimately end nomadism though sedentarization and force collectivization on all populations

rates of Russian settlement and policies that privileged colonists displayed strong evidence of a breakdown in inter-ethnic horizontal trust during violent conflicts, particularly the 1916 uprisings and reprisals. The violence then became a touchstone for ethnic distrust into the future (for a comparable process of violence affecting trust in the long run, see Charnysh 2015). The compound treatment of colonial policy, settlement, displacement, and violence puts communities on a negative spiral of mistrust and prejudice (Allport 1954; Fearon and Laitin 1996).

Figure 2.1 summarizes the theory and implications with reference to historical processes of Russian settler colonialism in Kazakhstan, differences between the two oblasts of interest, and potential long-term effects on social trust.

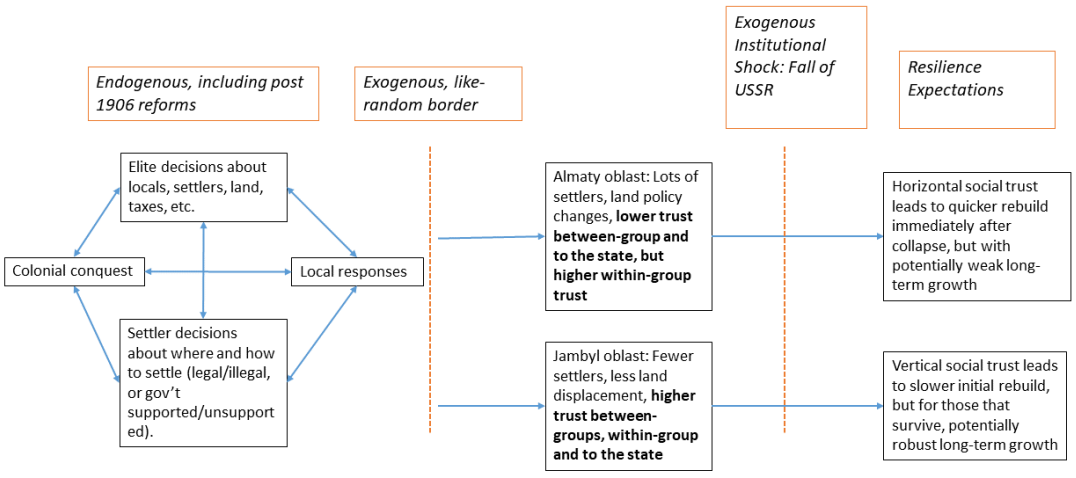
Figure 2.1: Diagram of the Proposed Theory and Oblast-level Implications



In considering the effects of social trust on economic resilience, there are many intriguing expectations and possible mechanism pathways. Communities with strong horizontal trust between neighbors and friends may be more likely to support informal lending groups that allocate capital. Going to your neighbor to borrow animal feed could help you keep your farm afloat during a difficult winter; high social trust and norms of reciprocity suggest

that your neighbor will expect assistance in return building a new barn come summer. Communities with strong horizontal trust might be more able to provide public goods for themselves (see also Ostrom 2000; Tsai 2007), fixing market failures and increasing economic potential. Solving the collective action problem to provide and protect public and common pool resources may be one benefit of communities with strong horizontal trust. However, the collective action strength in this arena may be a weakness in others, depending on formal state power. Consider communities that solve the collective action dilemma and manage to protest against perceived injustices. While admirable, when these protests are against a much stronger formal state (e.g. the near totalitarian USSR), they may translate to depressed economic development as the state takes retaliatory measures (e.g. withdrawal of state investment, depletion of labor and human capital through arrests and executions). Social trust could therefore play a very inconsistent role in economic resilience. The effect of social trust and the mechanisms through which it affects resilience are highly dependent on social and political contexts and the nature of the shock.

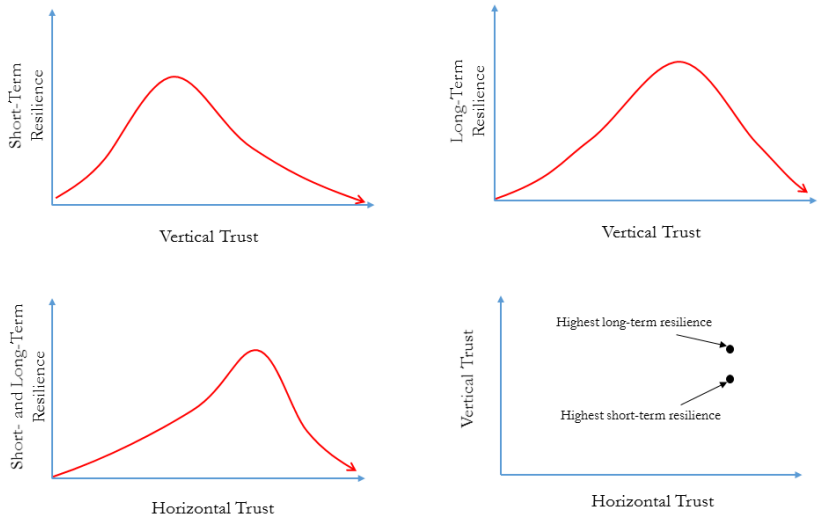
Figure 2.2: Full Proposed Process Revisited



Where would we expect the higher rates of resilience, given the prior and proposed theories of social trust? Figure 2.2, repeated from the introduction, serves as a reminder of the full theoretical story of the project. Given that the shock in this case is the collapse of the formal state (the USSR), one might naturally first think of the potential impact of vertical trust variation on resilience. If an individual or community has placed a high degree of trust in the state, demonstrated, for example, by working only the collective farm without also planting a personal garden, they would be hard pressed to survive (much less thrive) when the system supporting the collective farm collapses. Thus a community that did not fully trust the state to provide and always act in their best interests might be better positioned to survive the collapse.

A community with no vertical trust at all, however, might survive the initial collapse in the short term but be unable to enact a long-term recovery. Again this may be specific to the type of shock at hand. In the global environment of the late 20th and early 21st centuries, states are still the most powerful source of transaction-cost lowering economic innovations, such as providing currency and a legal structure for contract enforcement. If an individual or community removes themselves entirely from those structures, they may find it difficult to efficiently accumulate capital, acquire credit, or invest in intensive projects to improve production. Thus, resilience in the long term might require a higher level of vertical trust than one would initially assume. These expectations of the relationship between vertical trust and resilience are presented graphically in the figures on the top row of Figure 2.3.

Figure 2.3: Expected Variation in Trust and Resilience



As Figure 2.3 shows, in either the long- or short-term, a moderate level of vertical trust is proposed as the ideal for resilience (particularly after a shock to state capacity). However, the exact ideal point of vertical trust may be contingent on the time-frame of resilience. It is likely also contingent on the interplay with horizontal trust. A high degree of horizontal trust could compensate for a community mistakenly placing too much vertical trust in state structures on the verge of collapse or withdrawal. To continue the state farm versus personal garden example, a community with "too much" vertical trust might be expected to suffer if there is no longer a state to uphold the workings of the farm. However, if there are strong neighborly or familial connections, the community might be able to better pool what personal farming resources do exist. In an example that was mentioned by village respondents during interviews in the fall of 2017 (see Chapter 6), some communities had enough horizontal trust that they in fact continued to come together and work on the state farm after the Soviet collapse. These respondents indicated that their work on the collective farm (voluntarily underpinned by horizontal trust) allowed them to do fairly well in the early 1990s. At least

one respondent contended that their survival was more threatened later in the 1990s, when the state insisted that the collective farms be completely privatized.

If the goal is resilience, could there ever be such a thing as too much horizontal trust? The bottom left quadrant of Figure 2.3 suggests that this might be the case. At the extremes, one could imagine a situation where a too-selfish individual trusts so much in their neighbors that they do not do any work themselves. Or, on the other side of the equation, a too-selfless individual who trusts that if they give away everything they earn, the community will come through for them.[13] As with vertical trust, there is a risk in having too much. What if one's beliefs in another person's good will are unfounded? Should one always keep something in reserve from both the state and the neighbors to respond to possible decline in the world around you?[14] The experiences of communities and individuals in Kazakhstan suggest that the answer to these questions is yes.

The lower right panel on Figure 2.3 simplifies the expected relationship between horizontal trust, vertical trust, and resilience over the short- or long- term. On either time-frame, higher horizontal trust leads to better resilience (except on the extremes). For short-term resilience, slightly lower vertical trust is optimal, while higher vertical trust may give the advantage over the long-run, if the community can survive the initial short-run period.

On the dimension of ethnic trust variation (or what might be generalized to be called group trust variation) and resilience, again the story is likely that more is better, regardless of whether that comes from high within- or between-group trust, with the same warning caveat about the potential danger to of resilience at extremely high levels. Figure 2.4 proposes expectations for rates of horizontal inter- and intra-group group trust and resilience.

---

[13]A related issue is what is sometimes referred to as the "toi" economy. A "toi" is a term used across multiple Turkic languages for a big party, usually a wedding. Cultural expectations that everyone will chip in to help pay for a relative's wedding can lead to a decrease in savings. Throwing a big party with trust that everyone will contribute because you contributed to their events in the past leads to potential harm when your neighbors suddenly have nothing left to spare. For more on the "toi" economy, see Rubinov (2014).

[14]Reflecting Hirschman's point that a slack economy is better able to respond to declines in quality (Hirschman 1972).

Assuming that there is diversity (on ethnic or other group dimension) in the community, high rates of both inter- and intra-group trust position that community well to be resilient. Intuitively, those groups that can pool resources from larger groups, or draw on a greater diversity of resources, may be more likely to solve the challenge of an economic and political shock. If a community is closed to cross-group interaction, that diminishes the potential resource base to draw upon. Communities high on only the intra- or inter-group dimension, while low on the other, are second-best positioned. And communities that are low on both intra- and inter-group trust are worst positioned for resilience after shocks like the Soviet collapse.

Figure 2.4: Varieties of Group Trust and Resilience

		Inter-group (between)	
		High	Low
Intra-group (within)	High	(1) Best for resilience	(2) Second best for resilience
	Low	(3) Third best for resilience	(4) Worst for resilience

2.6 Conclusion

The work of prior scholars and the theorizing I engage with in this chapter and in Chapter 1 suggest that Russian colonial policy choices regarding settlement and land displacement will have long-term impacts on social trust along multiple dimensions. That variation in trust, in turn, will impact rural community resilience after the shock of the Soviet collapse.

In the next chapter, I lay out the history of Russian colonial policy in Kazakhstan, focusing on two oblasts in southern Kazakhstan. Within the broad theoretical framework of the dissertation, the different colonial policy choices in the two oblasts shape my expectations for variation in social trust, and therefore in resilience, in the long-run.

Chapter 3

COLONIAL SETTLERS AND INDIGENOUS RESPONSES: HISTORY AND IMPLICATIONS OF RUSSIAN COLONIALISM IN KAZAKHSTAN

3.1 Introduction

What policies did Russian colonial authorities put into place regarding settlement in their southern Kazakhstan territories? Did those policies differ between regions? And, if so, how might that variation in policy have affected social trust and economic resilience in the long-term? In this dissertation, I focus on the colonial experiences of two regions in Southern Kazakhstan, now referred to as Almaty and Jambyl oblasts. These two oblasts share a border that winds its way from the tip of Lake Balkash south to the border with Kyrgyzstan.

This chapter first places the specific colonial histories of Almaty and Jamybl oblasts into the larger history of Russian colonial rule in Central Asia. I then trace the different policy choices in the two oblasts regarding settlement, the corresponding variation in number of settlers from elsewhere in the Empire, and differences in settler-indigenous interactions.

The theoretical story of the dissertation asserts that patterns of trust are sticky, and that those initial settler-indigenous interactions (conditioned by policy choices) set long-term patterns of trust in the state, in neighbors, and in members of an ethnic in-group or out-group. An obvious concern, given the case under study, is that the extreme policy upheaval of the Soviet period would have changed trust again, in such a way as to wipe out the proposed colonial period impacts on trust. Section 3.4 addresses these concerns.

3.1.1 A Note on Sources

The history of the Kazakh steppe and sedentary Central Asia during the Russian conquest and colonial rule contains war, diplomacy, slavery, failed expeditions, dramatic turns of events, boring personality clashes, and many long years of difficult existence for local populations, settlers, and colonial policymakers. In relating this history and the implications for trust and resilience in Kazakhstan, I rely mainly on secondary sources, particularly on the work of historians and other social scientists who have done extensive archival research.[1] As many of these historians rightly note, their primary sources are tilted towards the Russian perspective. The authors also carry their own biases, acknowledged or not.[2] There are written accounts available of life in Kazakhstan prior to Russian colonization, but they are few and are often held in hard-to-reach archives. There are also few written accounts from the Kazakh perspective on Imperial colonization.

Where possible I have referenced primary sources, particularly memoirs and travel accounts from the late Imperial and early Soviet period.[3] The memoirs of Shayakhmetov (2006) describe the early Soviet period, including the 1930s famine in Kazakhstan. Haxthausen (1856) and Pahlen (1964) were Imperial observers who published accounts of travel in the region, with commentary on administrative organization and effectiveness that are colored by their own policy preferences. Nazaroff (1932) describes the region through the lens of his escape from Turkestan after the October revolution (with many of asides about his preferred hunting locations along the way). Accounts from Imperial sources carry a bias towards the Imperial policy makers of their own stripe, naturally. One can detect not-so-subtle digs at bureaucrats from other wings of the colonial administration (often directed, in these sources, towards the Resettlement Administration which was tasked with facilitating

[1] For example Sokol 1954; Pierce 1960; Bacon 1966; Demko 1969; Williams 1971; L. R. Fisher 1989; Brower 1996; Wendelken 2000; T. Martin 2001; Khodarkovsky 2002; Sahadeo 2007; Campbell 2011; Morrison 2015; Kindler 2018

[2] Williams (1971), for example, comes out strongly in favor of the benefits of the Imperial colonial experience, while criticizing the Soviet policies.

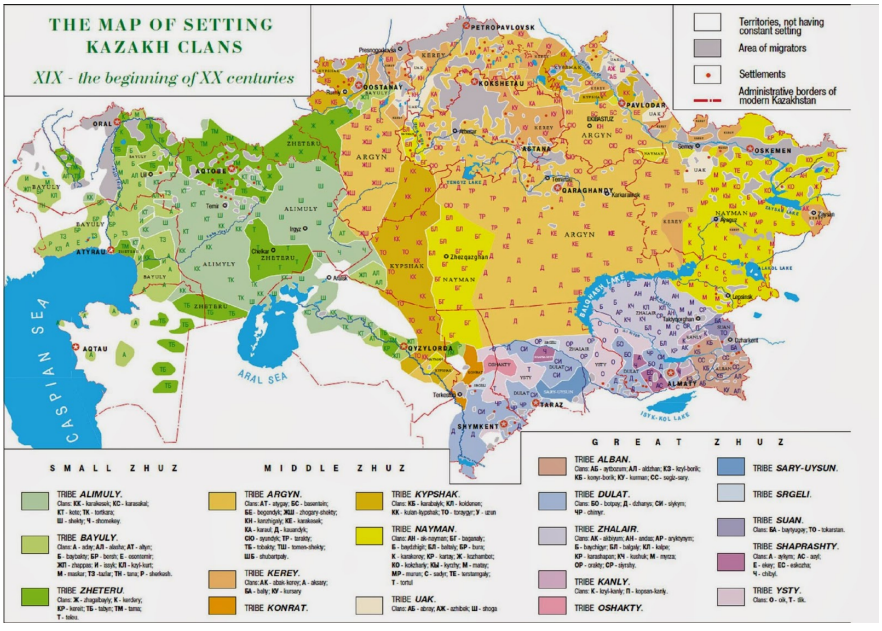
[3] c.f. Haxthausen 1856; Pahlen 1964; Nazaroff 1932; Shayakhmetov 2006

settler migration to the region).

3.2 Colonial Expansion into the Steppes

Prior to Russian conquest, most of modern-day Kazakhstan was inhabited by semi-nomadic groups, with a handful of settled cities in the southern regions. The three main socio-political groups of Kazakhs are known as the large, middle, and small zhuzes (see Figure 3.1 for a map of the zhuzes' approximate territories at the beginning of the 20th century), and are made up of smaller (and formerly fluid, now quite fixed) subgroups, each referred to as a ru. These groups engaged in trading and raiding with settled-agricultural groups around the edges of their lands (e.g. the group currently referred to as Uzbeks). They also engaged in diplomacy with their neighbors, including China, Khiva, Bukhara, Kokand, and Russia (Noda 2016). Kazakh leaders (khans and sultans) claimed authority based on lineage ties to Chingis Khan, or based on the strength of their ties to Islam (Schatz 2004).

Figure 3.1: Kazakh Zhuzes at the Beginning of the 20th Century

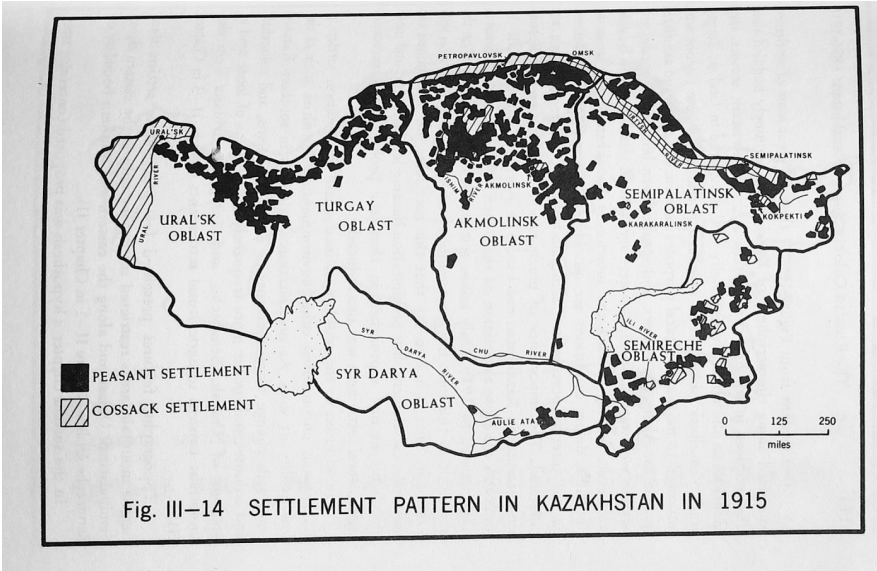


Source: Cited in Schatz 2004.

The majority of the territory of present day Kazakhstan was relatively peacefully incorporated into the Russian Empire during the 18th and 19th centuries. Military forts went up along rivers and post roads, followed eventually by administrative control (V. Martin 2001; Khodarkovsky 2002). A brief historical sketch may be beneficial here for readers who are less familiar with Russian colonialism (see also a list of notable dates in Table 3.1). The Russian empire began expanding from Moscow as early as the 16th century, gaining territory mainly to the south of Moscow. The empire then crept primarily east, across the steppes and Siberian forests. The Russian military built a string of forts along major rivers and began skirmishing with local populations. A major year to mark in Central Asian-Russian history is 1731, when the small (kishi) zhuz appealed to Russia for protection from the aggression of another large nomadic group. Russian control over all of the Kazakh subgroups (or hordes) was formalized by around 1830; by 1865 the empire was aggressively expanding into "Turkestan" – present day Uzbekistan, Tajikistan, Turkmenistan, and parts of Kazakhstan and Kyrgyzstan not already captured. The Russians took Tashkent with military force and made protectorate arrangements with the khanates of Khiva and Bukhara; the Gok Tepe (with various spellings) victory over the Turkmens in 1881 is often noted as the end of the Russian conquest of Central Asia (though many rebellions and uprisings followed). By the late 1800s and early 1900s, railways connected much of the territory to Russia.

Even before railway connectivity, many ethnic Russians, Cossacks, and other migrant populations began settling in the forests, steppes, and river basins of Central Asia, especially after the abolishment of serfdom in 1861 and the Stolypin land reforms beginning in 1906. Figure 3.2, from Demko (1969), maps the location of Imperial settlements as of 1915. Settlements track where there is arable land, with the most dense regions of settlement in the northern oblasts. In many cases, peasant communities in Russia would send scouts ahead to evaluate the land (Demko 1969 88). Some of these settlements were established illegally and later petitioned for official recognition, while others were planned and administered by the Imperial authorities (Pierce 1960 118-119, Demko 1969). Illegal immigration often went unpunished (Wendelken 2000 78, citing Williams 1966).

Figure 3.2: Map of Imperial Settlements in 1915



Source: Demko 1969.

By one estimate, between 1894 and 1903, 66 percent of migrants to the northern oblasts of Akmolinsk, Turgay and Semipalatinsk were squatters without official permission to be on the land (Demko 1969, 59). By 1906, however, policies towards settlement were more lenient, possibly in response to the waves of settlers entering the region (for more on the impact of the Stolypin reforms on migration, both legal and illegal, see Chernina, Castañeda Dower, and Markevich (2014)). According to the Imperial Census in 1897, 12 percent of the population in the Kazakh oblasts were Russian by the end of the 19th century (Demko 1969, 75); by 1916 that percentage had grown to 28.5 (Demko 1969, 79). In the steppe regions (in what is now northern Kazakhstan), the Russian population was even higher: roughly 40% of the population was Russian by 1911 (Pierce 1960, 137). Settlement was less rapid in areas farther south (in what is now mainly Uzbekistan), where much of the arable and/or irrigated land was already occupied by settled populations. In settled Turkestan, state-sponsored irrigation expansion projects and Russian settlements were begun relatively late in the colonial process (Pierce 1960,135-136).

Table 3.1: Key Events in Russian Expansion

Year	**Event**
1720	By this year, forts are established in in Omsk, Zhelezinka, Semi, and Ust-Kamen
1731	Abul Khayr Khan accepts Russian protection for the kishi zhuz
1773–1774	Pugachev Rebellion
1789	Middle Horde conquered (some sources say much earlier)
1837-1847	Kenesary Rebellions against Russian authority
1853	General Perovskii takes Ak-Mechet (now Kyzylorda)
1854	Creation of Siberian Kirgiz oblast, Omsk as administrative center
1854	Creation of Semipalatinsk obalst, Semipalatinsk as administrative center
1854	Verny (now Almaty) founded; founding of Semirechiye oblast
1859	Creation of Orenburg Kirgiz oblast, Orenburg as administrative center
1860	Semipalatinsk oblast gets addition of trans-Naryn region from China, around Lake Issyk-Kul
1861	Alexander II abolishes serfdom
1864	Col. Cherniaev takes Aulie-Ata (now Taraz)
1864	Col. Verevkin takes Azret (now Turkestan)
1865	Creation of Turkestan oblast, with military governor under governor-general of Orenburg
1866	General Romanovskii replaces Chernaev as leader in Turkestan
1866	Khudoiar Khan (leader of Kokand) becomes vassal of tsar
1867-68	Gen. Von Kaufman appointed to the newly formed governor-generalship of Turkestan, formed in July, he arrives November. Formal division of steppes, with Semirechiye and Syr Darya in Turkestan. (Wendelken 2000, 76)
1897	Russian Imperial census
1891	Steppe Statute sets levels of "surplus" Kazakh land
1906	Beginning of Stolypin agricultural reforms
1916	Semirechiye revolts

It is difficult to overstate the effect of Russian colonial rule on Kazakh social, economic, and political systems. The rise of farming settlements in the steppe areas of what is now Kazakhstan significantly disrupted the semi-nomadic patterns of Kazakhs in the region (Guirkinger and G. Aldashev 2016). There were tensions over laws and customs, as well as over land and authority (V. Martin 2001). Wendelken writes that Russian migration changed the structure of Kazakh authority: "Russian reforms did undercut the prestige of the Kazak aristocracy as the khans became more closely identified with Russia. Power shifted

away from them and toward the traditional local leadership of the *bais* and *aksakals* (village elders)" (Wendelken 2000, 76, emphasis in original and "Kazak" spelling sic). Others have described how the colonialism of the Imperial era shaped conceptions of Kazakh nationalism (L. R. Fisher 1989).

The more famous Imperial-era revolts on the steppe, the Kenesary Revolts, occurred from roughly 1837-1847 and have been the subject of many academic studies (e.g. in English: Sabol 2003; Malikov 2005). To average Kazakhs, the migration of settlers was likely more noticeable than military conquest. Settlements broke up herding routes, and agriculture took up land that used to be used for grazing (Guirkinger and G. Aldashev 2016). There are stories (perhaps apocryphal) of Kazakhs returning to winter homes from high summer mountain pastures to find their lands occupied.

3.3 Colonists in Almaty and Jambyl oblasts

While there was Russian colonial disruption in the previous economic and social patterns throughout the territory of today's Kazakhstan (and all of Central Asia), the level and type of disruption varied based on the administrative unit. Pierce writes that the period of Russian expansion, "gave ample scope for the Russian system of colonial rule to be applied and to display its characteristics. Central Asia thereby provided a laboratory...in which Imperial Russia could use the experience gained in Siberia and the other borderlands in the course of several centuries" (Pierce 1960, 5). This section describes some of the key administrative differences regarding settlement in the two main oblasts of interest. Those differences in policy translated into differential rates of settlement, differential rates of Kazakh land displacement, and differential rates of conflict, particularly in 1916. Between 1896 and 1916, the number of migrants to the Semirechiye had reached a total of 78,301, while only 22,415 had arrived in Syr Darya (Demko 1969, 99). Sokol reports a higher total number of Russian colonists in Syr Darya, noting 45,000 settlers in a total of 108 villages in 1914 (Sokol 1954, 33). This figure is still dwarfed by the numbers reported in Demko (1969). Williams states that during period of the Pahlen investigation in Turkestan (1908-1909) there were a total

of 107,000 Russian settlers in Semirechiye, while by 1911 there were 202,290 spread among all four of the remaining Turkestan oblasts (including Syr Darya) (Williams 1971, 177). The map presented in Figure 3.2 shows the difference in the number of settlements between the two oblasts, with Imperial settlements almost up to the border on the Almaty side and none on the immediate Jambyl side. Why was there a divergence in rates of settlement? What role did land displacement play in both drawing differential rates of settlers and triggering conflict? In other words, how did these policy decisions shape interactions between settlers, Kazakhs, and colonial authorities?

Both Syr Darya and Semirechiye were administered though a chain of governor-generalships. Syr Darya had a more consistent, and more strict, policy toward migration into the region. With more settled cities to manage, authorities were fearful of over-antagonizing local populations. They may also have discouraged Russian settlements to minimize their own work. Contemporary observer Pahlen notes, "I have heard minor officials talk with rage of the settlers and have known them do everything in their power to oust them from their districts, for a single Russian village was a source of more trouble than a few hundred native settlements" (Pahlen 1964, 183).

Semirechiye, in contrast, was more varied, with policies towards settlement alternating between encouraging and discouraging. In the later Imperial years, settlement was heavily supported by some wings of the bureaucracy in Smirechiye, in particular the Resettlement Administration (Colonization Department), while other wings were more skeptical (Pahlen 1964, 183-193). Initially, some Imperial observers noted good working relationships between the first waves of settlers and Kazakhs (or Kyrgyz), including renting land from locals and the hiring of laborers between groups (Morrison 2015). Writes Pahlen: "Some of them [settlers] had made contact with the Kirigiz, who pretended to ownership of the vast stretches of country over which they grazed their herds and were taken seriously. Deals were struck and land rented for next to nothing" (Pahlen 1964, 178).

Over time, new statistical formulas were used in Semirechiye to reduce the amount of landed allotted to the Kazakh portion of the population for grazing (Campbell 2011; Mor-

rison 2015). The Shcherbin expedition, from 1896-1902, is a well-researched example of how colonial authorities used supposed scientific principles to discover "surplus land" that Kazakhs nomads could cede to Russian settlers (Sokol 1954, 36; Campbell 2011).

Scholars and contemporary observers point to tensions arising from these land policy choices as a major factor leading to the 1916 revolts in the area (Sokol 1954; Pahlen 1964 192-193). Nazaroff observed, "The cause of the dissatisfaction of the Kirghiz with the Russian authorities was the unfair way in which their land was taken from them and given to Russian settlers; there were also various irregularities in the requisitions by the local authorities during the war, such as seizing of their cattle, horses, tents, and so on, on the grounds of making a sacrifice in the national crisis" (Nazaroff 1932, 150). According to historians, the violence of 1916 was much greater in Semirechie than Syr Darya (Brower 1996; Sokol 1954).

Where there were higher rates of settlers, as in Semirechiye, there were higher rates of land displacement and greater conflict. I expect that this also led to lower rates of trust between groups, higher rates of trust within groups, and lower trust towards the government. Where there were lower rates of settlers, as in Syr Darya, there were lower rates of land displacement and less conflict. I expect that, compared to Semirechiye, this therefore led to higher rates of trust between groups, similar rates of trust within groups, and higher trust towards the government.

3.4 Revolution, War, Famine: Continuity and Change in the Soviet Period

As Russia transitioned through revolution and war into the Soviet Union, so too did Central Asia. Eventually, new administrative units (Soviet Socialist Republics, autonomous regions) appeared on the map with new policies towards social and economic activities. Many administrative borders also changed, including the former border between Semirechiye and Syr Darya, but the division between the two oblasts eventually reappeared, becoming the current oblast border between Almaty and Jambyl.

The history of the Soviet period in Kazakhstan is fascinating in its own right. In the hands of various historians, it illuminates a variety of concepts from nationalism in socialist

contexts (T. Martin 2001) to how totalitarian institutions can consolidate during periods of (potentially manufactured) crisis (Kindler 2018. It also greatly complicates any causal story I might propose that links Russian colonial rule to post-Soviet outcomes.

There are two ways to consider the potentially confounding impact of the Soviet period on social trust. First, it is possible that the Soviet period was so totalitarian and centralized that it was applied evenly throughout all of Kazakhstan. Therefore any effect it might have on trust in the oblasts, particularly for this study in Almaty and Jambyl, would wash out, as I am comparing the difference in rates of trust and resilience between the two.

However, the assumption of evenly applied Soviet rule throughout Kazakhstan, or even just between Almaty and Jambyl, is difficult to meet however. A second perspective on the Soviet history and how it might challenge the causal framework acknowledges this variation in the application of Soviet policy. As Kindler notes, for example, the early Soviet policies in Semirechiye and Semiplantisk did differ from those put into place in different areas of modern Kazakhstan (Kindler 2018). If this is the case, it could do damage to the research design. Perhaps the administration noted lower trust in Semirechiye and therefore made an effort to enact policies that would mitigate that lack of trust. Note, however, that this would bias against any findings I might see of differences in trust – if this is the case we would expect the Soviet period to have smoothed out any colonial-era impacts of policy on social trust and the Soviets invested in lowering distrust where they saw it.

My reading of the history, however, is that differential Soviet policies, particularly in the early years, did the opposite in terms of trust. That is, the policies in fact exacerbated existing trust differentials between populations. Administrators certainly noted the lack of trust and the continuation of violence between Kazakh and setter populations in Semirechiye. But their policies ultimately increased the distrust, in part because increasing distrust between groups was one way to strengthen the centralized power of the USSR. From this perspective, to put it plainly, the policies of the Soviet Union and their impact on trust are endogenous to the initial colonial experiences of the steppes. Especially in the early years after the revolution, Soviet authorities responded to colonial conditions of trust. Their responses did more

to increase mistrust (on horizontal, vertical and ethnic dimensions) that increase trust.

Kindler makes the point that the new Soviet power perpetuated many of the features of colonial rule – if not in formal law and policy, than in informal networks and attitudes: "Although the Bolsheviks sought to revolutionize existing conditions, they were, of course, themselves products of their origins: they were members of the multiethnic society of the Russian Empire. Within the party of Kazakhstan and elsewhere, honor, patronage, and personal loyalty were paramount. Among the Kazakhs, kinship and genealogy linked individuals, shaped clans, and generated trust. The party and the clans thus shared common principles: They were two separate networks of personal relationships that might intermingle and even absorb one another. The clans used Soviet institutions as they saw fit and sometimes even modified them" (23).

An initial push for 'decolonization' in Kazakhstan, which involved sending some settlers back to Russia and prioritizing land access for Kazakhs, soon reverted to policies that incentivized migration to the steppes (Pianciola 2017; Kindler 2018). Requisitioning for wars and famine in the early 1920s did not help to build bridges of trust between communities. "Native inhabitants and newcomers had to get along under the conditions of the steppe. But they rarely trusted one another" (Kindler 50).

3.5 Conclusion

Settler colonialism is a lens through which we can view the changes that Imperial Russian colonialism wrought in Kazakhstan. Settlement policies represent just one of the many ways that colonialism restructured society. I forefront settler colonial patterns because those patterns appear to be tied to very different settler-indigenous interactions, and therefore to different lingering patterns of social trust.

The regions that are now called Jambyl and Almaty oblasts were administered separately under Imperial rule as Syr Darya and Semirechiye. Figure 3.2 shows how differences in colonial policy translated in to a much higher rates of settlement in Semirechiye. This also appears to have resulted in higher rates of land expropriation and violence in 1916. Chapter

2 suggests that these differences in interaction, conditioned by colonial policies, could have lingering impacts on social trust and, ultimately, on economic resilience. The following chapters set out and test the expected long-term differences in Jambyl and Almaty oblasts based on their histories with Russian settler colonialism.

Chapter 4

DIFFERENCES IN 21ST CENTURY SOCIAL TRUST BETWEEN ALMATY AND JAMBYL OBLASTS

4.1 Introduction

As Chapter 3 makes clear, Almaty and Jambyl oblasts received very different colonial "treatments" in terms of settlement policies. Chapter 2 argued that these differential colonial policies would affect long-term social trust and economic resilience outcomes. This chapter tests whether the compound treatment of the colonial period has a measurable impact on variation in social trust in the twenty-first century. We know that colonial rule can have a host of impacts on colonized areas – social trust is just one area of potential impact (Nunn and Puga 2012). As discussed in Chapter 1, scholars have also theorized that trust could be inherited or transmitted intergenerationally (Spolaore and Wacziarg 2013; Algan and Cahuc 2010). Yet the political science and political economy literature connecting colonial rule to social trust outcomes is relatively new, particularly in settler colonialism settings.

In causal language, what I propose as a colonial "treatment" was a compound treatment, meaning that the policy alone is not what drives social trust variation. Instead, the initial policy choice conditioned rates of settlement, rates of land displacement, and patterns of settler-indigenous interaction (from generally cooperative to ethnic-based violence). In this chapter, I first specify the expectations for social trust between the two oblasts in Kazakhstan, given their differential colonial histories.

I then take a quantitative approach to test whether there are notable differences in trust between the two oblasts. The statistical tests include bivariate t-tests comparing means and proportions between the two oblasts, and robustness checks with OLS regressions that allow for controls of potential demographic confounders. Regressions with an interaction term for

oblast and Kazakh ethnicity allay concerns that demographic variation in the survey samples are driving results.

In general, quantitative analyses in Kazakhstan are challenging due to a paucity of reliable measures. For example, the World Values Survey, a benchmark survey in the study of social trust that has been used in myriad analyses (La Porta et al. 1997; Knack and Keefer 1997), has only one wave of data from Kazakhstan (2011). These measurement challenges led me to leverage multiple sources of data to triangulate the concepts of interest. First, I use two sources of survey data: the World Values Survey data from 2011 (see Section 4.4) and data gathered in a more recent survey commissioned by myself and colleagues that had waves in 2017 and 2018 (see Section 4.5.

Surveys are a very common way to evaluate social trust. They are relatively easy to conduct in the field, especially compared to other common ways to measure trust, such as laboratory games (Glaeser et al. 2000).[1] However, there is the potential for biases with surveys, as with any measurement strategies. The particular difficulties of gathering survey data in Kazakhstan (where social desirability bias can be very high and country size/accessibility greatly increase survey cost), led me to invest in a second measurement strategy. I develop a new measure for evaluating trust: images shared on social media. To my knowledge, this is the first attempt at using images shares on social media to measure social trust.

To build the images indicators, I use images shared on Twitter. I gather tweets (messages posted on Twitter) and any accompanying images from the two oblasts of interest. The images are manually labeled for the presence or absence of key image features that represent different types of trust. The new social media images approach represents a more behavioral measure of trust when compared to opinions recorded on surveys. Telling a researcher that you trust your non co-ethnic neighbors is one thing; inviting those neighbors over for a wedding, snapping a picture, and then posting that picture online is another. Expressing an opinion on a survey is relatively cheap, while there are generally higher costs to engaging

[1]Other options for measuring trust include long-term ethnographic observation, or using historical proxies such as ethnic intermarriage, tax paying, and military service.

on social media. The social media measurement combined with the survey measurement thus helps the researcher to triangulate and reach better conclusions about the presence or absence of certain types of trust within certain populations. In addition, the social media strategy has the advantage of taking the researcher entirely out of the picture. It is also a relatively efficient way to gather data from a large area that is sparsely populated, like the two oblasts in Kazakhstan. As this is a new measure, is valuable to compare the image results to the more familiar benchmark of the survey analysis.

4.2 Expectations of Trust between Oblasts

Building on the historical insights of Chapter 3, I have clear expectations for how social trust might vary along the dimensions of interest between Almaty and Jambyl oblasts. In terms of inter-ethnic interactions, in the now-Kazakhstan portions of Syr Darya (Jambyl oblast), those relations tended to be less violent. Whereas in Semirechiye (Almaty oblasts), tensions over land and policy were primary motivators of inter-ethnic violence in 1916 (Sokol 1954; Pahlen 1964 192-193).[2] The violence in what is now Almaty oblast is both a sign of a breakdown of trust and a reference point for future poor inter-group relations.

I expect that policies in Syr Darya (now Jambyl) led to more communities with relatively high horizontal trust (both between and within ethnic groups) and relatively high vertical trust. In Semirechiye (now Almaty), in contrast, I expect that policies led to relatively mixed levels of horizontal trust (high within an ethnic group, low between ethnic groups) and low levels of vertical trust.

The remainder of the chapter tests the proposed theory by linking colonial variation in Almaty and Jambyl oblasts to recent trust outcomes. If colonial policies have persistent effects on horizontal, vertical, inter- and intra-ethnic dimensions of social trust, we should still expect measurable differences between oblasts in these areas. I first evaluate the differences in social trust between the two oblasts using a standard method: survey data. I then turn

[2]Much of the 1916 Semirechiye violence occurred in what is now Kyrgyzstan (Duishembieva 2015), but there is evidence of violence on what is now the the Kazakhstan side, as well.

to a novel means of measuring social trust, using images shared on social media to construct a visual vocabulary of variation in social trust.

4.3 Research Design

Making a causal argument for the long-term impacts of colonial rule in this case is very difficult. The gold-standard for causal research, a randomized experiment where subjects are assigned to treatment or control conditions, is difficult to image in this case, much less to implement. The technical challenge of traveling back in time to randomly assign a Russian colonial treatment to different regions is perhaps matched only by the ethical challenge of making that assignment. Variation in colonial treatment, as the previous chapter showed, led to variation in land displacement and arguably was the root of differential rates of torture, rape, deaths in during riots, arrests, executions, starvation and extreme migration.

In the absence of a true randomized experiment to assign different Russian colonial policy treatments, I rely on what is plausibly a natural experiment. The border between what is now Almaty and Jambyl oblasts appears fairly arbitrary, driven by potentially random placement as opposed to responding to some meaningful difference in the landscape or in social groups present prior to colonization. While the Russian colonial authorities may have treated Central Asia like a laboratory (Pierce 1960, 5), and experimented with different policy treatments across arbitrary borders, I cannot know that their experiments were truly randomized, or that there was no contamination between treatment and control. This is all to say that I fully acknowledge the weakness of any causal claims I might put forth in this case. A causal argument here relies far more on a careful reading of the history than on an experimental design.

The quantitative empirics that I put forth in this chapter are simple in terms of statistical analysis: I compare the average rates of trust between the two oblasts using t-tests. Even if the differences I find in trust are not ultimately caused by colonial treatment, they show an intriguing empirical regularity: differences in trust on the dimensions of interest in different geographic regions in Kazakhstan. Supplementing the t-tests, I also run multiple regressions

using the WVS data. In these robustness checks, similar patterns emerge regarding the differences in trust between the two oblasts.

4.4 World Values Survey Data on Social Trust

Surveys are a well-used means of measuring social trust, with the World Values Survey (WVS) taking pride of place in non-USA contexts but also used in the USA (Knack and Keefer 1997; La Porta et al. 1997; Helliwell, Huang, and Wang 2016; Uslaner 2000; Paola, Toldra-Simats, and Zingales 2013; Guiso, Sapienza, and Zingales 2006; Levine, Lin, and Xie 2016; Algan and Cahuc 2010; Delhey, Newton, and Welzel 2011; Catterberg and Moreno 2005; Nunn and Wantchekon 2011; Newton 2001). The 6th wave of the WVS included a nationally representative sample in Kazakhstan (World Values Survey Association 2014) and is useful in presenting a broad picture of between-oblast differences in trust. The nation-wide survey, conducted in 2011, has a series of questions relating to social trust and to confidence in formal organizations. The data can be disaggregated to the oblast level.[3]

A potential critique of the presented bivariate analyses that follow is that they ignore other factors that might influence the aggregate trust in each oblast. In particular, it might be that the survey responses between the two oblasts are not balanced in terms of demographics, and that some difference in demographics is what is driving the observed differences in social trust. Table 4.1 assuages these concerns by showing that the average/media age, proportion male, and average/median income are very similar between the two survey samples.[4] In addition, I address these concerns with the regressions in Section 4.4.1.

Table 4.1: Demographic Balance in World Values Survey Data

Oblast	Count	Avg. Age	Median Age	Prop. Male	Avg. Income	Median Income
Almaty	148	39.7	36.5	0.4	4.9	5.0
Jambyl	65	40.5	39.0	0.4	5.3	5.0

[3]The data have been further subset to include only responses which came from communities with less than 100,000 inhabitants, in keeping with the rural focus of the dissertation.

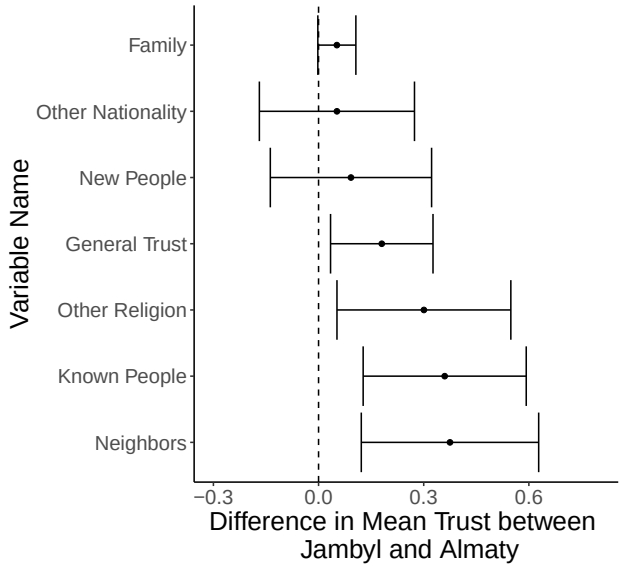
[4]Respondents indicated their income on a scale of 1 to 7, with 7 indicating higher income.

The survey includes a standard question about generalized trust, which has a binary response option. Respondents can indicate either that "Most people can be trusted" or that you "Need to be very careful" when dealing with others. In Table 4.2, the proportion of respondents saying most people can be trusted is shown in the "General Trust" column. A chi-squared test statistic of the difference of proportions of responses between Almaty and Jambyl oblast on this question is included in the table, with corresponding p-value. A series of questions on the WVS ask to what degree the respondent trusts a series of groups on a scale of 1 to 4, where 4 indicates the strongest level of trust. Table 4.2 presents the average responses across oblasts when asked about trust in family, neighbors, people whom the respondent knows, people the respondent is meeting for the first time, people of another religion, and people of another nationality. Table 4.2 also reports t-test statistics of the differences in means between these measure of horizontal trust, with the corresponding p-values. Figure 4.1 shows the differences between mean trust graphically, with 95% confidence intervals around the difference.

Table 4.2: World Values Survey Data on Social Trust (2011)

Oblast	Count	General Trust	Family	Neighbors	Known People	New People	Other Religion	Other Nationality
Almaty region	148	0.36	3.93	2.76	2.93	1.72	2.11	2.38
Jambyl	65	0.54	3.98	3.14	3.29	1.82	2.42	2.43
Stat.		5.34	-1.90	-2.94	-3.06	-0.80	-2.40	-0.47
P-val.		0.02	0.06	0.00	0.00	0.43	0.02	0.64

Figure 4.1: World Values Survey Trust Differences



While the WVS did not ask explicitly about trust in state organizations (vertical trust), it did ask a series of questions about *confidence* in state organizations, which I include as a potential proxy for vertical trust. Although it is common in the literature to use the WVS confidence data as a proxy for vertical ("political") trust, some might question whether these measures are a perfect match. The concept of trust and confidence are clearly related (a seminal piece by Arrow 1972, for example, treats confidence as a trust synonym). Having confidence in some organization or institution means that you think it is going to do something in what you believe is the correct manner. Trust, as discussed in Chapter 1, is believing that someone will do something correctly *on your behalf*. So the gap between confidence and trust is in that we do not know whether confidence that the "something" that will be done correctly is on your behalf. Because of the potential gap in concepts between confidence and trust using this measure, I asked specific questions about vertical trust in the 2017-2018 survey, as discussed in Section 4.5.

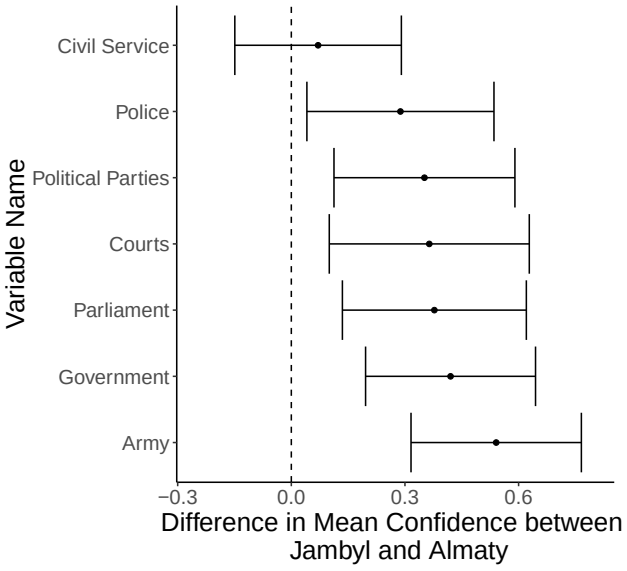
Table 4.3 reports average confidence in a series of formal organizations across oblasts, on a scale of scale of 1 to 4, where 4 indicates the strongest level of confidence. The organizations

included in Table 4.3 are: the army, the police, the courts, the national-level government generally, political parties, and the civil service. Table 4.3 also reports t-test statistics of the differences in these means between these measure of horizontal trust, with corresponding p-values. Figure 4.2 shows the differences between mean trust graphically, with 95% confidence intervals around the difference.

Table 4.3: World Values Survey Data on Confidence in Government (2011)

Oblast	Count	Army	Police	Courts	Govt	Pol Parties	Parliament	Civil Service
Almaty region	148	2.63	2.36	2.30	2.70	2.37	2.56	2.62
Jambyl	65	3.17	2.65	2.66	3.12	2.72	2.94	2.69
Stat.		-4.76	-2.31	-2.73	-3.71	-2.92	-3.08	-0.64
P-val.		0.00	0.02	0.01	0.00	0.00	0.00	0.53

Figure 4.2: World Values Survey Confidence Differences



The WVS data shows that, across all measures, people in Jambyl oblast were more trusting than people in Almaty oblast. Jambyl had a statistically significantly ($p<0.05$) higher rate of generalized trust, and a higher rate of trust in neighbors, known people, and

people of other religions. On the remaining measures, Jambyl still reported higher average rates of trust, but the differences were not statistically significant. For example, Almaty and Jambyl residents were roughly equally distrustful of new people and people of other nationalities. Jambyl also had statistically significantly higher rates of confidence in state organizations across the majority of measures (including the police, political parties, the courts, parliament, the government, and the army). On the remaining measure, confidence in the civil service, Jambyl continued to have a higher average but the difference is not statistically significant.

These findings are in line with the expectations, in particular the expectation that Almaty would have relatively lower rates of vertical trust. Interestingly, though, there was less variation that expected in terms of inter- and intra-ethnic horizontal trust. Jambyl, as expected, had generally higher rates of horizontal trust compared to Almaty, but there did not seem to be much difference in terms of trust of people outside their own ethnic group, though Jambyl did have more trust of people of another religion (a key component of ethnic difference in Kazakhstan). As noted above, the WVS data did not act directly about trust in state organizations, instead asking about confidence.

4.4.1 Multiple Regression

Furthermore, a multiple regression approach allows for a consideration of the oblast association with trust while controlling for for demographic factors. Tables 4.5 and 4.6 (included at the end of this chapter and split into two tables for easier viewing) present the results from a series of OLS regressions (and one logit) for each of the horizontal trust survey outcomes, while controlling for ethnicity (with Other or non-Russian/non-Kazakh as the reference category), gender, age, and income. When controlling for demographic factors, and despite the small sample size, we continue to see a statistically significant higher rate of trust in Jambyl oblast (with the exception of the trust in family outcome). These results are evidence of the robustness of the t-test results presented in Figure 4.1.

Similarly, Tables 4.7 and 4.8 present results for the vertical trust (confidence) outcomes.

Again, the results are very similar the t-test finding presented in Figure 4.2. On all of the vertical trust outcomes, the Jamybl oblast coefficient in positive and for most of the regressions the association is statistically significant.

4.4.2 Variation in Trust Between Kazakhs in Almaty and Jambyl

Table 4.1 indicates that the two survey samples were very similar in terms of age, gender, and income. The regression results suggest that the differences in trust hold even when controlling for demographic factors. There were possibly concerning differences in ethnic diversity between the two samples, however, that might bias the results. Jambyl oblast, for example, had no rural respondents who identified as Russian. The proposed theory does not differentiate between ethnic groups, assuming that the colonial effects on trust will be the same regardless of ethnicity. However, it is possible to relax that assumption and wonder if the colonial policies, land displacement, and settler-indigenous interactions changed trust differently for different ethnic groups. If this is the case, then the fact that the two survey samples are not balanced on ethnicity presents a challenge to sound conclusions. The variation might be driven by the lack of Russians in the Jambyl sample, not true differences in trust between oblasts.

To assuage these concerns, I subset the data to only include respondents who indicated that they were Kazakh. The differences in trust between oblasts (within Kazakh respondents) are presented in Figures 4.3 and 4.4. Limiting to only Kazakhs, very similar patterns of trust differences emerge. Consistent with the results that include all ethnicities, the figures show that Jambyl respondents had generally higher rates of horizontal trust and vertical trust (confidence).

Figure 4.3: World Values Survey Trust Differences within Kazakh Respondents

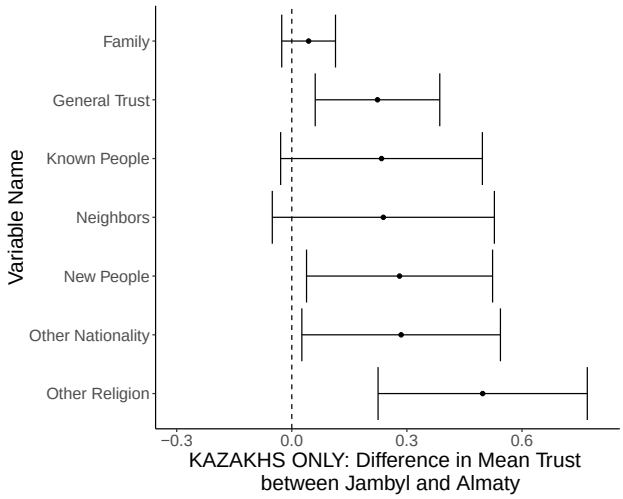
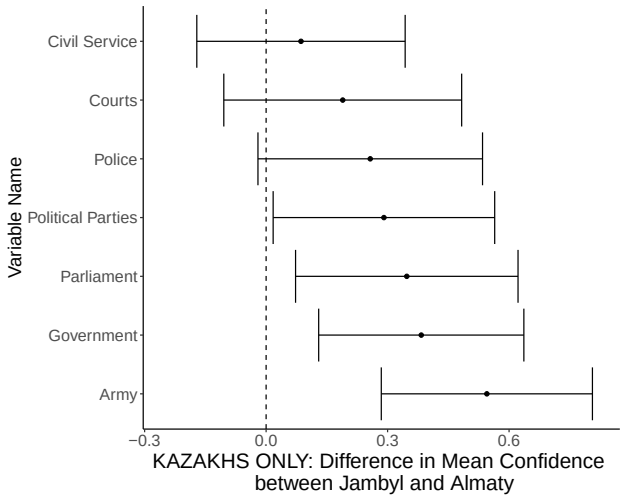


Figure 4.4: World Values Survey Confidence Differences within Kazakhs Respondents



In addition, I conduct a robustness check in the OLS regression framework. I update specifications shown in Tables 4.5, 4.6, 4.7, and 4.8 to include an linear multiplicative interaction term between the oblast and whether or not the respondent is Kazakh. These results are presented in Tables 4.9, 4.10, 4.11, and 4.12.

4.5 New Survey: 2017 and 2018 Data

In the spring of 2017 and fall of 2018, a nation-wide survey in Kazakhstan that I designed with colleagues Alexander Diener and Kristoffer Rees included a series of questions on trust in formal government institutions and organizations. A similar series of questions asked about how respondents perceived the effectiveness of formal government institutions and organizations. The survey was conducted in collaboration with the Institution for Public Opinion Research (IPOR). Each wave had 500 respondents using a sampling frame built from official Kazakhstani census data. The aim was to gather a representative sample from each oblast and from rural/urban areas within each oblast. Survey interviews were conducted in-person by trained IPOR staff in Russian or Kazakh, as chosen by respondents.

Compared to the WVS questions presented in Table 4.3, the relevant questions on this survey more directly addressed vertical trust. Unfortunately, the sample size is small for village respondents in Almaty and Jambyl oblasts, meaning that the results are not very precise. For this analysis, I have combined both waves of the data (2017 and 2018) into one sample, retaining only those responses that came from rural areas in Almaty and Jambyl. There were a total of 111 respondents across the two waves, 82 from Almaty oblast and the remaining 29 from Jambyl.

Figure 4.5 compares the average trust responses between the two oblasts towards a range of government institutions, organizations, and individuals (with two exceptions – NGOs and the media), while Figure 4.6 compares the average perceived effectiveness of those same institutions, organizations, and individuals. In both figures, "National Gov't Index" is an additive index. It is the sum of responses on 8 questions about national-level organizations or individuals: the President, the court system, the Constitutional Council, the Supreme Court, the Majilis, the Senate, the Assembly of People, and tax collectors. Each question asks the respondent to give the degree to which they trust the organization or individual (or how effective they think the organization is), on a scale of 1 to 4, where a 4 indicates the highest level of trust. The highest possible value on the index, therefore, is 32.

Figure 4.5: Vertical Trust Differences (2017/2018 Survey)

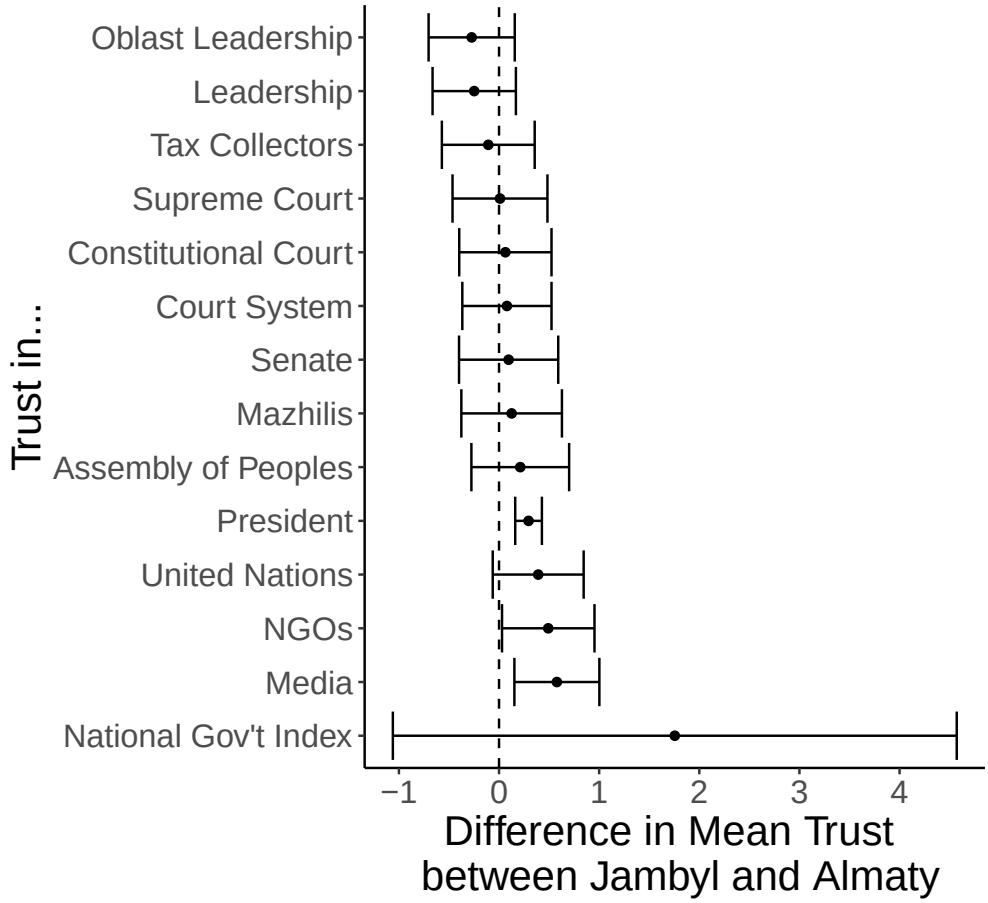
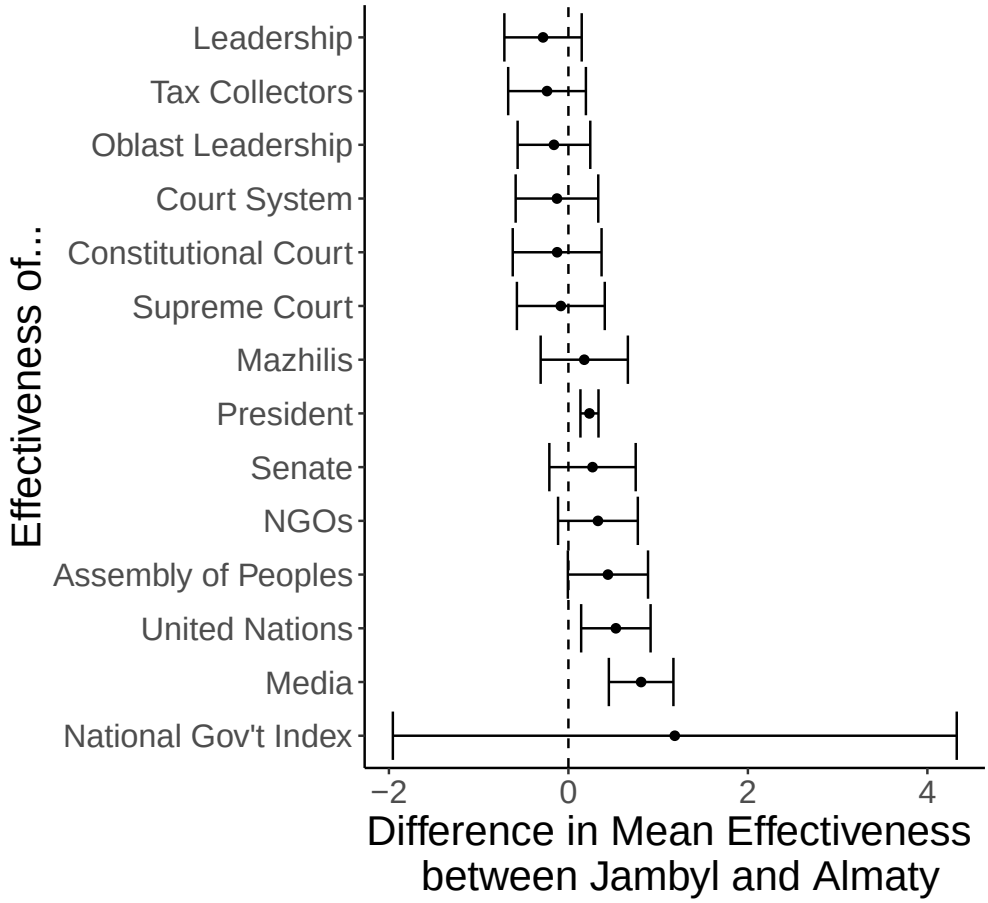


Figure 4.6: Vertical Effectiveness Differences (2017/2018 Survey)



As the figures show, the differences in trust and perceived effectiveness are not large between the two oblasts. Where there are statistically significant differences, however, they indicate that Jambyl respondents have higher rates of vertical trust compared to Almaty respondents. They also rate the organizations higher in terms of effectiveness, on average. Interestingly, the respondents in Jambyl had higher rates of trust in the two arguably non-governmental entities (the media and NGOs).

There are some easy critiques of the survey data analyses presented above. First, the results shown are un-weighted. Second, the data come from the 2010s, not the 1990s, which is the period of the shock of interest. Third, diversity on many factors within each oblast

explain the differences, not only the border effect of interest. Nevertheless, the data do provide a check on the proposed theory. There are measurable differences in trust between the two oblasts. Next, I turn to an innovative data source as a third check of the difference in trust between the two oblasts.

4.6 Social Media Data on Social Trust

Surveys such as the WVS and the survey conducted by IPOR have become a standard means of evaluating both generalized and particularlized social trust (Bahry et al. 2005; Knack and Keefer 1997). Scholars interested in either historical data on social trust or in data from regions that are not easily surveyed have built creative measures of social trust from records on tax-paying and government service (Levi 1988) or participation in non-governmental, civil society groups (Putnam 1993; A. Varshney 2001). Others have used games in a lab setting to evaluate trust (Glaeser et al. 2000).

However, social science researchers are increasingly turning to social media as a source of data on numerous political processes. Can we use social media behavior and shared materials as indicators of trust? The study of trust online is a broad field.[5] Other scholars have researched the broad determinants of trusting behaviors online (Friedman, Khan Jr., and Howe 2000) or the ways that exposure to disturbing content online might decrease social trust (Näsi et al. 2015). Computer and network scientists have considered how conversation patters on social media track with trust on that site (Adali et al. 2010). However, for these scholars trust is a dependent variable or a concept that exists mainly online, where my aim is to leverage images shared on social media as a measure of offline trust.

Using images shared on social media to evaluate social trust has many benefits. Compared to surveys or games, there is less direct researcher intervention in the measurement process, which potentially reduces social desirability bias that can affect responses. While there are start up costs, including a necessary investment in technical programming skills to access

[5]See Sherchan, Nepal, and Paris (2013) for a review of early steps to study trust in online social networks.

APIs, developing coding forms and hiring image annotators, using a social media measure is far cheaper than sponsoring a survey in Kazakhstan, with its vast distances and sparse population. Images also have the benefit of needing less translation work. Where social media text is the primary source, especially from a country like Kazakhstan where multiple languages are commonly used, measures built from social media texts are only as good as their translations, which can be particularly difficult because of the rapidly changing nature of Internet slang.

Naturally there are also downsides to using images shared on social media to evaluate social trust. First is a concern about ethics and privacy in using social media data. For this study, I rely on data that is publicly available on Twitter. That said, it is still possible that individuals do not understand the publicly accessible nature of their tweets. Further, images shared via tweet could include people who were photographed without permission. For this reason, I include no examples of images from the collected data here, and I do not make the raw images publicly available. Replication data includes the image labels without reference to the tweet id and a list of the raw tweet ids for every tweet included in the dataset; those wishing to acquire the raw images may use the Twitter API to search for each included tweet.

Another potential issue with using social media data is the selection effect of who has an account. It is true that Twitter is not widely used in Kazakhstan and tends to be more popular in the larger cities, such as Almaty. To assuage these concerns, the analysis focuses mainly on images shared by official Twitter accounts from oblast-level government offices. I then supplement the findings with tweets collected by location searches through the Twitter API search, as described in more detail below.

4.6.1 Potential Indicators of Social Trust

One can think of many potential indicators of social trust from social media. In this paper, I mainly images shared on social medial. However, there are a number of alternative measures of social trust. For example, the number of people who follow a government account

may be indicative of social trust. Prior research suggests from the United States suggests that following politicians online is not actually very common (Nielsen and Vaccari 2013). Following official government accounts is likely even less common that following political leaders. In a recent paper surveying the literature and presenting new results, C. Fisher et al. (2019) find that individuals who are younger and have higher interest in politics and a higher sense of political efficacy are more likely to follow politicians online. Individuals who had higher trust in the news media also were more likely to follow politicians. Based on these prior results, I conjecture that where there is higher vertical trust, a larger portion of the population will follow official government Twitter accounts. As C. Fisher et al. (2019) point out, why individuals follow accounts is understudied – this preliminary new measure of social trust will be a fruitful area for future work.

Moving beyond the metadata of account followers, the images shared on social media can show the presence or absence of vertical, inter-ethnic, and intra-ethnic trust. Note that in this analyses, my interest is in relative levels of trust. That is, based on the pictures share on social media, how would we know if there is more or less social trust in Jambyl, as compared to Almaty? I compare the relative proportion (or percentage) of images that contain certain image features of interest.

As an indicator of vertical trust, I look for people posing next to officials in uniform. The argument here is that civilians willing to be photographed smiling with police officers, politicians, or other representatives of the state indicates trust. In particular, I look for civilians and state officials working or celebrating together. It is possible that these types of images are coerced or are more prevalent precisely due to low vertical trust (the state knows that people are not trusting, for example, and so makes a concerted propaganda effort to take and share more photos). If the results with this measure diverged wildly from the survey results, this would be a large concern for the measure. However, the analysis below demonstrates that the survey and images produce similar results in terms of vertical trust.

As an indicator of horizontal trust, with an emphasis on the interaction with the ethnic dimensions, I look for people posing next to people of another ethnicity. As above, simply

being in a picture together is a weak measure, and instead I focus on images where people of different ethnicities are working or celebrating together. Are workplaces and parties segregated by race, even in extremely diverse Kazakhstan? Or are there indications that people are working and playing across ethnic lines? A higher proportion of multi-ethnic celebratory photos is indicative of more inter-ethnic trust.

In contrast, I expect that images showing people of a single ethnic group working or celebrating together is an indicator of intra-ethnic horizontal trust. Are people sharing photos of themselves working with neighbors who look like them at a higher rate in Almaty or Jambyl? If we think that people in both oblasts have parties and work together at similar rates, an increase in the proportion of mono-ethnic images would conceivably come at the expense of multi-ethnic images, indicating that instead of representing intra-ethnic trust, these images instead represent inter-ethnic distrust. However, this is a strong assumption. I do not a assume a trade-off between multi-ethnic and mono-ethnic parties. A higher proportion of mono-ethnic gatherings in the images indicates that people are more likely to attend, photograph, and post about their co-ethnics, relative to individuals in the other oblast. It does not necessarily follow that this means they do not also post a relatively higher proportion of multi-ethnic gatherings.

4.6.2 Data

To test differences in trust between the two oblasts of interest, as indicated in images shared on social media, I collected tweets from the Twitter search API in the summer of 2018. An API, or Application Programming Interface, offers a way to programmatically interact with the Twitter (and other) servers. Using the API, a researcher can send requests for data and receive data back from Twitter (or other online services), usually with limits on the number or requests or amount of data within a certain time period. An API collection strategy is much more efficient than manually searching for and collecting Tweets using a web browser. My data collection was conducted using Python scripts.

The collection strategy using the API was twofold. First, I tracked thirteen specific

Twitter accounts identified as official government accounts for Jambyl and Almaty oblast. There were eight official accounts associated with Jambyl and five associate with Almaty. Second, I searched for relevant tweets using location and keyword parameters. I used the API to search for and collect tweets that included the location terms Kazakhstan, Almaty, and Jambyl (and transliterated equivalents in Russian and Kazakh), followed by keyword searches for Almaty, Jambyl and Taraz (and their equivalents in Russian and Kazakh).

I assigned each tweet to an oblast based on three criteria. First, I knew in advance the location of each official account. Second, I searched for Almaty or Jambyl (and spelling variants) in the user profile associated with each collected tweets. The user profile includes both the user-specified location and the text of their user-provided description. Third, I searched for the location keywords in the text of each individual tweet. There are a total of 785 tweets in the dataset, 566 from Almaty oblast and 219 from Jambyl. Of the Almaty tweets, 69 came from official accounts, while of the Jambyl tweets, 178 came from official accounts. As is clear from these figures, a larger proportion of Jambyl tweets are official, relative to Almaty.

In collecting the tweets, I also collected the images shared with each tweet. Twitter currently allows user to attach up to four images to each tweet. In addition, if the user attaches a video with their tweet, the first frame of the video will be included as an image. From the 785 total tweets, there were 1,222 images, 880 affiliated with Almaty and 342 with Jambyl. Of those, 76 images from Almaty were sent by official accounts, compared to 301 from Jambyl.

Figure 4.7: Example Image 1

Figure 4.8: Example Image 2

A labeling or annotating procedure is needed to determine whether or not collected images contain the features of interest. For this project, images were annotated using an 8 question

form built on the LabelBox platform. Two annotators, myself and an undergraduate research assistant, labeled the 1,222 gathered images. On a random 10% sample of images across two waves of labeling, we achieved 87% and 75% agreement (consensus), which was surprisingly strong given the highly subjective nature of some of the prompts (for example, noting if the image was patriotic, or if there were people pictured of multiple ethnicities). This is likely due in part to both the research assistant and myself having extensive experience in the former Soviet Union, which led to similar image interpretation.

4.6.3 Differences in Trust between Oblasts

The first indicator of interest is the difference in the number of official account followers between Almaty and Jambyl. In Almaty, the average number of followers was 288, compared to 164 in Jambyl. This difference is not statistically significant ($t = 0.53$, $p = 0.62$). Almaty and Jambyl oblasts have differing populations (1.95 million and 1.07 million, respectively). After adjusting by population size, Jambyl accounts had a slightly higher average following compared to Almaty. However, the difference in the number of account followers was also not statistically significant after normalizing by population size.

Using the proposed image indicators of social trust described above, are there differences in trust between the oblasts in 2018? Table 4.4 reports results from a series of t-tests comparing the rates of trust indicators in images between the two oblasts. First, do the pictures include both state officials and civilians (vertical trust)? Looking only at images shared by official accounts, 32% of Jambyl images meet the criteria, while only 16% of Almaty images do (the difference is statistically significant, $p < 0.05$ for a two-tailed t-test). The relationship holds if the analysis is expanded to include tweets and images from all Twitter accounts.

Second, do the pictures show people of multiple ethnicities working together (horizontal inter-ethnic trust)? Looking only at images shared by official accounts, 5% of Jambyl images meet the criteria, while 12% of Almaty accounts do (the difference is statistically significant, $p < 0.5$ for a two-tailed t-test). Expanding the data to include all accounts, however, the

relationship flips: 5% of Jambyl images meet the criteria, while 2% of Almaty accounts do (the difference is statistically significant, p <0.5 for a two-tailed t-test).

Third, do the pictures show people of multiple ethnicities celebrating together (horizontal inter-ethnic trust)? Looking only at images shared by official accounts, 2% of Jambyl images meet the criteria, while 11% of Almaty accounts do (the difference is statistically significant, p <0.5 for a two-tailed t-test). However, expanding to include all accounts, 2% of Jambyl images meet the criteria, while only 3% of Almaty accounts do (the difference is not statistically significant).

Fourth, do the pictures show people of a single ethnicity working together (horizontal intra-ethnic trust)? Looking only at images shared by official accounts, 20% of Jambyl images meet the criteria, which matches the 20% of Almaty accounts do (the slight difference is not statistically significant). Expanding to include all accounts, 18% of Jambyl images meet the criteria, while only 5% of Almaty accounts do (the difference is statistically significant, p <0.5 for a two-tailed t-test).

Fifth, do the pictures show people of a single ethnicity celebrating together (horizontal intra-ethnic trust)? Looking only at images shared by official accounts, 2% of Jambyl images meet the criteria, while 16% of Almaty accounts do (the difference is statistically significant, p <0.5 for a two-tailed t-test). Expanding to include all accounts, 2% of Jambyl images meet the criteria, while 4% of Almaty accounts do (the difference is statistically significant, p <0.5 for a two-tailed t-test).

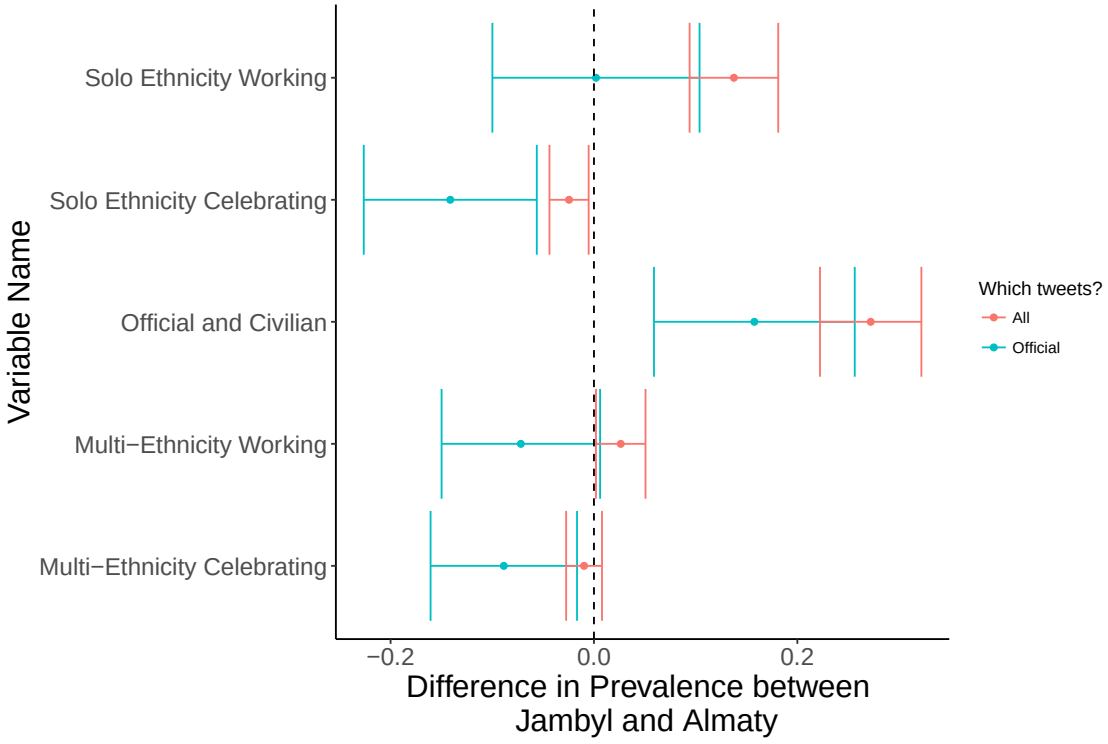
In summary, there do appear to be systematic differences in image content between the two oblasts. The vertical trust measure reveals a statistically significant difference, with Jambyl having a relatively higher proportion of images that contain both state officials and non-official individuals. The horizontal measures are mixed and vary notably based on sampling criteria. Based on images from official accounts, Almaty oblast appears to have the higher rate of inter-ethnic trust. But the difference flips or disappears when images from all accounts are included. Almaty appears to have a higher rate of intra-ethnic trust based on the single ethnic celebrating measure, but Jambyl has the higher rate based on the single

ethnic working measure.

Table 4.4: Differences in Image Indicators Between Oblasts

Only official?	Indicator	Jambyl Percent	Almaty Percent	t-stat	p-val	Lower CI	Upper CI
Yes	Official & Civilian	31.56	15.79	-3.16	0.00	-0.26	-0.06
No	Official & Civilian	29.82	2.61	-10.73	0.00	-0.32	-0.22
Yes	Multi-ethnic Working	4.65	11.84	1.83	0.07	-0.01	0.15
No	Multi-ethnic Working	4.68	2.05	-2.12	0.03	-0.05	-0.00
Yes	Multi-ethnic Celebrating	1.66	10.53	2.45	0.02	0.02	0.16
No	Multi-ethnic Celebrating	1.75	2.73	1.08	0.28	-0.01	0.03
Yes	Single-ethnic Working	19.93	19.74	-0.04	0.97	-0.10	0.10
No	Single-ethnic Working	18.42	4.66	-6.21	0.00	-0.18	-0.09
Yes	Single-ethnic Celebrating	1.66	15.79	3.31	0.00	0.06	0.23
No	Single-ethnic Celebrating	1.75	4.20	2.50	0.01	0.01	0.04

Figure 4.9: Image Results



4.6.4 Comparison to WVS Data

The previous section advances a new method for measuring social trust. It is not the only possible measure, of course, as the analysis of the WVS data demonstrates. As a validation of the new measure, one might ask how the image findings fit with or diverge from the survey data.

In terms of vertical trust, the image data and the survey data align fairly well. Both the WVS and the images indicate a higher rate of vertical trust in Jambyl oblast, compared to Almaty (see Table 4.3).

On the dimension of horizontal trust, the comparisons are much more nuanced, especially in terms of intra-ethnic trust.[6] According to the WVS, Almaty and Jambyl oblast were indistinguishable in terms of trust for people from another nationality (see Table 4.2), though people in Jambyl were more trusting of people of another religion. The image analysis suggests that there may be some differences between the oblasts on intra-ethnic trust, depending on the sample and on whether one prefers the celebrating or working indicator. Working with the largest sample size of images, however, the only statistically significant difference indicates a higher rate of intra-ethnic trust in Jambyl oblast, somewhat fitting with the WVS finding. A larger sample size and more image labels could clarify this relationship further.

4.7 Results: More Settlers, Less Social Trust

These results, across the two different measurement strategies, suggest that there are indeed long-term, lingering impacts of Russian colonialism on social trust in Southern Kazakhstan. Almaty oblast, which experienced more intensive settler colonialism and more land displacement, had consistently lower rates of vertical social trust in the 2011 survey data, the 2017-18 survey data, and in the 2018 social media image analysis. In terms of horizontal trust, a pattern of higher trust in Jambyl oblast also holds, though the results are less consistent and vary depending on which data subset and specific outcome in under analysis (e.g. trust in

[6]The WVS does not have a proxy for interethnic horizontal trust, so there is little comparison to be made there.

new people versus trust in family).

The proposed theory that the variation in colonial policy would also affect inter- and intra-ethnic horizontal trust has only mixed empirical support. In the WVS data from 2011, both oblasts scored similarly on inter-ethnic trust. In some of the subsets of the data (for Kazakhs only, for example) Jambyl oblast residents do report more trust than their Almaty counterparts in people who are of another nationality or another religion. In the image data, there were very mixed results between oblasts on the proposed measures of horizontal inter- and intra-ethnic trust. Depending on the sample and the indicator, one could argue that Almaty has higher intra- and inter-ethnic trust or one could argue the exact opposite. This indicates a need to further refine the intriguing measurement possibilities posed by social media image analysis.

Given data limitations, it is difficult to say whether or not the differences presented here between Almaty and Jambyl oblast are caused by colonial treatment. The consistent results could be attributed to some other observable or unobservable factor. The natural experiment in colonial policy is not a strict as randomization in a laboratory setting and it is reasonable to suspect that there will be contamination and sorting based on colonial policies and social trust. A future step that could clarify causality would be a two-stage regression that takes into account not just where a respondent currently lives but where they grew up. The data does not currently allow for this test, but future work along these lines is to be encouraged. If trust is passed down through generations after a shock such as colonial rule, what would matter for an individual's current trust might not be where they currently live, but where they grew up and where their parents (or other formative adults) lived. Someone who was born and raised in Northern Kazakhstan, where the history of settler colonialism is even more intensive, might then move to Almaty oblast and be driving the lower rates of trust observed there. Note, however, that this would be consistent with the mechanisms and proposed theory of how colonial rule impacts social trust – additional data collection, particularly survey work, could allow for this more rigorous causal test.

4.8 Regression Tables

Table 4.5: Trust Regression Results (1/2)

	Dependent Variable: Trust in...			
	Family	Other Nationality	New People	General Trust
	OLS	*OLS*	*OLS*	*logistic*
	(1)	(2)	(3)	(4)
Jambyl	0.053 (0.038)	0.293* (0.119)	0.304** (0.115)	1.057** (0.344)
Kazakh Ethnicity	0.065 (0.049)	−0.572*** (0.150)	−0.341* (0.146)	−0.491 (0.433)
Russian Ethnicity	0.118* (0.058)	0.015 (0.179)	0.126 (0.174)	0.031 (0.506)
Male	0.024 (0.033)	0.120 (0.103)	0.074 (0.100)	0.336 (0.294)
Age	−0.001 (0.001)	−0.002 (0.003)	−0.001 (0.003)	−0.016 (0.010)
Income	0.017 (0.010)	−0.045 (0.031)	−0.126*** (0.030)	−0.173 (0.091)
Constant	3.824*** (0.085)	2.928*** (0.261)	2.497*** (0.253)	1.006 (0.753)
Observations	213	213	213	213
R^2	0.054	0.135	0.161	
Adjusted R^2	0.026	0.109	0.137	
Log Likelihood				−136.125
Akaike Inf. Crit.				286.251
Residual Std. Error (df = 206)	0.239	0.736	0.716	
F Statistic (df = 6; 206)	1.942	5.344***	6.593***	
Note:	*p<0.05; **p<0.01; ***p<0.001			

Table 4.6: Trust Regression Results (2/2)

	Dependent Variable: Trust in...		
	Other Religion	Known People	Neighbors
	(1)	(2)	(3)
Jambyl	0.523*** (0.125)	0.315* (0.124)	0.334* (0.133)
Kazakh Ethnicity	−0.450** (0.158)	−0.038 (0.158)	−0.060 (0.169)
Russian Ethnicity	0.093 (0.189)	−0.271 (0.188)	−0.340 (0.201)
Male	0.086 (0.108)	0.008 (0.108)	0.047 (0.115)
Age	−0.002 (0.003)	−0.003 (0.003)	0.0003 (0.004)
Income	−0.067* (0.033)	−0.021 (0.033)	−0.060 (0.035)
Constant	2.718*** (0.274)	3.227*** (0.273)	3.147*** (0.292)
Observations	213	213	213
R^2	0.135	0.060	0.070
Adjusted R^2	0.110	0.033	0.043
Residual Std. Error (df = 206)	0.775	0.772	0.825
F Statistic (df = 6; 206)	5.367***	2.198*	2.598*
Note:	*p<0.05; **p<0.01; ***p<0.001		

Table 4.7: Confidence Regression Results (1/2)

	Dependent Variable: Confidence in...			
	Civil Service	Police	Political Parties	Courts
	(1)	(2)	(3)	(4)
Jambyl	0.096 (0.120)	0.317* (0.128)	0.359** (0.125)	0.271 (0.139)
Kazakh Ethnicity	−0.055 (0.153)	−0.090 (0.162)	0.027 (0.159)	0.119 (0.176)
Russian Ethnicity	−0.055 (0.182)	−0.027 (0.193)	0.046 (0.190)	−0.213 (0.210)
Male	−0.035 (0.104)	−0.133 (0.111)	−0.041 (0.109)	0.047 (0.120)
Age	−0.004 (0.003)	0.002 (0.004)	−0.003 (0.003)	−0.001 (0.004)
Income	−0.040 (0.032)	−0.013 (0.034)	−0.010 (0.033)	−0.012 (0.036)
Constant	3.052*** (0.265)	2.476*** (0.281)	2.550*** (0.276)	2.378*** (0.305)
Observations	213	213	213	213
R^2	0.017	0.038	0.048	0.056
Adjusted R^2	−0.012	0.010	0.021	0.028
Residual Std. Error (df = 206)	0.747	0.793	0.778	0.860
F Statistic (df = 6; 206)	0.584	1.348	1.742	2.027
Note:	*p<0.05; **p<0.01; ***p<0.001			

Table 4.8: Confidence Regression Results (2/2)

	Dependent Variable: Confidence in...		
	Parliament	Government	Army
	(1)	(2)	(3)
Jambyl	0.406** (0.125)	0.451*** (0.119)	0.589*** (0.123)
Kazakh Ethnicity	−0.092 (0.158)	−0.060 (0.151)	−0.023 (0.157)
Russian Ethnicity	−0.063 (0.188)	−0.035 (0.180)	0.049 (0.187)
Male	−0.091 (0.108)	−0.044 (0.103)	0.048 (0.107)
Age	−0.001 (0.003)	0.001 (0.003)	−0.003 (0.003)
Income	−0.027 (0.033)	−0.048 (0.031)	−0.059 (0.032)
Constant	2.846*** (0.274)	2.961*** (0.261)	3.038*** (0.271)
Observations	213	213	213
R^2	0.057	0.079	0.117
Adjusted R^2	0.030	0.053	0.091
Residual Std. Error (df = 206)	0.773	0.738	0.766
F Statistic (df = 6; 206)	2.085	2.963**	4.557***
Note:	*p<0.05; **p<0.01; ***p<0.001		

Table 4.9: Trust Regression Results with Interaction (1/2)

	Dependent Variable: Trust in...			
	Family	Other Nationality	New People	General Trust
	OLS	*OLS*	*OLS*	*logistic*
	(1)	(2)	(3)	(4)
Jambyl	0.133 (0.129)	0.242 (0.397)	0.321 (0.387)	1.259 (1.235)
Kazakh Ethnicity	0.079 (0.053)	−0.581*** (0.164)	−0.338* (0.159)	−0.461 (0.467)
Russian Ethnicity	0.128* (0.060)	0.009 (0.186)	0.128 (0.181)	0.053 (0.522)
Male	0.022 (0.033)	0.121 (0.103)	0.074 (0.100)	0.332 (0.295)
Age	−0.001 (0.001)	−0.002 (0.003)	−0.001 (0.003)	−0.016 (0.010)
Income	0.018 (0.010)	−0.046 (0.031)	−0.126*** (0.030)	−0.173 (0.091)
Jambyl*Kazakh Interaction	−0.088 (0.135)	0.056 (0.417)	−0.019 (0.406)	−0.220 (1.289)
Constant	3.811*** (0.087)	2.936*** (0.268)	2.494*** (0.261)	0.979 (0.770)
Observations	213	213	213	213
R^2	0.055	0.135	0.161	
Adjusted R^2	0.023	0.105	0.132	
Log Likelihood				−136.110
Akaike Inf. Crit.				288.221
Residual Std. Error (df = 205)	0.239	0.738	0.718	
F Statistic (df = 7; 205)	1.720	4.561***	5.624***	
Note:	*p<0.05; **p<0.01; ***p<0.001			

Table 4.10: Trust Regression Results with Interaction (2/2)

	Dependent Variable: Trust in...		
	Other Religion	Known People	Neighbors
	(1)	(2)	(3)
Jambyl	0.619 (0.418)	1.059* (0.413)	1.216** (0.441)
Kazakh Ethnicity	−0.433* (0.173)	0.088 (0.170)	0.089 (0.182)
Russian Ethnicity	0.105 (0.196)	−0.175 (0.194)	−0.226 (0.207)
Male	0.083 (0.109)	−0.010 (0.107)	0.026 (0.114)
Age	−0.002 (0.003)	−0.002 (0.003)	0.001 (0.004)
Income	−0.067* (0.033)	−0.020 (0.033)	−0.058 (0.035)
Jambyl*Kazakh Interaction	−0.105 (0.439)	−0.819 (0.434)	−0.971* (0.463)
Constant	2.703*** (0.282)	3.108*** (0.279)	3.007*** (0.297)
Observations	213	213	213
R^2	0.135	0.076	0.090
Adjusted R^2	0.106	0.045	0.059
Residual Std. Error (df = 205)	0.776	0.767	0.818
F Statistic (df = 7; 205)	4.587***	2.416*	2.892**
Note:	*p<0.05; **p<0.01; ***p<0.001		

Table 4.11: Confidence Regression Results with Interaction (1/2)

	Dependent Variable: Confidence in...			
	Civil Service	Police	Political Parties	Courts
	(1)	(2)	(3)	(4)
Jambyl	0.054 (0.403)	0.977* (0.426)	0.983* (0.418)	1.049* (0.461)
Kazakh Ethnicity	−0.063 (0.166)	0.022 (0.176)	0.133 (0.172)	0.251 (0.190)
Russian Ethnicity	−0.060 (0.189)	0.059 (0.200)	0.127 (0.196)	−0.112 (0.216)
Male	−0.034 (0.105)	−0.148 (0.111)	−0.055 (0.109)	0.029 (0.120)
Age	−0.004 (0.003)	0.002 (0.004)	−0.003 (0.003)	−0.001 (0.004)
Income	−0.040 (0.032)	−0.012 (0.034)	−0.009 (0.033)	−0.010 (0.036)
Jambyl*Kazakh Interaction	0.046 (0.424)	−0.727 (0.447)	−0.686 (0.439)	−0.856 (0.484)
Constant	3.059*** (0.272)	2.371*** (0.287)	2.451*** (0.282)	2.255*** (0.311)
Observations	213	213	213	213
R^2	0.017	0.050	0.060	0.070
Adjusted R^2	−0.017	0.018	0.027	0.038
Residual Std. Error (df = 205)	0.749	0.790	0.776	0.856
F Statistic (df = 7; 205)	0.500	1.543	1.853	2.201*
Note:	*p<0.05; **p<0.01; ***p<0.001			

Table 4.12: Confidence Regression Results with Interaction (2/2)

	Dependent Variable: Confidence in...		
	Parliament	Government	Army
	(1)	(2)	(3)
Jambyl	0.968* (0.416)	1.109** (0.396)	0.863* (0.413)
Kazakh Ethnicity	0.004 (0.171)	0.051 (0.163)	0.023 (0.170)
Russian Ethnicity	0.010 (0.195)	0.050 (0.186)	0.085 (0.194)
Male	−0.104 (0.108)	−0.059 (0.103)	0.041 (0.107)
Age	−0.001 (0.003)	0.001 (0.003)	−0.003 (0.003)
Income	−0.026 (0.033)	−0.047 (0.031)	−0.059 (0.033)
Jambyl*Kazakh Interaction	−0.618 (0.436)	−0.724 (0.416)	−0.301 (0.434)
Constant	2.757*** (0.280)	2.857*** (0.267)	2.995*** (0.279)
Observations	213	213	213
R^2	0.066	0.093	0.119
Adjusted R^2	0.035	0.062	0.089
Residual Std. Error (df = 205)	0.771	0.734	0.767
F Statistic (df = 7; 205)	2.082*	2.999**	3.965***
Note:	*p<0.05; **p<0.01; ***p<0.001		

Chapter 5

SOCIAL TRUST AND RURAL ECONOMIC RESILIENCE AFTER THE SOVIET COLLAPSE

5.1 Introduction

Communities of every kind (human, animal, plant) are subject to shocks. Those shocks, or disturbances, include natural disasters (hurricanes, tornadoes, droughts) but also human-centric events (wars, terrorism, coups, financial crises). "Resilience" means the ability of a community to recover from such disturbances. Resilience is about bouncing back, or returning to a prior state. In a world where these types of shocks are inevitable, and perhaps are increasingly common due to climate change and population growth, understanding how communities respond is crucial.

In this chapter, I evaluate at a high level the impacts of a highly complex political and economic shock. I test quantitatively whether or not there are differences in rural resilience in Almaty and Jambyl oblasts after the collapse of the Soviet Union. For causal identification, I rely on a regression discontinuity around the border between Almaty and Jambyl oblasts, supplemented with a multivariate logistic regression analysis that controls for alternative explanations.

Measurement presents a challenge to resilience research in general, but especially to the study of rural resilience in a country as big and sparsely populated as Kazakhstan. One could imagine using survey data to assess resilience, for example, but this would entail having an extensive, longitudinal sample. To measure and compare the resilience of rural communities in Almaty and Jambyl oblasts, I turn to remote sensing data, primarily an annual time series of nighttime lights data (available from the United States government from 1992 to 2013). The nighttime lights time series is an underused resource in political science. It has global

coverage, appealing when the communities of interest are difficult to get to and official data are not publicly available. The data, discussed in more detail below, allow for a fine-grained consideration of differences in resilience that are tied to specific geographic places.

After the collapse of the USSR, the nighttime lights data shows that some communities went dark and then bounced back to brightness, while others went dark and stayed that way. Can social trust patterns set by initial Russian colonial policies explain why some communities bounced back while others did not? The long-term links between colonial policy, social trust, and resilience can help us understand how communities respond to crises.

The analysis in Chapter 5 shows that there is indeed variation in trust between the two oblasts of interest. A consistent result from Chapter 5 is that Jambyl oblast has higher rates of vertical trust relative to Almaty oblast. As noted in Chapters 1 and 2, the social scientists are generally interested in trust as a mechanism to explain other important outcomes, such as economic development (e.g. Algan and Cahuc 2010) or democracy (e.g. Putnam 1993). In Chapter 2, I hypothesized that variation in social trust along the three dimensions of interest would affect rural resilience. The constellation of trust associated with the most resilient outcomes will depend on the type of shock the community experiences. In the case of a political and economic shock, lower vertical trust and higher horizontal trust should best position a community for resilience in the short term. In the long term, if a community can survive the initial period after collapse, slightly higher vertical trust should lead to better resilience. This chapter analyzes resilience at a distance, drawing high level conclusions about the average resilience of communities in Almaty and Jambyl oblasts. The micro-level mechanisms linking trust and resilience are the subject of Chapter 6.

Trust is not the only factor conceivably linked to resilience. The size and wealth of the community before the shock hits are also important – a larger population and more reserves to draw upon mean a greater chance of recovery. Where possible, I control for these alternative explanations in the analyses that follow.

The remainder of the chapter proceeds as follows: I first draw on the broad theoretical framework set out in Chapter 2 and the history related in Chapter 3 to set expectations

for resilience in Almaty and Jambyl oblasts given their different colonial histories and the observed variation in social trust. I then introduce the nighttime lights data and the two procedures I developed to convert the raw pixel data into meaningful geographic areas that could be tracked over time. Two quantitative analysis strategies follow to evaluate the differences in resilience, as measured by changes in brightness, between the two oblasts. The first is a geographic regression discontinuity and the second is a multivariate logistic regression approach.

5.2 Expectations

Chapter 2 sets out the theoretical expectations of colonial rule, social trust, and economic resilience, while Chapter 3 discusses in detail the history of Almaty and Jambyl oblasts. As a reminder, the proposed theory suggests that areas with lower vertical trust will be better suited to survive shocks like the Soviet collapse. By not putting their full faith in the state, communities will have greater self-reliance, perhaps by having withheld some sources of economic activity from the state. These communities might also be less likely to wait for state intervention to save them after the Soviet collapse – with less trust in the benevolence of the state, they are better positioned to pick up the scraps and attempt to repair infrastructure and maintain economic activity.

Given the differences in the colonial histories of Almaty and Jambyl oblast, particularly the way that policies conditioned settler patterns and land displacement, the findings in Chapter 4 are partially consistent with theoretical expectations. Having shown that Almaty oblast evinces *lower levels* of vertical trust, this suggests that the oblast should have *higher rates* of economic resilience after the Soviet collapse. The differences between the two oblasts on measures of horizontal and ethnic trust are less conclusive, suggesting that any observed differences in resilience between the two oblasts are better explained by the vertical dimension.

5.3 Nighttime Lights Data

To generate quantitative data on a fine-grained geographic scale from the time period of interest, I turn to an increasingly-common proxy for human activity: nighttime lights. I use GIS (specifically the program ArcGIS) and nighttime lights data to trace settlement brightness in Almaty and Jambyl oblasts in the 1990s. Nighttime lights (also referred to as luminosity, or brightness) have consistently shown to be a good proxy for human activity and economic development (Weidmann and Schutte 2017; Xi Chen and William D Nordhaus 2014; Jean et al. 2016; Ghosh et al. 2013; Henderson, Storeygard, and Weil 2012; Elvidge et al. 2009). The luminosity data have been validated by prior geographic work in Kazakhstan as a good proxy measure for regional GDP (Propastin and Kappas 2012). GDP per capita is often thought of a proxy for income, or more broadly for well-being. It is in this vein that the nighttime lights are an intriguing measure. For the purposes of this study, one can think of them as a proxy (the lights) for a proxy (GDP) that is a stand in for the true concept of interest (economic well-being). To be clear, I am not interested in GDP per se. The elements that go into a community's GDP are complex (land, labor, and capital, each with myriad moving pieces). As Chapter 6 describes, the micro-level processes for how some communities maintained economic activity are varied, from strategies to pool scarce resources to national-patriotic feelings that kept people from moving away. The nighttime lights data are proxy for economic well-being and activity, as validated by their correlation with another proxy for the same concept, GDP.[1]

Another way to think about nighttime lights is what they represent in terms of physical infrastructure: electricity, power-plants, cables, fixtures, light-bulbs, etc. Min et al. (2013) takes this approach in using the nighttime lights data, focusing on what having electricity means in terms of government capacity, "pork", and collective action. In thinking about why communities went dark across the former Soviet Union in the 1990s, infrastructure is an

[1] I am reminded of the iconic Seattle billboard from the 1970s, which said, "Will the Last Person Leaving SEATTLE — Turn Out the Lights", see `https://www.historylink.org/File/1287`

important part of the story along with government capacity. Power went out because there was no way to pay people for labor and no way to get replacement parts; it was unclear who to appeal to to get a light pole fixed, and even if you found the right office they likely did not have the resources to get it fixed.

The lights data are available from the United States' National Oceanic and Atmospheric Administration as the Version 4 DMSP-OLS Nighttime Lights Time Series (`https://ngdc.noaa.gov/eog/dmsp/downloadV4composites.html`). For this project, I used the Average Visible, Stable Lights, & Cloud Free Coverages data. The raw data are geolocated TIFF image files by year, where each pixel contains a brightness value, from 0 (the darkest) to 63 (the brightest). Figures 5.1 and 5.2 shows the luminosity of the two oblasts of interest in 1992 and 2012 to demonstrate the raw TIFF files overlaid by maplines.

Figure 5.1: Nighttime Luminosity in Jambyl and Almaty Oblasts in 1992

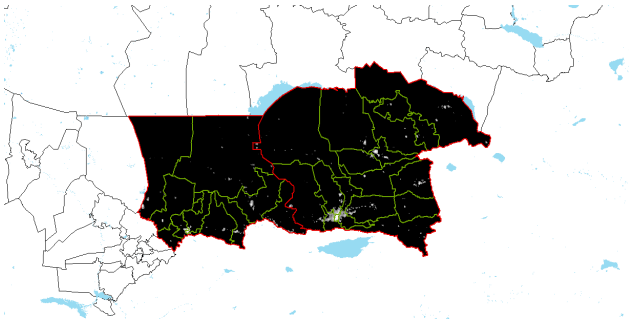
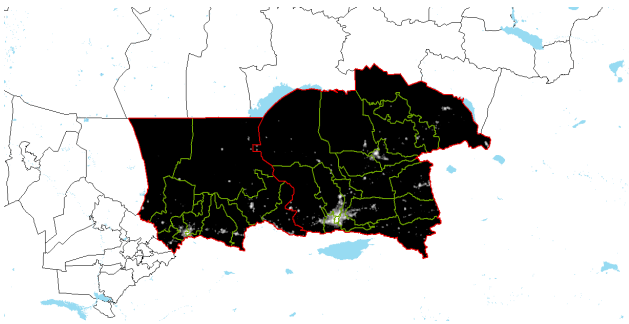


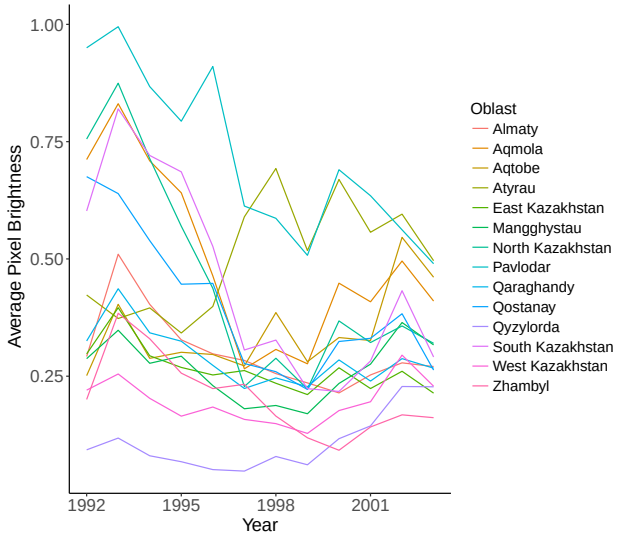
Figure 5.2: Nighttime Luminosity in Jambyl and Almaty Oblasts in 2012



For the purposes of this analysis, the ideal strategy would be to compare brightness during the Soviet period (before 1991) to brightness after the collapse (after 1991). Unfortunately, the available time series begins in 1992. In using these data, I am assuming that the shock of the collapse lowered brightness beginning in 1991 but that the brightness was still sliding darker in 1992 as infrastructure and governance failed. If this assumption is incorrect, the data will be biased towards resilience (that is, using 1992 as the baseline instead of 1991 will make it easier for communities to appear they have recovered from the shock). This essentially biases against findings that detect a resilience difference between oblasts.

Once the lights are mapped onto geographic areas, one can calculate summary brightness statistics for any area (that is, for any polygon), including the average brightness, minimum, median, and so forth. For each year of data, one can calculate the relevant statistics for that unit, generating time series data (a longitudinal tracking of the same unit over time). For example, Figure 5.3 shows the mean brightness for each of Kazakhstan's oblasts over time.

Figure 5.3: Change in Mean Brightness by Oblast



I use two procedures to parse the data into smaller units from Almaty and Jambyl oblasts. As an initial cut, I compared towns over time (this method also helped me to identify field

sites, discussed more in the next chapter). As a second cut, I used a 2km by 2km grid. For both strategies, I use a Universal Transverse Mercator (UTM) Zone 43 North projection.

5.3.1 Community-level Strategy

As a first step, in the absence of formal GIS data denoting community boundaries, the nighttime lights in 1992 are used to draw boundaries around lights-contiguous areas. The identified lights-polygons are assigned names, based on the presence of Google Earth town locations within their boundaries, and I generate nighttime lights measures of interest, including the average brightness of the town and the total sum-of-light (SOL) for the town. I then superimpose the 1992 town boundaries onto the 1993 nighttime lights data and calculate measures of brightness with the lights of subsequent years (1993, 1994, 1995, and beyond) for the 1992 areas. Figures 5.4 to 5.12 show each step in this process for an example region in Almaty oblast. The community-level data from each year is then compiled into a panel dataset tracking each area over time. Table 5.1 shows a snippet of the panel data set generated by the method.

Figure 5.4: Procedure for Identifying Towns and Measuring Brightness Changes (1): snippet of 1992 raw data

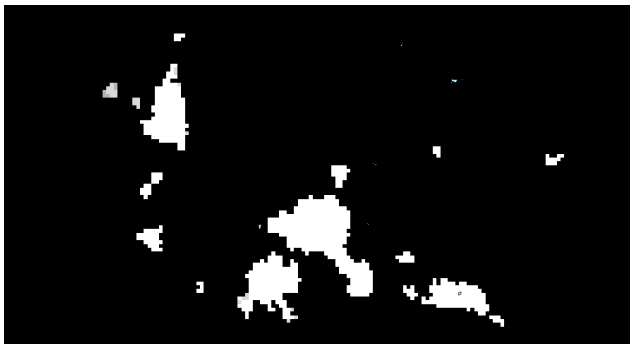


Figure 5.5: Procedure for Identifying Towns and Measuring Brightness Changes (2): Polygon boundaries around 1992 lights

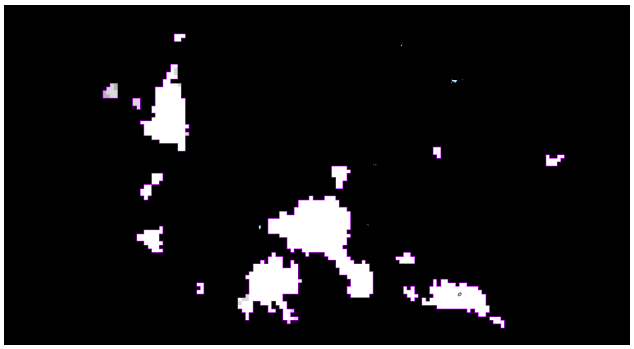


Figure 5.6: Procedure for Identifying Towns and Measuring Brightness Changes (3): Image of 1992 boundaries

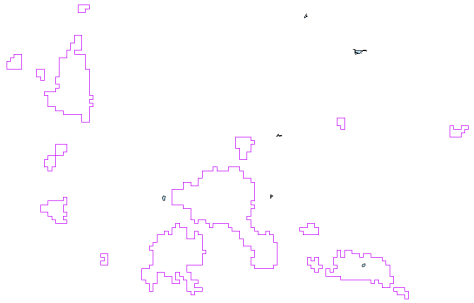


Figure 5.7: Procedure for Identifying Towns and Measuring Brightness Changes (4): Naming 1992 communities

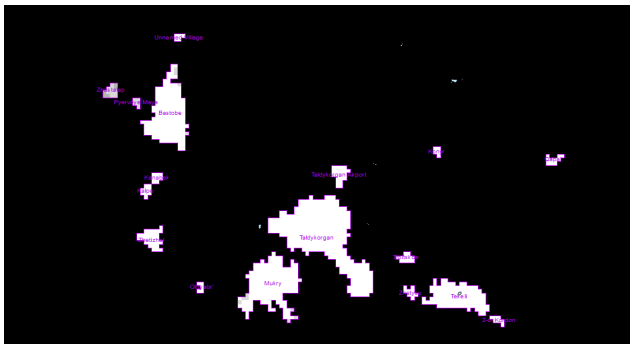


Figure 5.8: Procedure for Identifying Towns and Measuring Brightness Changes (5): 1992 boundaries over 1995 lights

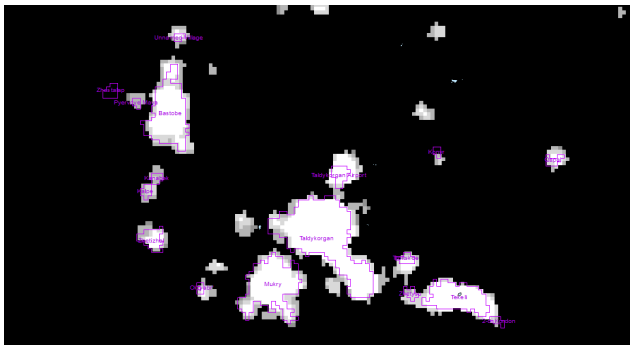


Figure 5.9: Procedure for Identifying Towns and Measuring Brightness Changes (6): 1992 boundaries over 2000 lights

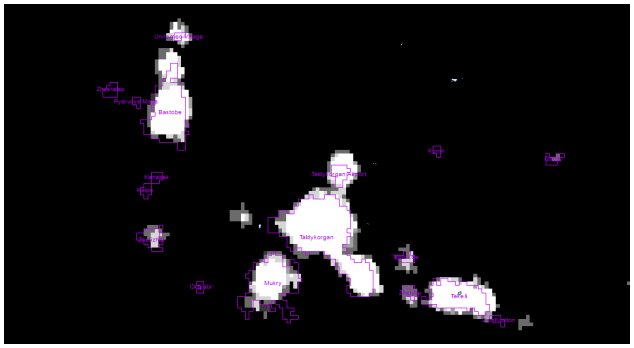


Figure 5.10: Procedure for Identifying Towns and Measuring Brightness Changes (7): 1992 boundaries over 2005 lights

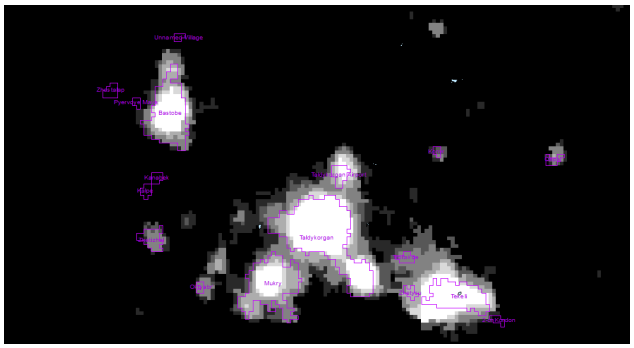


Figure 5.11: Procedure for Identifying Towns and Measuring Brightness Changes (8): 1992 boundaries over 2010 lights

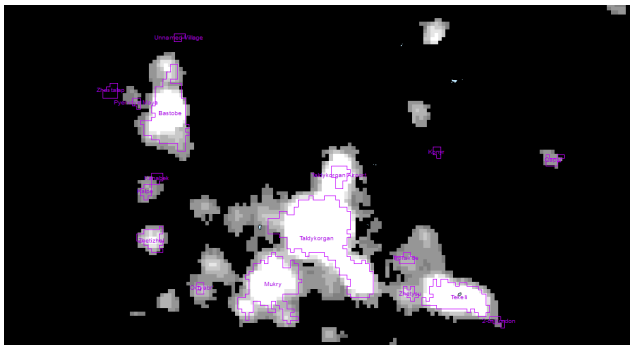


Figure 5.12: Procedure for Identifying Towns and Measuring Brightness Changes (9): 1992 boundaries over 2013 lights

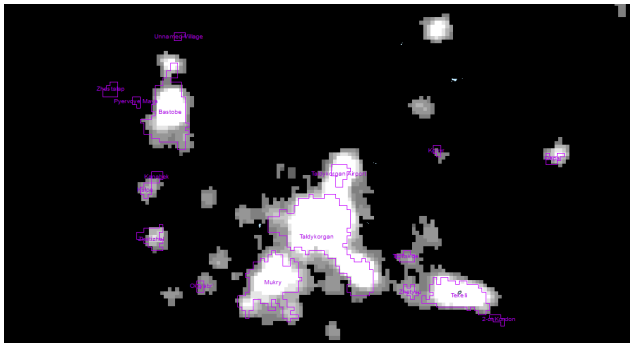


Table 5.1: Sample of Panel Data of Nightime Lights by Community

Community Name	Oblast	Year	Mean Brightness	Total Sum Brightness
Aksu	Almaty	1992	14.9	342.0
Aksu	Almaty	1993	0.0	0.0
Aksu	Almaty	1994	6.3	144.0
Aksu	Almaty	1995	7.3	167.0
Aksu	Almaty	2000	0.0	0.0
Aksu	Almaty	2005	0.6	14.0
Aksu	Almaty	2010	3.3	75.0
Aksu	Almaty	2013	0.0	0.0

The data allow for comparisons of places over time. For example, Figure 5.13 shows the average brightness (by 1992 area) for small towns in Almaty and Jambyl oblasts. Most towns in the oblasts seem to follow similar paths of dimming during the 1990s, then having some slow recovery. There are exceptions, of course, as some towns actually became brighter in the 1990s. While difficult to see in the figure, some towns appear to have never recovered from the dimming in the 1990s. Table 5.2 lists 11 towns that had an average brightness of zero after 2000 (the values in the table are the mean brightness each year for the listed community).

Figure 5.13: Change in Mean Brightness for Small Towns, 1992-2013

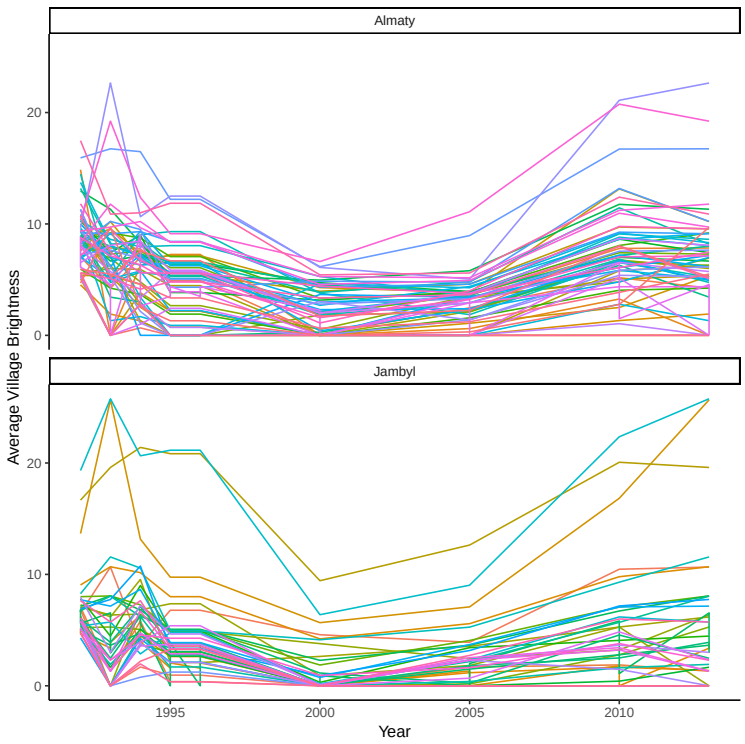


Table 5.2: Towns with Zero Brightness After 2000

Community Name	Unique ID	1992	1993	1994	1995	2000	2005	2010	2013
1 Maya	202	5.4	0.0	0.7	0.0	0.0	0.0	0.0	0.0
Abandoned town?	197	6.9	0.0	1.7	1.0	0.0	0.0	0.0	0.0
Aydarly	117	5.1	0.0	3.8	2.2	0.0	0.0	0.0	0.0
Karaboget	139	5.6	0.0	3.7	3.0	0.0	0.0	0.0	0.0
Kumozek	135	5.8	0.0	4.5	3.4	0.0	0.0	0.0	0.0
Saryozek	140	4.3	0.0	4.2	2.1	0.0	0.0	0.0	0.0
Shyganak	155	4.8	0.0	0.8	1.2	0.0	0.0	0.0	0.0
Turkestan	74	5.2	0.0	3.6	3.7	0.0	0.0	0.0	0.0
Zhansulan	116	4.7	0.0	2.0	0.4	0.0	0.0	0.0	0.0
Zhastalap	178	5.6	0.0	2.8	0.0	0.0	0.0	0.0	0.0
Zhaylaukol	153	4.7	0.0	2.2	3.3	0.0	0.0	0.0	0.0

5.3.2 Grid Strategy

The community-level strategy above is attractive because it generates named entities that can easily be found on a map. They are a relatively referenceable unit of analysis, which is important for tracking specific communities or areas through time. If you want to connect a contemporary area to its Soviet or pre-Soviet history, it helps immensely to have a named community to look for (even if that name or its spelling has changed over time, as is the case for many of these communities).

However, a downside of the strategy is that it generates a relatively small sample size of observations for quantitative analysis. In total, the procedure described above generated a list of only 217 standalone communities. There are many more independently administered villages and towns that this officially listed for each oblast; the identification procedure using the nighttime lights unfortunately lumps together many formally independent communities if they have contiguous nighttime brightness. To increase the sample size, I therefore also aggregated the nighttime lights on a grid level. I superimpose a 2km by 2km grid over Almaty and Jambyl oblasts, then generate brightness summary statistics for each grid polygon for each year. This procedure tracks 85,307 grid polygons over each year, of which 2,169 had a

brightness in 1992 greater than 0 but less than 50 (this excludes the very brightest grid cells from urban areas).

5.4 Analyses and Results

I take two approaches to analyzing the quantitative, nighttime lights data. First, the shared border between Almaty and Jambyl oblast creates the potential for a geographic regression discontinuity analysis. The treatment, described in more detail below, is compound and there is the potential for filtering along the border (a potential contamination of the treatment effect).

In part due to the limitations and potential violations of the regression discontinuity assumptions, I also take a second approach, namely a logistic regression model where the dependent variable is whether or not a grid-cell was ever observed to return to its 1992 brigtness over the span of the nighttime lights series.

5.4.1 Regression Discontinuity

The Imperial borders, their initial like-random assignment, and their relative fixedness from the Imperial period up to the 1990s allows me to consider a geographic regression discontinuity design (Keele and Titiunik 2015) to assess the long-term effects of Imperial policies on later survival. I also borrow from designs that leverage time series cross sectional data to examine differences in outcomes of interest over time. Essentially, the initial treatment is variation in Russian colonial policy alongside the like-random, border between Almaty and Jambyl oblasts. Settlements and trust developed deferentially on each side of the border due to the initial policy treatment. I assume that trust patterns were relatively fixed by the time of the 1917 revolution, as evidenced and set by the 1916 revolts.

The 1991 collapse of the Soviet Union provides an exogenous shock to the systems on either side of the border, a shock that was applied to both sides. The research design asks to what degree their response to that shock depends on their assignment into one of oblasts, where the response is their change in economic status in the 1990s. To a degree, one can

think of this as a study of heterogeneous treatment effects: the shock of the collapse was a treatment equally applied. Is there a case to be made that being in one oblast or the other contributes to how well the subject, in this case a village, responded to that treatment? Are there differences in how each of the identified towns fared after the collapse of the Soviet Union, and can those differences be explained by which side of the oblast border they are on?

For a strict regression discontinuity, there should be no treatment contamination. In this instance, contamination might look like sorting around the border, or moving from one oblast to the other. If this movement occurs randomly, the research design holds, but the treatment effect (or intent-to-treat effect) signal may be diluted. However, if individuals sort because of the treatment or proposed mechanism, that does to damage to the design. In the case of Kazakhstan, most mobility in the Soviet era was not voluntary, so there is little to indicate that individuals sorted on the basis of trust. In the post-Soviet era, data from the early 1990s on interregional migration are scarce. Examining data from 2008 to 2010, A. Aldashev and Dietz (2014) find that only about 1% of the population migrated between oblasts. They argue that the movement is primarily attributed to economic factors (e.g. higher wages). Higher wages could ultimately be linked to trust, so despite the low rates of migration A. Aldashev and Dietz (2014) find, this could represent a contamination effect in the research design.

In a first-cut attempt to estimate the effect of differential colonial policies, I first limit the town sample to exclude the largest cities (anything over the 90th percentile in area in 1992). This removes urban communities. I then examine the average change in lights of a town in Almaty oblast compared to the average change in lights in Jambyl oblast. To hone in on the potential for a regression discontinuity right along the border, I subset the data to compare changes in towns that fall within set distances from the border. Initial results are reported in Table 5.3.

Without any further analysis or statistical tests, we can see if the results in Table 5.3 pass an initial plausibility test. With all of the identified villages included (118 in Almaty, 77 in

Table 5.3: Change in Lights by Oblast and Border Distance

Oblast	Average Difference in Lights, 1992-93	N	Max	Min
	All villages			
Almaty	-1.8	118	53.0	0.0
Jambyl	-1.5	77	50.0	0.0
	Within 5km of oblast border			
Almaty	-0.6	3	11.0	0.0
Jambyl	2.6	2	54.0	0.0
	Within 20km of oblast border			
Almaty	0.8	4	13.0	0.0
Jambyl	-1.2	11	18.0	0.0
	Within 50 km of oblast border			
Almaty	-1.3	15	13.0	0.0
Jambyl	-1.7	21	18.0	0.0
	Within 100 km of oblast border			
Almaty	-1.2	24	14.0	0.0
Jambyl	-1.7	44	18.0	0.0

Jambyl), the average villages on both sides of the oblast border darkened from 1992-1993, with a difference in difference of 0.3. Almaty oblast darkened slightly more that Jambyl. If we limit the sample to only those villages within five kilometers of the border, the sample size shrinks dramatically. Here is appears that the Jambyl villages actually got brighter, while the Almaty side darkened.[2] Expanding the range to within 100 kilometers of the border naturally gives a larger sample size (24 in Almaty, 44 in Jambyl). At this distance, it again appears that on both sides of the border, the average village darkened, with a difference in difference of 0.5. Jambyl darkened slightly more than Almaty.

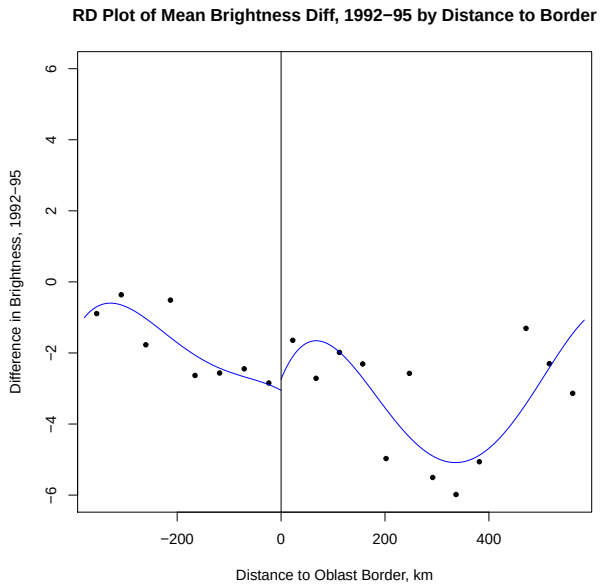
Table 5.3 provides an initial consideration of the border effect. It also shows the sensitivity of this type of analysis to researcher-driven decisions, such as the choice of distance to the border. For a more data-driver approach, I turn to the best-practice methods suggested by Calonico et al. and made accessible with the R package "rdrobust" (Calonico, Cattaneo, and Titiunik 2015). Writing from the same research group, Keele and Titiunik suggest that

[2]A military base in the region may explain the effect.

this type of analysis is particularly appropriate for geographic regression discontinuities (e.g., discontinuities along physical borders), because it can mitigate concerns about spatial auto-correlation (Keele and Titiunik 2015). The method involves automatically binning together observations that are 'close' to one another; a cluster of villages becomes one data point as their changes in brightness are averaged together. The bin size can be determined by using one of a number of potential methods. Once binned, the data can be used to plot variation over the two regions, up to the border. Figure 5.14 and Figure 5.15 presents examples for the Kazakhstan data. The data on each side of the border are modeled using a non-parametric 4th order polynomial.

Figure 5.14: Regression Discontinuity, Town Strategy, 1992 to 1993

Figure 5.15: Regression Discontinuity, Town Strategy, 1992 to 1995



Figures 5.14 and 5.15 show an interesting pattern that is somewhat consistent with the proposed theory. The focus of interpretation is on the intercepts of the regression lines at the border (where the vertical line marks 0). In both figures, the intercept for Jambyl is lower than the intercept for Almaty, indicating that at the border, we'd expect communities to be darkening more on the Jambyl side. They were, in short, less resilient than communities on the Almaty side.

As the town strategy for tracking changes over time yielded such a very small number of observations, I replicate the regression discontinuity using the 2km grid strategy, generating the results shown in Figures 5.16 and 5.17. Note that this strategy leads to many more data points and regressions lines that are much smoother. The slopes are still more varied than one would prefer to see. However, again we see a break at the border in the difference in brightness (between both 1992-1993 and 1992-1995). At the discontinuity, Jambyl oblast evinces lower rates of resilience.

Figure 5.16: Regression Discontinuity, Grid Strategy, 1992 to 1993

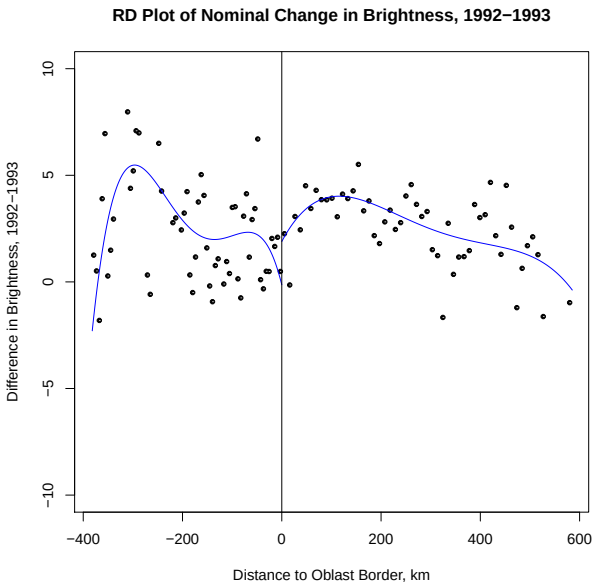
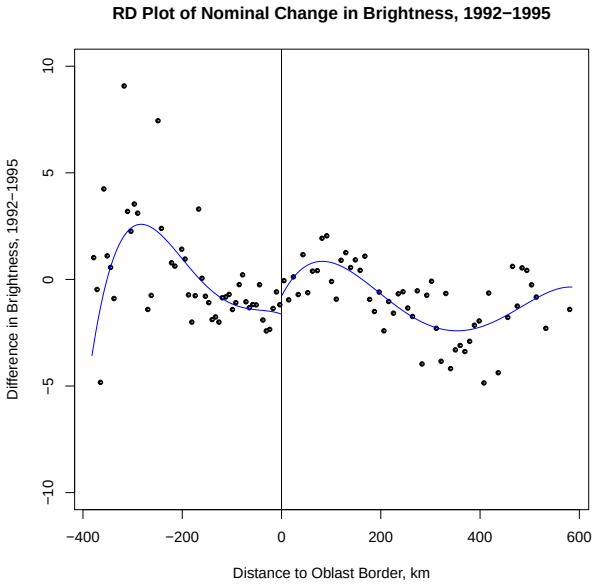


Figure 5.17: Regression Discontinuity, Grid Strategy, 1992 to 1995



A geographic regression discontinuity has many appealing qualities from the perspective of causal inference. If the border is random, and if the "treatment" is correctly applied and there is no contamination between treatment and control groups (e.g. no sorting around the border based on the treatment), then the design does very well at allaying concerns about the potential confounding effects of observable factors. However, those assumptions can be hard to meet. In this case, the treatment is compound (policy increasing likelihood of settlement, increasing likelihood of negative interactions), and there are concerns about potential sorting around the border post-treatment. In addition, as the results figures show, there are few settlements right at the border between the oblasts, making precise conclusions difficult. To supplement this analysis, I therefore turn to a second modeling strategy.

5.4.2 Logistic Regression Approach

As a second modeling strategy, I analyze the nighttime lights using multiple logistic regression. To maximize possible statistical power, I use the gridded data for the analysis.

Dependent Variable

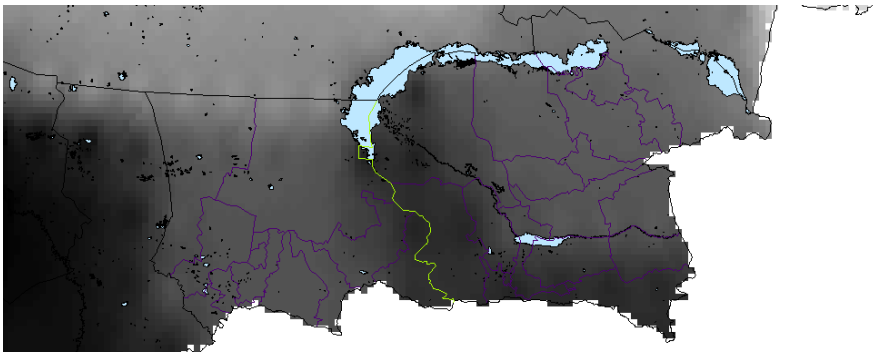
The dependent variable is a binary variable, "Recovery," where a 1 indicates that at some point in 1993 or later, the grid cell returned to the brightness value it had in 1992. A 0 indicates that the cell never again achieved its 1992 brightness. Which covariates are associated with the return of a grid cell to its previous brightness?

Independent Variable and Controls for Alternative Explanations

The independent variable of interest is a binary indicator of whether or not a given grid cell is located in Jambyl oblast. I also control for additional observed covariates that could conceivably impact resilience. First, I control for the approximate income (GDP) per capita in the grid cell in 1990 (in purchasing power parity [PPP] adjusted USD), to account for economic basis prior to the Soviet collapse. One might suspect that a stronger economic

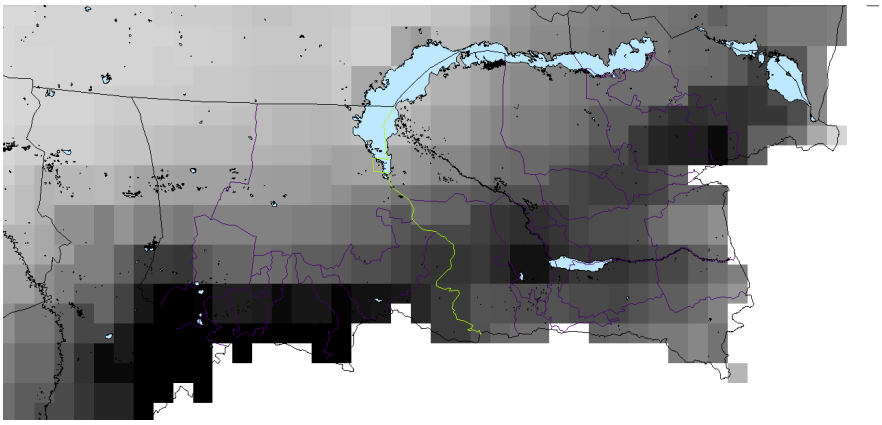
basis to begin with would arm communities with better reserves with which to respond to crisis. To generate the average income per capita per grid cell in 1990, I interpolate from the one degree gridded from G-Econ data (W D Nordhaus and Chen 2016; W D Nordhaus 2005). I used inverse distance weighted (IDW) interpolation, then superimposed the 2km by 2km grid. Figure 5.18 shows the spatial distribution of this variable across the two oblasts, where darker areas have lower incomes.

Figure 5.18: GDP per Capita in 1990, PPP Adjusted USD



Second, I control for the approximate average annual rainfall, as a proxy for the agricultural potential of the area. Areas with better agricultural production likely would be better positioned to rebound after the Soviet collapse. The rainfall data come from Esri's Global Average Annual Precipitation, 1950-2000 (Data Basin Dataset) layer (B. Fekete 2002; B. M. Fekete, Vorosmarty, and Grabs 2002). Figure 5.19 shows the spatial distribution of this variable across the two oblasts, where darker areas have higher amounts of rainfall.

Figure 5.19: Average Precipitation, 1950-2000



Third, I control for the initial brightness of the grid cell in 1992, as an additional check on the initial economic base of a given community. Places that were brighter to start with might either have a more reserves to rely on; conversely it might be more difficult to return to the same level of brightness if it started at a very high rate of electrification.

Finally, I control for the Euclidean distance from the grid cell to the city of Almaty (city location from Esri's World Cities product). Almaty is the largest city in Kazakhstan, so one might wonder if closer access to city resources would allow for better recovery (e.g. people might be more easily able to commute for work in the city and bring back resources to their rural area). This is an "as the crow flies" distance, and as such is a crude indicator of how much benefit a community might stand to receive from proximity to a large urban area.

Results

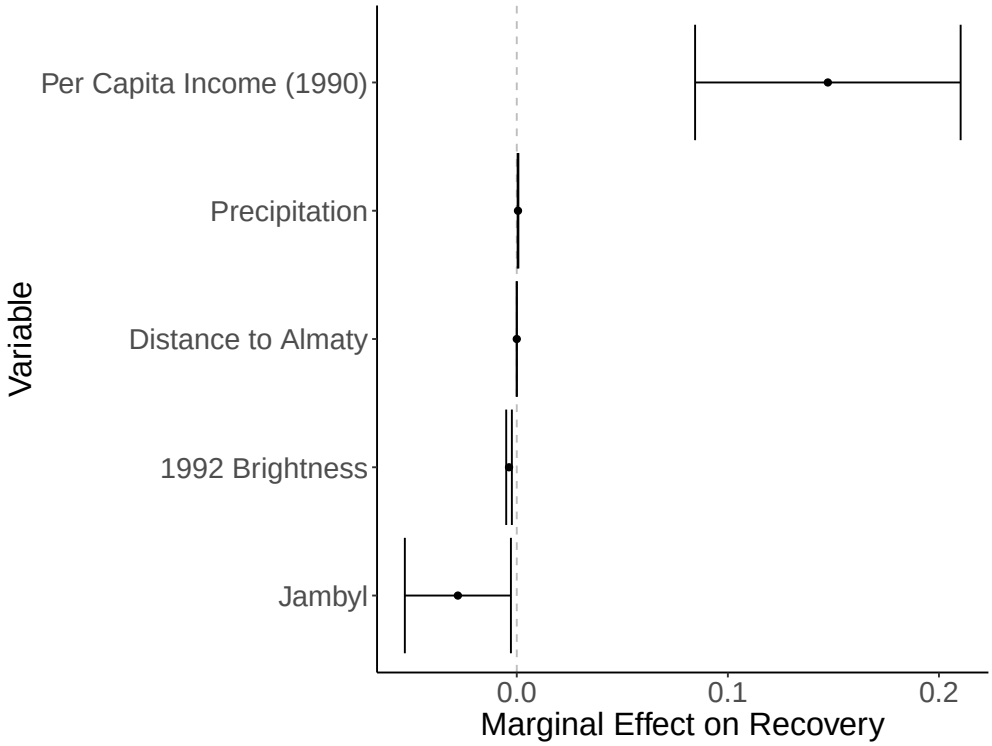
Table 5.4 reports the coefficients, statistical tests, and confidence intervals for the logistic regressions. Four results are reported as a robustness check with different combinations of the control variables. In all four regressions, the Jambyl oblast coefficient has a negative sign. It is statistically significant at the $p<0.05$ level in three of the four specifications. Figure 5.4.2 shows the marginal effect of of each coefficient on the binary "recovery" outcome with the fourth, full logit specification from Table 5.4.

Table 5.4: Logistic Regression Results

	Dependent variable:			
	Binary, 1 if Recovered 1992 Brightness			
	(1)	(2)	(3)	(4)
Jambyl	-0.857^{***}	-0.303	-0.544^{**}	-0.398^{*}
	$(-1.153, -0.562)$	$(-0.654, 0.049)$	$(-0.918, -0.170)$	$(-0.757, -0.038)$
Precipitation		0.007^{***}	0.012^{***}	0.008^{***}
		(0.004, 0.009)	(0.009, 0.014)	(0.006, 0.011)
Per Capita Income (1990)		1.727^{***}		2.101^{***}
		(0.917, 2.538)		(1.224, 2.977)
1992 Brightness			-0.040^{***}	-0.052^{***}
			$(-0.059, -0.022)$	$(-0.071, -0.033)$
Distance to Almaty		-0.00000^{**}	-0.00000^{***}	-0.00000^{*}
		$(-0.00000, -0.00000)$	$(-0.00001, -0.00000)$	$(-0.00000, -0.00000)$
Constant	2.687^{***}	-0.068	0.182	-0.325
	(2.477, 2.897)	$(-0.910, 0.773)$	$(-0.630, 0.993)$	$(-1.178, 0.528)$
Observations	2,204	2,169	2,169	2,169
Log Likelihood	-645.320	-531.364	-537.569	-518.480
Akaike Inf. Crit.	1,294.639	1,072.728	1,085.139	1,048.960

Note: *p<0.05; **p<0.01; ***p<0.001

Figure 5.20: Logit Marginal Effects



5.5 Discussion

Across the multiple analysis strategies utilized in this chapter, rural communities in Jambyl demonstrate lower resilience after the collapse of the Soviet Union, as evidenced by changes in nighttime lights satellite imagery. These areas, which experienced lower rates of Russian colonial settlement, lower rates of Kazakh land displacement, and lower rates of inter-ethnic violence in the colonial era, were less resilient.

The degree to which this difference in resilience could be explained by variation in the mechanism of social trust is explored in the next chapter, where I turn to qualitative interview data from Almaty and Jambyl oblast. Does variation in social trust appear to be one of the drivers of the notable differences in resilience, as the theory suggests?

Chapter 6

QUALITATIVE EVIDENCE: RESILIENCE AND TRUST IN RURAL POST-SOVIET KAZAKHSTAN

6.1 Introduction

What are the individual and community-level mechanisms through which variation in social trust might affect resilience? The primary goal of this chapter is provide in-depth answers to questions regarding the relationship between social trust and rural resilience. As in Chapter 5, the shock of interest is the collapse of the Soviet Union in Kazakhstan. What stories do people living in villages in Almaty and Jambyl oblasts tell about the collapse? Do they shed light on the "how" and "why" of variation in resilience and on variation in trust along the dimensions of interest in the two oblasts?

This chapter relies on qualitative interview and observation data gathered during fieldwork in Kazakhstan in the autumn of 2017. The fieldwork prompted me to refine my initial the proposed theory, particularly in terms of the mechanism channels by which colonial legacies might transmit through time to affect economic resilience and the mechanisms by which different types of trust might affect resilience. While I initially approached the project with an eye towards social trust, that focus was redoubled after my fieldwork. The prior literature made clear that colonial policy could have long-term impacts on social trust, and that social trust in turn could have an impact on resilience. But the logic of that chain became even more relevant as I spoke to people in rural and semi-rural areas from Almaty and Jambyl oblasts.

The interviews and fieldwork observations provided evidence on a few main points. First, the difficulties of the 1990s were easily recalled, confirming that bouncing back was a relevant concept in the histories of these communities. Second, interactions between neighbors and

with the state were often pointed to as impacting relative levels of economic well-being after the Soviet collapse. Third, the visits revealed both within and between oblast variation in terms of trust and resilience. Jambyl oblast has both "successful" (in terms of resilience) and "failed" or "failing" towns, as did Almaty oblast.

Three large classes of mechanisms for resilience that are linked to social trust emerged from the interviews, with a fourth class that is more speculative. These mechanisms are summarized in Table 6.1. The first, collective action, references instances where individuals overcame the temptation to defect and worked with their neighbors. As noted by Ostrom (2000), pooling resource and labor is easier with increased horizontal social trust. Examples include continuing to work together on collective farms even in the absence of the state and pooling resources to fix infrastructure or assist neighbors who were going through hard times.

The second set of mechanisms fall under the general class of network effects, or what might be termed social capital (Putnam 1993). As with collective action, increased horizontal social trust is generally considered increase in the strength of networks. These connections to others, primarily but not exclusively family, were mentioned by many respondents when explaining why they had not left their villages. Remittances from those who had left the village (either abroad or to other parts of Kazakhstan) also helped villages survive.

The third set of mechanisms are what I term the "squeaky wheel." It was clear in some villages that state support was instrumental in long-term survival. If the state had not stepped back in in the late-1990s and early 2000s, I suspect many of the visited villages would have completely disappeared. That state support took the form of investment in infrastructure, but also in providing a source of labor via the oralman program that repatriated Kazakhs living outside of Kazakhstan. Not all villages received the same level of state support. To a degree, whether or not a community received funding for a new well is a matter a luck, but it is also a matter of asking and petitioning (a process that at least one village mayor described). Believing that it is not a complete waste of time to ask the government for support is underpinned by trust that the government will act in the interest of the citizens (if properly informed and motivated).

Finally, I speculated that illegal activity contributed to village survival after the collapse of the Soviet Union. To be very clear, none of my respondents reported this type of activity directly. Some spoke indirectly about the increases in crime in their communities. The type of crime and corruption that I have in mind could range from minor (tax avoidance) to major (growing and trading illegal goods, engaging in organized crime). Normative implications aside, these types of activities would help rural communities to survive after the collapse by providing much needed income. In terms of trust, these activities would be supported by a lack of vertical trust and strong horizontal trust. As one respondent noted, "You can't wait for the government to get things done. If you want it done, you have to do it yourselves."

Table 6.1: Mechanisms of Trust and Resilience

Mechanism	Type of Evidence	Trust in the Mechanism
Collective action	Pooling resources, micro-lending	Supported by higher horizontal trust
Network effects	Preventing leaving, remittances	Supported by higher horizontal trust
Squeaky wheel	Petitioning the government	Supported by higher vertical trust
Illegal activity	Refusing to pay taxes, stripping materials from state farms and public places	Supported by lower vertical trust, higher vertical trust

A secondary motivation for undertaking the qualitative fieldwork was the known issues of other data sources used in this dissertation. While the satellite nighttime lights imagery used in previous chapters provides an initial hint that there is variation in the relative level of survival of villages in Kazakhstan after the collapse of the Soviet Union, pictures can lie just like any other data source. They are a useful proxy when on-the-ground data are scarce or expensive to gather, but as with all proxies, it is important to validate them if at all possible.

The same is true of the survey and social media data. The benefits of survey data are that the researcher can carefully design questions that accurately reflect core concepts. Yet these data have an unavoidable social desirability bias that might affect the answers that

respondents give. In addition, even a carefully designed question could be misinterpreted or mistranslated when in the field, generating biased data.

Social media data, in contrast, holds the researcher at a remove. These are almost purely observational data, where a researcher essentially peers into an individual's life through the public trails that they leave online (though naturally what individuals post online is usually curated with a specific goal in mind). The downside of this is that it is hard to verify that what the researcher thinks is reflected in an online trace is what truly is occurring in the offline or more "real" world.

The fieldwork therefore serves as a means of ground-truthing the satellite data and attempting to confirm in more detail that the meaning I assign to survey, remote sensing, and social media data corresponds to the concepts used by respondents when the are given a chance to express themselves in a more free-response manner.

6.2 Method

The very existence of a "Methods" section signals that this chapter falls into the class of writing that what Van Maanen calls a "realist account of culture" (Van Maanen 2011, 45). While Van Maanen is mainly concerned with variation in ethnographic writing conventions, his discussion overlaps with espistemological considerations, and it is true that I approach my qualitative work from a mainly realist/positivist perspective (c.f. Kubik 2009; Lindlof and Taylor 2011, 5-6). The work presented in this chapter is a fairly surface-level qualitative exploration when compared to more in-depth and long-term studies. I approach the data from a positivist and logical-linear standpoint, treating the qualitative data as another means of testing hypotheses.

In September 2017, I visited 8 villages in Kazakhstan. 4 of the villages were in Almaty oblast, while the remaining 4 were in Jambyl oblast. This type of fast-fieldwork has upsides and downsides. On the positive side, we were able to visit a wide range of sites in a limited timeframe. On the negative side, we were not able to build deep relationships with respondents. In no way would I consider this fieldwork to be truly ethnographic, along the lines of

the type of political ethnography espoused by Edward Schatz and others (Schwartz 2009). The time period of the fieldwork was very short, there was no participant observation. At no point did I attempt to drop my researcher-observer mask. I next describe the research choices made for the study, including how sites were selected, how field visits were conducted and data collected, and how responses were coded for analysis.

6.2.1 Site Selection

Table 6.2 lists the 8 villages in the study with basic descriptors. The names in this table are pseudonyms to protect interview respondents. To assign pseudonyms, I borrowed names from villages around the city of Kyzylorda, in Kyzylorda oblast, that struck me as being very common or benign Kazakh place-names. To be clear, I did not visit any villages in Kyzylorda, and any relation of these names to actual villages in Almaty or Jambyl oblast is purely coincidental. In addition, I have at times changed respondent and interview details (ages, gender, some additional location names) to protect those I spoke to from any reprisals that might arise from their participation and out of respect for their privacy. The data collection method, including the interview instrument, was reviewed by the University of Washington Human Subjects Division Institutional Review Board (STUDY00002435).

Table 6.2 also gives a rough relative size estimate for each site, based on my impressions and interview responses, with "village" denoting a smaller community than "town" (villages had lower population, lower enrollment in schools, as well as fewer roads, homes, businesses, etc). The final column in Table 6.2 gives a very general summary of the site status, derived from the impressions of the research team after visiting and the comments about each site made by inhabitants or by inhabitants of nearby towns. Further description of how these status designations were made is included in Section 6.4 below.

Table 6.2: Research Sites

Almaty Oblast			
Village number	Pseudonym	Rough Size	Apparent Status from Visit
1	Besaryk	Large Village	Thriving
2	Akkum	Small Village	Struggling, but reviving
3	Kyzyltam	Small Village	Struggling
4	Zhanatalap	Small Town	Thriving
Jambyl Oblast			
1	Abay	Small Town	Thriving
2	Belkol	Small Village	Struggling
3	Akzhar	Large Village	Struggling, but reviving
4	Karaozek	Small Town	Thriving

The villages in each oblast were fairly close to one another, often but not necessarily in the same raion. Both clusters were within 200 kilometers of the oblast border. Village selection was not random. Within logistical constraints (e.g. how far I could safely travel), I purposefully selected clusters where there was a good deal of variability in the dependent variable. I used the nighttime lights data to identify village clusters, with a goal of maximizing the number of villages I could visit that appeared at a distance to fall into both thriving and struggling categories. Clearly this selection violates key tenets of causal inference. However, note that the primary goal of this qualitative work was primarily to validate the remote-sensing, survey, and social media data. Secondarily, the visits and conversations with village inhabitants about their experiences in the 1990s were sources of theoretical and conceptual development.

6.2.2 Field Visits and Data Collection

The research team consisted of myself, a driver, and two research assistants, both of whom had completed at least an undergraduate degree in Central Asia. One of the research assistants acted as the interviewer for the Kazakh language interviews. For safety reasons, we

did not overnight in any of the villages or on the way, each day returning to Almaty.[1]

I also wanted to minimize potential issues with local officials and any risks that might come to our team due to an affiliation with a foreign researcher. We were careful to alert most government offices in the villages we visited to our presence. The warmth of our reception varied. We were also stopped a few times on the road at police checkpoints. Not staying overnight in the villages reduced the risk of potentially contentious interactions.

Figure 6.1: Main Road in Jambyl Oblast

Staying overnight in any of the villages would have created more opportunities for this type of potentially harmful interaction, even if those interactions could have also generated useful information. For example, in one village, an official expressed sadness that we had not let him know in advance that we were coming. He said they would have slaughtered a

[1]The safety concerns fell into the general categories of road conditions, crime, and gender issues. Rates of traffic fatalities in Kazakhstan are quite high. Figure 6.1 shows a picture of a main road we traveled. Note that this two-lane road with no barrier between lanes and many potholes is a main trucking route, and so is traveled by small personal cars, buses, and large trucks. This increases the risk of accidents. As the research team leader, I tried to ensure that we were off the road before dark to decrease the risk of deadly accidents. In terms of gender dynamics, the entire team besides myself were male. It did not feel culturally appropriate or safe for us to lodge at hotels or to camp out on the road.

sheep and thrown a party. If we had allowed that to happen, surely we would have heard longer histories, more examples of social trust at work (or not), and in-depth accounts of the post-Soviet transition (most likely over rounds of vodka toasts). These types of gatherings would have had a degree of transaction to them: I would have gained data, and officials would be able to brag about hosting an American guest. They would have also been genuine expressions of hospitality and curiosity. I deemed this type of interaction and the trade-offs involved as unsuitable for the project for logistical and safety reasons.

In each of the villages, my research team and I spoke with multiple individuals, including government officials. Upon arrival in each village we generally sought out the main government office (the akimat, or mayor's office, usually). This alerted officials to our presence as a means of forestalling any potential issues they might have with us interviewing residents. In some of the offices, our impromptu visits also led to in-depth interviews with officials, who then connected us to individuals who "knew the history" of the village (these respected elders included an animal husbandry expert and a writer, who was happy to gift us copies of his books about the region).

At no point were we told that we could not conduct interviews. Generally speaking, we received a warm welcome from government officials and civilians alike. Civilians tended to be more skeptical about us than the officials. Much of this welcome (and lack of welcome) can certainly be attributed to the rarity of seeing a American woman in a small village.

We stayed for tea with one group of government employees. One akim (mayor) told us to pick up a free watermelon from the vendors who were set up along the main road near the turn-off to the village. In both cases, we accepted the tea and watermelon so as to not offend. For cases of spontaneous gift giving, we brought chocolate so that we could reciprocate. At no point did we offer compensation for interviews in any form.

My strategy for selecting interview subjects was far from random, though we did approximate a "random walk" strategy in a couple of the sites. The main sampling strategy was a combination of snowball and convenience sample. Unless akimats (government offices) recommended specific individuals for us to talk to (a snowball sample), we went for walks

around the various villages and asked the people we met if they would be willing to speak with us. Figure 6.2 shows one the main street in one of the towns where we walked, meeting interview subjects along the way. Occasionally respondents would recommend others who we could speak to, allowing for an additional snowball sample.

Figure 6.2 is also relevant as an example of the types of impressionistic data that the research team noted as we conducted interviews. Notes about the quality of the roads, or about the number of people on the streets, or about the willingness of individuals to speak with us, helped to construct a more general sense of the status of each town in terms of economics and demographics. For example, Figure 6.2 shows a town with a paved road, but there are many potholes and the shoulders of the road quickly become sand, with notable trash. We do see power lines, however, and evidence that fences and electricity poles have been painted. Figure 6.3 shows a street in a site that seems to be faring better after the collapse. As in Figure 6.2, the road is paved. There are also concrete curbs along the road, indicating a higher level of care, as well as power lines and newer, well-maintained fencing. The village photographed in Figure 6.4 also has painted fencing, but only around the mosque. The road is unpaved, though there are powerlines and streetlamps. This image came from one of the struggling towns, a status that we assigned based on interviews and on the judgment of research team members after spending time in each village and assessing the situation from viewing the condition of the area.

Figure 6.2: Main Street 1

Figure 6.3: Main Street 2

Figure 6.4: Main Street 3

Semi-structured interviews were conducted in Russian and Kazakh. Responses were recorded by two to three listeners taking handwritten notes (very few respondents consented to be audio-recorded). Having multiple sets of notes allows for validation of interview responses. We conducted over 30 interviews, ranging in length from a few minutes to almost an hour. After each field visit, I recorded extended verbal fieldnotes where I talked about each interview (referring to my written notes) along with my impressions of the villages (level of economic development, types of economic activity, resources, general feel of the community and official government offices). The transcriptions of these verbal fieldnotes, plus my original hand-written notes and the written fieldnotes and memos from my research assistants, represent the majority of the qualitative data from these village visits. In addition, I took a few pictures during the visits (including Figures 6.1 – 6.4). In taking pictures, I avoided including individuals, except for the pictures taken with individuals who first asked for a picture with me, and also avoided pictures of signs that could identify the exact villages we visited.

I include the interview questions in English translation in Appendix A. I developed the

initial list of questions based on the research questions. Before taking the questions into the field, my research assistants and I discussed and adjusted them. We paid particular attention to questions that might be considered sensitive politically or socially. One research assistant did the initial translation of the questions into Russian and Kazakh, which we then edited together to ensure that the translations accurately reflected the concepts of interest.

Respondents indicated which language they would prefer for the interview. As we expected, only ethnic Kazakhs were comfortable being interviewed in Kazakh, and even among Kazakhs there were those who preferred to have their interview conducted in Russian. I noted quite a bit of code-switching, or flipping back and forth between Russian and Kazakh depending on the subject or context. For example, one interview subject would respond to my research assistant's Kazakh questions in Kazakh until he looked at me, at which time he would immediately switch into Russian for a few sentences, but eventually would flip back into Kazakh. One woman spoke Kazakh in her office surrounded by colleagues, but the minute she was alone with our research team she switched to Russian, in which she was clearly more comfortable.

My identity and positionality potentially affected the responses we received. I have spent long periods of time in Kazakhstan, including 27 months as a Peace Corps Volunteer living and working in rural areas, plus an additional summer studying Kazakh in Almaty and occasional short visits with friends while I was conducting research in Kyrgyzstan. Despite my comfort with many elements of Kazakhstani life, my physical presence reads as foreign to most people I meet there. In a memo responding to our visits, one of my research assistants wrote: "I am 80% confident that if I did not have American with me I would get different answers. The people in such places, especially officials, try to show only the positive sides of things to guests." Despite the potential for bias, the qualitative data provides an important part of the dissertation work. Compared to the remote sensing analysis, these data are far more informative in terms of understanding the details of social interactions and telling stories of resilience (or lack thereof). They are therefore useful for validation of the quantitative data and for developing accurate narratives and mechanisms of resilience.

6.3 Analysis

To organize and analyze the fieldnotes and interview responses, I used the qualitative data analysis (QDA) software Atlas.ti (Version 8.3). This software helped me to build and track common themes in the fieldnotes, and to associate those thematic trends with specific villages and oblasts. There were two main types of fieldwork documents: notes on specific interviews and general observations about towns and oblasts. As I read each document within Atlas.ti, I applied codes to specific passages in the notes ("quotes" to use Atlas.ti terminology). A given quote might receive multiple labels.

These codes were then used to organize the disparate documents and quotes into meaningful categories that help structure the narrative laid out in this chapter. In my descriptions of villages and processes below, I present specific quotes from relevant codes. I also include graphical representations of the language used for relevant themes, primarily word clouds. Word clouds are a basic summary of textual data, where the size of each word represents its frequency within texts tagged with a given code. For the presented figures, I excluded standard English stopwords and stemmed all of the included words to consolidate instances where the same basic word was used with various declensions or conjugations. Note that the colors used in the figures are automatically generated by Atlas.ti and are intended to break the visual monotony but not to convey any particular meaning. These graphics help guide my interpretation of the fieldnotes.

To develop the coding scheme, I first listed codes that I believed a priori would be relevant for the study. These included codes for the status of each town, oblast, and the country as a whole; for trust in neighbors and government; for difficulties during the 1990s; and for strategies of survival during the post-Soviet period. As I coded, I added additional codes as I encountered relevant quotes in my fieldnotes. These included codes for oralmans (Kazakhs who "returned" to Kazakhstan after the fall of the USSR, described in more detail below), for other types of population movement, and codes to denote meta observations within the fieldnotes about the method and experiences of data collection (e.g. comments about the

reception we received from different akimats). After coding all of the documents, I examined the codes and their frequencies, grouping the codes and quotes into relevant meta-codes. In total, I created 74 unique codes and 8 meta-codes. In total, the codes were applied 901 times across all of the documents. The codes, organized into meta-codes, and their frequencies are presented in Table 6.3.

Table 6.3: Qualitative Codes and Meta-Codes

Code	**Count**
Status Opinions	
Status of Almaty Oblast	4
Status of Besaryk	12
Status of Akkum	15
Status of Kyzyltam	17
Status of Zhanatalap	6
Status of Jambyl Oblast	6
Status of Abay	18
Status of Belkol	16
Status of Akzhar	8
Status of Karaozek	10
Status of Country	0
Changes of Collapse	
Capitalism	17
Challenges for young people	18
Current difficulty finding work	5
Difficulties of 1990s	41
Life before Soviet Collapse	18
Personal observation of struggle	4

Continued on next page

Table 6.3 – *Continued from previous page*

Code	Count
Privatization	8
Privatize sovkhoz/kolkhoz	7
Strategies for 1990s survival	36
Strategies for 2000s survival	30
Population Movement	
Belonging to place	5
Came from elsewhere	34
Left but came back	6
Oralmans	24
People leaving	38
People who left coming back	5
Reasons to come back	1
Reasons to leave	9
Reasons to move here	8
Reasons to stay	23
Town Details	
Demographics of town	18
Economic foundation	44
Ethnic composition	30
History of Abay	2
History of Akkum	3
History of Akzhar	1
History of Belkol	3
History of Besaryk	6
History of Kyzyltam	3

Continued on next page

Table 6.3 – *Continued from previous page*

Code	Count
History of Zhantalap	9
Local pride	7
Ethnicity	
Critique diversity	0
Critique lack of diversity	1
Critique other nationality/ethnicity	2
Interethnic trust	21
Kazakh nationalism/patriotism	8
Kazakhification	6
Lack of ethnic diversity	2
Praise diversity	1
Praise other nationality/ethnicity	0
Horizontal Trust	
General social trust	20
Helping neighbors	24
Informal pooling resources	22
Lack of pooling resources	6
Lack of social interactions	1
Lack of social trust	5
Support from family only	3
Vertical Trust	
Can't trust government	2
Complaint about government	17
Infrastructure degrading	12
Infrastructure improvement	51

Continued on next page

Table 6.3 – *Continued from previous page*

Code	**Count**
Lack of state-sponsored groups for adults	2
Praise for government	15
State support for finding work	2
State-sponsored social activities	26
Using courts for town benefit	1
Meta from Research Team	
Code switch Kazakh to Russian	2
Landscape observation	8
Meta about method	7
Meta about interaction	8
Researcher observation on infrastructure	1
RA 1	17
RA 2	33
Total Codes	**901**

The meta-code "Status Opinions" contains codes to label quotes relating to the status of each town, each oblast, and the country as a whole (note that this final code was in the initial scheme, but that no quotes were labeled as relevant to this topic). Status here could mean a very broad statement from a respondent that things in the town are "good" or "very difficult." Or it could be a more specific comment that the town is having a hard time because of the lack of water or the fact that young people are moving away.

"Challenges of Collapse" encompasses codes that deal with the difficulties of the Soviet collapse and strategies for survival. I noted common topics of discussion when questions of the collapse and survival were raised, including multiple mentions of capitalism and privatization.

This meta-code also includes references to what life was like before the collapse, and to challenges that communities continue to face to this day.

Many of our respondents were born elsewhere and moved to a given village for a variety of reasons. The wealth of comments about population movements warranted a series of codes and a meta-topic of "Population Movement." These topics covered statements that respondents made about themselves (where they were born, for example, if not in the village) and also their more general opinions as to why someone might stay or leave the village. This meta-code also contains a code for oralmans, as the oralman program and these individuals are strong examples of migration and movement (see Section 6.4.1 below for more detail about oralmans).

"Town Details" organizes codes that relate to the specific histories and demographic composition of each town. To a degree, these are all codes and quotes that are relatively factual (when the town was built, for example, or how many different ethnicities are present in the town). The code for "Local pride", however, is less factual and refers to instances where respondents bragged about things from their town that they were proud about, whether the quality of their produce or the story of a local who made it onto an Olympic team.

While the "Town Details" contains a sub-code for the ethnic composition of a given site, a separate "Ethnicity" meta-code organizes the majority of the fieldnotes on issues of nationality and ethnicity. These codes deal with interethnic trust (or mistrust), either broadly expressed (e.g. "we have good relations between ethnicites") or specifically targeted (e.g. references to the "odd practices" of another ethnic group).

The "Horizontal" and "Vertical Trust" meta-codes are fairly self-explanatory within the broad framework of this dissertation. The "Horizontal Trust" codes and quotes reflect how individuals felt about their neighbors and whether they engaged in social capital practices motivated by social trust, such as pooling their resources informally to help out a friend after the death of a family member. Relevant "Vertical Trust" codes and quotes related to how respondents felt about their government. As infrastructure in each town was heavily reliant on state funding, comments about infrastructure improvement or degradation are also

included under this meta-code.

The final meta-code is a catch-all for fieldnotes about the research process. It also contains codes to designate whether a particular comment or observation came from one of my research assistants. The research assistant notes generally validated my own. Often they recorded the same information I did about an interview, while only occasionally did our notes conflict (usually misreported dates or place names). They also occasionally included useful pieces of information that I had not recorded.

6.4 Results: Town Descriptions

This section describes each of the research sites in detail. The emphasis here is on using the descriptors to determine the relative status of each location and to validate the nighttime lights data.

6.4.1 Sites in Almaty Oblast

Besaryk

In Besaryk, we noticed more people out on the streets than in any other site we visited. Respondents in Besaryk expressed pride in the ethnic diversity of the town, which they attributed to the efforts of a former sovkhoz director to recruit workers from a wide range of Soviet republics. One man said that he moved to Besaryk from Uzbekistan just before the fall of the USSR. He arrived with a good deal of capital, in the form of animals and money. But inflation after the collapse wiped out his savings; he survived because he was able to maintain his herd, though its size shrank considerably.

In Besaryk we also spoke to one man who had recently moved to the community from China. Individuals who have "returned" to Kazakhstan after the fall of the USSR from surrounding states (often China, Mongolia, Uzbekistan, the Karakalpakistan region of Uzbekistan, or Turkmenistan) are referred to as "oralman" (which translates roughly as "returnee"). Oralmans are ethnic Kazakhs who either lived in areas that were not included

within Kazakhstan's border when the SSR was delineated or who fled (or otherwise moved out of) Kazakhstan during periods of upheaval. They usually receive government support, in the form of land and a stipend, to repatriate to Kazakhstan (see Diener 2005).

In the Besaryk akimat, staff printed out for us a written history of their town in relation to the nearby railway, which was pointed to as a driver of development and community longevity. The town has at least one school and a relatively new hospital. In terms of ethnic diversity, respondents said they had 12-13 different ethnic groups living in the town, and at least one approvingly noted that they had representatives from all three Kazakh zhuzes.

Figure 6.5 is a word cloud built from all of the quotes that referenced Besayk's status, where the size of each word is determined by the number of times that work appears in the quotes (larger indicates more prevalent). For this and all of the additional word clouds, pre-processing steps included stemming and removing standard English-language stopwords. Based on the word cloud, our notes on Besaryk's status clearly contained many references to the people of the town, to infrastructure such as the road, and to the "good" occurring in the town. In the research team notes, we described the status of Besaryk with quotes such as "Things are going well with animals so they're doing well" and "This village surprised me by its population... we noticed so many people on the street going to work or just having conversations." Especially in comparison to some of the other villages we visited, Besaryk seemed to be doing very well. This is not to say that residents did not have complaints, including some comments about a lack of necessary infrastructure (e.g. access to natural gas) and about income inequality (e.g. disparities in how the rich and the poor held weddings or other parties).

Figure 6.5: Besaryk Status Words

Akkum

The status of Akkum took us a bit by surprise, based on the remote sensing data. According to the nighttime lights data, Akkum was bright in 1992, but then went dark and never appeared to recover (at least up until the last year of the data in 2013). When we asked individuals in Besaryk about Akkum, they said that indeed it had had a very hard time in the 1990s, particularly in terms of getting good water (e.g. water that was not oversalinated). However, they said that they thought Akkum was doing much better now. This opinion was shared by others in Almaty when I described this town as a place that had "gone dark."

When we arrived in Akkum, we discovered that we had not been misled by our respondents. Akkum was not "dead," and indeed did show some signs of resurgence, most of which occurred after the end of the nighttime lights time series (after 2013), according to our interviews. The Arts Center was newly refurbished. Parks, the school building, and fences around state property seemed to be in good repair. We also noticed new public water pumps (see Figure 6.6), a solution to the Akkum's issue of clean water that was identified by respondents in Besaryk and seconded by respondents in Akkum.

Figure 6.6: Water Pump in Akkum

Akkum was much smaller than Besaryk. The human inhabitants (less than 75 families, we were told) were far outnumbered by livestock. A rough count of sheep divided by residents led officials to estimate over 200 head of livestock per person in the town. The school, built to accommodate close to 500 students, had less than 200 students enrolled. Akkum was also less ethnically diverse than Besaryk and some of the other communities we visited. A large number of residents were oralmans.

Kyzyltam

Water was an important part of the story of Kyzyltam's status, as well. Unlike in Akkum however, the problem of fresh water was very much still an active issue. Kyzyltam was much smaller than Akkum and Besaryk, with only 35 students enrolled in the school (though respondents noted a similar total number of households as in Akkum, suggesting a much older population based on the disparate school enrollments). We noted freshly painted fences, but also crumbling infrastructure. It is possible that only the state support of oralmans is

keeping the town alive.

Figure 6.7 contains the word cloud of status quotes from Kyzyltam. "Water" appears prominently, but also of note are the words relating to hardship. Full quotes from our fieldnotes regarding Kyzyltam include such phrases as "horror movie" and "town on life support." Describing Kyzyltam, a respondent in another village said, "That place is really dying. That place is is really having a hard time. They're having trouble getting good water."

Figure 6.7: Kyzyltam Status Words

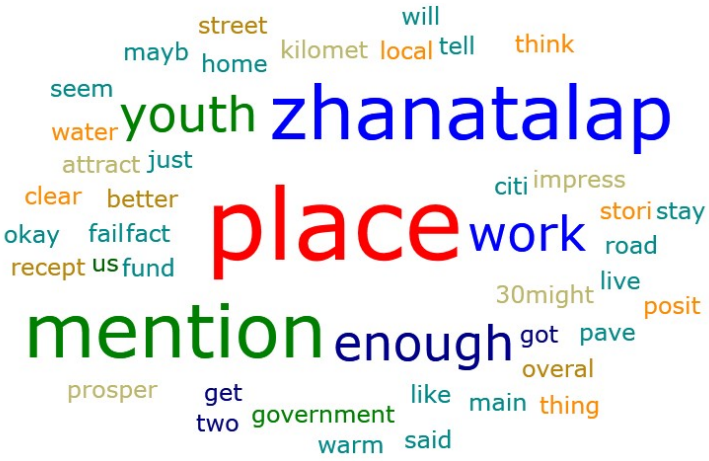
Zhanatalap

Our respondents in Zhanatalap were almost exclusively associated with the akimat. More so than in the other villages we visited in Almaty oblast, this leads to a potential for responses that are biased towards presenting the town in a favorable light. Figure 6.8 also reflects the sources of our interviews – of note in particular is the prominence of the word "government." May of our respondents in Zhanatalap pointed to official state financing as the key to their survival, especially after the forced privatization of their sovkhoz in the mid-1990s.

Zhanatalap was also the largest of the villages we visited in Almaty oblast, with a population of close to 70,000. Respondents claimed that the town has 11 different ethnic groups living there, with fewer than 30 Russian families. They described peaceful interethnic rela-

tionships. However, respondents were not easily able to think of times when they had helped their neighbors or informally pooled resources.

Figure 6.8: Zhanatalap Status Words



6.4.2 Sites in Jambyl Oblast

Abay and Karaozek

On the satellite nighttime lights maps, Abay and Karaozek appeared to be distinct towns, with a border of darkness separating them. On the ground, however, we found that the two flowed into one another, with a main road (under construction during our visit) connecting them. It was difficult to tell where Abay ended and Karaozek began, thus they are described together here. The grouping of these towns together is also due to the sparsity of data from Karaozek.

Together, Abay and Karaozek form a fairly large population center. One school in Abay had around 1,500 students enrolled. Ethnic diversity was high (ethnicities noted included Kazakh, Russian, German, Turkish, Korean, and Kurdish), and we heard many examples of helping neighbors and friends across ethnic lines. At the same time, we also heard complaints about changing social norms. Some said that life was much better under Soviet Union and complained about the way that capitalism left members of society behind to fend for them-

selves. One man noted noted that, "People used to be afraid of dogs. Now they are afraid of one another." The collapse led to many people leaving the area, particularly the German population. We noted quite a bit of economic activity and infrastructure development.

Belkol

Belkol was a very small village, one that we drove completely through in a manner of minutes. It was situated away from the main road. The school had fewer than 40 student enrolled, all in primary school. The town contained only Kazakhs from the same ru, we were told, though respondents noted that a significant Dungan population lived and farmed nearby.

While the school and other official buildings appeared well-kept, economic activity in the town was slim. Belkol was one place where many respondents spoke about Kazakh-specific traditions or patriotism to explain why they stayed in the village or to explain why they came back after leaving for work or education. For example, one man returned because he felt tied to the landscape of his ancestors. Another man stayed because his parents lived there, and by Kazakh tradition he, as the youngest son, was obligated to care for them.

Status words for Belkol included both positive descriptors ("beautiful") but also some words that do not speak well for the future of Belkol (e.g. "leaving" and "disappear"). Respondents in Belkol highlighted the difficulties facing young people in the village, noting that most had to leave to either find work or continue their education beyond primary school.

Akzhar

Our time in Akzhar was short. Respondents in Belkol had mentioned that they thought Akzhar was doing fairly well, and that it had mostly recovered from the difficulties of the 1990s. When we arrived, we found that the road was in rough shape, but that it was paved. The lack of any cafes that could host weddings and celebrations was a cause for complaint among respondents.

The few individuals we spoke with in Akzhar described their town in mostly positive

terms. A common response about the status of Akzhar involved a discussion of new construction and infrastructure, including the school and a clinic.

We noted that Akzhar seemed to be "doing fairly well." They were also quite proud of the range of state-sponsored social activities available in their community, including music groups and sports clubs. In terms of ethnic diversity, one respondent claimed that interethnic relations were excellent – to prove the point, she called over a neighbor, who was of a different ethnicity, and referred to that neighbor's son as her grandson.

6.5 Connections between Trust and Resilience

The interview and observation data collected from the eight sites yielded numerous potential connections between trust and resilience. The next section discusses the variation we saw in resilience between the sites, along with strategies respondents related for survival during the 1990s and into the 2000s. I then discuss how those strategies relate to the variation in social trust that emerged between the sites.

6.5.1 Survival and Resilience

We generally confirmed that villages identified as struggling via remote sensing were indeed worse off on the ground than their relatively thriving neighbors. While we could not visit all of the villages initially identified as struggling based on the remote sensing data due to logistical concerns, our respondents did confirm that they were aware of areas around them that had struggled during the 1990s, including towns on the initial list. That is, while we may not have been able to sample all of the villages identified by the remote sensing data, we did encounter a wide variation in terms of resilience on the ground.

Figure 6.9, for example, shows the shell of a former Soviet-era Arts Center in one of the struggling towns. The building has been abandoned, as had the factory pictured in Figure 6.10. In other towns, however, we found newly renovated Arts Centers and individuals taking advantage of the free market to start their own small businesses, from opening bakeries to selling pencils at kiosks near schools.

Figure 6.9: Abandoned Arts Center

Figure 6.10: Abandoned Factory

We also found that some of the struggling villages of the 1990s have made comebacks in recent years. Note, for example, the newly-painted fences in Figure 6.9, which surrounded a

school that also had a brand-new artificial turf soccer field. These revival processes appear to be heavily subsidized by government programs, including the oralman initiative.

Respondents in every village described a difficult time during the immediate post-Soviet period. Common responses to questions about how they survived involved a reliance on animal herding (primarily sheep, but also horses, cattle, and some camels and goats, or pigs kept by Russians), home gardens, and selling produce (often along the main road). Respondents also talked about the process of out-migration, with essentially every respondent having friends and family members who moved away. While many of the reported out-migrants moved to urban areas in Kazakhstan, others were in Russia or other parts of Europe (particularly ethnic Germans who repatriated to Germany). As far as current economic conditions, many respondents noted that there were more products on store shelves than ever before, though a common comment was, "Things are good, if you have the money." This was then contrasted with the Soviet period, when "Maybe there were problems and people without jobs, but at least we didn't see them."

Figure 6.11: Means of Economic Resilience 1

Figure 6.12: Means of Economic Resilience 2 (from Belkol)

Figure 6.13: Means of Economic Resilience 3 (from Akzhar)

From our interviews and impressions of the eight villages we visited, as summarized

in Table 6.2, 4 generally fell into the "struggling" category (with 2 of those possibly on the path to revival), while the remaining 4 were classified as "thriving." With the limited sample of villages and interview data, the reasons why some villages survived while others failed is difficult to determine conclusively. However, we did see patterns of trust potentially influencing how individuals responded to the collapse of the USSR. These patterns are the focus of the following section.

6.5.2 Evidence of Horizontal Trust

Many respondents talked about local sovkhozes (state-run farms) or kolkhozes when answering questions about economic survival. In two of the relatively well-off villages, respondents described some continuity in sovkhoz activity after the collapse. In one village, although officially the sovkhoz was disbanded, workers continued to collectively manage livestock. In another, they managed to hold the sovkhoz structure together, even without the state. Respondents noted that this insulated them from some of the upheaval of the 1990s, though some claimed that they did not escape the crisis but only delayed it: in the mid-1990s, they were forced by law to disband the sovkhoz and then experienced a difficult time economically. Villages where sovkhozes were immediately divided up into private property did not seem to fare as well, in part because the capital allowed people to emigrate.

Maintaining the sovkhoz without the state requires a high degree of horizontal trust. Individuals needed to believe that their neighbors were going to show up for work without the power of the state coercing their action. If, as respondents seemed to indicate, keeping the sovkhoz together was important for survival, this suggests that horizontal trust positively affected resilience via the mechanism of pooled labor and resources. In a different region of Kazakhstan, I was once told a story about how after the Soviet collapse, a group of neighbors pooled their money to replace a waterline, using their own resources and the trust they had in one another to coordinate for a better outcome.

Respondents in many villages gave concrete examples of horizontal trust – to say that the thriving villages universally reported high horizontal trust while the struggling villages

did not would be untrue. In the struggling villages respondents told us about pooling their resources to help their neighbors with a wedding, for example, or to help someone rebuild after a fire.

Ethnic Kazakh respondents occasionally pointed to Kazakh-specific traditions as the motivator of this collective behavior. They referred to Kazakh traditions and proverbs when asked why they had not left or why they came back to the village, even after describing how hard the 1990s were. They referenced traditions such as the expectation that the youngest child will move in or stay with their parents to take care of them as they age, or they described feeling like this place was an important homeland for them as Kazakhs. When asked about supporting one another, these respondents mentioned the Kazakh tradition of "asar," or pooling labor and resources. In the more ethnically diverse areas, respondents talked about helping out neighbors without as often referencing this nationality-focused term, though one respondent, when asked about helping each other out during difficult times, responded that the practice had declined due to emigration because, "The Germans were the ones who were really good at that."

Regardless of ethnic composition (for more on ethnicity and trust see Section 6.5.4), in the towns that were thriving we did seem to note a higher level of horizontal trust. Examples of helping one another out came more readily to mind for respondents. Relating to vertical trust, described in more detail below, we also heard examples of communities informally pooling their resources to make up for a lack of what would typically be provided by the state. Communities came together not only to build mosques, for example, but also to improve government buildings such as schools.

6.5.3 Evidence of Vertical Trust

Kazakhstan is an autocratic state with a poor record of protecting media and opposition figures who critique the government. Likely because of this history, our questions about trust in the government were met with some suspicion. For example, one respondent wanted to confirm who I was. When I explained and emphasized that he did not have to answer

any of my questions, he waved away the issue. "I'm an old man, what are they going to do to me?" he replied. The idea that there was someone out there who could potentially do something to him for expressing his opinion was real in this statement, even as he downplayed the probability of it affecting him.

One of our respondents summarized his position on the government using the following language, "If you wait for the state to do something, you're never going to have it. You have to really do it for yourself." The government, in his mind, was capable of helping the village to recover from the Soviet collapse (and, more recently, from the effects of the 2008 global recession). But he did not trust that the government would take those helping steps, instead advocating for communities and individuals to take action on their own.

In one site on the thriving end of the scale, a respondent began trying to leverage my presence in order to get something out of the government (the "squeaky wheel" mechanism of resilience). She began a list of things that she said were wrong with the town (mainly in terms of infrastructure such as roads, water, and lighting). But a neighbor quickly stopped her, saying, "This person isn't from the akimat! She isn't passing along complaints to the government, don't say things that aren't true." I jokingly responded that I would write down the initial complaints in big letters and tell the akim if I met them – everyone laughed.

To me, this interaction spoke to a very instrumental view of the government. The respondent clearly knew that the state was a source of potential infrastructure improvements. She also believed at least somewhat that the government would respond if it heard complaints. At the same time, this was far from a ringing endorsement that the government would always have her best interests at heart. It was not a blind faith that the state would take care of her, but a strategic acknowledgement that the state could make life easier if properly motivated.

Respondents in another of the thriving villages made it clear that they would be far worse off without significant state support. They noted the good fortune that put them just over the line into a different raion than many of their neighboring towns – their raion had a larger budget. While these comments do not speak to vertical trust, per se, they do suggest that recovery from the shock of the Soviet collapse in the long run was dependent on state

support. After making it through the most difficult times, communities needed to coordinate with the state to get access to infrastructure requiring significant investment, such as roads and electricity lines.

6.5.4 Evidence of Ethnic Trust

A third link between varieties of trust and resilience relates to ethnic diversity in the visited villages. In the first village we visited, we at first had a difficult time finding any Kazakhs to interview. Everyone we approached who was willing to be interviewed turned out to identify as a non-Kazakh ethnicity. On its face, this is not all that surprising to find in Kazakhstan. That Kazakhs were a minority in the country after the fall of the Soviet Union has been well reported, and the Kazakhstani state frequently brags about the number of nationalities and ethnic groups present in the country. The Kazakhstan Embassy in the USA claims 130 nationalities and 100 ethnic groups.[2] In the course of our interviews, we spoke to people who identified as Kazakh, Russian, Korean, German, Turkish, and Azeri, among others. We also noted evidence of sub-ethnic group diversity. Kazakhs drew distinctions between people belonging to different zhuzes and ru, for example. And when asked about interethnic harmony, some Kazakh respondents brought up oralmans. While the oralmans living in the villages were all ethnic Kazakhs, some respondents who had lived in Kazakhstan their entire lives (if not always in the same village) felt that relations with Kazakh oralmans fell under the category of inter-ethnic harmony.

Interestingly, the places that were not doing as well tended to be more heavily Kazakh. Respondents in Belkol, for example, claimed that their village was made up entirely of one Kazakh ru (though they noted that they made sure to intermarry outside of the village pool, preferring women from other rus, to avoid birth defects). This village seemed to be holding on, but barely. Respondents noted lots of migration out of Belkol to urban areas. I suspect that they are kept in existence by virtue of strong horizontal trust within the ethnic group,

[2]See `https://www.kazakhembus.com/content/ethnic-diversity`

and a concerted patriotic-nationalist effort to support ethnically Kazakh areas on the part of the state.

The variation in ethnic composition that we noted supports the importance of distinguishing between the horizontal trust present between individuals who share an ethnicity and that between ethnic groups. Given the colonial history of Kazakhstan and these responses, the ethnic dimension of solidary groups (Tsai 2007) cannot be ignored. In the villages we visited, the size of the town is a strong predictor of ethnic diversity – larger towns were more diverse, while smaller towns tended to be more mono-ethnic (usually Kazakh). So it is difficult to tease out from these data whether differences in resilience are attributable to the initial size of the community, the ethnic composition of the community, or the initial levels of trust on the dimensions of interest. In my estimation, however these factors are closely intertwined and associated with the variation we saw in survival status.

6.6 Results: Differences between Oblasts

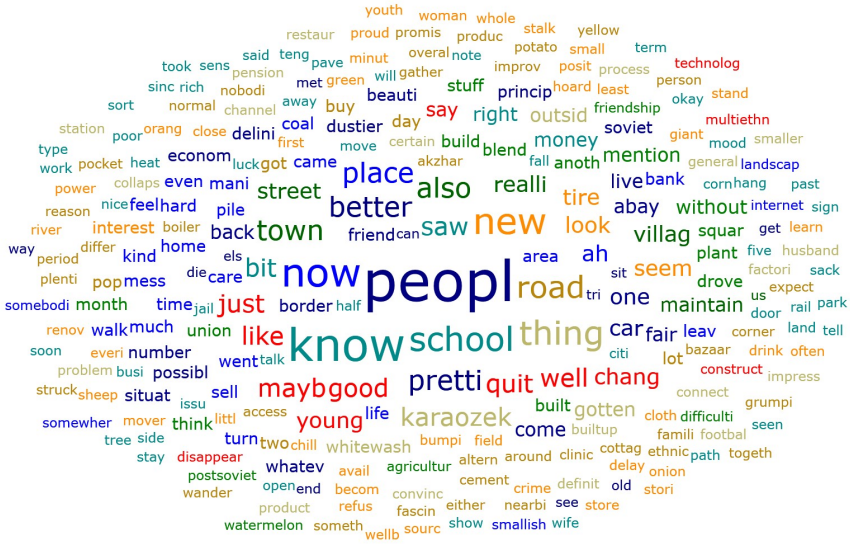
As the previous descriptive sections and the initial Table 6.2 demonstrate, there was considerable variation in resilience between the various villages we visited. Not all of the villages in Almaty oblast were thriving, and not all of the oblasts in Jambyl were failing. In other words, we saw considerable *within-oblast* variation that I suggest is tied to differences in trust after the collapse of the USSR. The main theory of this dissertation, however, operates on the level of the oblast, asking how variation in oblast level policies during the Imperial period might have impacted the average long-term status of communities within different oblasts. What narratives do the qualitative data suggest about the status and strategy differences *between* the two oblasts?

Figures 6.14 and 6.15 display the word clouds for village status quotes from Almaty and Jambyl oblasts, respectively. Comparing the two, an immediate conclusion about the data is that there were more varied statements about status from Jambyl oblast – there are many more words in the cloud, compared to Almaty. A possible implication of this is that people in Jambyl were more willing to speak about the status of their towns and oblast; it may

also reflect random or systematic differences in how we conducted our interviews in the two oblasts. Overall, we spoke to more people in Almaty than in Jambyl oblast, which is perhaps unexpected given the words distributions. Despite speaking to more people in Almaty, we had fewer unique words describing town status in that oblast.

Figure 6.14: Almaty Status Words

Figure 6.15: Jambyl Status Words



To my eye, the word clouds of status words are very similar between oblasts. In both, the words "people" and "place" are prominent, as are basic quality words like "good," "bad," and "better." Infrastructure words like "road" and "school" appear in both, indicating that respondents often thought of the quality of infrastructure when describing the status of villages in each oblast. "Water" appears as a more prominent word for Almaty oblast, reflecting my previous observation that the status of the towns we visited in Almaty oblast was highly determined by the ease of access to good water. That said, at the high level of word counts in status quotes, the oblasts do not appear to be clearly or easily distinguishable. This reflects the variation within each oblast, in that we visited both surviving and struggling villages in each oblast. Those statuses appear to balance out in the aggregate descriptors.

Table 6.4 breaks down the oblasts into counts of relevant codes. In this table, I include five of the meta-codes and sub-codes to facilitate comparison between the themes of interest across oblasts. The included meta-codes are "Changes of Collapse," "Population Movement," "Ethnicity," "Horizontal Trust," and "Vertical Trust." Given the differences in the number and length of interviews in each village and each oblast, comparing code counts cannot be taken as a strict test of hypotheses concerning differences between the oblasts. However, they are suggestive of potential factors on which the two oblasts might either differ or be similar.

In terms of the challenges of collapse, respondents in both oblasts had no trouble describing difficulties in the 1990s. As Table 6.4 shows, Almaty residents were relatively more forthcoming about their strategies for survival in 1990s, and were the source of all of the comments relating to the privatization (or lack thereof) or state-sponsored farms (sovkhoz or kolkhoz). High rates of population movement was described in both oblasts, though Almaty oblast had more references to oralmans.

On the social trust dimensions of interest, we do see some difference between oblasts. Recall the initial hypothesis that differential Russian colonial policy between the oblasts would lead to predictable variation in social trust. Jambyl oblast, with lower rates of Russian settlement and Kazakh land displacement, was predicted to have higher rates of horizontal

trust, especially between ethnic groups, and also higher rates of vertical trust. Interestingly, these patterns do not appear to strictly hold in the qualitative data. Instead, we heard quite a bit of variation within the oblasts.

There were more comments related to positive rates of interethnic trust from Jambyl oblast, but also more comments about a lack of ethnic diversity and complaints about individuals of another ethnicity. In Jambyl oblast we also heard that ethnic trust had changed after the collapse of the Soviet Union. Some of this was attributed to population movement – the departure of Germans, for example, changed the networks of trust between ethnic groups. Often discussions of ethnic trust overlapped with more general comments about neighborly horizontal trust. We heard examples of informal pooling of resources as a solution to difficult times in both oblasts.

Table 6.4: Comparing Codes between Oblasts

Code	**Almaty Oblast Count**	**Jambyl Oblast Count**
Changes of Collapse		
Capitalism	4	13
Challenges for young people	9	9
Current difficulty finding work	4	1
Difficulties of 1990s	26	15
Life before Soviet Collapse	5	13
Personal observation of struggle	3	1
Privatization	4	4
Privatize sovkhoz/kolkhoz	7	0
Strategies for 1990s survival	32	4
Strategies for 2000s survival	15	15
Population Movement		
Belonging to place	1	4

Continued on next page

Table 6.4 – *Continued from previous page*

Code	Almaty Oblast Count	Jambyl Oblast Count
Came from elsewhere	27	7
Left but came back	3	3
Oralmans	23	1
People leaving	12	26
People who left coming back	2	3
Reasons to come back	0	1
Reasons to leave	0	9
Reasons to move here	1	7
Reasons to stay	8	15
Ethnicity		
Critique lack of diversity	1	0
Critique other nationality/ethnicity	0	2
Interethnic trust	9	12
Kazakh nationalism/patriotism	5	3
Kazakhification	2	4
Lack of ethnic diversity	0	2
Praise diversity	1	0
Horizontal Trust		
General social trust	9	11
Helping neigbors	10	14
Informal pooling resources	13	9
Lack of pooling resources	1	5
Lack of social interactions	0	1
Lack of social trust	0	5
Support from family only	0	3

Continued on next page

Table 6.4 – *Continued from previous page*

Code	Almaty Oblast Count	Jambyl Oblast Count
Vertical Trust		
Can't trust government	0	2
Complaint about government	4	13
Infrastructure degrading	4	8
Infrastructure improvement	31	20
Lack of state-sponsored groups for adults	1	1
Praise for government	11	4
State support for finding work	0	2
State-sponsored social activities	20	6
Using courts for town benefit	1	0

On the dimension of vertical trust, the Almaty oblast respondents were more likely to praise the government and mention state-sponsored music and sports groups when asked about social activities. The Jambyl responses produced more complaints about the government and direct statements of distrusting the government to take on needed projects. Because of the variability in respondents, however, I hesitate to place too much weight on these comparisons between the oblasts in terms of vertical trust. Our respondents in Almaty tended to be affiliated with the government more so that in Jambyl, leading to potentially biased responses.

6.7 Discussion and Conclusions

The comparative themes and narrative threads presented in this chapter enrich the theoretical framework of the dissertation. Drawing on qualitative fieldwork data, mainly notes from semi-structured interviews and research team observations, I have described the various

trajectories of eight villages in Almaty and Jambyl oblasts. The struggles these communities faced after the collapse of the Soviet Union were severe and near-universal. Pensions and government salaries went unpaid for months. Many state-run farms were privatized, allowing individuals to sell of their shares and use the proceeds to leave the villages. Those who stayed relied on their livestock and fields to survive.

Though I note some variation in strategies and trust between oblasts, the larger source of variation appears to be within oblast. In each oblast we visited both thriving and struggling villages. This is certainly attributable to the data collection strategy, given that I prioritized trying to visit villages in each oblast that had a range of resilience outcomes according to the nighttime lights data.

The fieldwork data do validate the other data sources of the dissertation, in general. The nighttime lights show some communities recovering from the collapse more easily than others – we certainly found that to be true on the ground. The survey and social media data suggest that we would see individual and oblast level variation in trust along the dimensions of interest. The qualitative data support the idea of variation, though we tended to see it more on the individual or community level than at the oblast level.

Most importantly for the story of the dissertation, the qualitative fieldwork validates some of the proposed mechanisms by which trust influences economic resilience. The narratives respondents gave for survival after the collapse relied on a range of mechanism supported by social trust (see Table 6.1). Trusting networks made it more likely that individuals would stay in the village or send remittances after leaving. Collective action contributed to resilience, including the pooling of scare resources to care for livestock, whether that pooling occurred between extended family members, within broader ties of ethnicity, or across ethnicity based on neighborly or friendship bonds. That pooling, especially of labor in keeping state farms together, is influenced by trust, in the belief that the other people will show up and contribute (Ostrom 2000). Years after the collapse, once the central state has rebounded somewhat, some communities were able to extract benefits from the state, particularly in terms of infrastructure. This supports the theory that resilience after formal

state collapse is best achieved with low vertical trust, but not zero vertical trust. Through the detailed qualitative work, evidence emerges that trust is positively tied to resilience, though that connection depends on the specific dimensions along which trust varies.

Chapter 7

CONCLUSION

In March of 2019, Kazakhstan's long-serving president, Nursultan Nazarbayev, stepped down from office. Up until that point, Nazarbayev had been the official leader of the country since the late 1980s, when he became First Secretary of the Communist Party of Kazakhstan. Presidential elections scheduled for June 9, 2019 will be the first in the country's history where Nazarbayev will not be on the ballot. While Nazarbayev retains many important state powers (such as a seat on the Constitutional Council), his departure raises many questions about the future of the country. Will there be repercussions for the economy? Shake-ups in political leadership? Violence between factions?

If such upheavals do come to pass, the theory and evidence put forth in this dissertation suggests concrete predictions about which areas of the country will be more resilient. The departure of Nazarbayev will provide another potential test of the long-term impacts of Russian colonial rule, the transmission of social trust along the three dimensions of interest between generations, and rural resilience. Areas with higher rates of Russian settlement during the Imperial period demonstrate lower rates of vertical social trust in the contemporary era. And comparing the two oblasts of interest in Southern Kazakhstan, I find that the oblast with lower vertical trust demonstrated greater resilience in the face of shocks such as the collapse of the Soviet Union.

Beyond contributing to our predictions of how communities will respond to recent political events in Kazakhstan, this dissertation has also contributed to broad literatures in political economy and comparative politics that considers how colonial rule and colonial institutions might shape political attitudes and behaviors long into the future. Colonial rules about where and how settlers from other parts of the Russian empire could migrate to Kazakhstan,

including policies about Kazakh land displacement, conditioned the type of contact that occurred between Russians, Kazakhs, and the state. Those initial interactions set patterns of trust and mistrust in the state (vertical trust), in neighbors (horizontal trust), and along ethnic lines (inter- and intra-ethnic trust).

To build this theory and test the long term impacts of Russian colonial rule on social trust and economic resilience, I have leveraged a wealth of varied data sources, including primary and secondary historical accounts, nighttime lights remote sensing data, multiple surveys, images shares on social media, and qualitative interviews. The quantitative and qualitative analyses of these data have varied based on the structure of the data. Taken together, the data and analyses provide both tests of the broad theoretical points and examples of the mechanisms that connect colonial policy, social trust, and resilience.

The focus on two oblasts in southern Kazakhstan, Almaty and Jambyl oblasts, allows for a degree of controlled comparison. The oblasts share a border, and are similar on many observable variables. The causal research design rests on these similarities, and on the relatively arbitrary and fixed nature of the border between the two oblasts. Relative to Jambyl, Almaty received more settlers in the Imperial colonial period and had more instances of violence between settlers and indigenous populations. Almaty oblast today demonstrates notably lower rates of vertical social trust, though on the other dimensions of social trust any differences that there may be between the two oblasts are less clear from the data. As is perhaps intuitive given the political and state-centered nature of the shock of interest (the collapse of the Soviet Union), the more resilient oblast on average is Almaty, the oblast with lower vertical trust.

The theory and empirics of the dissertation raise many questions for future study. The theory implies that community origins shape heuristics that affect trust in the long-run. A further exploration of the implications of this theory could involve additional survey and interview research to determine if where people grew up in Kazakhstan (as opposed to where they live now) has a significant impact of variation in levels trust. Russian colonialism was also not limited to Kazakhstan – a broader consideration is warranted on the effects of settler

colonialism throughout the Central Asian region; there are perhaps even opportunities to compare variation in long-term impacts after settler colonial and extractive colonial policies enacted by the same colonial power in adjacent regions. On the measurement side, the project has advanced novel measures of resilience and trust using remote sensing and social media data. Future work will continue to validate and expand these measures.

The long-term impacts of colonial rule, the origins and transmission of social trust, and the factors that contribute to resilience are all areas that have received extensive scholarly attention. However, the Central Asian example of settler colonialism has largely been ignored in our theorizing and analyses. This dissertation relied on a deep engagement with the details of one country to demonstrate that different types of settler colonial rule (more intensive versus less intensive) have different implications for social trust and resilience in the long run.

BIBLIOGRAPHY

Acemoglu, Daron, Simon Johnson, and James A. Robinson (2001). "The Colonial Origins of Comparative Development: An Empirical Investigation". In: *American Economic Review* 91.5, pp. 1369–1401.

Adali, Sibel et al. (2010). "Measuring Behavioral Trust in Social Networks". In: *2010 IEEE International Conference on Intelligence and Security Informatics*, pp. 150–152.

Adger, W. Neil (2000). "Social and ecological resilience: are they related?" In: *Progress in Human Geography* 24.3, pp. 347–364. URL: http://journals.sagepub.com/doi/10.1191/030913200701540465.

Adger, W Neil et al. (2005). "Social-Ecological Resilience to Coastal Disasters". In: *Science* 309.5737, pp. 1036–1039. URL: https://science.sciencemag.org/content/309/5737/1036.

Aldashev, Alisher and Barbara Dietz (2014). "Economic and spatial determinants of interregional migration in Kazakhstan". In: *Economic Systems* 38.3, pp. 379–396. URL: http://dx.doi.org/10.1016/j.ecosys.2013.10.004.

Aldrich, Daniel P. (2011). "The Externalities of Strong Social Capital". In: *Journal of Civil Society* 7, pp. 81–99.

Aldrich, Daniel P. and Michelle A. Meyer (2015). "Social Capital and Community Resilience". In: *American Behavioral Scientist* 59.2, pp. 254–269.

Algan, By Yann and Pierre Cahuc (2010). "Inherited Trust and Growth". In: *American Economic Review* 100.December, pp. 2060–2092.

Allport, Gordon (1954). *The Nature of Prejudice*. Reading, MA: Addison-Wesley.

Anastasopoulos, L. Jason et al. (2016). "Photographic Home Styles in Congress: A Computer Vision Approach". In: pp. 1–52. URL: http://arxiv.org/abs/1611.09942.

Arrow, Kenneth J. (1972). "Gifts and Exchanges". In: *Philosophy and Public Affairs* 1.4, pp. 343–362.

Axelrod, Robert (1984). *The Evolution of Cooperation*. New York: Basic Books.

Bacon, Elizabeth (1966). *Central Asians under Russian Rule: A Study in Culture Change*. 1980th ed. Ithaca: Cornell University Press.

Bahry, Donna et al. (2005). "Ethnicity and Trust: Evidence from Russia". In: *American Political Science Review* 99.4, pp. 521–532.

Bjørnskov, Christian (2018). "Social Trust and Economic Growth". In: *The Oxford Handbook of Social and Political Trust*. Ed. by Eric M. Uslaner.

Boone, Catherine (2003). *Political Topographies of the African State: Territorial Authority and Institutional Choice*. Cambridge, UK: Cambridge University Press.

Bowles, Samuel and Herbert Gintis (2004). "Persistent Parochialism: Trust and Exclusion in Ethnic Networks". In: *Journal of Economic Behavior and Organization* 55, pp. 1–23.

Braithwaite, Valerie and Margaret Levi, eds. (1998). *Trust and Governance*. New York: Russell Sage Foundation.

Brower, Daniel (1996). "Kyrgyz Nomads and Russian Pioneers: Colonization and Ethnic Conflict in the Turkestan Revolt of 1916". In: *Jahrbücher für Geschichte Osteuropas* 44.1, pp. 41–53.

Calonico, Sebastian, Matias D. Cattaneo, and Rocío Titiunik (2015). "Optimal Data-Driven Regression Discontinuity Plots". In: *Journal of the American Statistical Association* 110.512, pp. 1753–1769.

Campbell, Ian Wylie (2011). "Settlement promoted, settlement contested: the Shcherbina Expedition of 1896–1903". In: *Central Asian Survey* 30.3-4, pp. 423–436.

Casas, Andreu and Nora Webb Williams (2018). "Images that Matter: Online Protests and the Mobilizing Role of Pictures". In: *Political Research Quarterly*, pp. 1–16.

Catterberg, Gabriela and Alejandro Moreno (2005). "The Individual Bases of Political Trust: Trends in New and Established Democracies". In: *International Journal of Public Opinion Research* 18.1, pp. 31–48.

Cesarini, David et al. (2008). "Heritability of Cooperative Behavior in the Trust Game". In: *Proceedings of the National Academy of Sciences* 105.10, pp. 3721–3726.

Charnysh, Volha (2015). "Historical Legacies of Interethnic Competition: Anti-Semitism and the EU Referendum in Poland". In: *Comparative Political Studies* 48.13, pp. 1711–1745. URL: https://doi.org/10.1177/0010414015598921.

— (2019). "Diversity, Institutions, and Economic Outcome: Post-WW-II Displacement in Poland". In: *American Political Science Review*, pp. 1–19.

Chen, Xi and William D Nordhaus (2014). "Using Luminosity Data as a Proxy for Economic Statistics". In: *Proceedings of the National Academy of Sciences* 108.45, pp. 8589–8594.

Chernina, Eugenia, Paul Castañeda Dower, and Andrei Markevich (2014). "Property rights, land liquidity, and internal migration". In: *Journal of Development Economics* 110, pp. 191–215. URL: http://dx.doi.org/10.1016/j.jdeveco.2013.03.010.

Citrin, Jack and Laura Stoker (2018). "Political Trust in a Cynical Age". In: *Annual Review of Political Science* 21, pp. 49–70.

Colletta, Nat J. and Michelle L. Cullen (2000). *Violent conflict and the transformation of social capital : lessons from Cambodia, Rwanda, Guatemala, and Somalia (English)*. Washington, D.C: The World Bank.

Costa, Dora L, Noelle Yetter, and Heather Desomer (2018). "Intergenerational Transmission of Paternal Trauma among US Civil War ex-POWs". In: *Proceedings of the National Academy of Sciences* 115.44, pp. 11215–11220.

Crepaz, Markus M. L. (2008). *Trust Beyond Borders: Immigration, the Welfare State, and Identity in Modern Societies*. Ann Arbor: University of Michigan Press.

Darden, Keith A (2019). *Resisting Occupation in Eurasia: Mass Schooling and the Creation of Durable National Loyalties*. Cambridge, UK: Cambridge University Press.

Delhey, Jan and Kenneth Newton (2003). "Who trusts?: The origins of social trust in seven nations". In: *European Societies* 5.2, pp. 93–137.

Delhey, Jan, Kenneth Newton, and Christian Welzel (2011). "How General Is Trust in "Most People"? Solving the Radius of Trust Problem". In: *American Sociological Review* 76.5, pp. 786–807.

Demko, George J. (1969). *The Russian Colonization of Kazakhstan 1896-1916*. The Hague, Netherlands: Indiana University, Bloomington; Mouton & Co.

Dennison, T.K. and Sheilagh Ogilvie (2007). "Serfdom and Social Capital in Bohemia and Russia". In: *The Economic History Review* 60.3, pp. 513–544.

Diener, Alexander C. (2005). "Kazakhstan's kin state diaspora: Settlement planning and the Oralman dilemma". In: *Europe - Asia Studies* 57.2, pp. 327–348.

Duishembieva, Jipar (2015). "Visions of Community: Literary Culture and Social Change among the Northern Kyrgyz, 1856-1924". PhD thesis, p. 301.

Easterly, William and Ross Levine (2003). "Tropics, Germs, and Crops: How Endowments Influence Economic Development". In: *Journal of Monetary Economics* 50, pp. 3–39.

Elvidge, Christopher D et al. (2009). "A global poverty map derived from satellite data". In: *Computers & Geosciences* 35, pp. 1652–1660.

Engerman, Stanley L. et al. (2002). "Factor Endowments, Inequality, and Paths of Development among New World Economies". In: *Economía* 3.1, pp. 41–109.

Farrell, Henry (2002). "Trust, Distrust , and Power". In: *Distrust*. New York: Russell Sage Foundation.

— (2005). "Trust and Political Economy". In: *Comparative Political Studies* 38.5, pp. 459–483.

Fearon, James D and David D Laitin (1996). "Explaining Interethnic Cooperation". In: *American Political Science Review* 90.4, pp. 715–735.

Fekete, B. M., C. J. Vorosmarty, and W. Grabs (2002). "High-resolution Fields of Global Runoff Combining Observed River Discharge and Simulated Water Balances". In: *Global Biogeochemical Cycles* 16.3, 15–1 to 15–10.

Fekete, B.M. (2002). *Global Average Annual Surface Runoff, 1950-2000*.

Fierman, William, ed. (1991). *Soviet Central Asia: The Failed Transformation*.

Fisher, Caroline et al. (2019). "Regaining Control Citizens who follow politicians on social media and their perceptions of journalism". In: *Digital Journalism* 7.2, pp. 230–250. URL: https://doi.org/10.1080/21670811.2018.1519375.

Fisher, Lyn R (1989). "Qazaqjylyq: Nationalism and Revolution in Kazakhstan, 1900-1920". PhD thesis. University of Montana, pp. 1900–1920.

Friedman, Batya, Peter H Khan Jr., and Daniel C Howe (2000). "Trust Online". In: *Commun. ACM* 43.12, pp. 34–40. URL: http://doi.acm.org/10.1145/355112.355120.

Fukuyama, Francis (1995). *Trust: The Social Virtues and the Creation of Prosperity*. New York: The Free Press.

Gaikwad, Nikhar (n.d.). "East India Companies and Long-Term Economic Change in India". In:

Ghosh, Tilottama et al. (2013). "Using Nighttime Satellite Imagery as a Proxy Measure of". In: *Sustainability* 5, pp. 4988–5019.

Gintis, Herbert et al. (2003). "Explaining Altruistic Behavior in Humans". In: *Evolution and Human Behavior* 24.3, pp. 153–172.

Glaeser, Edward L. (2001). "The Formation of Social Capital". In: *Isuma* 2.1, pp. 34–40.

Glaeser, Edward L. et al. (2000). "Measuring trust". In: *Quarterly Journal of Economics* 115.3, pp. 811–846.

Glanville, Jennifer L and Pamela Paxton (2007). "How do We Learn to Trust? A Confirmatory Tetrad Analysis of the Sources of Generalized Trust". In: *Social Psychology Quarterly* 70.3, pp. 230–242.

Golovina, Svetlana et al. (2014). "Social Capital in Russian Agricultural Production Cooperatives". In: *Post-Communist Economies* 6.4.

Greif, Avner, Paul Milgrom, and Barry R Weingast (1994). "Coordination Commitment and Enforcement: The Case of the Merchant Guild". In: *Journal of Political Economy* 102.4, pp. 745–746.

Greif, Avner and Guido Tabellini (2010). "Cultural and Institutional Bifurcation: China and Europe Compared". In: *American Economic Review* 100.2, pp. 135–40.

Grosfeld, Irena and Ekaterina Zhuravskaya (2015). "Cultural vs. economic legacies of empires: Evidence from the partition of Poland". In: *Journal of Comparative Economics* 43.1, pp. 55–75. URL: http://dx.doi.org/10.1016/j.jce.2014.11.004.

Guirkinger, Catherine and Gani Aldashev (2016). "Clans and Ploughs: Traditional Institutions and Production Decisions of Kazakhs under Russian Colonial Settlement". In: *The Journal of Economic History* 76.1, pp. 76–108.

Guiso, Luigi, Sapienza Paola, and Luigi Zingales (2004). "The Role of Social Capital in Financial Development". In: *American Economic Review* 94.3, pp. 526–56.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales (2006). "Does Culture Affect Economic Outcomes?" In: *Journal of Economic Perspectives* 20.2, pp. 23–48.

Hardin, Russell (2002). *Trust and Trustworthiness*. New York: Russell Sage Foundation.

Hariri, Jacob Gerner (2012). "The Autocratic Legacy of Early Statehood". In: *American Political Science Review* 106.3, pp. 471–494.

Haxthausen, Baron von (1856). *The Russian Empire: Its People, Institutions, and Resources*. Ed. by Robert (translation) Farie. Volume II. London: Chapman and Hall.

Hechter, Michael (2013). *Alien Rule*. New York: Cambridge University Press.

Helliwell, John F, Haifang Huang, and Shun Wang (2016). "New Evidence on Trust and Well-Being".

Henderson, J. Vernon, Adam Storeygard, and David N Weil (2012). "Measuring Economic Growth from Outer Space Author". In: *American Economic Review* 102.2, pp. 994–1028.

Hirsch, Francine (2014). *Empire of Nations: Ethnographic Knowledge and the Making of the Soviet Union*. Ithaca, NY: Cornell University Press.

Hirschman, Albert O. (1972). *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*. Cambridge: Harvard University Press.

Horowitz, Leah S (2010). ""Twenty years is yesterday": Science, Multinational Mining, and the Political Ecology of Trust in New Caledonia". In: *Geoforum* 41, pp. 617–626.

Hwang, Monica (2017). "Ethnicity and Political Trust in Canada: Is There a Deepening Divide?" In: *Canadian Journal of Sociology* 42.1, pp. 23–54.

Jamal, Amaney and Irfan Nooruddin (2010). "The Democratic Utility of Trust: A Cross-National Analysis". In: *Journal of Political Economy* 72.1, pp. 45–59.

Jean, Neal et al. (2016). "Combining satellite imagery and machine learning to predict poverty." In: *Science* 353.6301, pp. 790–4. URL: http://www.ncbi.nlm.nih.gov/pubmed/27540167.

Jones Luong, Pauline (2002). *Institutional Change and Political Continuity in Post-Soviet Central Asia: Power, Perceptions, and Pacts*. Cambridge, UK: Cambridge University Press.

Kasara, Kimuli (2013). "Separate and Suspicious: Local Social and Political Context and Ethnic Tolerance in Kenya". In: *Journal of Politics* 75.4.

Keele, Luke J. and Rocío Titiunik (2015). "Geographic boundaries as regression discontinuities". In: *Political Analysis* 23.1, pp. 127–155.

Khodarkovsky, Michael (2002). *Russia's Steppe Frontier: The Making of a Colonial Empire, 1500-1800*. Bloomington, IN: Indiana University Press.

Kindler, Robert (2018). *Stalin's Nomads: Power and Famine in Kazakhstan*. Ed. by Cynthia (trans.) Klohr. Pittsburgh, PA: University of Pittsburgh Press.

Klein, Benjamin, Robert G. Crawford, and Armen A. Alchian (1978). "Vertigal Integration, Appropriable Rents, and the Competitive Contracting Process". In: *The Journal of Law and Economics* 21.2, pp. 297–326.

Knack, Stephen and Philip Keefer (1997). "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation". In: *Quarterly Journal of Economics* 112.4, pp. 1251–1288.

Kubik, Jan (2009). "Ethnography of Politics: Foundations, Applications, Prospects". In: *Political Ethnography: What Immersion Contributes to the Study of Power*. Ed. by Edward Schatz. Chicago: University of Chicago Press, pp. 25–52.

La Porta, Rafael et al. (1997). "Trust in Large Organizations". In: *American Economic Review Papers and Proceedings 87 (2): 333-338.* 87.2, pp. 333–338.

Laidlaw, Zoë and Alan Lester, eds. (2015). *Indigenous Communities and Settler Colonialism: Land Holding, Loss, and Survival in an Interconnected World*. London: Palgrave Macmillan.

Lange, Matthew (2017). *Killing Others: A Natural History of Ethnic Violence*. Ithaca: Cornell University Press.

Lee, Alexander and Kenneth A Schultz (2012). "Comparing British and French Colonial Legacies: A Discontinuity Analysis of Cameroon Alexander Lee". In: *Quarterly Journal of Political Science* 7.4, pp. 1–55.

Leonard, Madeleine (2004). "Bonding and Bridging Social Capital: Reflections from Belfast". In: *Sociology* 38.5, pp. 927–944.

Levi, Margaret (1988). *Of Rule and Revenue*. Berkeley, CA: University of California Press.

— (1996). "Social and Unsocial Capital: A Review Essay of Robert Putnam's Making Democracy Work". In: *Politics & Society* 24.1, pp. 45–55.

Levi, Margaret and Valerie Braithwaite (1998). "Introduction". In: *Trust and Governance*. Ed. by Valerie Braithwaite and Margaret Levi. New York: Russell Sage Foundation, pp. 1–5.

Levi, Margaret and Laura Stoker (2000). "Political Trust and Trustworthiness". In: *Annual Review of Political Science* 3, pp. 475–507.

Levine, Ross, Chen Lin, and Wensi Xie (2016). "Corporate resilience to banking crisis the roles of trust and trade credit".

Lindlof, Thomast R. and Bryan C. Taylor (2011). *Qualitative Communication Reserach Methods*. 3rd. Los Angeles: SAGE Publications.

Lowes, Sara et al. (2015). "The Evolution of Culture and Institutions: Evidence from the Kuba Kingdom". URL: `http://www.nber.org/papers/w21798`.

Macy, Michael W and John Skvoretz (1998). "The Evolution of Trust and Cooperation between Strangers: A Computational Model". In: *American Sociological Review* 63.5, pp. 638–660.

Malikov, Yuriy (2005). "The Kenesary Kasymov rebellion (1837–1847): A national-liberation movement or "a protest of restoration"?" In: *Nationalities Papers* 33.4, pp. 569–597.

— (2011). *Tsars, Cossacks, and Nomads: The Formation of a Borderland Culture in Northern Kazakhstan in the Eighteens and Nineteenth Centuries*. Berlin: Klaus Schwarz Verlag.

Mamdani, Mahmood (2002). *When Victims Become Killers: Colonialism, Nativism, and the Genocide in Rwanda*. Princeton, N.J: Princeton University Press.

Martin, Terry (2001). *The Affirmative Action Empire: Nations and Nationalism in the Soviet Union, 1923-1939*. Ithaca, NY: Cornell University Press.

Martin, Virginia (2001). *Law and Custom in the Steppe: The Kazakhs of the Middle Horde and Russian Colonialism in the Nineteenth Century*. Richmond, Surrey: Curzon Press.

McManus, Phil et al. (2012). "Rural community and rural resilience: What is important to farmers in keeping their country towns alive?" In: *Journal of Rural Studies* 28.1, pp. 20–29. URL: http://dx.doi.org/10.1016/j.jrurstud.2011.09.003.

Mebane, Walter R. Jr. et al. (2017). "Using Twitter to Observe Election Incidents in the United States".

Mercer, Jonathan (2005). "Rationality and Psychology in International Politics". In: *International Organization* 59.1, pp. 77–106.

Min, Brian et al. (2013). "Detection of Rural Electrification in Africa using DMSP-OLS Night Lights Imagery". In: *International Journal of Remote Sensing* 34.22, pp. 8118–8141.

Moran, Dominique (2001). "Forestry Villages in the Russian North - Social Capital and Subsistence at the Margins". In: *Belgeo* 3, pp. 199–214.

Morrison, Alexander (2015). "Peasant Settlers and the 'Civilising Mission' in Russian Turkestan, 1865 – 1917". In: *The Journal of Imperial and Commonwealth History* 43.3, pp. 387–417.

Näsi, Matti et al. (2015). "Exposure to online hate material and social trust among Finnish youth". In: *Information Technology and People* 28.3, pp. 607–622.

Natkhov, Timur (2015). "Colonization and development: The long-term effect of Russian settlement in the North Caucasus , 1890s – 2000s". In: *Journal of Comparative Economics* 43.1, pp. 76–97. URL: http://dx.doi.org/10.1016/j.jce.2014.09.003.

Nazaroff, Pavel Stepanovich (1932). *Hunted Through Central Asia*. Ed. by Malcolm (Translator) Burr. Edinburgh and London: WM Blackwood & Sons LTD.

Newton, Kenneth (2001). "Trust, Social Capital, Civil Society, and Democracy". In: *International Political Science Review* 22.2, pp. 201–214.

Nielsen, Rasmus K. and Cristian Vaccari (2013). "Do People "Like" Politicians on Facebook? Not Really. Large-Scale Direct Candidate-to-Voter Online Communication as an Outlier Phenomenon". In: *International Journal of Communication* 7, pp. 2333–2356. URL: http://ijoc.org/index.php/ijoc/article/view/1717.

Noda, Jin (2016). *The Kazakh Khanates between the Russian and Qing Empires: Central Eurasian International Relations during the Eighteenth and Nineteenth Centuries*. Leiden: Brill.

Nordhaus, W D (2005). "Geography and Macroeconomics: New Data and New Findings". In: *Proceedings of the National Academy of Sciences of the United States of America (PNAS)* 103.10. URL: https://doi.org/10.1073/pnas.0509842103.

Nordhaus, W D and X Chen (2016). *Global Gridded Geographically Based Economic Data (G-Econ), Version 4*. Palisades, NY. URL: http://doi.org/10.7927/H42V2D1C.

Norris, Fran H. et al. (2008). "Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness". In: *American Journal of Community Psychology* 41.1-2, pp. 127–150.

Nunn, Nathan and Diego Puga (2012). "Ruggedness: The Blessing of Bad Geography in Africa". In: *The Review of Economics and Statistics* 94.1, pp. 20–36.

Nunn, Nathan and Leonard Wantchekon (2011). "The Slave Trade and the Origins of Mistrust in Africa". In: *American Economic Review* 101.7, pp. 3221–3252.

O'Brien, David J., Valeri Patsiorkovski, and Larry D. Dershem (2000). *Household Capital and the Agrarian Problem in Russia*. Aldershot, UK: Ashgate Publishing.

Ostrom, Elinor (2000). "Collective Action and the Evolution of Social Norms". In: *Journal of Economic Perspectives* 14.3, pp. 137–158.

Pahlen, K.K. (1964). *Mission to Turkestan: Being the Memoirs of Count K. K. Pahlen, 1908-1909*. Ed. by Richard A. Pierce. London: Oxford University Press.

Paola, Sapienza, Anna Toldra-Simats, and Luigi Zingales (2013). "Understanding Trust". In: *Economic Journal* 123.573, pp. 1313–1332.

Pianciola, Niccolò (2017). "Stalinist spatial hierarchies: placing the Kazakhs and Kyrgyz in Soviet economic regionalization Stalinist spatial hierarchies : placing the Kazakhs and Kyrgyz in". In: *Central Asian Survey* 36.1, pp. 73–92. URL: http://dx.doi.org/10.1080/02634937.2016.1221380.

Pierce, Richard A. (1960). *Russian Central Asia 1967-1917: A Study in Colonial Rule*. Berkeley, CA: University of California Press.

Propastin, Pavel and Martin Kappas (2012). "Assessing Satellite-Observed Nighttime Lights for Monitoring Socioeconomic Parameters in the Republic of Kazakhstan". In: *GIScience & Remote Sensing* 49.4, pp. 538–557.

Putnam, Robert D (1993). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.

— (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.

Radnitz, Scott, Jonathan Wheatley, and Christoph Zürcher (2009). "The Origins of Social Capital: Evidence from a Survey of Post-Soviet Central Asia". In: *Comparative Political Studies* 42.6, pp. 707–732.

Randell, Heather (2018). "The Strength of Near and Distant Ties: Social Capital, Environmental Change, and Migration in the Brazilian Amazon". In: *Sociology of Development* 4.4, pp. 394–416.

Rees, Kristoffer and Nora Webb Williams (2017). "Explaining Kazakhstani Identity: Supraethnic identity, ethnicity, language, and citizenship". In: *Nationalities Papers*.

Rubinov, Igor (2014). "Migrant Assemblages: Building Postsocialist Households with Kyrgyz Remittances". In: *Athropological Quarterly* 87.1, pp. 183–215.

Sabol, Steven (2003). "Kazak resistance to Russian colonization: interpreting the Kenesary Kasymov revolt, 1837–1847". In: *Central Asian Survey* 22.2-3, pp. 231–252. URL: http://humanities.tau.ac.il/history-school/files/assisreding1.pdf.

Sahadeo, Jeff (2007). *Russian Colonial Society in Tashkent, 1865-1923*. Bloomington, IN: Indiana University Press.

Scacco, Alexandra and Shana S. Warren (2018). "Can Social Contact Reduce Prejudice and Discrimination? Evidence from a Field Experiment in Nigeria". In: *American Political Science Review*, pp. 1–24.

Schatz, Edward (2004). *Modern Clan Politics: The Power of "Blood" in Kazakhstan and Beyond*. Seattle, WA: University of Washington Press.

Schwartz, Edward, ed. (2009). *Political Ethnography: What Immersion Contributes to the Study of Power*. Chicago: University of Chicago Press.

Shayakhmetov, Mukhamet (2006). *The Silent Steppe: The Memoir of a Kazakh Nomad under Stalin*. Ed. by Jan (translator) Bulter. New York, NY: Rookery Press.

Sherchan, Wanita, Surya Nepal, and Cecile Paris (2013). "A survey of trust in social networks". In: *ACM Computing Surveys* 45.4, pp. 1–33. URL: http://dl.acm.org/citation.cfm?doid=2501654.2501661.

Skerratt, Sarah (2013). "Enhancing the analysis of rural community resilience: Evidence from community land ownership". In: *Journal of Rural Studies* 31, pp. 36–46. URL: http://dx.doi.org/10.1016/j.jrurstud.2013.02.003.

Smith, Jordan W., Dorothy H. Anderson, and Roger L. Moore (2012). "Social Capital, Place Meanings, and Perceived Resilience to Climate Change". In: *Rural Sociology* 77.3, pp. 380–407.

Sokol, Edward Dennis (1954). *The Revolt of 1916 in Russian Central Asia*. Baltimore, MD: Johns Hopkins Press.

Spolaore, Enrico and Romain Wacziarg (2013). "How Deep Are the Roots of Economic Development?" In: *Journal of Economic Literature* 51.2, pp. 325–369.

Tabellini, Guido (2010). "Culture and Institutions: Economic Development in the Regions of Europe". In: *Journal of the European Economic Association* 8.4.

Tikhomirov, Alexey (2013). "The Regime of Forced Trust: Making and Breaking Emotional Bonds between People and State in Soviet Russia, 1917 – 1941". In: *The Slavonic and East European Review* 91.1, pp. 78–118.

— (2017). "Trust and Distrust in a Modern Dictatorship: A Case Study of the Soviet Union". In: *Trust and Happiness in the History of European Political Thought*. Ed. by Laszlo Kontler and Mark Somos. Brill, pp. 436–461.

Tsai, Lily L. (2007). *Accountability without Democracy: Solidary Groups and Public Goods Provision in Rural China*. Cambridge: Cambridge University Press.

Twigg, Judyth L. and Kate Schecter, eds. (2003). *Social Capital and Social Cohesion in Post-Soviet Russia*. Armonk, NY: M.E. Sharpe.

Uslaner, Eric M (2000). "Producing and Consuming Trust". In: *Political Science Quarterly* 115.4, pp. 569–590.

Van Maanen, John (2011). *Tales of the Field: On Writing Ethnography*. Second. Chicago: University of Chicago Press.

Varshney, Ashutosh (2001). "Ethnic Conflict and Civil Society: India and Beyond". In: *World Politics* 53.3, pp. 362–398.

Varshney, Kush R. et al. (2015). "Targeting Villages for Rural Development Using Satellite Image Analysis". In: *Big Data* 3.1, pp. 41–53. URL: http://online.liebertpub.com/doi/10.1089/big.2014.0061.

Weidmann, Nils B and Sebastian Schutte (2017). "Using night light emissions for the prediction of local wealth". In: *Journal of Peace Research* 54.2, pp. 125–140.

Welch, Michael R et al. (2005). "Determinants and Consequences of Social Trust". In: *Sociological Inquiry* 75.4, pp. 453–473.

Wendelken, Rebecca W. (2000). "Russian Immigration and its Effects on the Kazak Steppes, 1552-1965". In: *The Role of Migration in the History of the Eurasian Steppe: Sedentary*

Civilization vs. "Barbaian" and Nomad. Ed. by Andrew Bell-Fialkoff. New York: St. Martin's Press, pp. 71–97.

White, John M (2011). "Histories of Indigenous–Settler relations : Reflections on internal colonialism and the hybrid economy". In: *Australian Aboriginal Studies* 1, pp. 81–96.

Whiting, Susan H. (1998). "The Mobilization of Private Investment as a Problem of Trust in Local Government Structures". In: *Trust and Governance*. New York: Russell Sage Foundation.

Whiting, Susan H. et al. (2019). "A Long View of Resilience in the Chengdu Plain, China". In: *The Journal of Asian Studies* 78.2, pp. 257–284.

Whitley, Rob and Kwame McKenzie (2005). "Social capital and psychiatry: Review of the literature". In: *Harvard Review of Psychiatry* 13.2, pp. 71–84.

Williams, D.S.M (1966). "Russian Peasant Settlement in Semirech'ye". In: *Central Asian Survey* 14.2, pp. 110–22.

— (1971). "Williams_1971_Imperial_RU_in_Turkestan.pdf". In: *Asian Affairs* 2.2, pp. 173–179.

World Values Survey Association (2014). "WORLD VALUES SURVEY Wave 6 2010-2014 OFFICIAL AGGREGATE v.20150418." URL: `www.worldvaluessurvey.org`.

Yehuda, Rachel et al. (2016). "Holocaust Exposure Induced Intergenerational Effects on FKBP5 Methylation". In: *Biological Psychiatry* 80.5, pp. 372–380. URL: `http://dx.doi.org/10.1016/j.biopsych.2015.08.005`.

Zhukov, Yuri M and Roya Talibova (2018). "Stalin's Terror and the Long-term Political Effects of Mass Repression". In: *Journal of Peace Research*. URL: `https://journals.sagepub.com/doi/10.1177/0022343317751261`.

Appendix A

INTERVIEW QUESTIONS

1. First, please tell me a bit about yourself! About how long have you lived in this town?
   (a) How long has your family lived here?
   (b) Did you get your education here?
2. Where else have you lived?
3. Do you work, or have you ever worked in this town, or elsewhere? What is (or was) your profession?
4. Were you ever tempted to move away from your town or village?
   (a) Why did you stay, why did you come back?
5. Has anyone from your family or friends moved away? Why?
   (a) Did they come back?
6. Can you tell me what you know about the history of this village?
   (a) Do you know about when it was founded, or by whom?
7. Do you think this town has changed since you've lived here? Or has it stayed the same?
   (a) Can you tell me some ways it has changed?
   (b) What are some ways it has stayed the same?

8. Were there big changes here after the fall of the Soviet Union, either that you remember of that you've heard about?

9. Do you see any big changes happening now?

10. What do you think about the towns and villages around yours? Have you seen any changes there?

11. What about (enter specific nearby disappeared town)? Do you know what happened with that village?

12. Do you happen to know anyone from (enter specific nearby disappeared town)?

13. Could you tell me a bit about your social circle here? Do you have a large group of family and friends, or do you prefer to have a smaller social group?

    (a) With whom do you socialize most often?

    (b) Do you socialize with people who are of a different nationality, or who speak a different language?

14. If you needed help to hold a wedding, do home repairs, or fix something on your land who would you turn to for help?

    (a) Would you trust people in your social circle to help you out? Why or why not?

15. Are there any organized groups that you participate in, such as sports, arts, unions, politics?

16. Do you follow politics in your town, or in the country, or in the world?

17. How well do you think your local government does to provide what people need?

(a) Do you trust your government to do the right thing for society?

18. Is there anything else you would like to add?

Appendix B

2017/2018 SURVEY

Kazakhstan Survey

Interviewer: *Before beginning the survey, make sure respondent has read and checked the IRB Consent form. If they do not check the consent form, you may NOT continue with the interview*

After consent form, complete the following on your own (do not read to respondent). Remember to note the interview end time even if the respondent does not complete the entire survey.

Language survey is conducted in: _____

Oblast where the survey is conducted: _____

Raion where the survey is conducted: _____

Interview date: (day, month, year) _____

Interview start time: _____ Interview end time: _____

Respondent gender: _____ (male, female, or unclear)

Part I Demographic Information

Interviewer: *Please read the script below as faithfully as possible. Read the following questions and record the responses. Do NOT offer the respondent the option of "No answer/I don't know/Request to skip." Select that response ONLY if that is what the respondent says of their own accord or if they request to skip or to not answer a question. Remember that you must stop the interview completely if the respondent asks to end it.*

1. Are you a citizen of Kazakhstan? [***Interviewer:*** *Allow subject to respond, then choose the appropriate response below*]
   - □ Yes
   - □ No

     IF NO, interviewer read: Thank you for participating. Unfortunately, you are not eligible to complete the survey. **[STOP]**

   - □ *No answer/I don't know/Request to skip*

     IF No answer/I don't know/Request to skip, interviewer read: Thank you for participating. Unfortunately, you are not eligible to complete the survey. **[STOP]**

2. How old are you? Are you: [***Interviewer:*** *Read the following options before respondents answer.*]
   - □ Less than 18

     IF less than 18, interviewer read: Thank you for participating. Unfortunately, you are not eligible to complete the survey. **[STOP]**

   - □ 18-25
   - □ 26-35
   - □ 36-45
   - □ 46-55 or
   - □ Over 56

- ☐ *No answer/I don't know/Request to skip*
  IF No answer/I don't know/Request to skip, interviewer read: Thank you for participating. Unfortunately, you are not eligible to complete the survey. **[STOP]**

3. What is your ethnicity? [***Interviewer:*** *Allow subject to respond, then choose the appropriate category below*]
   - ☐ Kazakh
   - ☐ Russian
   - ☐ Uzbek
   - ☐ Ukrainian
   - ☐ Uighur
   - ☐ Tatar
   - ☐ German
   - ☐ Other: [***Interviewer***: *record below]*
     - ○ Which ethnicity? _____
   - ☐ *No answer/I don't know/Request to skip*

4. What is your mother tongue? [***Interviewer:*** *Allow subject to respond, then choose the appropriate category below*]
   - ☐ Kazakh
   - ☐ Russian
   - ☐ Uzbek
   - ☐ Ukrainian
   - ☐ Uighur
   - ☐ Tatar
   - ☐ German
   - ☐ Other: [***Interviewer***: *record below]*
     - ○ Which language? _____
   - ☐ *No answer/I don't know/Request to skip*

5. What is your highest education level? [***Interviewer:*** *Allow subject to respond, then choose the appropriate category below*]
   - ☐ Did not complete high school
   - ☐ Completed high school
   - ☐ Completed professional-technical degree
   - ☐ Completed undergraduate degree
   - ☐ Completed MA degree or equivalent
   - ☐ Completed PhD degree or equivalent
   - ☐ *No answer/I don't know/Request to skip*

6. What is your monthly household income? Is your income between: [***Interviewer:*** *Read the following options before respondents answer*.]
   - ☐ 0 – 23 000 Tenge
   - ☐ 23 001-80 000 Tenge
   - ☐ 80 001-150 000 Tenge

- □ 150 001-300 000 Tenge or
- □ More than 300 000 Tenge
- □ *No answer/I don't know/Request to skip*

7. What is your marital status? Are you: [***Interviewer:*** *Read the following options before respondents answer.*]
   - □ Single, never married
   - □ Married
   - □ Divorced or
   - □ Widowed
   - □ *No answer/I don't know/Request to skip*
   - □ *Other (only if offered by respondent):* _____

8. In what type of area were you raised? Was the area where you grew up: [***Interviewer:*** *Read the following options before respondents answer.*]
   - □ Rural
   - □ A village or town more than 25km from a city
   - □ A village or town within 25km from a city or
   - □ A city
   - □ *No answer/I don't know/Request to skip*

9. In what type of area do you currently live? Is the area where you live: [***Interviewer:*** *Read the following options before respondents answer.*]
   - □ Rural
   - □ A village or town more than 25km from a city
   - □ A village or town within 25km from a city or
   - □ A city
   - □ *No answer/I don't know/Request to skip*

10. How many years have you lived in your current home? _____
    - □ *No answer/I don't know/Request to skip*

11. What is your religious affiliation, if you have one? _____
    - □ *No answer/I don't know/Request to skip*

    IF NO AFFILIATION STATED, interviewer read: Do you consider yourself to be an atheist?
    - ○ Yes
    - ○ No
    - ○ *No answer/I don't know/Request to skip*

Part II: Personal Opinions

12. ***Interviewer:*** *read the following and record the responses; select NA if the respondent refuses to answer or if they request to skip*. Thank you. Now I will ask you to evaluate your fluency in each of the following languages on a 5 point scale with 1 meaning "no ability" in the language and 5 meaning "completely fluent." How fluent are you in:

	1	2	3	4	5	
Russian	o	o	o	o	o	NA
Kazakh	o	o	o	o	o	NA
English	o	o	o	o	o	NA

Interviewer read: Do you speak any other languages?

□ No

IF NO interviewer go to question 14.

□ Yes

IF YES, interviewer ask: Which other languages do you speak?

Interviewer: *record the languages below then read*: Please evaluate your fluency in each of the other languages you speak on the same 5 point scale. How fluent are you in:

	1	2	3	4	5	
Other: _____	o	o	o	o	o	NA
Other: _____	o	o	o	o	o	NA
Other: _____	o	o	o	o	o	NA

□ *No answer/I don't know/Request to skip*

13. In your opinion, how important is it to have a single shared language in a country? Is it: [***Interviewer:*** *Read the following options before respondents answer.*]

    - ☐ Very important
    - ☐ Slightly important
    - ☐ Not very important or
    - ☐ Not important at all
    - ☐ *No answer/I don't know/Request to skip*

    IF ANY ANSWER GIVEN, interviewer ask: In your opinion, what should be the single shared language in Kazakhstan?

    - ○ _____
    - ○ *No answer/I don't know/Request to skip*

14. In comparison to your peers, how familiar are you with current political issues in Kazakhstan? Are you: [***Interviewer:*** *Read the following options before respondents answer.*]
    - ☐ A lot more familiar
    - ☐ A little more familiar
    - ☐ About as familiar
    - ☐ A little less familiar or
    - ☐ A lot less familiar
    - ☐ *No answer/I don't know/Request to skip*

Interviewer*: Please read the following text and record the responses; select NA if the respondent refuses to answer or if they request to skip.*

15. Thank you. Now I'm going to read you some statements about Kazakhstan. On a scale of 1-4, please tell me how much you agree or disagree with each of the statements. A 1 means you disagree with the statement completely, while a 4 means you agree with the statement completely. How much do you disagree or agree with the following:

	1 – Disagree; 4 – Agree				
Knowledge of the Russian language is necessary to be able to accomplish the activities of daily life in Kazakhstan.	1	2	3	4	NA
Knowledge of the Kazakh language is necessary to be able to accomplish the activities of daily life in Kazakhstan.	1	2	3	4	NA
It is important for all citizens of Kazakhstan to be able to speak and understand Kazakh well.	1	2	3	4	NA
Interviewer*: Pause for water or a breath then read:* Thank you. Please continue to tell me on a scale of 1-4 how much you disagree or agree with the following statements:					
I am proud to be a citizen of my country.	1	2	3	4	NA

I feel that I belong and am fully welcome to live and flourish in Kazakhstan	1	2	3	4	NA
I feel more connected to Kazakhstan as a country than to my place of residence, whether city, village, or oblast.	1	2	3	4	NA
***Interviewer**: Pause for water or a breath*					
I am confident in my future in Kazakhstan	1	2	3	4	NA
In general, ethnic relations in Kazakhstan are peaceful and stable	1	2	3	4	NA
I am confident in the future of my children in Kazakhstan	1	2	3	4	NA
I am concerned about Russian claims to Northern Kazakhstan resulting in a situation similar to Eastern Ukraine.	1	2	3	4	NA
***Interviewer**: Pause for water or a breath*					
I would characterize Kazakhstan as a Eurasian country	1	2	3	4	NA
I would approve of my children marrying someone of a different ethnic group	1	2	3	4	NA
I have no plans to move out of my homeland	1	2	3	4	NA
Recent changes occurring in my place of residence, whether city, village, raion, or oblast, are welcome and positive	1	2	3	4	NA
***Interviewer**: Pause for water or a breath*					
Homeland is a term directly linked to ethnicity rather than citizenship	1	2	3	4	NA
I can be patriotic and feel that I belong in Kazakhstan without calling myself Kazakhstani	1	2	3	4	NA
Future generations, regardless of ethnicity, will call themselves Kazakhstani	1	2	3	4	NA
It is important for all the ethnic groups that make up the citizens of Kazakhstan to consider themselves united as a single political community	1	2	3	4	NA
***Interviewer**: Pause for water or a breath then read:* Thank you. We have four more statements. Please continue to tell me on a scale of 1-4 how much you disagree or agree with the following:					
The recent government reforms proposed by the President will be good for the country	1	2	3	4	NA
The Assembly of People of Kazakhstan plays an important role in Kazakhstani politics	1	2	3	4	NA

The "Mengilik El Patrioticheski Akt" is an important policy statement for the government of Kazakhstan	1	2	3	4	NA
The "Mengilik El Patrioticheski Akt" affects, or will affect, my day-to-day life	1	2	3	4	NA
Switching to the Latin alphabet for Kazakh is a good idea.	1	2	3	4	NA
I like the proposed format for Kazakh in the Latin alphabet.	1	2	3	4	NA

Part III: Identity and Attachment

Interviewer: *Please read the following text and record the responses; select NA if the respondent refuses to answer or if they request to skip.*

16. Thank you. Now I'm going to read you a list of things that might be important parts of what make you who you are. Please rank how important each item is to making you who you are on a scale of 1-4, where 1 means that the item not an important part of what makes you who you are and 4 means that the item is a very important part of what makes you who you are. How important to who you are is:

	1 – Least important; 4 – Most important				
Your ethnicity	1	2	3	4	NA
Your religion	1	2	3	4	NA
Your country of citizenship	1	2	3	4	NA
The town, city or region where you grew up	1	2	3	4	NA
The oblast where you grew up	1	2	3	4	NA
Being from the former Soviet Union	1	2	3	4	NA
Being from a Turkic-language speaking country	1	2	3	4	NA
Being a part of the Islamic ummah	1	2	3	4	NA
Being from Eurasia	1	2	3	4	NA
Speaking Russian	1	2	3	4	NA
Speaking Kazakh	1	2	3	4	NA
Speaking English	1	2	3	4	NA
Speaking another language besides Russian, Kazakh, or English	1	2	3	4	NA

Interviewer: *Please read the following text and questions, then record the responses. Do NOT offer the respondent the option of "No answer/I don't know/Request to skip." Select that response ONLY if that is what the respondent says of their own accord or if they request to skip*

or not answer a question. Remember that you must stop the interview completely if the respondent asks to end it.

Thank you. Now I am going to ask you some questions about national identities in Kazakhstan.

17. When thinking about your national identity, what do you consider yourself to be? [***Interviewer:*** *Allow subject to respond, then choose the appropriate response below*]
    - ☐ Russian
    - ☐ Kazakh
    - ☐ Kazakhstani
    - ☐ Other: ***Interviewer*** *record:_____*
    - ☐ *No answer/I don't know/Request to skip*

18. To what extent do you identify as a Kazakhstani? Do you identify as Kazakhstani: [***Interviewer:*** *Read the following options before respondents answer.*]
    - ☐ A lot
    - ☐ A little bit
    - ☐ Not very much or
    - ☐ Not at all
    - ☐ *No answer/I don't know/Request to skip*

19. Compared to 5 years ago do you personally use the term Kazakhstani to describe yourself more, less, or about the same amount?
    - ☐ More
    - ☐ Less
    - ☐ About the same amount
    - ☐ *No answer/I don't know/Request to skip*

20. Compared to 5 years ago do you hear the term Kazakhstani being used by others to describe themselves more, less, or about the same amount?
    - ☐ More
    - ☐ Less
    - ☐ About the same amount
    - ☐ *No answer/I don't know/Request to skip*

21. Did you complete any part of your education outside of Kazakhstan?
    - ☐ Yes.

      IF YES, interviewer read: How many years did you study outside of Kazakhstan? _____
        - o *No answer/I don't know/Request to skip*

      Then interviewer read: How many years did you study outside of the CIS? _____
        - o *No answer/I don't know/Request to skip*

    - ☐ No.
    - ☐ *No answer/I don't know/Request to skip*

22. Have you ever worked outside of Kazakhstan?
    - ☐ Yes.
        IF YES, interviewer read: How many years did you work outside of Kazakhstan?
        - o _____
        - o *No answer/I don't know/Request to skip*

        Then interviewer read: How many years did you work outside of the CIS?
        - o _____
        - o *No answer/I don't know/Request to skip*
    - ☐ No.
    - ☐ *No answer/I don't know/Request to skip*

23. Do the terms Malaya Rodina and Bolshaya Rodina make sense to you?
    - ☐ Yes
        IF YES, interviewer read: What do you think of as your Malaya Rodina?
        - o _____
        - o *No answer/I don't know/Request to skip*

        Then interviewer read: What do you think of as your Bolshaya Rodina?
        - o _____
        - o *No answer/I don't know/Request to skip*
    - ☐ No
    - ☐ *No answer/I don't know/Request to skip*

24. In which oblasts in Kazakhstan have you lived for more than 30 days? Please list them all. [***Interviewer:*** *Allow subject to respond, then select all of the relevant options below*]
    - ☐ Akmola
    - ☐ Aktobe
    - ☐ Almaty
    - ☐ Almaty Region
    - ☐ Astana
    - ☐ Atyrau
    - ☐ Baikonur
    - ☐ East Kazakhstan
    - ☐ Jambyl
    - ☐ Karaganda
    - ☐ Kostanay
    - ☐ Kyzylorda
    - ☐ Mangystau
    - ☐ North Kazakhstan
    - ☐ Pavlodar
    - ☐ South Kazakhstan
    - ☐ West Kazakhstan
    - ☐ Other: ***Interviewer*** record responses _____

☐ *No answer/I don't know/Request to skip*

25. In which oblasts in Kazakhstan would you be comfortable living for more than 30 days? Please list them all. [***Interviewer:*** *Allow subject to respond, then select the relevant options below. Note that the last option is "Any or all of them"*]
    - ☐ Akmola
    - ☐ Aktobe
    - ☐ Almaty
    - ☐ Almaty Region
    - ☐ Astana
    - ☐ Atyrau
    - ☐ Baikonur
    - ☐ East Kazakhstan
    - ☐ Jambyl
    - ☐ Karaganda
    - ☐ Kostanay
    - ☐ Kyzylorda
    - ☐ Mangystau
    - ☐ North Kazakhstan
    - ☐ Pavlodar
    - ☐ South Kazakhstan
    - ☐ West Kazakhstan
    - ☐ Other: ***Interviewer*** record responses _____
    - ☐ Any or all of them
    - ☐ *No answer/I don't know/Request to skip*

Part IV: Organizations and Offices

Interviewer: *Please read the following text and record the responses; select NA if the respondent refuses to answer or if they request to skip.*

26. Thank you. Now I am going to read you a list of organizations and offices. For each one, please tell me on a scale of 1-4 how effective you think the organizations or offices are. In other words, how good are they at performing their tasks? 1 means they are very ineffective and 4 means they are very effective. How effective is:

	1 – Least effective; 4 – Most effective				
The President	1	2	3	4	NA
The Courts	1	2	3	4	NA
The Constitutional Council	1	2	3	4	NA
The Supreme Court	1	2	3	4	NA
The Majilis	1	2	3	4	NA
The Senate	1	2	3	4	NA
The Assembly of People	1	2	3	4	NA
Tax collectors	1	2	3	4	NA

Civil society and non-governmental organizations	1	2	3	4	NA
Mass media	1	2	3	4	NA
The United Nations	1	2	3	4	NA
The mayor of your town	1	2	3	4	NA
The governor of your oblast	1	2	3	4	NA

Interviewer: *Please read the following text and record the responses; select NA if the respondent refuses to answer or if they request to skip.*

27. Thank you. Now I am again going to read you the same list of organizations and offices. How much do you trust the following organizations and offices to do the right things for society? 1 means you trust them the least and a 4 means you trust them the most. How much do you trust:

	1 – Least trust; 4 – Most trust				
The President	1	2	3	4	NA
The Courts	1	2	3	4	NA
The Constitutional Council	1	2	3	4	NA
The Supreme Court	1	2	3	4	NA
The Majilis	1	2	3	4	NA
The Senate	1	2	3	4	NA
The Assembly of People	1	2	3	4	NA
Tax collectors	1	2	3	4	NA
Civil society and non-governmental organizations	1	2	3	4	NA
Mass media	1	2	3	4	NA
The United Nations	1	2	3	4	NA
The mayor of your town	1	2	3	4	NA
The governor of your oblast	1	2	3	4	NA

Part V: Issues facing Kazakhstan

Interviewer: *Please read the following text and record the responses; select NA if the respondent refuses to answer or if they request to skip.*

28. Thank you. Now I am going to read you a list of issues that might be facing Kazakhstan right now. For each one, please tell me on a scale of 1-4 how important it is for the government to address the issue. 1 means the issue is not important at all and a 4 means the issue is very important. How important is it for the government to address:

	1 – Least important; 4 – Most important				
The standard of living	1	2	3	4	NA
Unemployment	1	2	3	4	NA

Neighboring states	1	2	3	4	NA
Islamic radicalism	1	2	3	4	NA
Internal ethnic divisions	1	2	3	4	NA
Foreign companies	1	2	3	4	NA
Devaluation of currency	1	2	3	4	NA
Corruption	1	2	3	4	NA
Law enforcement	1	2	3	4	NA
Ecology	1	2	3	4	NA
Education	1	2	3	4	NA
Economy	1	2	3	4	NA
Socioeconomic or class divisions	1	2	3	4	NA
Using the Latin alphabet for Kazakh	1	2	3	4	NA

Interviewer: *Please read the following text and record the responses; select NA if the respondent refuses to answer or if they request to skip.*

29. Thank you. Now, for the last section of the survey, I'm going to read you a list of things that might be important for promoting patriotic identity in Kazakhstan. Please tell me how important each item is for promoting patriotic identity on a scale of 1-4, where 1 means that the item is not important and 4 means that the item is very important. How important for promoting patriotic identity is:

	1 – Least important; 4 – Most important				
A good economy	1	2	3	4	NA
A fair legal system	1	2	3	4	NA
A strong president	1	2	3	4	NA
A collective sense of belonging	1	2	3	4	NA
Winning lots of medals in sports events like the Olympics	1	2	3	4	NA
Representation of one's ethnic group in the government	1	2	3	4	NA
Winning international prizes for scientific research	1	2	3	4	NA
Equality between social groups, meaning no group is privileged over another in society	1	2	3	4	NA

Interviewer, *please read the following.* Thank you for completing the survey!

Interviewer: *remember to record the interview end time on the first page.*