

Legacy Institutions and Political Order in Weak States: Evidence from Chad

by

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Abstract

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This dissertation investigates variation in the ability of non-state institutions to produce political order in weak states. In countries with weak central governments, non-state institutions, such as chieftaincies, are often seen performing many of the functions of a state: enforcing legal codes, collecting taxes, guaranteeing property rights, and ensuring security. However, while some chieftaincies demonstrate an impressive command over their followers, in other places, residents feel free to disobey their chief's edicts. I ask: Why do people in some places comply with their local chief, while in other places they do not?

Such chieftaincy institutions are often referred to as “traditional,” “customary,” or “informal,” institutions. However these conceptual labels are inappropriate for the full range of institutions to which they are applied. Some of which have nothing to do with local traditions or customs, while some have written legal codes and official state recognition. Accordingly I consider them to be *legacy institutions*, based upon the historical legacy of their community.

I develop a theory of institutional time-dependent reputation and how it affects individuals' compliance decisions. I explain how centuries-old institutions can command greater compliance than newer institutions, because people grow up knowing the institution's reputation, believing they will be punished if they disobey its leader. In contrast, people are still formulating their beliefs about newer institutions, because they are unsure whether newer institutions are capable of following through with consequences.

I corroborate this theoretical argument with new evidence collected via immersive research in Chad. Using in-depth interviews with chiefs and a survey of 2,300 Chadian villagers across peripheral regions of Chad, I find that residents have higher expectations of compliance in areas where there are older institutions with established reputations. This finding that is robust to a variety of analytical approaches and statistical models.

This dissertation is dedicated to Jeanine, Andre, and the memory of Abdoulaye Haroun.

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Chapter 1

Introduction

For people who live in Rey Bouba, in Northern Cameroon, the most important laws are not those of the state of Cameroon. Lying hundreds of miles and at least a day's travel north of Cameroon's capital city, the Lamidat of Rey Bouba is the primary governing institution in the space it occupies. State authority is completely absent, unless it is exercised via the Lamidat (Mouiche 2005 p.12). Disputes are resolved and business is settled by the Lamidat, under the "all-powerful" Lamido, the institution's leader. The Lamidat collects taxes on business within its area. If any central state employees in the area challenge the Lamido, they lose their job. And the Lamidat's representatives are able to exact any punishment on those who disagree with its orders, including killing them, without any intervention by the central state. In Rey Bouba, law and order is defined by the Lamidat, not the rules of the Republic of Cameroon.

Across sub-Saharan Africa, many citizens are similarly removed from the reach of state institutions. Only a small fraction of Africans live in a capital city. Most do not live in a city at all (Sow 2015). Even among urban residents, many towns and cities are distant from their state's capital, both physically and socially. And the central state governments of many African countries are considered to be among the most fragile in the world (Fund For Peace 2018). So for many Africans the central state is hardly Hobbes's Leviathan, and in some cases, the central state's authority is effectively absent.

However, not all places where the state is absent are lawless. In some areas, international organizations provide many of the key services of government (Krasner and Risse 2014). Elsewhere, rebel groups become de facto governments (Mampilly 2012). And in some places like Rey Bouba, institutions generally referred to as "traditional" or "customary" govern many aspects of daily life: providing security, assigning property rights, resolving disputes, and offering social services.

The presence and power of these "traditional" institutions is uneven. In a nearby part of Northern Cameroon, in the area around Maga, "chiefs" do not figure in peo-

ple's discussions of important local institutions, although they exist.¹ This absence is not recent: a 1964 ethnographic study of the ethnic Massa populations in the region reports that they respect no chief (de Garine 1964). Elsewhere in Cameroon, the association of fons (chiefs) in the Northwest region backed a slate of ruling party candidates in the 1996 municipal elections and called on their followers to vote accordingly. Those candidates lost in 30 out of 32 districts (Englebert 2005). Unlike in Rey Bouba, "traditional" institutions are not the preeminent governing institutions for Cameroonians in Maga or in many parts of the Northwest region.

The variation between places like Rey Bouba and places like Maga is not always evident to outsiders. "Traditional" institutions and chiefs exist in the Northwest of Cameroon, as they do around Maga. The difference is in the degree of their importance in the lives of the people who live there. One key aspect of whether an institution matters to the population is whether people will comply with its directives. Understanding that variation is the motivating question of this dissertation: Why do people in some places comply reliably with their local chief, while in other places they do not?

1.1 Legacy institutions

I take Douglass North's definition of institutions as "the constraints that human beings impose on themselves" (North 1990 p.5), and I use the term *legacy institutions* to refer to institutions like chieftaincies, kingdoms, sultanates, and clans. Existing research is inconsistent in its use of conceptual labels, with scholars using terms like traditional institutions, customary institutions, neo-customary institutions, informal institutions, and twilight institutions. Yet each of these labels is inappropriate for at least some of the institutions discussed in this dissertation. Traditional and customary are inappropriate because many such institutions were either reshaped or created during colonial or post-colonial periods. Informal is also inappropriate, because some of these institutions have written codes and histories, and some are also sanctioned by state authorities. "Twilight institutions" (Lund 2006) is also inappropriate because it defines such institutions in terms of their relationship to the state, despite the fact that many such institutions predate the existence of the state in which they are located. I use the term "chief" interchangeably with "legacy institution leader," as a shorthand to match colloquial usage in central Africa. Chapter 2 offers a detailed discussion of these different conceptualizations and labels of institutions, as well as the way I conceptualize legacy institutions in this dissertation.

¹Author's notes, August, 2006; personal communication, Boniface Noyongoyo

1.2 The periphery

This dissertation examines the institutions which shape life for people in Africa who live far enough outside the capital cities of their countries for state authority to be tenuous. Social scientists have long recognized the difference between regions where one political authority holds a true monopoly over violence and regions where this authority is contested. In Africa, central states often hold a clear monopoly of violence in only a fraction of their territories. In the rest of their area, their sovereignty is *de jure* in international law rather than a fact on the ground (Jackson and Rosberg 1982).

I define the periphery as areas outside the capital where the state lacks a clear monopoly over violence. Theoretically, we should expect that politics should be organized differently in such areas than in areas where state authority is consolidated. In extreme cases, the periphery can begin quite close to the capital city; Bierschenk and De Sardan (1997) note that in the mid-1990s, state authority in the Central African Republic stopped 12 kilometers outside Bangui. In general, existing theories predict that state capacity declines as distance from the capital city increases (Herbst 2000).

These theories also suggest that conflict and disorder is more likely in these peripheral areas where the state lacks a clear monopoly on violence. Empirical studies identify evidence to support this prediction, finding that conflict (excluding protests and coups) is more likely in areas geographically far from the capital (Buhaug and Gates 2002, Buhaug and Rød 2006). Thus, this study focuses on considering variation in social order in peripheral regions where state authority is not consolidated.

1.3 Literature

Scholars have investigated legacy institutions, compliance, and institutionalization using a wide range of approaches. These research agendas have primarily proceeded along separate tracks. Olson (1993) comes closest to the question in this dissertation with his model of institutionalization by a “stationary bandit,” a theory that has set the baseline for much of the work that has followed. In his theory, the stationary bandit controls coercive capacity and compliance is taken as a given.

Like Olson, other researchers have developed theories of institutionalization out of anarchy. These theories begin with the introduction of specialists in violence to a society where the population faces a tradeoff between production and predation. These works tend to focus on overall welfare, and they do not distinguish between voluntary or involuntary tax payments or compliance (Bates, Greif, and Singh 2002, Grossman 2002, Konrad and Skaperdas 2012, Usher 1989). Similarly, the property-rights institutions examined by Grief (2006) and the insurance

schemes analyzed by Fafchamps (2003) and Udry (1994) begin from a state of anarchy, but they also are limited in scope to specific types of economic interactions. Like Olson, they draw a direct line from coercion to compliance.

Other prominent studies of institutionalization have explained the origins of a number of important institutions, although they have not focused on legacy institutions. Sovereign states raised money most effectively and defeated their competitors (Spruyt 1996, Tilly 1990). “Rule of law,” limiting the abuses a sovereign can do to a population, can emerge via elite pacts (Weingast 1997), beginning the transition from a “natural state” where power and wealth are consolidated to an “open access order” with secure property rights for all (North, Wallis, and Weingast 2009). Margaret Levi (1989) explains the origins of taxation institutions and their enforcement mechanisms, addressing issues of compliance related to the ones discussed here. Her focus is on the amount of taxation that an existing leader chooses to collect. In all these studies, there is already a baseline of institutions: a polity with a leader or elites. Levitsky and Murillo (2009) surveys literature on institutional strength in such cases. In these cases, overwhelming coercive capacity and a pre-existing polity of some sort are simply assumed.

Compliance

Other research across the social sciences does focus on questions of compliance and obedience. Milgram’s (1963) famous study on obedience found that research participants comply with morally objectionable commands from an authority figure at alarmingly high rates. Sociologists have found that people may obey the law because of legitimacy and morality rather than instrumental reasons (Tyler 1990). Economists have integrated these moral legitimacy dimensions with instrumental concerns to develop a framework in which both factors affect compliance, meaning people cheat only when tax rules are neither legitimate nor strongly enforced (Kirchler, Hoelzl, and Wahl 2008). The material tradeoffs individuals face when considering whether to comply with government decisions and taxes in industrialized societies have been thoroughly examined, as reviewed by Andreoni, Erard, and Feinstein (1998). These studies all consider a context in which an overarching government, or a clear authority figure, already exists, again presupposing an existing institution with coercive capacity. For such scholars, explaining the emergence of such an institution would require returning to a theory like Olson’s.

Legacy institutions

Many scholars have identified the importance of legacy institutions, showing how legacy institution leaders serve as key links in state patronage networks, act as vote brokers, administer land rights, and partner with international organizations. African states have depended on “traditional” elites as local surrogates since colonialism, sometimes even creating them where none previously existed (Berry 2001,

Mamdani 1996, Young 1994). Legacy institution leaders make up a critical part of many states' patronage networks (van de Walle 2001, Bayart 1989). Such organizations range from fully personalist to highly institutionalized and vary in their levels of social capital (Bayart et al 1997); their authorities overlap with unclear boundaries of legality (Roitman 2005). In many places, legacy institutions shape land-allocation practices (Boone 2003, Honig 2017). The legacies of pre-colonial states influence the level of public-goods provision (Wilfahrt 2018). Chiefs shape individuals' vote choices (Baldwin 2013) and parties' political strategies (Koter 2013). Levels of economic development depend on whether central state institutions are congruent with pre-existing institutions (Englebert 2000). Even the Soviet Union was unable to crush legacy institutions in central Asia; clans came to dominate politics in countries like Kyrgyzstan and Kazakhstan soon after they gained independence (Collins 2004). And clan institutions affect statebuilding and conflict patterns in Somalia (Ingiriis 2018). These works identify important political roles played by legacy institution leaders, but they do not investigate why some legacy institution leaders can count on compliance from their followers while others cannot.

Peacebuilding experts have also recognized the important role of legacy institutions, arguing that international interventions in post-conflict environments should recognize "hybrid political orders" that include state, "traditional," and "indigenous" dispute resolution mechanisms (Boege et al 2009, Mac Ginty 2008, Mallett 2010, Tubiana et al 2012). Researching rebel groups, Staniland (2014) shows how differing ties to pre-existing social networks affect rebel group effectiveness. Autesserre (2007) notes that conflicts flared in eastern Congo because of competition between state authorities and local chiefs despite peacebuilding interventions by the international community. However, none of these works proposes a framework to evaluate the legitimacy of "traditional authorities," a critique made by Donais (2012). Across all three strands of research, ideas about the origins of institutions would return to Olson's theory, or one like it, with a direct relationship between coercion and compliance.

1.4 Argument

One institutional characteristic which has received comparatively little attention is the duration that the institution has existed. I argue that the level of compliance with a leader's directives depends on the time-dependent institutional reputation of the institution she leads. Specifically, I claim that compliance is higher when an institution has existed for a longer duration. Unlike in Olson's theory, my argument suggests that compliance changes over time even as coercion stays fixed. The intertwined roles of time and reputation are not merely overlooked in the extant literature, the theoretical mechanism linking time and institutionalization is misunderstood. North (1990, 60), for example, noted in his foundational work that

“[c]reating a system of effective enforcement and of moral constraints on behavior is a long, slow process that requires time to develop if it is to evolve.” Yet, in North’s analysis, the precise role played by time in the establishment of new institutions remains murky.

To clarify how this dynamic works, I present a simple theory of institutional creation among a previously lawless population. This theory suggests that time is not simply an indicator of some underlying difference between areas. Rather, the duration that an institution has existed shapes how individuals make decisions about whether to comply with it. My theoretical framework helps to explain why threats of punishment from an institution’s leader are not credible when the institution is new. I call such institutions *courte-durée* legacy (CDL) institutions, while I refer to institutions which have existed for a long duration as *longue-durée* (LDL) institutions.

CDL institutions lack a reputation for inducing compliance, regardless of whether if they have coercive capacity. Even if a CDL institution was truly strong enough to follow through on its threats of punishment, there would be no way for people to know that – it has no reputation. Its leader might attempt to send a signal or make an investment to show its strength, but no such signal could be credible. The logic behind this claim is that the leader of a weak institution would make every effort to mimic the signals that a nascent, strong institution’s leader would send. Accordingly, people would not view any signal as credible, and would wait to watch cycles of noncompliance and punishment to update their beliefs about the institution.

LDL institutions have a reputation that they have earned over time. The process by which people would update their beliefs would be self-reinforcing, with people complying at increasing rates with initially-strong institutions and at decreasing rates with initially-weak institutions. The reason this cycle reinforces itself is that the likelihood of any individual being punished depends not just on the strength of the institution, but also on the number of noncompliers. The more people comply because they expect punishment for noncompliance, the easier it is for leaders to punish and coerce the few remaining noncompliers. Thus if people update their beliefs to think that an institution is stronger, the number of noncompliers would decline. This change in the number of noncompliers would increase the likelihood any of the remaining noncompliers would be punished – even holding everything about the institution constant. Similarly, if people update their beliefs to think an institution is weaker, the number of noncompliers would increase, decreasing the likelihood that any of them would be caught and punished.

The duration an LDL institution has existed is important in two ways. First, it is an indicator of the initial strength of the institution, because initially-weak institutions should not be expected to survive as long. The second way duration is important is in developing an institutional reputation. Over time, people update their beliefs and change their behavior. Even with an initially-strong institution, compliance would start out low, because people would not yet be sure that the institution was strong. So with that initially-strong institution, compliance would

gradually increase over time as that institution's reputation changed, even though everything about the institution itself remained the same.

This theory shows how people's decisions to comply depend on the reputation of the institution, which can only be forged over time. If an institution starts off strong, compliance would gradually increase until everyone, or almost everyone, would follow its directives. If an institution starts off weak, compliance would decline, leaving that institution vulnerable to replacement, starting over the clock on institutional duration. The result of this theory is that the presence of a *longue-durée* institution should be associated with high levels of compliance.

1.5 Research design

I evaluate my argument by comparing legacy institutions in Chad, a diverse, poor, post-conflict country in central Africa. The theory originates from preliminary interviews in Chad, as well as from my observations during my extensive travels in the region. I then test the hypotheses I developed via data from in-depth interviews and an original survey. The results support the claim that institutional duration is associated with higher degrees of compliance with legacy institution leaders.

State authority in Chad is tenuous: Boko Haram is currently active in the country's west, rebel fighters most recently waged a battle for the capital city in 2008, and the country has witnessed violent civil conflict in every decade since independence. The country is ethnically and religiously diverse. Muslims make up just over half of the population, while Christians represent most of the remainder. Dozens of ethnic groups are present, and none of them makes up more than one third of the country's population. The fragile nature of central state authority and the wide variation among populations and legacy institutions make Chad a good site to test my theory of institutionalization over time.

Immersive research in Chad

During the years I conducted my research, arriving at my home base in Abéché on a bus as a foreigner meant having an authority figure without a regular uniform confiscate my passport at a heavily-staffed checkpoint by the entry to town. Getting it back the following day would require visiting an almost-unmarked administrative office of the Chadian security apparatus toward the center of town; the exact location of the office changed from one trip to the next. There, I would have to fill out a form and negotiate with whoever was the head officer in that office that month. They were interested in official invitations and institutional letters, and would inspect them. But the specific rules and requirements they would recite changed from one officer to another. But the more important question – as I know from the times when I didn't have the paperwork they wanted – was where I

was staying, who my host was, and whether I had their phone number. In my case, I was fine because I was staying at the home of Abdoulaye Haroun, in the Rue de N'Djamena neighborhood, and he was willing to vouch for me.²

This process was part of the set of institutions which maintained order in Abéché. Over the course of my repeated trips to town, I came to believe that the important part was not the “official” part of the process that related to the laws of the Chadian state. The paperwork requested changed from one time to another as the office moved and officials rotated in and out. Rather, the important part of the institution was to ensure that I was tied to a local host.

I came to see Abdoulaye was my ‘wali’ (or ‘tuteur’), meaning that he was my surrogate father while I was in town. If I caused any trouble, it would be Abdoulaye’s responsibility to pay for the damages or make amends, even if I disappeared. Our family representative would be the chef de race of the Bulala ethnic group. This arrangement is not formalized in Chadian law, and I observed that not all Chadian towns operated this way. Nonetheless, in Abéché, this system is accepted and enforced by the other layered institutions which organize life there: the Sultanate of Ouaddaï, organized clan groups, and neighborhood institutions. Chadians from other regions where such institutions did not operate were forced to adapt and identify their own chefs de race.³

My observations, interpretations, and understandings were a product of the immersive research strategies I employed. Throughout my research for this project, I was a participant observer in living and traveling through Chad and the greater subregion. I was immersed in a community of Chadians: I lived in their houses, traveled on the their buses and bush taxis, bought food at the central market, and stayed inside with everyone else when violent protests occurred outside. By living in this way, I observed, interacted with, and depended on local governing institutions in ways that differed systematically from the ways I would have if I was affiliated with an NGO or international organization. I depended on Chadian institutions for security, both from bandits and from the state itself. I had no letter from a registered NGO to ensure my security or freedom of movement. Although I am not Chadian, I had access to the same repertoire of institutions that Chadians did, and I dealt with them face-to-face. These research practices informed the hypotheses I developed, as well as the strategies I employed to test them.

Empirical strategy

I use both interview and survey data to test the theory I developed about the link between duration and compliance. From interviews with legacy institution leaders, small business owners, and everyday citizens, I demonstrate the variation in institutional reputation and degrees of compliance with legacy institutions. These

²Field notes, July 8, 2013 (e-mail); December 5, 2016

³Interview S8, June, 2013

interviews show two aspects of my theory. First, respondents talked about how they complied in part because of expectations that everyone else would also comply, and that noncompliers would stand out. These comments support my theoretical claim about compliance depending not only on the characteristics of an institution, but also on the decisions of other people in the area. Second, interview data shows that people are still updating their beliefs about the strength of CDL institutions.⁴

I then present results from an original survey of more than 2,300 villagers in rural areas of two regions at opposite ends of Chad. I employ two empirical strategies. First, I use a paired-comparison design in which I identify legacy institutions that are similar on all dimensions except the duration that they have existed. I then evaluate survey responses about compliance across the paired comparison. Second, I present regression results across a larger number of legacy institutions, controlling for a wide range of individual-level and institution-level covariates. These results, with numerous robustness checks including individual-level matching, support the argument that high rates of compliance are associated with institutions that have existed for a long duration.

1.6 Legacy institutions and the Chadian state

Legacy institutions are important to Chadian politics because they shape the bargaining between peripheral groups and the center. Legacy institutions that the center considers “powerful” are at an advantage because they offer either a shortcut to maintaining order with limited investment, but the central state’s rulers fear their capacity to mobilize rebellion. As shown with some examples from Dar Tama in Chapter 2, legacy institutions are capable of turning their independent organizational capacity to contest state authority. As one Chadian scholar put it: “He who controls the chefferie controls all the reins of power.”⁵

1.7 Plan of the dissertation

The remainder of the dissertation proceeds as follows: In Chapter 2, I discuss the conceptualization of legacy institutions, arguing that alternative labels and conceptualizations are inappropriate or incomplete. In Chapter 3 I present a theory how a population would make compliance choices when faced with a new institution about which they had limited information. This theory suggests that there

⁴This research was funded by the National Science Foundation (SES-1560575), the U.S. Institute of Peace, the West African Research Association, the Institute on Global Conflict and Cooperation at UC-San Diego, the Institute of International Studies at UC-Berkeley, and the Center for African Studies at UC-Berkeley. Research was conducted under UC-Berkeley Committee for the Protection of Human Subjects protocol ID numbers 2015-08-7860 and 2013-03-5099.

⁵“Qui tient la chefferie tient tout les reins de pouvoir,” S2 June 2013

is no signal that an initially-strong institutional entrepreneur could send to differentiate herself, and that accordingly the population would only seek to update by observing cycles of noncompliance and punishment. In Chapter 4, case studies of legacy institutions in Chad illustrate the theory from the previous chapter. Chapter 5 details my immersive research strategy in Chad, showing how my approach to research and my observations while living and traveling in Chad informed the theory I developed and my empirical approach. Chapter 6 presents survey data demonstrating the link between high rates of compliance and institutions that have existed for a longer duration. Chapter 7 concludes by noting the implications of these findings for scholars, policy practitioners, and NGOs who frequently work with local chiefs without noting differences among them.

Chapter 2

Conceptualizing legacy institutions

Djodo-Gassa, in southwest Chad, is home to a local chief with the title *chef de canton*. He leads the *chefferie* of Djodo-Gassa, one of the salient political and social institutions in the area. The *chefferie* hosts a court where people from the area come to resolve all sorts of disputes based on a combination of its own local rules and the Chadian state's laws, and the chief is advised by a court of counselors. The chief directs *goumiers* – local security officers – to enforce the court's decisions. In the eyes of the Chadian state, the *chefferie* is a *canton*, a type of local institution recognized by Chadian law as an *institution traditionnelle*.

The first *chefferie* in Djodo-Gassa was established during the 1930s. The first chief died in 1961, and the title passed to his eldest son. However, that new chief only lasted two years before being ousted because “he was behaving badly,” according to the current chief. In 1963, a new chief took over, with a different family council to decide subsequent succession decisions.¹ This institution would be what I call a *courte-durée* legacy (CDL) institution: it has not existed long enough to establish a firm reputation.

About a hundred miles away, the *chefferie* of Léré is led by a chief who holds the title of the *Gong de Léré*. Like the chief in Djodo-Gassa, he oversees a similar court, is advised by a similar ‘royal court’ of counselors, and controls *goumiers* to enforce his decisions. Like the *chefferie* in Djodo-Gassa, Léré is a *canton* in the eyes of the Chadian state.

The *Gong de Léré* traces his lineage, and the history of his institution, back to the 1550. A family tree shows the current *Gong* as the 19th head of the institution he leads, having taken over in 2000 upon the death of his father.² This institution would be what I call a *longue-durée* legacy (LDL) institution: it has existed for a very long duration, and has established its reputation.

Mirroring the language of the Chadian state, much academic work would call both *chefferies* traditional institutions. But at least for the case of Djodo-Gassa, the

¹Djaï Aboïna, *chef de canton* of Djodo Gassa, 3-19-16-1.

²3-16-16-1

label is misleading. Whose traditions does that chefferie represent? The first such institution there was established by a new local chief during a period when French colonial authorities were looking for such chiefs to serve as local surrogates. The populations of that region had historically not had political institutions organized in that way – initiation rituals were more important.³ Labeling the institution as a “customary institution” or “indigenous institution” would raise similar concerns: whose customs does it represent? For whom is this institution, initially created in the 1930s and remade in the 1960s, “indigenous”?

Other alternatives would be to call the chefferie an informal institution or to consider it as a type of state institutions. But neither of these labels is appropriate either. Informal does not fit because the chefferie is officially recognized by the Chadian state, violating common definitions of the term “informal institution.” A third option would be to consider it simply as an arm of the state because of that official recognition. But that conceptualization would also be problematic given that the institution has survived and operated more-or-less independently since 1963 despite the repeated upheavals and wars affecting the Chadian state in that period. Despite its official recognition, the chefferie can stand alone as its own institution.

This chapter proposes a new title: the chefferies in Djodo-Gassa and Léré are legacy institutions. The institutions – the common set of social rules – are the historical legacies of the regions. In the case of the chefferie in Djodo-Gassa, the historical legacy begins with an institutional entrepreneur operating during the French colonial period and continues through the independence period. In Léré, the legacy began much earlier, with an institutional entrepreneur in the 16th century.

These chefferies are not unique. A wide range of social scientists have identified and investigated similar institutions. Most of these scholars have used one of the labels rejected above, referring to the institutions as traditional, customary, indigenous, informal, or a branch of the state. A select group of scholars including Catherine Boone and Christian Lund have identified this conceptual problem and used other labels; their approaches are discussed below.

Changing the label is more than a matter of semantics. A clearer conception of legacy institutions has the potential to help advance research agendas on state-building, rebel group formation, post-conflict recovery, and the enforcement of human rights. At present, these bodies of research view traditional institutions as fixed background conditions rather than dynamic institutions led by strategic actors. Furthermore, the positive connotations of words like “traditional” has the potential to warp analysts’ perspective, blinding them to the potential for such institutions to foment violence or oppress marginalized groups.

³Interview A2, July, 2013

2.1 Traditional, indigenous, and customary institutions

The most common terms for institutions like the chefferie are “traditional,” “indigenous,” and “customary,” which are often used interchangeably (Englebort 2005). At times, one of these words is used in the definition of another (Sklar 1993). “Traditional institutions” have been the focus of extensive academic study (Buur and Kyed 2007, Vaughan 2005). They are given official status in a number of state laws, such as the constitutions Chad, Ghana, and Uganda. Donors and non-governmental organizations aim to include them in their development projects (USAID 2007). The definition provided by Buur and Kyed (2007) is a clear statement of this conceptualization:

In this introduction, we use the concept of ‘traditional leader(s)’ as a common English term to refer to chiefs, clan elders, and kinship-based leaders, with equivalent terms in French, Portuguese, and German. This is not because we see such leadership figures as ‘traditional’ in the sense of reflecting a pure, static continuity with the past, but rather because present-day government legislation, donor policies, and the claims to authority that chiefs articulate tend to invoke ‘tradition’ and ‘traditional authority.’ Similarly, we use the concept of traditional authority in referring to state recognition of chieftaincy, traditional leadership, kinship-based organizations or institutions, and so forth. ⁴

Englebort (2005), who puts the word “traditional” in quotation marks the first time he uses it, offers a similar, but shorter, definition:

In this paper, the term “traditional” and “indigenous” are used interchangeably. Use of the former does not imply any contrast with modernity or any assumption that indigenous structures benefit from time-tested experience. ⁵

Baldwin (2014) adds a similar caveat: “The term ‘traditional’ is used by convention and is not meant to imply their positions have not changed over time,” noting that Logan (2009) uses a similar definition with a similar caveat.

In writing about “customary institutions,” Wig and Kromrey (2018) define customary institutions as “traditional political systems that organize ethnic groups with roots in pre-colonial political structures,” which would explicitly exclude the chefferie of Djodo-Gassa. However, in the next paragraph, they write that many such institutions have been reshaped or supported by colonial authorities and

⁴Buur and Kyed 2007 p.24

⁵Englebort 2005 Footnote 2

post-independence governments. They conclude their discussion of how such institutions should be conceptualized by noting that “this [colonial and post-colonial influence] makes it hard to draw a sharp distinction between contemporary states and customary institutions” (Wig and Kromrey p. 416).

The caveats in these definitions hint at the problem with the terms “traditional,” “customary,” and “indigenous:” they are used to refer to both institutions that are not actually traditional, customary, or indigenous, in addition to those that are. Englebert’s addition of quotation marks around the word serves to emphasize this point: not all “traditional institutions” are actually traditional in a literal sense of the word, as the chefferie in Léré could claim to be. These scholars refer to institutions as “traditional” because other people call them that, not necessarily because they believe the institutions represent something based on timeless traditions or indigenous history.

In Gerring (2012)’s terms, this lack of consistency in the usage of “traditional” between these academic specialists and a larger audience creates three problems:

First, it leaves no appropriate term to distinguish institutions that truly are traditional from those which are not. Institutions exist that clearly meet the strict definitions of these words. They deserve a label to distinguish them from institutions created or drastically reshaped during subsequent periods like colonial rule. All such truly traditional institutions are also legacy institutions, but not all legacy institutions are traditional institutions.

For example, it would be misleading to call both the chefferies in Djodo-Gassa and Léré “traditional institutions,” because they have very different relationships with local tradition. It is clear that the chefferie in Léré is a traditional institution: The Gong and his institution are indisputably important parts of local tradition and custom, particularly among the Mundang who make up a majority of the population there. In contrast it does not seem appropriate to consider the chefferie in Djodo-Gassa a “traditional institution.” With its origins in the 1930s during a period that the French were looking for chiefs and a reformulation in the 1961, it exists more as a product of 20th century Chadian politics than any of the region’s traditions. For the Moussai people who live there, initiation ceremonies would have had a more salient role in local social organization before the formation of the chefferie, and such ceremonies continue today.⁶

Second, it precludes analysis of the factors which shaped these institutions into their present form. Declaring that institutions are “traditional” or “indigenous” suggests that their origins are so temporally and culturally distant as to be irretrievable without a deep dive into the ancient history and culture of a group. For many institutions that carry the “traditional” label, this is not the case, because they were created within the last century. Closer attention to these origins might yield insights into political processes at work today.

⁶A1, July, 2013, A2, July, 2013

An example of such an institution is the Sultanate of Dar Tama, in eastern Chad, discussed at greater length in Chapter 4.7. The institution was drastically reshaped by the central state in 2007 when it ousted and arrested the previous sultan and some of his associates. The current sultan was named by a newly-constituted family council which is not viewed as legitimate by much of the population. Given these recent and contested changes to the institution, calling it a “traditional institution” would not be appropriate.

Third, it ties these institutions to the positive connotations of the words “traditional,” “customary,” or “indigenous.” The need to preserve groups’ traditions has been recognized by the United Nations.⁷ Accompanying this understanding is the view that they refer to the positive aspects of a group’s history. As an extreme example, Americans would not generally refer to longstanding social institutions in the southern United States intended to disenfranchise African Americans as traditional institutions. Even if such institutions did truly originate with the traditions of the region, our understanding of the word “traditional” precludes us from applying it to such normatively objectionable practices and institutions. Certainly not all institutions that are labeled traditional are similarly normatively objectionable. Nonetheless, the label itself presupposes that they are either desirable or benign, foreclosing an impartial analysis of the role such institutions play in modern politics.

For example, I personally saw a representative of the Sultanate of Ouaddaï slap a woman in the face, hard, because he was unhappy with the manner in which she had testified in the sultanate’s court.⁸ This gendered violence suggests that the “traditional” label is inappropriate for two reasons: First, some Ouaddaïens, especially women, might dispute that this behavior represented their traditions or customs. Second, because of the positive connotations of “traditional” and “customary,” human rights organizations regularly partner with institutions like the Sultanate of Ouaddaï, and its court, without considering the problematic practices they may inadvertently be endorsing.

For these reasons, the terms “traditional institution,” “customary institution,” and “indigenous institution” should be used for a more limited set of institutions: those which actually represent specific, longstanding traditions or customs of a defined group or place, like in Léré. Such labels would be appropriate for institutions which were well-established for a defined “indigenous” group before the arrival of some outsiders or new institutional form. Despite their prevalence in government documents and prior research, their usage confuses conceptual boundaries and inhibits theoretical and empirical research progress.

⁷See U.N. resolution, safeguarding traditional culture and folklore, found at: http://portal.unesco.org/en/ev.php-URL_ID=13141&URL_DO=DO_TOPIC&URL_SECTION=201.html retrieved June 29 2015

⁸Field notes, February 15, 2016

2.2 Informal institutions

Scholars also sometimes refer to institutions like the chefferie as informal institutions (e.g. Collins 2004). This usage has the benefit of placing these institutions into a broad base of literature that includes a wide range of important political institutions. In setting out a research agenda on informal institutions, Helmke and Levitsky (2004) offer a clear definition (*italics and footnotes from original*):

We define informal institutions as *socially shared rules, usually unwritten, that are created, communicated, and enforced outside of officially sanctioned channels*.⁹ By contrast, *formal* institutions are rules and procedures that are created, communicated, and enforced through channels widely accepted as official. This includes state institutions (courts, legislatures, bureaucracies) and state-enforced rules (constitutions, laws, regulations), but also what Robert C. Ellickson calls “organization rules,” or the official rules that govern organizations such as corporations, political parties, and interest groups.¹⁰

Although this definition has been productively applied to institutions in a wide range of cases (Brinks 2003, O’Donnell 1996, Lauth 2000), not all institutions like the chefferie cannot easily be classified as either formal or informal. It can be difficult to determine whether such institutions are “communicated and enforced outside of officially sanctioned channels” (Helmke and Levitsky 2004). This degree of recognition from the state can shift with changes that occur in the capital city, without any change occurring on the ground anywhere near the chefferie. Thus, attempting to classify the chefferie as formal or informal would have it bouncing back and forth between the two categories over time despite not changing at all.

An example of this ambiguity is the chefferie nomade Arab-Mahrea, an institution of the “mahrea” clan of Arabs, regardless of their geographic location. The institution is longstanding, stable, and important to its members: its chief was selected from among his brothers by a family council after his father’s death, it operates a court, and it has market *guarants* and representatives in N’Djamena, Oum Hadjar, and Am Timan.¹¹ But although he claims the title of “chef de canton,” he is not in fact a “real chef de canton” in the eyes of local Chadian administrators, at least not any more. In the past, he used to have more official recognition than he does now – he used to have *goumiers* funded by the state, but no longer

⁹ “This definition borrows from Brinks 2003a and is consistent with North 1990; O’Donnell 1996; Carey 2000; and Lauth 2000. We treat informal institutions and norms synonymously. However, norms have been defined in a variety of ways, and some conceptualizations do not include external enforcement. See Elster 1989.” (Footnote in Helmke and Levitsky 2004)

¹⁰p. 31 Ellickson 1991 (Footnote from Helmke and Levitsky 2004.)

¹¹Ali Hamdan Egemir, 2-7-16-1

does. Nonetheless the fundamental institution has remained the same, despite the state's changing relationship with the institution.

For this reason, describing such institutions as “informal” would require broadening the definition included above to include institutions that have sometimes, but not always, been officially sanctioned. This change would be an instance of conceptual stretching, in Gerring's (2012) terminology. This change would limit the usefulness of the “informal institutions” concept, which has already been clearly defined and productively used in a large number of articles. Thus a different concept and label is needed for institutions like the chefferie.

2.3 State institutions

Another way to study institutions like the chefferie has been to analyze them as arms of state institutions. This approach has been especially common and productive in the study of the African state (Bayart 1989, Mamdani 1996). Scholars have shown how central governments have depended on “traditional” elites as local surrogates since colonialism, sometimes even creating them where none previously existed (Berry 2001, Boone 2003, Mamdani 1996). This conceptualization has shown how such organizations range from fully personalist to highly institutionalized and vary in their levels of social capital (Bayart et al 1997), that institutional authorities overlap, with unclear boundaries of legality (Roitman 2005), and that levels of economic development depend on whether central state institutions are congruent with pre-existing institutions (Englebert 2000). Scholars have developed these compelling findings about weakly institutionalized states by closely analyzing the peripheral arms of the state, which are often based around institutions like chieftaincies.

However, this conceptualization precludes consideration of the idea that leaders of institutions like chieftaincies or sultanates might work against the central state rather than with it. Given the nature of such institutions – that they claim some authority that predates central state institutions, or at least operates separately from them – an orientation in opposition to central state leaders is a possibility, as seen in the discussion of the rebellion in Dar Tama in Chapter 4.7, as well as Eck (2014) and Wig (2016). By conceptualizing institutions like chieftaincies as arms of the central state, scholars overlook the possibility for chiefs to be independent strategic actors and use their power to actively fight or undermine state authorities.

2.4 Twilight institutions, neo-customary institutions

A select number of scholars have recognized that these three conceptualizations are inadequate. Christian Lund (2006) proposes a new label, twilight institutions,

along with a new analytical framework in which such institutions should be considered. Catherine Boone (2003, 2014) does not propose an entirely new framework, but in her groundbreaking work on land tenure regimes she uses the term neo-customary institutions, in recognition of the problems listed above. While these conceptualizations represent substantial advances, they do not resolve the general problem of what to call institutions like chieftaincies or sultanates.

For Lund, the key defining feature of twilight institutions is the ambiguous boundary between state and local institutions. He eschews a fixed definition, writing:

Two paths tend to be travelled in approaching public authority in local arenas. Either a rigorous universal definition of the concept is proposed, or examples representing the phenomenon are displayed. As the point of this article – and indeed of this entire collection – is to get a better understanding of something which is as yet elusive, I opt for the second possibility and offer here a handful of evocative examples which hopefully resonate with other cases with which the reader might be familiar. (Lund 2006 p.687)

He notes that in many cases, local institutions simultaneously place themselves in opposition to the policies of the central state, while also claiming the language of the state authority to legitimate their claims. He writes:

In such cases it is difficult to ascribe exercised authority to the “state” as a coherent institution; rather, public authority becomes the amalgamated result of the exercise of power by a variety of local institutions and the imposition of external institutions, conjugated with the idea of a state. (Lund 2006, p.686)

This conceptualization illuminates the ways in which multiple institutions lay claim to the mantle of “state authority,” even at times when those institutions are in direct conflict with each other.

As with the definition of informal institutions, this conceptualization of twilight institutions rests on central states’ decisions about the legitimacy of other institutions. If twilight institutions are defined by the ambiguous nature of state authority, the conceptualization is no longer apt for cases when a central state has unambiguously decided to endorse the actions of a local institution. Such a change in central state policy could take place without any change at the local level, as in the example of the Chef de Canton Arab-Mahrea. Thus, the conceptualization of twilight institutions is problematic because it defines them not by their own characteristics, but by the way central state institutions treat them.

Boone does not set out to focus on the conceptualization of institutions like chieftaincies; her focus is on the ways differing land tenure regimes shape politics. In writing about land tenure institutions organized through chieftaincies, she

refers to them as “neo-customary institutions.” She writes that she appends the “neo” prefix to clarify that such institutions are not truly customary, but have been reshaped by colonial and modern political processes (Boone 2003). This term is not ideal for two reasons. First, the “neo” prefix suggests that the institutions have been modified recently. Second, it still suggests that all the institutions have “customary” origins. One or the other of these conditions may not be met. The “neo” prefix might apply to the chefferie in Djodo-Gassa, but as noted above, the “customary” label does not.

While both Lund’s term “twilight institutions” and Boone’s term “neo-customary institutions” are improvements over the other labels discussed above, neither is an ideal, encompassing conceptual label for the range of institutions discussed in this dissertation. The term “twilight institution” is useful for discussing the ambiguous relationships between institutions like the chefferie and the state. But it makes little sense over a time period that has seen dramatic shifts in state institutions and the degree to which they officially recognize institutions like the chefferie. The term “neo-customary institutions” recognizes the ongoing historical processes which have shaped such institutions, but it still only fits institutions based on longstanding customs. Not all institutions discussed in this dissertation meet both of these standards.

2.5 Legacy institutions: a definition

I propose the term *legacy institution* as an encompassing concept to include the wide range of institutions which other works have referred to as traditional or informal. Legacy institutions include both those which have a true link to longstanding traditions or customs indigenous to an area and those which do not. In both cases, a key commonality between such institutions is their link to the historical legacies of the places where they are located, often in post-colonial countries that achieved independence within the last century. This commonality inspired the name “legacy institutions.”

I define legacy institutions as social and political institutions which: 1) have some ability to operate independently from the central state, with rules which do not originate from the state, 2) claim to be an institution particular to a specific location or identity group based on the historical legacy of that place or group, and 3) claim some degree of social authority over a group of people based on geography or identity, even if those individuals do not ‘opt in’ to the institution.

This definition encompasses many institutions, some of which can also carry other labels. The vast majority of traditional, customary, and indigenous institutions – in the strict senses of the words – meet these standards. These overlapping labels pose no problem, just as existing labels for institutions can overlap: the U.S. Senate is a formal institution, a legislative institution, and a democratic institution.

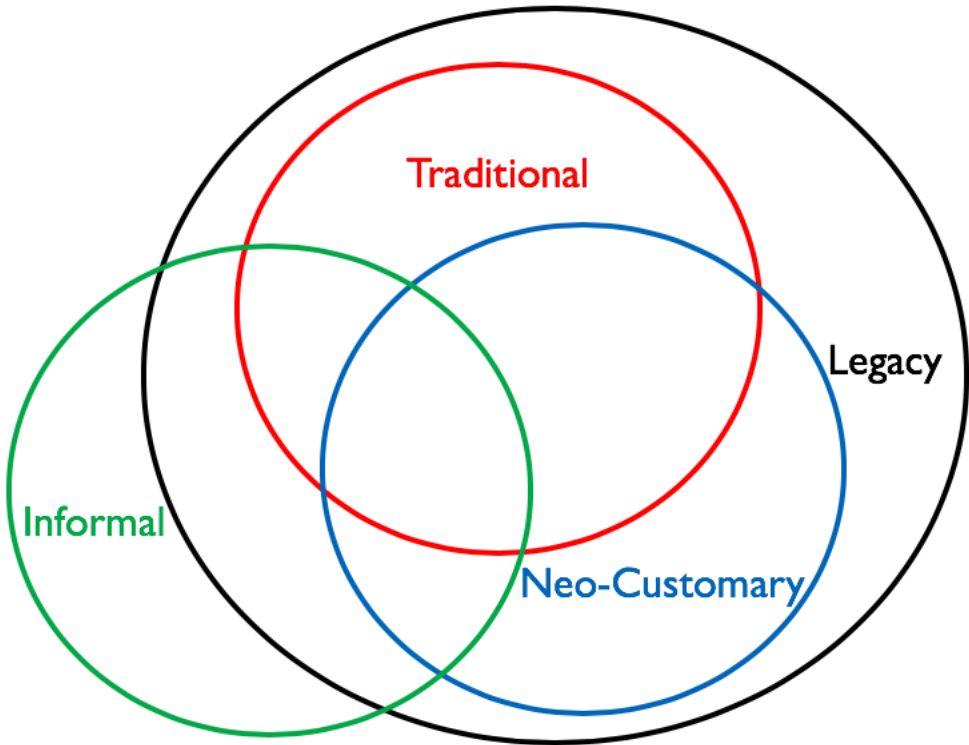


Figure 2.1: Overlap between legacy institutions and other concepts

This definition excludes other categories of institutions which already have clear conceptualizations and labels. Religious institutions and political parties generally do not meet these standards, because these institutions require individuals to ‘opt in’ to membership in the institution, either as a believer or as a party member. Institutions like city and town governments do not meet these standards because their institutional forms are not place-specific and their ability to operate independently from the central state would be questionable.

The legacy institution label is most important for institutions that do not have any other appropriate label, like the chefferie in Djodo-Gassa. Many of these institutions originated during the colonial period, when colonial administrations were looking for local partners and did not distinguish between longstanding, truly-traditional institutions and newly-formed chieftaincies. Some chieftaincies led by paramount chiefs in British West Africa, Chefs de Cantons in French West and Central Africa meet this standard. No existing label can be applied to these institutions without stretching the concept it was originally intended to represent.

One benefit of this separate, encompassing term is to facilitate comparisons between institutions with true ties to longstanding traditions of a specific and

those with origins related to different historical legacies. These comparisons are often important because institutions labeled *chefferies* in francophone Africa or paramount chieftaincies in anglophone Africa are a mix of institutions with ties to true longstanding traditions or customs and institutions which lack such ties. Chapter 6 of this dissertation presents such a comparison, evaluating differences between a set of legacy institutions which could also be traditional institutions, without conceptual stretching, and a set of legacy institutions for which “traditional institution” would be a misleading label.

Table 2.1: Example institutions and the conceptual categories into which they fall

Institution	Traditional	Informal	Neo-customary	Legacy
Chefferie of Djodo Gassa	N	N	N	Y
Chefferie of Léré	Y	N	Y	Y
Chefferie Arab-Mahrea	Y	Sometimes	Y	Y
Sultanate of Dar Tama	N	N	Y	Y
Sultanate of Ouaddaï	Y	N	Y	Y

*Twilight institutions are not included because the lack of a fixed definition.

2.6 State manipulation

One advantage of conceptualizing institutions like the chefferies which started this chapter as legacy institutions is to allow a focus on bargaining and conflict between such institutions and the state. The relationship between each legacy institution and the central state is an ongoing negotiation. The central state claims authority over all legacy institutions, it provides some funding to legacy institution leaders, and it claims to name each institution’s leader by decree from N’Djamena. The degree to which the state has any real control, or merely releases a decree confirming what was already internally decided, varies from one institution to another.

The state, and President Deby, recognize legacy institutions’ importance. Multiple people mentioned, unprompted, that Deby had been sure to make himself chef de canton for his homeland, taking the position from his half-brother.¹² In some cases, like with Dar Tama, he is capable of imposing his will on the sultanate. But in other cases, it is the president who is forced to appeal to powerful sultans – like the Sultan of Ouaddaï – for help maintaining power. “He who controls the chefferie controls all the reins of power,” one scholar said.¹³ “Even today, the state has not managed to establish itself in the Ouaddaï,” said another.¹⁴ The negotia-

¹²S2, June, 2013

¹³“Qui tient la chefferie tient tout les reins de pouvoir,” S2 June 2013

¹⁴“Jusqu’aujourd’hui, l’état n’est pas arrivé à s’asseoir dans la Ouaddaï,” S6, June, 2016

tions between legacy institution leaders and the state depend on some notion of the “power” of a particular legacy institution: “All the *chefferies* that are powerful have an advantage,” a scholar said.¹⁵

The state is capable of supporting or disrupting legacy institutions in a variety of ways. It can support them by bestowing official titles like *chef canton*, by providing financing, and by preventing other groups from breaking away into a different canton. It can disrupt them by releasing official decrees splitting up one legacy institution into multiples, with or without support from a faction of the local population. And in the extreme, it can disrupt them by deposing or even jailing legacy institution leaders, as in the prominent case of the Sultanate of Dar Tama and some *chefs de canton* in the region, who were also replaced after participating or being affiliated with rebellion.¹⁶ Several people commented about the rapid growth in the number of members of the national association of “traditional chiefs,” worrying about diluted authority.¹⁷

One strategy to disrupt legacy institutions is counterintuitive: internationally-backed decentralization initiatives. The Chadian state uses such efforts to force *cantons* to hold votes – on the state’s terms – for the chief, rather than selecting the chief by whatever mechanism they previously had. Some chiefs are refusing to go along with anything related to decentralization as a result, but only “powerful” chiefs leading stronger institutions are capable of resisting.¹⁸

2.7 Conclusion

As the range of examples from Chad show, conceptual labels that other scholars have used for legacy institutions are inadequate. Many of these institutions are not traditional. Some are not informal, because they have written laws and recognition from the central state. It would be a stretch to call them customary or indigenous, because that raises questions of what the customs of a region are or who was the “true” indigenous population. Nonetheless, all of these institutions have some ability to operate independently from the central state, as shown by the fact that some have participated in rebellion. They are either place-specific or group-specific. And they claim authority based on that place or group, even if people don’t opt in to the institution. They are legacy institutions: products of local historical legacies.

¹⁵“Tout les chefferies qui sont puissant sont avantageés” in their negotiations with the state” S2, June, 2013

¹⁶2-28-16-1, 2-26-16, 2-27-16-1

¹⁷S1, June, 2013; A1, July, 2013

¹⁸S2, June, 2013; S7, June, 2013

Chapter 3

Institutionalization and time

This chapter considers how a governing institution is established among a previously lawless population. In places where people comply with legacy institution leaders, a meaningful institution has developed – people constrain their own actions based on the institution’s rules. In places where people do not comply, this process has not occurred. In the context of the peripheries of weak states, there is no other institution that is reliably capable of serving as an enforcer.¹ Therefore, the legacy institutions with which people comply were able to develop on their own, since there was no other institution to impose their existence. The places where people comply with legacy institutions have gone through an institutionalization process that other places have not. This chapter develops a theory of how such a process would unfold.

To develop a theory of how this institutionalization process works, I consider how an institutional entrepreneur would attempt to establish a new governing institution out of a state of anarchy. Institutional entrepreneurs might wish to establish such an institution in order to collect valuable resources via taxation, as in existing theories of institutionalization (e.g. Olson 1993, Levi 1989). I focus attention on the decisions of the population in the area: Why might people decide to comply, or not, with a recently-created governing institution?

Many things affect how people choose to act, including whether their preferences are aligned with a given rule and whether they believe it is moral, just, or fair. In any population, some people will certainly comply, some will be unsure, and some will disobey. As in the tax compliance literature, I focus on one key question which is likely to shape the choices of those in the middle: whether people think they are likely to be punished for disobedience. This tradeoff between following the rule or ignoring it and risking punishment would depend on people’s beliefs about the reputation of the institution and its enforcers. I then evaluate how this tradeoff changes as duration – the temporal length of an event, as defined by Gryzmala-Busse (2011) – of an institution increases. The scope of this

¹This is true so long as no international organizations or rebel groups are acting as substitutes for the state.

theory is limited to situations where two conditions are met: 1) there exists no over-arching, pre-established governing authority to support the new institution, and 2) there is an open question about the level of coercive capacity of the institutional entrepreneur. This argument shares similarities with the study of reputation in international relations, where Tomz (2007) shows that reputation – not coercion itself – is a key determinant of international lending, as well as with Englebert's (2002) argument about state reputation and legitimacy.

The theory presented here focuses on the creation of a generalized institution which claims the right to compel unpopular decisions, like a taxation rule. One important question is to identify the conditions under which villagers would voluntarily comply. It is one thing to announce a directive and threat of punishment to a given population and hope they will follow it. It is quite different to physically coerce every member of a population into complying. This chapter separates these concepts and asks: When will members of the population decide to comply before being physically forced to do so? In making this decision, the key unknown for the population would be whether the institutional entrepreneur would be able to follow through on the threat of punishment. Members of the population might expect that some institutional entrepreneurs would be stronger than others, and that it would only be worthwhile to comply with the stronger types.

An important feature of this environment is that the probability of punishment for any individual villager depends not just on the strength of the institutional entrepreneur, but also on the choices of other villagers. If only a few villagers cheat, it is easier for an institutional entrepreneur to single them out for punishment. However, if many villagers cheat, it is much less likely that the institutional entrepreneur will punish them all. Accordingly, villagers must figure out not only what coercive tools the institutional entrepreneur has at her disposal, but also how all of her neighbors will act.

Conventional wisdom (e.g. Ntsebeza 2005) would expect that there should be observable differences between initially-strong institutions, which people would then comply with, and weak institutions, which people would then not comply with. Investments in institutional structure or levels of hierarchy would lead people to believe that some institutions had more coercive capacity than others. With this expectation, compliance would always be high when institutions made investments signaling their strength, and would always be low when institutions did not make those investments.

My theory differs from this conventional understanding in three ways: 1) There is no way for stronger institutions to signal that they are strong, so there is no observable difference between strong and weak institutions. They look similar because weak institutions would mimic strong institutions. 2) Compliance would start low even when the institution is strong, in terms of coercive capacity. This initially-low compliance arises because people are unsure whether the institution they face has strong or weak coercive capacity, since there are no observable differences. This prediction differs from existing models like Olson's. 3) Compliance will

be high with old institutions. Eventually, people figure out whether the institution has strong or weak coercive capacity and update their beliefs accordingly. After compliance with a weak institution drops off, it would be vulnerable to failure or replacement, because few people would be complying with it. Therefore, institutions with weak coercive capacity would not survive long enough to become old. In contrast, with strong coercive capacity, people would eventually figure out the institution's strength. In those cases, compliance would increase to high levels. Observing an old institution means both that it had strong coercive capacity and that people have finished updating their beliefs about it.

3.1 An institutional entrepreneur

Olson's (1993) model of the stationary bandit offers a starting point. In order to focus on the population's compliance decisions, I begin with an institutional entrepreneur: a would-be leader who has yet to convince anyone to follow his directives. This institutional entrepreneur has already decided to attempt to tax a given population, and has already decided on the tax rate he will demand.² For simplicity in presentation I refer to taxation, but this same framework could be used about any decision that would be costly for members of the population. If people don't pay the tax voluntarily, the institutional entrepreneur would attempt to punish them and force them to pay. Getting punished would be worse than paying voluntarily, but paying voluntarily would be worse than not paying at all.³

People would differ in how they perceive cost-benefit tradeoffs between paying the tax or risking punishment for two reasons. First, risk-averse individuals would fear the punishment more. Individuals might be more risk-averse depending on their age or family status; young men without families might be less risk-averse, for example. Second, the perceived cost of paying the tax would depend on an individual's wealth. Individuals with limited means to survive would view any tax as costly, whereas better-off individuals would view the same tax as less costly.

²Other theoretical approaches (Levi 1989, de la Sierra 2017) focus on determining an optimal taxation rate. For this theory, it is reasonable to assume a fixed tax rate because an institutional entrepreneur would need to set a clear, fixed, and public tax rate if he expects people to begin to comply with his directive. Furthermore, this theory does not consider migration, which would entail large costs for the migrating individual.

³The cost of punishment would be greater than the tax amount, and the tax amount and the cost of punishment would be known in advance to everyone. I assume this punishment cannot be arbitrarily large (to induce full compliance) for two reasons: First, there may be practical limitations on the types of punishment that an institutional entrepreneur can institute. Second, psychology research shows that individuals begin to respond to punishments they consider unfairly large with irrational retribution (Molm 1997). Thus an institutional entrepreneur would hesitate to set too large a punishment, fearing it might set off an irrational and violent attempt at retribution by the population.

Because of these differences, people would make different choices about whether to pay the tax.

The institutional entrepreneur would have some coercive capacity, but he would be unlikely to be able to coerce everyone in the population in every round of taxation. In this context, coercive capacity means the ability to control a group of enforcers who use violence to compel compliance. The institutional entrepreneur's control over these enforcers would stem from a mix of pre-existing ties and charismatic authority.

An institutional entrepreneur's type, in terms of her coercive capacity, would be fixed. Since there is no institution to enforce contracts, there would be no way for such an institutional entrepreneur to simply hire more coercive capacity by using valuable resources. Any newly "hired" enforcers could simply disappear with the goods, or turn around and attack the institutional entrepreneur. Therefore, the institutional entrepreneur's coercive capacity is limited to those enforcers with whom she has the pre-existing ties by which she can control them.

This level of coercive capacity would also be unobservable to the population, because institutional entrepreneurs could bluff. It would be impossible for the population to know whether a new institutional entrepreneur's enforcers would actually follow through, or if they were simply posturing. There would be no way to separate true coercive capacity from bluffing. Hereafter, I refer to the institutional entrepreneur's coercive capacity as her strength.

Even if there was no immediately-observable difference between stronger and weaker institutional entrepreneurs, a stronger type of entrepreneur would still likely be able to make some investment more efficiently than a weaker type, and could profit more from that investment.⁴ In Olson's theory, such an investment would be the protection of the population from outside bandits. In this case, the stronger type of institutional entrepreneur might hope that by making a costly investment (e.g. in protection from other bandits), she could send a credible signal of her strength to the population to induce compliance. This scenario is the subject of this chapter.

In Olson's theory, the investment and signal made by the institutional entrepreneur would be protection from outside predation. In his theory, investing in security would both increase the amount of production that villages would be able to keep, as well as the part that an institutional entrepreneur can tax. It is easy to imagine that an institutional entrepreneur with more capacity to coerce villages into paying taxes would also be better able to protect villages from outside predation. However, a weaker institutional entrepreneur would still be able to mimic

⁴An extreme type of institutional entrepreneur might be able to take some action that weaker institutional entrepreneurs simply could not imitate, if she possessed some new technology or overwhelming force that others could not even appear to mimic. In this case, the question of compliance would be moot. But this situation would only be the case when one institutional entrepreneur had a unique, extreme difference from anyone else. I do not consider this case in this chapter.

this signal by making a show of offering protection, even if the protection was not effective. Other examples of investments could include a well, irrigation system, or road, any of which would need regular maintenance in order to continue offering benefits to productivity. Strong institutional entrepreneurs would be able to make these investments more efficiently, but this efficiency would not be immediately observable. The question is whether such an investment could signal her type.

Case example: Goumiers as a security investment

The common investment across the legacy institutions discussed in Chapters 4 and 6 is to employ goumiers – private security guards – for legacy institutions and their courts. Across the board, the legacy institutions in Chad invest in these goumiers, similarly to the protection investment in Olson’s theory. However in these cases, goumiers also enforce the decisions of the chief’s court, as well as providing protection.

3.2 Initial beliefs

People’s initial choices when faced with a new institutional entrepreneur would depend on any information they had about that person, their ideas about the new (taxation) rule, and the broader institutional environment in which they lived. These initial ideas might differ across individuals, but they would also be likely to vary systematically across space and time. Some important factors, like the arrival of European colonial governments and Christian missionaries, occurred simultaneously across large regions. Other factors, like small-scale conflicts with neighboring groups, would vary at much more local levels.

Information about the individual institutional entrepreneur would be idiosyncratic. Such an individual might emerge from a prominent family, as a deft leader in hunting or conflict against raiding groups, or as a skilled economic operator in trade or agricultural production. Local knowledge about an individual’s characteristics would vary based on specific location.

Ideas about the legitimacy of any particular rule, like taxation, might vary based on religious ideas or broad geographic region. Religious ideas can define expectations for who is a legitimate leader, what leaders can or cannot do, and what people should respond. In terms of taxation, percentages of income expected as tithes or contributions to the poor can set expectations about what is a legitimate taxation amount.

The broader institutional environment would also shape people’s choices, and this would vary both by geographic region and time period. The presence or absence of a colonial government is a prominent example of this type of institutional variation. Another factor would be the presence of a nearby pre-colonial empire.

The presence of these other institutions could affect people's beliefs in either direction. On one hand, it might lead people to believe that a new institutional entrepreneur is weak or illegitimate, if she is perceived as a mere puppet of a distant institution. On the other hand, if that larger institution was perceived as legitimate or fearsome, a local institutional entrepreneur's ties to it could bolster her legitimacy or her claims to coercive power.

While these factors might shape individuals' ideas, none of them would provide a mechanism by which villages could organize collective action. Common sets of ideas or shared identity characteristics do not necessarily create any way to sanction free-riders. Any environment in which villages were capable of acting collectively already has a social institution to ensure compliance, by definition. Since the question at hand is to understand the origins of this compliance, the relevant village environment is one in which villagers cannot organize collective action.

Case example: Before the chefferie in Djodo-Gassa

In the case of Djodo-Gassa, introduced in the previous chapter and discussed in Chapter 4.1, there was no political organization to organize generalized collective action before the establishment of the chefferie. In that area, there were social institutions like initiation rites which marked the passage from childhood to adulthood, as well as rituals intended to ensure plentiful rainfall. But none of these institutions resembled a polity: there was no centralized authority, way to organize collective action, or mechanism to sanction freeriders. People's initial beliefs about that first institutional entrepreneur who established the chefferie would have depended the environment at the time: French colonial administrators had arrived and were looking for chiefs with whom they could team up, but they did not have sufficient administrative themselves to rule the area.

3.3 Can a strong type signal its strength?

Any institutional entrepreneur would hope to take whatever action she could, in advance, to induce voluntary compliance. As noted above, an initially-strong institutional entrepreneur might be able make some types of investments more efficiently than an initially-weak type of institutional entrepreneur would be able to. Such a strong type might make such an investment, hoping that it would signal her type and induce compliance immediately.

Members of the population wondering about the probability of punishment would not just be wondering about the strength of the institutional entrepreneur, but also about the decisions of the other members of the population. The more people comply, the easier it is for any institutional entrepreneur to coerce any remaining noncompliers, and thus the higher the probability of punishment for anyone who does not comply. In the opposite direction, if fewer people comply, the

harder it is for any institutional entrepreneur to coerce a large number of noncompliers. Thus the likelihood that any individual is punished depends both on the strength of the institutional entrepreneur and on the decisions of those around her. This dynamic has been incorporated into models of criminal behavior in advanced industrial societies (Fender 1999, Sah 1991). Therefore, the information problem faced by the villagers is more complex than if they were merely concerned with learning about the institutional entrepreneur.

Appendix A presents a formal model of the strategic interaction in the first encounter between an institutional entrepreneur and the villagers. The model addresses the question of whether a stronger institutional entrepreneur can send a credible signal of her type, given that the probability of punishment for any villager depends both on her type and also on the actions of other villagers. The model shows that there is no separating equilibrium and thus no way for a strong type of institutional entrepreneur to send a credible signal. This result arises because the weak type always prefers to mimic the strong type.

The reason an initially-strong institutional entrepreneur cannot signal her strength is because the probability of punishment depends on the number of other people who cheat. If most people believe they are facing a strong institutional entrepreneur because of a signal they observe, they will comply. This high rate of compliance would mean that the probability of punishment would be very high – even if the institutional entrepreneur was, in fact, weak. Therefore, a weak institutional entrepreneur would want to mimic the signal or investment that a strong institutional entrepreneur would make, even if that investment was very inefficient for the weak type to make. If people believed the signal, few people would cheat and the few cheaters would be punished with a high probability, despite the weakness of the institutional entrepreneur. Because if people were to comply voluntarily, then they would never find out that the institution was weak. But people are smarter than that, so they would discount any signal or investment by an institutional entrepreneur.

Case example: Universal investment in goumiers

The investment in goumiers and a court is common across all legacy institutions discussed in Chapters 4 and 6, matching this theory that both strong and weak types of institutional entrepreneurs make the same types of investments. Although it is not possible to measure which CDL institutions are the “strong type” or the “weak type,” it is likely that some of the legacy institutions in one of the two regions discussed in Chapter 6 would fall into both categories. However, in all of the chefferies where we conducted interviews and surveys, the chefferies had both a court and goumiers to enforce its decision. Hence this investment is not a signal of anything, because even the weaker institutions are mimicking the stronger ones.

3.4 Updating beliefs, changing probability of punishment: a cycle

Rather than looking for a signal, people would observe cycles of cheating and punishment to determine that an institution is, in fact, strong. In the absence of any useful signal, the only way the population would learn is by observing rounds of decisions and punishments. However, updating these beliefs would also be a very complicated process, because villagers would need to figure out not only what fraction of cheaters were punished, but also what fraction of the villagers cheated.

The same probability of punishment could arise with two different types of strongman, depending on how many villagers decide to cheat. Therefore, accurately observing the probability of punishment in any given round is insufficient to allow villagers to update about the type of the strongman. Villagers also need to observe or infer how many people cheated. Unpacking the information that villagers would require to update highlights the complexity of that process, and suggests that such updating might take a long time.

The second time an institutional entrepreneur makes a taxation demand, the members of the population face the same dilemma, but they have additional information about the likelihood of punishment. As long as some people refused the taxation demand the first time, everyone learns about the probability of punishment based on whether those people were punished. As noted above, individuals make different choices about whether to pay, depending on their risk aversion and wealth.

After the first taxation demand, the true likelihood of punishment would have depended on two factors: 1) how many people the institutional entrepreneur could coerce in one round of taxation, and 2) how many people ignored the institutional entrepreneur's demand. Punishment is more likely if the institutional entrepreneur can coerce more people. Also, punishment is more likely if there are fewer disobedient people, making it easier to pick them out for punishment. So the true likelihood of punishment depends not only on the coercive capacity of the institutional entrepreneur, but also everyone else's choices to comply or disobey.

If every villager's choice and whether they were punished is complete and common knowledge, villagers would update after one round, so long as any villagers cheated. A villager would know exactly how many other villagers cheated, and exactly how many of them were punished. With this information, a villager would be able to identify the type of the strongman. However, these assumptions about the availability of information would not be reasonable in many contexts, and relaxing them significantly complexifies the updating task faced by villagers.

Observing the fraction of cheaters who were punished would be the easiest part of the challenge for villagers, but would still likely be a noisy signal. To observe this quantity, a villager would need to identify a set of cheaters and see how many

of them were punished. There would be no noise in the signal if they were able to observe punishment for the whole village. However, if an individual was only able to observe a smaller set of cheaters, then their perception of the probability of punishment would vary stochastically depending on whether they happened to observe a set of lucky or unlucky cheaters.

It would be much more difficult for villagers to directly observe the number of cheaters, for two reasons. First, neither a voluntary payment nor its absence is salient and visible. Even if people lived next to either other, it might not be observable to see a neighbor making a payment, or failing to do so. If distances were greater, this difficulty would increase. Second, people would have a clear incentive to lie: cheaters would wish to hide the fact that they cheated, hoping not to get caught. Therefore villagers would have trouble directly observing how many of their fellow villagers had cheated.

Even in a village where privacy is limited, cheating would still be difficult to observe. Unlike the amount of agricultural production, a fight, or an interaction between multiple people, there is nothing to see if someone fails to pay. Furthermore, reliable information flows among villagers may also be attenuated by norms of secrecy (Ferre 2001). So while the assumption of complete information in a village may be appropriate for some subjects, cheating is not among them.

Alternatively, a villager could attempt to infer the number of cheaters. However, this would require her to have perfect information about both 1) every other villager's relative perceived cost to pay voluntarily as opposed to cheating, and 2) everyone else's exact beliefs about what type of strongman they faced. Both of these quantities would be challenging for villagers to obtain information about. Again, people would have incentives to lie about their propensity to cheat, and it might not even be something that people could clearly articulate. And it is not clear how villagers would be able to observe other villagers' beliefs. Furthermore, in the model in Appendix A, the former is assumed to be a simple linear expression, and the latter is assumed to be constant across all villagers. However, in the real world, both of these quantities would be likely to vary across the population of villagers in non-linear ways. Therefore, estimating the number of other cheaters would also be difficult for a villager because of limited information and incentives to lie.

In sum, a villager hoping to update her beliefs about the type of the strongman would be combining information on several different hard-to-observe quantities about which she might only have noisy signals. Accurately deducing the type of the strongman in this environment could thus be a process that could take a long time, depending on the quality of information the villager had about each of the relevant quantities.

In his model of criminal behavior in the United States, Sah (1991) presents some of the same ideas, including the endogeneity of the probability of punishment to the number of cheaters. He also formalizes these information constraints by making assumptions about how many people an individual might talk to, and

what information she might be able to obtain. He makes a similar claim about how slowly people would update their beliefs and behavior. In his conclusion, he notes that policy changes to reduce criminality are likely to be frustratingly slow to take effect. In a village context, with a brand new governing institution, the updating process could be expected to take even longer.

For villagers, identifying the probability of punishment is a process of guessing at a moving target. As people's beliefs about the probability of punishment change, that itself changes the true probability of punishment. In other words, likelihood of being punished at time $t=1$ would differ from the likelihood at $t=2$, even though coercive capacity stayed the same. This change is the result of people updating their beliefs, shifting the number of disobedient people. For example, if the population initially underestimated the institutional entrepreneur's strength, the next time they're asked to pay the tax, they expect a higher probability of punishment. These updated beliefs would lead to a larger number of people paying the tax and a lower number of people ignoring it. When more people comply, it is easier to punish each noncomplier, so the probability of punishment for each individual would rise.⁵

The cycle of increasing compliance with a strong institutional entrepreneur represents the slow birth of a social institution. The proportion of the population which complies continues to increase until everyone, or almost everyone, complies with the taxation demand. So individuals would expect cheaters to be punished with near certainty – even though the institutional entrepreneur can still only punish a fraction of the total population at once. This fear of punishment, and thus compliance, is driven both by the coercive capacity of the institutional entrepreneur and the social expectation that most other people will follow the taxation rule. In this way, what began as extraction under the threat of coercion has become a social institution: an agreed-upon social rule, a way in which human beings constrain their own actions.

On the other hand, if the institutional entrepreneur is weak, compliance declines in each round of taxation. In this case, the level of compliance descends to approach the amount of direct coercion the institutional entrepreneur can meet out. This weak institutional entrepreneur remains a stationary bandit, but a relatively ineffective one – she only gets what he can directly coerce out of the population.

Case example: Continued updating in Galgal

The interview with the shopkeeper in Galgal in Chapter 4.3 illustrates this point. Even though the institution was established in the 1930s, a shopkeeper says he still

⁵The inverse would be equally true. If the population overestimated the institutional entrepreneur's strength after the first round of taxation, they update by expecting a lower probability of punishment. These updated beliefs would lead to a higher number of people ignoring the demand. With more people to punish, the probability of punishment for each individual would fall.

has not seen enough from the chefferie to decide whether he needs to respects its edicts or not.

3.5 How duration changes the effects of other shocks

A wide range of outside shocks can change people's beliefs about an institution, but focusing only on the order of these shocks can mask the effect of duration itself. Such shocks could include invasions by outsiders, changes to the availability or price of resources, or the arrival of new religious beliefs or other ideas. Any of these shocks could affect either an institutional entrepreneur's coercive capacity or the population's beliefs about an institution, and thus compliance with it. However, changes to these variables can have different effects depending on the duration of an institution.

In cases where the institutional entrepreneur was initially weak, negative shocks would be expected to reduce compliance regardless of institutional duration. The effect is the same because with a weak institutional entrepreneur, the level of compliance always directly depends on the institutional entrepreneur's coercive capacity.

In contrast, if the institutional entrepreneur is initially strong, the predicted effects of a negative shock are different depending on institutional duration. If the institution is new, a negative shock to coercive capacity would reduce compliance, because the population is still learning about the institutional entrepreneur's coercive capacity. However, if the institutional entrepreneur was initially strong and a long duration has passed since the institution's creation, people comply because of their expectations of punishment, rather than waiting to be directly coerced. So a change to the true coercive capacity would not affect compliance, as long as the negative shock did not affect people's beliefs about the probability of punishment. Thus, the effect of a shock would depend on the duration that an institution had existed.

The two examples in the previous paragraph show how a focus on the timing of events can mask the effects of duration. The timing of events is the same: the institution began before the shock in both cases. So a focus on timing would suggest that the institutions were different, because of the differing effects of the shock. Yet as shown in the previous paragraph, this pattern can fit even if all characteristics of the institutions are identical except for their duration. Thus, considering the timing of events alone is not sufficient. The effects of shocks to other variables like wealth or the arrival of a colonial government can depend on the duration that an institution has existed.

Case example: Léré's survival

The case of the chefferie in Léré in Chapter 4.4 illustrates how an LDL institution can survive shocks which might destroy a CDL institution. In that institution, the negative shock would have been a reduction in the regional market price of the fish from the lake in Léré with the creation of other, larger artificial lakes nearby. This reduction in price would have sharply reduced the revenue to the chefferie, which depended on taxing the catch from the lake. However, because beliefs about the chefferie were well established when the price dropped, the institution survived unscathed.

3.6 The death of institutions, and processes of replacement

There are three reasons that a weak institutional entrepreneur would not be likely to endure. First, she would have no incentive to hang around. Since people comply only because of direct coercion, she could be equally successful elsewhere. Second, she would be vulnerable to negative shocks, as discussed above, which could eliminate her coercive capacity entirely. Third, she would have no comparative advantage over potential rivals. A new institutional entrepreneur would be able to tax the population just as effectively, and nothing would stop anyone from attempting to establish a new system of taxation in the same place. Thus, because weak institutional entrepreneurs continue to depend solely on direct coercion, they are unlikely to survive for long periods.

Even strong institutions are not necessarily destined to last forever. A clear implication of the theory described above is that any shock to the population's beliefs about an institution's coercive capacity would affect compliance. A shock to the population's beliefs essentially resets the duration clock. An institution could survive such a shock to beliefs if it continues to have strong coercive capacity. In contrast, if a shock to the population's beliefs occurred in conjunction with a real decrease in the institution's coercive capacity, compliance would decline. In this case, an institution would move from the positive feedback loop of increasing compliance to the negative feedback loop of decreasing compliance. As this theory shows, the key way that institutional duration affects compliance is through beliefs, so a shock that changes beliefs disrupts the belief-updating and learning process.

Case examples: Replacement in Djodo-Gassa, decline in Bédaya

The cases of Djodo-Gassa, in Chapter 4.1, and Bédaya, in Chapter 4.6, illustrate these points. In Djodo-Gassa, the first chefferie institution from the 1930s was replaced during the 1960s after the death of the first chefferie's chief. Having not es-

tablished a good institutional reputation, the descendants of the first chief had no comparative advantage over the rival institutional entrepreneur who established a different chefferie institution, which exists now. In Bédaya, an institution which once had a strong reputation, but people no longer comply with it at high levels because of shocks to beliefs in the intervening years. The combination of the French colonial administration's attacks on the institution, Christian evangelism, and the instrumentalization of that particular institution by the first post-colonial regime destroyed the reputation that the institution originally had.

3.7 How long is *longue-dure*?

There is no fixed amount of time in days, months, or years at which the cycle of increasing compliance is sure to be complete, or a weak institution is sure to have been replaced. How much time these processes take would depend on the frequency of taxation, the degree to which people can observe punishment, and the frequency with which weak institutions are challenged by new entrants. In contexts where taxation occurs very infrequently and where punishment is seldom observable, people would update their beliefs very slowly. In Gryzmala-Busse's (2011) terminology, this is a slow tempo, or pace of events. This tempo is often exogenous from the perspective of an institutional entrepreneur, for example if taxation depends on annual crop cycles or nomadic migration. If cycles of taxation, punishment, and belief-updating happen quickly, then compliance would be expected to change quickly. If taxation occurs daily and punishment is readily observable, the tempo of changes to compliance would be rapid. However, if any of those steps happens at a slow tempo, then changes to compliance would happen slowly as well. If taxation occurs annually, and people have limited ability to observe whether their neighbors comply and if they are punished, many decades could pass before the cycle of increasing (or decreasing) compliance would end.

The tempo of decisions and taxation would depend on the village's political economy, not on a choice made by an institutional entrepreneur. Annual crop cycles are common, and such a political economy sets a once-per-year maximum on the collection of taxes. In the context of nomadic herders, taxation could the tempo might be much slower, if families only pass through a major livestock market once every several years. If the taxation of important economic exchanges – or other decisions by institutional entrepreneurs – happen only at major ceremonies like weddings or funerals, then there might only be a handful of times in any individual's life when a decision-point is reached. Therefore the relationship between the amount of time in years and the duration of updating would depend on the tempo of the village's political economy.

This result about taking time to learn arises from a different mechanism than other models in which actors strategically let time pass in order to accumulate information (e.g. Fearon 2013, Powell 2004). In those models, a strategic actor

decides to test out the strength of another actor by observing costly actions in repeated periods. That logic does not apply here, because villagers cannot act as a single strategic actor, since they have no institution by which to organize collective action. If some villagers wanted to try to act “tough” to better observe the strength of the institutional entrepreneur, other villagers might decide to free-ride, undermining their neighbors. Rather, the result about time in this theory arises because of the complexity and unobservability of the information that villagers would need to completely update.

This theory also differs from models of coordination on a convention (e.g. Young 1993) or technological diffusion (e.g. Young 2009). In coordination games, there are multiple possible social conventions, and the problem is to coordinate individuals’ actions on one. However in the model presented here, once everyone has obtained complete information about the strongman’s type, there is only one optimal choice for each type of villager. In models of technological diffusion, there is a true, fixed advantage to a new technology, and the problem for individuals is to identify that advantage. In that environment, other people’s choices are irrelevant to any individual’s decision except as a source of information. As noted above, in model presented here, payoffs depend both on the type of the strongman and on the actions of other types villagers.

Case examples: Taxing crops, livestock, fishing, and courts

The tempo of decisions by legacy institutions discussed in Chapter 4 and Chapter 6 is defined by their decision to tax crops, livestock, fishing, and decisions at their courts. All of the institutions tax annual crop production, but often only in years if there is a surplus. Therefore, these rounds of compliance and punishment occur annually, at most. The Sultanate of Ouaddaï also taxes livestock sales, which might come about annually or even less frequently, depending on the needs of a herding family. In Léré, another form of taxation is to reserve a portion of the lake where only the Gong is allowed to fish – everyone else must pay the opportunity cost of foregoing fishing in that area. In that case, the tempo would depend on the frequency with which people attempted to violate that rule. Similarly, these legacy institutions tend to tax a fraction of financial settlements for cases decided at their courts. Again, the tempo of these decisions would depend on the frequency with which people brought cases to court. For a given family which might not need to go to court for years, this tempo would be quite slow.

3.8 Conclusion

This section has outlined how compliance with a strong institutional entrepreneur would increase gradually over time, and how a weak institutional entrepreneur would be unlikely to survive a long time. When people face a new institution, they

face the dilemma of whether to comply, or whether to ignore it and risk punishment. After each round of taxation and punishment, the population gains new information about the probability of punishment. This new information affects decisions about whether to pay voluntarily in subsequent rounds of taxation. However this new information comes in the form of a noisy signal, because the probability of punishment depends both on the strength of the institutional entrepreneur and the decisions of all the other villagers. The same probability of punishment can arise with either a weak or strong institutional entrepreneur, depending on the decisions of other villagers. Because the information villagers receive is noisy and incomplete, it could take them a very long time to update their beliefs.

This theory predicts divergent outcomes depending on the initial coercive capacity of the institutional entrepreneur. If the initial institutional entrepreneur is strong, compliance will gradually increase over time. This increasing compliance represents the birth of a new social institution. In contrast, if the initial institutional entrepreneur is weak, compliance declines over time. In this case the institutional entrepreneur is likely to leave or be replaced, starting the longevity clock over. This result suggests that in the absence of shocks to people's beliefs, greater longevity of a social institution will be associated with greater compliance with it.

Chapter 4

Legacy institution case studies

The range of legacy institutions in Chad illustrate the different stages of the theory of compliance illustrated in the previous chapter. With CDL institutions like the chefferies in Djodo-Gassa, Keuni, and Galal, compliance is low and unpredictable as people continue to update their beliefs. In these cases, people do not reliably comply even in the presence of coercive capacity, in line with the predictions in the previous chapter but in contrast to the predictions of theories like Olson's. However, with LDL institutions like the chefferie in Léré or the Sultanate of Ouaddaï, compliance is high, even when the level of coercive capacity is lower than that of some CDL institutions. That chefferie, having established its reputation, was able to survive shocks that other, shorter-lived institutions might not have. Even LDL institutions cannot survive shocks to beliefs, however, as shown by the case of the chefferie in Bédaya, where a once-strong institution has been dismantled by the efforts of the colonial and post-colonial governments. And these institutions retain their independence and capacity to challenge the central state, as shown by the case of Dar Tama. These cases illustrate the theoretical mechanism from the previous chapter linking institutional duration, reputation, and compliance.

4.1 Short duration, low compliance: Djodo Gassa

The first chefferie in Djodo Gassa began in the 1930s, with an institutional entrepreneur in the French colonial period. Before the establishment of this chefferie, there was no institution that resembled a polity. There were initiation rituals and rituals related to rain, but nothing to organize generalized collective action or sanction noncompliers. That first chefferie did not survive; it was replaced in 1963. The chief who formed that initial institution died in 1961 and passed the title of chief to his eldest son. That chief lasted only two years before being ousted for "behaving badly." In 1963, a new chief took over, with a different family council and different rules for subsequent succession decisions. Thus, I code the Djodo Gassa chefferie as originating in 1963. Family councils have decided succession

choices since then.¹

Despite superficial similarities between the sultanate of Ouaddaï and the chefferie in Djodo Gassa, the population in Djodo Gassa does not perceive the chefferie's authority in the same way that the population in Ouaddaï perceives the sultanate's. As at the sultanate of Ouaddaï, Djodo Gassa's chief runs a court where residents come to present their problems, including thefts like the one described above. Djodo Gassa's chief also has goumiers to enforce the court's decisions, and he does not hesitate to use them. If people disobey his decisions, he sends the goumiers to take their belongings.² However, unlike in Ouaddaï, compliance in Djodo Gassa is not reliable. The chief himself acknowledged that "traditional authorities are not respected."

This case shows how the mere presence of coercive capacity does not necessarily induce compliance directly, as models like Olson's (1993) would have predicted. The chief in Djodo-Gassa deploys his goumiers liberally to punish noncompliers – but people still do not regularly comply if they are not forced.

4.2 Noncompliance under CDL institutions: Keuni

One example of noncompliance with a CDL institution occurred with respect to a plot of land in Keuni, another chefferie similar to the one in Djodo-Gassa which originated in the 1930s.³ There, the chef de canton had taken a plot of land and sold it to a group of semi-nomadic Fulbe over the objections of a local village which believed it belonged to their low-level chef de village. The villagers and their low-level chef de village refused to vacate the land. So the chef de canton sent his goumiers, who beat up the chef de village.

Still, the villagers refused to comply. The low-level chef de village filed a complaint with the central state, first at the local sous-prefecture, and eventually at the regional capital. The chef de village eventually won the case in the eyes of the central state, defeating the theoretically more-powerful chef de canton. Villages continued to maintain physical control over the land.

The chef de canton wasn't done: He attempted to remove the chef de village from his position. The villagers refused. The chef de village retained his position, and he refused to have any more contact with the chef de canton. Now the chef de village deals only with the central state's representatives.

This example illustrates both that coercive capacity alone is not sufficient to ensure compliance, and that perceptions of how other villagers will respond is an important factor influencing compliance decisions. The chef de canton demonstrated that he had some degree of coercive capacity, and he used it: his goumiers

¹Djaï Aboïna, chef de canton of Djodo Gassa, 3-19-16-1.

²Djaï Aboïna, chef de canton of Djodo Gassa, 3-19-16-1.

³Abderahim's field notes, March 2017

beat up the chef de village. However, this coercion did not change the villagers' behavior, in large part because there were a large number of noncompliers. Villages did not expect other villagers to comply – and so it was not just a single individual against the chef de canton, it was an entire village of noncompliers.

4.3 Continued updating under CDL institutions: Gagat

With CDL institutions like Djodo-Gassa and Keuni, people are still updating their beliefs as to whether to comply. In Djodo-Gassa, compliance has actually declined since the 1980s. There, the chief said that more people complied during Hissne Habré's presidency in the 1980s, when the central government offered more financial support to legacy institutions across the country. When that financing evaporated, so too did the compliance. This change in compliance shows that the population had not finished updating their beliefs about the institution.

In the nearby chefferie of Gagat, which originated in 1936, a shop owner's comments about his views of the chief there reveal that he, too, is still updating his beliefs. In a conversation about whether he abides by what the chief says, he said that he had not seen enough of the chief's actions to make a decision. "The moment has not arrived. . . . I'm still waiting," he said.⁴

4.4 Long duration, high compliance: Léré

The LDL institution in Léré, led by the Gong, marks a sharp contrast to the CDL institutions discussed above. Since the institution has existed for nearly five centuries, people's expectations about it, and about their neighbors' beliefs about it, are well established. Specifically, people expect nearly-universal compliance. The Gong does not need a large number of enforcers – at the moment he has only six goumiers, fewer than the ten goumiers in Djodo-Gassa.⁵ Nonetheless, people comply at very high levels, in contrast with the predictions of theories like Olson's which would expect a direct connection between the level of coercive capacity and compliance. Compliance is high enough that the Gong can rely on the population to participate in punishment of noncompliers: those who noncompliers are expelled from the area, and everyone is expected to cut ties with them. "We don't want [him] any more," said one elder, speaking about about someone who had disobeyed the Gong.⁶

⁴Field notes from research assistant Abderahim Moussa, November 2016.

⁵3-16-16-1, 3-16-16-2

⁶3-16-16-2. "On ne veut plus de lui."

Surviving shocks

The case of the chefferie in Léré also shows how duration, other causal factors, and other shocks are interconnected. Léré is adjacent to one of the few natural lakes in the region. The fish from this lake would likely have been a valuable economic asset in the period when the institution was formed.⁷ In the intervening years, artificial lakes have been created in the region, flooding the market with cheaper fish. Now, the fish from Léré Lake is not even sold in Pala, the next nearest town – it is cheaper to import fish from Lagdo Reservoir in Cameroon. At the time that the first gong of Léré established a new institution, Léré Lake would have represented a uniquely valuable resource, which likely contributed to the initial strength of that first gong. However, the fish from the lake are no longer especially valuable, given the competition from new, artificial lakes. This is a shock of the type described in Chapter 3.5: the drop in fish prices could have negatively affected the gong's coercive capacity, but the institution would be expected to remain strong because of the long duration before the shock.⁸

4.5 Long duration, high compliance: Ouaddaï

The Sultanate of Ouaddaï is another LDL institution: it is relatively long-lived, and its subjects have learned over time to believe in its capacity to punish those who do not comply with its directives. Claiming an origin date of 1635, the sultanate has survived a long series of political and environmental shocks, including the relocation of its capital city to Abéché in the nineteenth century because the previous location ran out of water. The sultanate suffered a brief military defeat at the hands of French colonists in 1909. But the institution was not destroyed: its surviving leaders and much of the population fled the city. The French, realizing that they were unable to control the area without the sultanate, allowed it to return to Abéché and maintain its position of authority.⁹

Today, from a symbolic base at the sultan's palace and practical base at a nearby administrative office, the sultanate provides a range of services for residents. On any given day, the space around the sultanate's administrative office bustles with residents waiting to have their issues addressed. The sultanate's private security guards, called *goumiers* – young men with serious expressions and camouflage shirts – stand around and keep order.¹⁰ Many people come to have their problems

⁷Data on fish prices in the region hundreds of years ago is not available. Current information is based on personal observations from Pala and Léré in March 2016 and January 2017.

⁸The gong of Léré survived numerous other shocks as well; his forces' military defeat of the Fulani Jihad during the nineteenth century represents one notable one.

⁹Le Rouvreur (1962), p.186, and interview, Abéché, February 2016.

¹⁰They do not hesitate to be violent: when one woman who had been testifying in court attempted to argue with the court's decision, a *goumier* slapped her across the face (field notes, February 15, 2016).

heard in the sultanate's court, where judges decide cases based on a combination of their own interpretations of sharia, local traditions, and previous decisions made in their court. Others come to access the written records of previous court decisions, often in order to use precedent to enforce a claim to property or resolve a dispute. At the livestock market on the outskirts of town, the sultan's representatives write receipts for animal sales, providing proof of the transfer of property and collecting a tax on each sale. And when the harvest time comes in villages all across the region, villagers send the sultan their tax payments on their harvest.

A simple anecdote from a shopkeeper in Abéché shows the role that the sultanate plays for the local population. The shopkeeper had a security guard. At one point, some money was stolen from the shop, and the shopkeeper suspected the security guard. So, he went to the sultanate's court, which decided that the security guard should repay half of what had been stolen. The security guard paid what he had been assigned to pay, and the shopkeeper considered the issue resolved.¹¹

This anecdote shows how the role of the sultanate depends on compliance with its decisions. The benefit for the shopkeeper in this case was that the security guard paid half the money, which depended on the security guard's compliance. The benefit for the security guard was that he was expected to pay only half and that the shopkeeper would accept this amount, which depended on the shopkeeper's compliance. In other interviews, individuals frequently expressed confidence that noncompliers would be punished, often referring to things they learned from their parents or grandparents. But noncompliance is so rare that they were generally unable to come up with concrete examples of such punishment.¹²

The same logic applies to virtually all of the sultanate's important functions. Decisions about property rights, either for land or livestock, depend on acceptance from those who lost their claim to property. A decision about where nomads should not graze their livestock depends on the willingness of the nomads to abide by the decision. Compliance is the cornerstone of the sultanate's effectiveness.

4.6 Low compliance after shocks to beliefs: Bédaya

Even LDL institutions cannot survive shocks to beliefs, however, because they essentially reset the clock on people's expectations. The case of Bédaya shows how a once-strong institution can be destroyed by shocks to the population's beliefs, as outlined in chapter 3.7.¹³ Bédaya is the home of the mbang (king) of the Sara people, one of the prominent ethnic groups in southern Chad. Accounts of the mbang's kingdom presence in the precolonial period suggest that the mbang commanded strong coercive capacity, and that the population's beliefs would require

¹¹Interview, Abéché, February 3, 2016.

¹²Interviews, Abéché, February through April 2016.

¹³This paragraph's information: Author interviews and observations in Bédaya, July 2013, and Abéché, June 2013; also, Fortier (1982).

compliance. However, the institution was subjected to a series of shocks that affected both its true coercive capacity and the population's beliefs about it. The first shock came with the arrival of French colonists, who cut off the mband's head. Intense Christian missionary activity followed, along with the installation of French colonial administrative structures to facilitate cotton production and export. Subsequently Chad's independence president – an ethnic Sara – integrated Sara traditions into his own regime, which resulted in further delegitimizing the mband's institutions when his government collapsed. Each of these shocks affected not only the mband's true coercive capacity, but also the population's beliefs about that coercive capacity. The current mband acknowledged that people do not pay the traditional taxes they owe him from their harvests. And the population's lack of respect for his authority is evident: After my interview, he told me to return later to watch a very important ceremony over which he would preside. I showed up, but almost no villagers did – they were all drinking millet beer at a cabaret a few minutes away. The mband has also not retained his role in the eyes of the Chadian administration: He is not the chef de canton, or institutional leader, of his area.¹⁴

4.7 Conflict with the state and defeat: Dar Tama

The case of Dar Tama illustrates how legacy institutions can turn their capacity against the central state, as well as what happens when those efforts fail. As part of Chad's 2006 civil war, one of the main rebel groups – les Forces Unies pour le Changement – was led by an ethnic Tama who was the cousin of the Sultan of Dar Tama at the time. The Sultan himself did not officially join the rebellion, but he did organize reprisals against the enemies of the rebellion, and several chefs de canton who viewed themselves as subordinate to the Sultan did actively join the rebellion. People were more likely to join up with the rebels because of the support of their chiefs, according to one former rebel.¹⁵

After the central state defeated the rebels militarily, the central state turned its attention to the legacy institutions of Dar Tama. The Sultan of Dar Tama was forcibly ousted by the central state in 2007 and imprisoned; he is still under house arrest in N'Djamena. Four chefs de canton affiliated with the rebellion were also all replaced. Only some people respect the new sultan, a former chef de canton, who was selected by a “family council” whose legitimacy was not accepted by everyone. He operates the remains of the institution and its court – albeit in a different physical location than that of the deposed sultan. One man affiliated with the former sultan's court said that people did not respect the new sultan, they continue to think the deposed sultan is legitimate.¹⁶ These examples show how legacy institu-

¹⁴The chef de canton is a relative of the mband, but nonetheless, the institution has not retained its previous form.

¹⁵2-26-16-2

¹⁶Debos 2013b, 2-26-16; 2-27-16-1; 2-28-26-1, 2-28-16-2

tions operate as strategic actors independent of the central state, and that they can be disrupted by coordinated military and political actions that disrupt both their coercive capacity and people's beliefs about it.

In terms of institutional structure and coercive capacity, however, the Sultanate of Dar Tama still looks just like the Sultanate of Ouaddaï. They have the same sets of courts, judges, counselors, and embassies in other cities. They both have 30 goumiers to enforce their edicts. Theories like Olson's would predict equal compliance across the two institutions. Yet people comply with the Sultanate of Ouaddaï because of its intact, time-earned reputation, whereas people question the authority of the Sultanate of Dar Tama because recent upheavals disrupted any reputation it previously had.

4.8 Conclusion

The cases in this chapter parallel the theory presented in Chapter 3. CDL institutions like Djodo-Gassa, Keuni, and Gagal have not yet existed for a long enough duration to establish a reputation. Therefore, compliance is low even if the institutions have the coercive capacity to punish noncompliers. In contrast, people comply with the LDL institutions in Léré and Ouaddaï even though they have the same number, or fewer enforcers than the institutions in Djodo-Gassa or Dar Tama. This result matches the theory in Chapter 3, which differs from existing explanations like Olson's which would draw a direct link between the level of coercive capacity and compliance. Furthermore, the LDL chefferie in Léré also survived the kind of external shock that might have destroyed a shorter-lived institution. However, as the case of Bédaya shows, even LDL institutions are not immune to shocks that alter beliefs. All these institutions retain a degree of independence from the central state, as shown by the case of Dar Tama – but challenging the state comes with the risk of defeat. In each of these cases, people's decisions to comply depend on the institution's reputation, as established over time, as well as their beliefs about how their neighbors will act. The next chapter elaborates on this process through my own process of learning about the institutions operating in the places I conducted my research.

Chapter 5

Immersive research in Chad

The ideas presented in the preceding chapters are a product of the immersive research strategies I employed in Chad. I spent years as a participant observer living, traveling, and conducting academic work in Sahelian Central Africa. My participant observation was not circumscribed within a neatly-defined geographic area (e.g. a village) or within one specific sphere of life (e.g. a profession). I was a participant observer in numerous contexts: I helped other passengers push our bus out of the mud on the Maga-Maroua road in Cameroon in 2006. I walked the streets of Abéché in 2016 looking for water vendors during the shortage in the peak of the dry season. And at every checkpoint, I filed off of the bus with all the other passengers, waiting to show my papers and talk my way back onto the bus. The observations I made during these interactions informed my research agenda and hypotheses.

In conducting interviews across Chad about the legacy institutions like the ones discussed in the previous chapter, I observed that people's compliance with and respect for legacy institutions seemed to vary widely. Many of my interviews with legacy institution leaders, government officials, and citizens were designed with the goal of identifying the differences between the institutions which drove this variation. But I found the responses to those interviews to be frustratingly similar, even in cases where my hosts clearly believed there was an underlying difference between the institutions. The only reliable way I found to be an accurate predictor of whether people would take an institutions seriously or not was the duration that it had existed. Eventually I came to the view that the leaders of weaker institutions were never going to acknowledge that there was anything different about their institutions, and that they would create a facade that resembled the strongest institutions they knew of. Even as an outsider, I knew what some strong legacy institutions looked like, based on prominent examples like the Sultanate of Ouaddaï. So of course they did too. Of course they would mimic the institutions that everyone complied with, respected, and feared.

Spending each night sleeping outside at my home base in Abdoulaye's Abéché compound, physically protected only by an easily-jumpable wall, forced me to think hard about what kept them out: the expectation of punishment. In inter-

views and informal conversations, people weren't surprised. They all expected that the combination of clan institutions and the Sultanate were enough to ensure the safety of households that were embedded in the community. I wasn't just in any household, it was Abdoulaye's household, and any attack on us would engender retaliation by all of Abéché's Bulala. And it was obviously working: I wasn't getting robbed. Yet punishments were so rare and idiosyncratic that I struggled to nail down specific examples of cases. Everyone was sure it happened, but only based on what their father told them, or what they heard about from their elders.

Dealing with the constant slipperiness of any branch of Chadian state, while living in Abdoulaye's compound with its fixed, predictable social rules, was a daily contrast between new and old institutions. I came to believe that people had learned to respect certain social rules in part for two interconnected reasons: they believed everyone else would follow them, because everyone had so much time to learn that they needed to follow them. When rules are old, well understood, and universally accepted, any disobedience would be obvious. In daily life in Abdoulaye's household, any deviation from the dinnertime routine raised everyone else's eyebrows, and demanded an explanation – so people followed the rules. This dynamic was starkly different from the constantly-changing nature of state rules, which many more people disregarded. With those, a violation might be punished, but people were never sure. It was all about expectations, and expectations could only build up over time.

5.1 Immersive research strategies

As with the majority of political science research based on work “in the field,” this dissertation uses multiple methods of data collection to make inferences about the social world (Kapiszweski, MacLean, and Read 2015 p.29). One aspect of this project was long-term immersion and participant observation, referred to as the hallmarks of political ethnography by Schatz (2005 p.5), or as site-intensive methods by Kapiszweski et al (2015 p.236). My observations of and participation in local life were a complement to the other data-collection strategies I employed: interviews and a survey of villagers.

Three aspects of my immersion were important to my research. First, I spent substantial time traveling around a single subregion over a period of 12 years. These travels gave me a vantage point from which to observe the variation at the heart of this dissertation. People's compliance with the Sultanate of Ouaddaï stood out to me because I had been to otherwise-similar towns where legacy institutions were not viewed the same way. Second, I lived with Chadians (and Cameroonians, when in Cameroon) in their homes. My experiences with longstanding social institutions in the home marked a notable contrast with the unpredictability of the Chadian state. Third, I had no ties to international institutions with a local presence – the only organizations and institutions I had links to on the ground were

Chadian (or Cameroonian). This reliance on local institutions forced me to think hard about which ones I could trust.

The immersive aspect of my research was primarily responsible for developing hypotheses, identifying research sites, and understanding the processes behind individuals' decision-making, all common uses of site-intensive methods in political science (Kapiszweski et al. 2015). The research question of why people comply more with legacy institutions in some places, and the hypothesis I advance about longevity, were both products of my participation in daily practices of life in Sahelian Central Africa. Similarly, my understanding of how people's decision-making process depends on their neighbors' decisions also stems from numerous informal conversations with people in my households. While participant observation was not the primary method I used to test my hypotheses, those hypotheses would never have existed if I had been limited to interviews and survey data.

Unlike much other research using site-intensive methods, my research was not limited to a small geographical area nor to a single professional or social role. As a contrast with the examples discussed at length in Kapiszweski et al, I was neither James Scott living in one village, nor was I Richard Fenno following around U.S. Representatives. Because the object of my research was the political institutions which govern life across Sahelian Central Africa, then my observations were based on my participation in life across a range of contexts in Central Africa. The distinction which made me a participant observer, rather than a complete outsider, was that I had no recourse to institutions to which locals would not have had access. This strategy of mine contrasts with researchers who are hosted by or affiliated with international or non-governmental organizations, institutions which operate in the region but to which access is limited to a circumscribed selection of outsiders and privileged locals.¹

Because of the object of my research and my position as a foreign, white academic researcher, I aim to neither exclude nor center my presence as a researcher in my presentation of my observations. In this dissertation I do not claim to present a singular, objective set of facts about a people's culture in the way that observations are presented in older ethnographic work (e.g. Evans-Pritchard 1940). My identity a foreign researcher was clearly salient to my interview subjects, collaborators, and friends alike, influencing the way they presented their ideas and narratives. However my long experience in the region and my training as a reporter influence my approaches to interviews, helping me tease out the role my identity plays in shaping people's responses. So I do not focus on a self-examination of how my own identity has been reshaped through my research interactions with Chadians, as in works like Paul Rabinow's *Reflections on fieldwork in Morocco* (1977). As noted above, the role of immersion in my research was primarily to inspire insights

¹My identity and status obviously meant that my interactions with individuals and institutions were different than if I had been a local resident, but I nonetheless faced and relied on the same set of institutions.

to be examined and tested via other methods. Accordingly, I aim to be cognizant of and transparent about the point of view from from which I made the observations in this chapter, while maintaining a focus on the social and political institutions on which my research focuses.

My research is most similar to the “comparison with an ethnographic sensibility” proposed by Simmons and Smith (2017), differing from other ethnographic work in terms of the definition of the research site. In order to compare different governing institutions in peripheral regions of weak states, my strategy involves research at multiple locations within the same subregion and which fit within that general category. This approach, designed to facilitate comparison of different institutions, differs substantially from the ‘multi-sited ethnography’ described by Marcus (1995). In the work described by Marcus, multiple sites are linked together by a common people, metaphor, conflict, or other connection, yielding a single ethnography developed across multiple locations (Marcus 1995 p.105). But my analyses also do not aggregate all the way to the world systems level, as do other modern “global” ethnographic work as described by Burawoy (2000 p.26-27), where processes and observations at individual sites are linked to global phenomena like “late capitalism.” My work, at multiple locations within the broader “site” defined by peripheral regions of Central Africa, is intended for a different purpose than those works: to highlight variations between otherwise-similar places within the same subregion.

My perspective on socially constructed institutions

My perspective on Chadian identities and legacy institutions, including the summary of types of Chadian legacy institutions in the previous chapter, stems from my immersive research strategies. Legacy institutions, and the social identities which determine how an individual interacts with legacy institutions, are socially constructed. By spending each day in a household of Chadians, I was socialized into viewing institutions and identities in the ways that my hosts did. I picked up their shorthand vocabulary for discussing complex institutions and identities, as well as the simplifications they used to make sense of the complex social environment in which they lived. Sometimes, my hosts talked about their own identities and the legacy institutions which affected their own lives. But more often, we talked about my work and my interviews related to institutions and identities did not consider to be their own, but with which they were familiar. This point of view is that one of a local outsider, and it is what informed the categories and labels by which I understood the Sahelien social world, like the types of legacy institutions I presented in Chapter 3.

The benefit of this research strategy is to help draw generalizable arguments about social institutions out of the complex, messy reality of a weak-state environment. The types of legacy institutions presented in Chapter 3 are a crass and contested generalization of a complex reality, not a set of objective facts or a definitive

typology, as presented in something like Evans-Pritchard (1940). Anything that is not specifically cited to an individual interview or document represents my own simplified understanding of the Chadian context, after all of my interviews and experiences. Interview material represents the view of that individual, or at least what the person acknowledged in an interview. These views led to the development of the theory presented in Chapter 2 and the evidence presented in Chapter 5, and they are presented in order to illustrate how I came to these theoretical claims and empirical strategies.

5.2 Travels

My immersion in Sahelian Central Africa, and the first observations which informed this dissertation, began before I was a PhD student. I conducted independent research in northern Cameroon in 2006 which used the same strategies identified above: I lived in homes, traveled on public transit, and had no ties to NGOs or international organizations. In 2012, I returned to northern Cameroon for intensive Arabic language study and to make preliminary observations to inform a research agenda. During both of these trips I spent in the three Cameroonian towns discussed in this section: Garoua, Kousséri, and Maroua. My work in Chad began in 2013, which included my first trips to Abéché and Moundou. On paper, these towns are comparable. Each of those towns is approximately the same size (between approximately 100,000 and 250,000 people). All are multi-ethnic. All are majority-Muslim except Moundou, which has a sizable Muslim population. All except Moundou are in Cameroon, but they share a common currency, and the governments of Cameroon and Chad are both autocracies led by a president who has held power for decades. All are regional capitals except Kousséri.

From my vantage point on the ground, however, Abéché stood out. It teemed with armed men of ambiguous institutional affiliation – the type of people I would have expected to engage in predation in other contexts. However, it was safe. The market was absolutely enormous. And the Sultanate seemed to play an outsized role in local life.

The large number of armed men was expected because of Abéché's history of conflict and proximity to Darfur. This difference is immediately observable, starting with the checkpoint described at the beginning of this chapter. The town teems with men wearing camouflage and khakis, driving Toyota Land Cruiser pick-up trucks, which are banned for civilian use. Some uniforms have clear identifying marks, either for a branch of the Chadian armed forces or the Sudanese armed forces, as the town is home to the joint Forces Mixtes Tchado-Sudanese. The institutional affiliation of others was unclear, when their trucks are and camouflage shirts were unmarked. Regardless, their presence is not exactly reassuring to a visitor who has dealt with countless checkpoints and heard many stories about the violence perpetrated by Chadian security forces. And what I was told at a bar

during my first visit in 2013 was not reassuring. A man wearing camouflage had joined our table, rapidly drank a Guinness, then left, announcing that he had to go back to where he was stationed. My friend, a gendarme, then explained: there are armed men watching over all the major intersections in the city, making sure that no other armed men desert the base to head off in rebellion. All of the armed contingents are watching each other nervously.² These observations would have led me to expect that personal security in Abéché was not good.

However, I observed that personal security was, in fact, as good or better than it was in any of the other towns I mentioned above. My hosts and informants had assured me that it I would be safe, which was why I made the trip in the first place. In about a year in Abéché, I was never attacked nor robbed, despite sleeping outdoors, with an unlocked interior door to the room with my possessions, in a household compound whose walls were trivially easy to jump over. I walked all over town alone during the day time without any trouble, as did friends and contacts. Violence and theft certainly occurred, sometimes with victims in my extended personal network. However these incidents tended to be fights, thefts of telephones from acquaintances, or late-night street robberies, all of which are common across all of the similar towns I had visited.

The vast size of the town's market seemed to support the idea that security was good enough for trade. The market is huge, and there is no obvious geographical reason why it should be. Abéché is not a border city, it is about 200 kilometers from the Sudanese border, where the town Adré is located. So the market's huge size is not explained by its proximity to the border, as the market in Kousséri is. It is on the road from Adré to N'Djamena, but so are many other towns. So there is no infrastructural reason for the market's size, as there is with the railroad's end in N'Gaoundéré. A plausible explanation, then, seemed to be that the market existed because security and governance institutions were better in Abéché than anywhere else around.

Before I ever had a meeting at the Sultanate of Ouaddaï, it also stood out because of its prominence compared to any other similar institution in any of the other towns I was comparing it to. Huge numbers of people would assemble on a daily basis in public outside its court offices waiting to have their cases heard, which I had not observed at the offices of any other legacy institution in a town of that size. People frequently mentioned the sultanate in conversation. And a massive picture of the Sultan's palace is painted on the walls inside the most prominent camel-meat-spot in town, which serves as one of the central gathering places in Abéché. (The president is rumored to stop in there when he visits town.) Because I had spent time in a number of other similarly-sized towns in the same subregion, the prominence of the Sultanate stood out to me as something unique about Abéché.

²Field notes, June 2013

Checkpoints

Traveling by bus and negotiating my own way through checkpoints provided a window into how local authority structures varied across space and over time. The presence or absence of checkpoints, and the type of checkpoints, varied depending on the road and the time the road was traveled.

Checkpoints vary in the target of extraction – driver or passengers – and the predictability of the extraction. Some checkpoints do not affect passengers or delay the trip: the driver or the *chargeur*³ simply hands over a fixed sum of money to someone at the checkpoint. Some checkpoints do not affect passengers, but do delay the trip: This happens if the target of extraction is the driver not the passengers, but the amount to be paid is not agreed upon in advance. Some checkpoints affect passengers predictably: people without some pre-determined type of ‘legitimate’ document will be hassled, and others will not. And some checkpoints affect passengers unpredictably: the checkpoint operators will semi-arbitrarily select a subset of passengers to hassle for money.

During my travels, I did not always have the same set of official documents – I didn’t know the rules at first. But better documents did not always mean I was hassled less. On my first trip, I had nothing but a passport with a visa. At the beginning of my second trip, I had a formal invitation from the Université Adam Barka d’Abéché and nothing else. While conducting my survey, I had the formal invitation and an “autorisation de recherche” naming the specific locations to which I was traveling. However, one of the times I was hassled most intensely at a checkpoint was when I had all of the documents, including the “autorisation de recherche.” In that case, the officers manning the checkpoint insisted that my papers were not in order. They had permitted everyone else to get back on the bus, and they were saying that I would need to pull my bags off the bus and wait with them while I resolved my paperwork issue. Or, they said, I could pay them.⁴ Following the rules of the state was no guarantee of easy passage, and breaking them was no guarantee of trouble.

Witnessing and experiencing this variation, which I observed for years but could never fully predict for any given road in advance, had two effects. First, it highlighted in my mind the degree of local variation in governance institutions across space, even across relatively short geographic distances. Second, it demonstrated the same variation over time, for the roads I took repeatedly. In some places there were predictable presences or absences of checkpoints, but in other places they would appear or disappear without a logic I could discern.

³A bus-company employee whose job it is to get the bus loaded and running smoothly.

⁴I did neither – I grabbed my passport out of an officer’s hands, jumped back onto the bus, and the driver pulled off over the officers’ protests. Field notes Jan. 19, 2017

5.3 The household

In stark contrast to the unpredictability of the state, I found a predictable set of rules and social institutions in the households in which I stayed. Within household units, a social hierarchy was enforced, with clear responsibilities for individuals depending on their place in the pecking order. And when issues came up that required contacts outside the household, there were predictable institutions and networks to which members of a household could turn, as well as others to avoid.

The layout of the compound

The Muslim Chadian households in which I stayed all shared a common set of social rules, with a physical layout to match them. The household is referred to in French as a *concession*, which translates as ‘compound,’ and it refers to a piece of property, generally surrounded by an exterior wall, which can include several smaller family units. So the concession is often a larger unit than economists’ definition of a household as people who eat from the same pot. However, within a concession, the most important divisions are gender and hierarchical status, not family units.

My designated place, socially and physically, was among the adult men and adolescent boys who were either unmarried or whose wife was elsewhere. In physical layout, we were generally assigned the room (or rooms) that are closest to the entrance to the concession from the street. Such rooms would be occupied by a rotating cast of men and boys who often knew each other only loosely, if at all. In this space, we were all subject to all rules set by the head-of-household, and generally no women were expected to enter. Heading toward the interior of a compound, the next set of rooms would often be occupied by nuclear families other than that of the head of household. Sometimes these families would be relatives of the head-of-household, other times they would be unrelated renters. These spaces were an intermediate type of housing for married men who did not yet have the means to have their own compound. Within their area, these households had autonomy. Women could enter these areas at the discretion of the wife in the nuclear household. But outside of these set of rooms, occupants of such intermediate areas were still subject to the decisions made by the head-of-household.

At the back of the compound was the women’s area, which I did not enter, even in the households I lived in for extended periods. That area was limited to women, the head-of-household, and very close male relatives of either the head-of-household or one of his wives. If the head-of-household has multiple wives, each one gets her own designated portion of the women’s area which she controls.

Men were generally expected not to cook, and the women were expected to send food out to the men three times per day for breakfast, lunch, and dinner. In my household in N’Djamena, I wanted to get a small gas burner and cook for

myself, and the head-of-household firmly refused that I do so. In Abéché, I cooked for myself at times, as did the university students with whom I shared the room by the entrance to the concession. Abdoulaye, our head-of-household, was more tolerant of ways in which we violated social norms. We were all university students, a novel category in and of itself for the region, and so he lumped our choice to cook in with the other ways he considered us odd.

Abdoulaye's rules

Although Abdoulaye tolerated some deviations from Abéché's standard social norms, he was strict on one count: He wanted men staying in his concession to be present at dinner, unless they had an important reason to be absent. About a half hour after the maghreb prayer, one of Abdoulaye's younger sons would be summoned to the women's part of the compound to get a large platter of food. The platter would be set down on the sand on the edge of the ratty carpet in the outer part of the compound, in front of the room for visiting men which I shared with a handful of university students. Abdoulaye would sit on the carpet, hunched over the food, illuminated only by the stars above us. I was usually expected to sit next him, unless we had important visitors who would take that spot. His youngest sons would generally sit on the opposite side of him. Whatever collection of men were visiting or staying in our household then, between five and twenty people, would be arrayed around him, loosely in order of age and social stature, crouched on the sand. If anyone was absent, Abdoulaye would ask where he was. If anyone had news to announce, this was the time. If Abdoulaye had a question for someone, he would ask. And if he had a problem with someone or something, he would let it be known in no uncertain terms. Other nights we would be silent, listening to Abdoulaye's choice of entertainment: world news from a handheld radio tuned to a scratchy BBC Arabic shortwave broadcast.

Eventually I realized two reasons why this evening ritual was important. First, as our tuteur, our wali, he was responsible for us. If any of us got in trouble, he would be summoned to solve the problem or answer for our actions. The social order of the city depended on him to keep the men in his household in line, and this was his way of keeping tabs on us. Second, if he had any visitors, our presence showed them Abdoulaye's place in a social hierarchy, by placing him ahead of us. Our presence bolstered his status. Hierarchy, taciturn deference, and compliance with the tuteur: the social order was reinforced on a nightly basis around a platter of food.

Talking about chiefs or the Sultanate

Before my arrival, the big controversy in Abdoulaye's family concerned the marriage of one of his daughters. She married as a young teenager, and later said she had never wanted to marry the man she did. Subsequently she wanted a divorce,

and went to the sultanate to plead her case. As is local custom there, the sultanate refused to grant her a divorce unless she could repay the dowry her husband had paid.⁵ Notably, throughout the whole drama, no one talked about involving the central state or any of its branches, nor did anyone mention the possibility of disobeying the Sultanate. This omission is notable because, in theory, women would have more rights under the laws of the state than under the Sultanate's laws. But from the daughter's perspective, the state was not trustworthy or consistent – so no one else would abide by its decisions on such a matter, either. On the other hand, pleading a case to the Sultanate was worthwhile, because male family members would abide by its decision, even if it went against their wishes.

In Abéché, we would also be subject to decisions of the Bulala chef de race. But Abdoulaye himself had almost equal status – I was told that the Bulala families of Abéché had initially tried to hame him the chef de race, but he declined.

In N'Djamena, my household was made up of Walad Moussa Arabs. Everyone in the household had to obey Izadine, the head-of-household, and he had to obey their N'Djamena chef de race, and also a chef de canton somewhere near Bokoro. These chiefs would come up, from time to time, like to solicit money to pay the *diya*, or “price of blood” – the money paid to victims of a murder or vehicle accident by the clan of the responsible party.⁶ Izadine had saved his invitation to his chief's swearing-in ceremony, see Figure 4.1.

Funerals, weddings

Legacy institutions, social networks, and power relations take physical form at weddings, funerals, baptisms, and other ceremonies. With my hosts in Abéché, I could hardly distinguish the differences between events, aside from different moods of the participants and different prayers. Otherwise it looked the same: Everyone would show up, sit on mats for a while, then eat lots of food, then drink sweet drinks. What mattered was who showed up, who sat on which mat in which part of the compound, and who ate at the same plate of food. It was fully gender-segregated, so I only saw what happened among the men. Higher-status men were directed toward the better mats – often those with the best shade. (I sometimes ended up in this category. Abdoulaye reliably did.) They would likely be greeted personally by the male guest(s) of honor, and they would get food first. It also meant that their voices could be heard among the other influential men there. Middle-status men were around the fringes, but still with good mats. They would not be personally greeted, and they were unlikely to get a word in with anyone important at the gathering without an intervention by a higher-status man. (I sometimes ended up here.) Young men, boys, and lower-status people would have

⁵She was unable to pay, but was eventually able to convince her father to push her husband to divorce her, and the marriage ended.

⁶Mbairo 2013

Figure 5.1: Invitation to Izadine's chief's swearing-in ceremony



worse mats. When people talked about the family councils which decided who would become the next chief, or to advise the chief, I suspect the same dynamics are at play.

Watching the world: Who owns land

Sitting under a tree outside my household in Abéché once, a series of groups of men arrived and joined me in the shade. They arrived in three distinct groups, sat in three factions, exchanged greetings with each other and with me. Because it was my home, I was perceived as having a right to be there and participate in the discussion, if I so choose.

The men began to argue. At issue was the ownership of a plot of land across the street. The plot was vacant, with only piles of bricks that had been brought to build a wall and a house. The bricks had been brought there by a man who believed he owned the land. He, an ethnic Ouaddaien, had purchased the plot from another man, an ethnic Zaghawa. That man believed he had previously owned the land, and had a land title to prove it. There was no dispute between these two men or their entourages, although they were clearly distinct. However, a third man – another ethnic Zaghawa – also claimed to own the land. He also had a land title. He said it had always been his, and had brought his entourage to back up his point.

As the argument proceeded, my friends from my household joined us all under the tree and listened to the debate. The first Zaghawa man, who had sold the land, insisted that the debate should only be between him and the second Za-

ghawa man. The first Zaghawa man said: If I am wrong and you truly own this land, I will refund the money of the Ouaddaien. The Ouaddaien agreed. However, the second Zaghawa man continued to argue with the Ouaddaien, insisting that he should never had brought bricks to the property. Eventually, they all left, agreeing to reconvene at the city's land-titling office to get a judgement about which title was "real."

After they all left, my friends offered an interpretation of what happened. They said: If the second Zaghawa man and the Ouaddaien man go to court, the Zaghawa man will certainly win. (Chad's president is a Zaghawa, they dominate the military, and many Zaghawa are politically influential.) However, if two Zaghawa men go to court, it is ambiguous who will win. Therefore, the second Zaghawa man wanted the debate to be between him and the Ouaddaien man, because he knew he would win that fight. The Ouaddaien, knowing he would lose, needed cover from the first Zaghawa man who had sold him the land. My friends were impressed by the first Zaghawa man's honesty, in their perception, in that he defended the Ouaddaien man. They were also convinced he would win, because this was not the first such debate they had witnessed over this property. Other people had come with titles, claiming to own the plot of land, they said. The first Zaghawa man had won every argument. Whether he won on the basis of some true legal right, or on the basis of his connections, was unclear to me. And whether that distinction is real or important is questionable.⁷

This event solidified two ideas in my mind: 1) The Chadian state's institutions were not predictable enough for anyone to rely on them, even with official documentation, leading people to depend on other institutional forms, and 2) Disagreements and alliances often cross ethnic lines. In this case, the opposing parties were both ethnically Zaghawa, one of whom was allied with a Ouaddaien. This observation, and others like it, led me to focus on institutional links rather than strict ethnic affinities.

Chiefs' authority knows no bounds

One of my Abéché roommates was a medical school student and sometimes staff member at the Abéché hospital and a handful of local health clinics. At one point, telling a story about his day, he mentioned that he had needed to call the chief of a woman who had visited the clinic that day. I asked why, and he explained that it was common.

When a doctor or nurse orders a medical exam, especially if it involves a person's rectum or a woman's vagina, people often insist that the exam can only proceed if their chief OKs it. So patients would call their chief, then hand the phone to my roommate, the medical professional, and he would have to convince the person's chief that the rectal or vaginal exam was necessary. If he could successfully

⁷Field notes, July 2, 2013

convince the chief, they would do the exam. Otherwise, the patient would leave, unexamined.⁸

5.4 Relying on local institutions

When I met Chadian contacts for the first time, they frequently noted that it was unusual to encounter a westerner without any affiliation with an international organization or NGO. As noted in the section above on checkpoints, this absence meant that I interacted with agents of local governing institutions directly, rather than through any intermediaries. Furthermore, it shaped my interactions with my hosts, since they understood that I did not have another local organization to help out in the case of trouble. This research strategy allowed me to make observations that I would not have seen if I had been affiliated with an international organization.

Facing the state: Registration in N'Djamena

For a foreigner staying in Chad for more than three weeks, immigration formalities do not end at the airport. Such a stay requires an additional step: registration with authorities at the central police station in N'Djamena.

The first time I completed this registration, my host in N'Djamena accompanied me to the police station. When we arrived at the regular main entrance to the massive walled compound, we were told by uniformed, armed men that the entrance was closed to the public. We were directed to go around the corner, down a minor alley. When we turned the corner, we saw a massive crowd of shouting people pushed together around a narrow doorway which appeared to have been hastily knocked out from the concrete wall. We pushed our way through to the front of the crowd to find man blocking the doorway, deciding who he would let through and when. We joined the chorus of shouting, and before long he let me and my host through. Some combination of my white face, my American passport, my host's Chadian Arab accent and his flowing white jalabiya convinced him that we were not good targets from which to seek a bribe. Others, left shouting in the crowd, were not so lucky, as they stood there waiting and shouting.

Once we got inside the compound and figured out where we needed to go, we emerged back to the wide open yard on the opposite side of the main entrance from which we had initially been turned away. That entrance, heavily guarded and barely used, seemed like it would clearly have been a safer and easier entry point. However, it would have made it more challenging for a single individual to control entry via bribes or favoritism – and it would have been much more obvious to passers-by on a main street of N'Djamena. The use of the side entrance appeared

⁸Field notes December 10, 2016

to be an unnecessary choke-point, created for the purposes of rent extraction, or to bestow favors upon some individuals while blocking others.

On my next trip, when I entered the country and needed to re-register, I found the entrance had moved again. The main entrance came back into use, but it was roped off, with another checkpoint-style entry to the roped-off area a ways down the street. My local hosts, American passport, and language skills meant I always moved through the checkpoints without too much fuss. Nonetheless, the experience of continual change, even for for the same standard procedure in a fixed place, was disorienting. The changes, for no practical reason, create an impression that state institutions are not fixed. If they keep moving the entrance around, what else might they change?

5.5 Conclusion

The theory, interviews, and survey data presented in this dissertation are products of the immersive research strategies I employed. I became interested in the variation in legacy institutions across space after observing it through my travels in the region. My reliance on local institutions, and my repeated conversations with my hosts about my safety reinforced my idea that order was often not a product of state institutions but of longstanding legacy institutions. And my experiences in the homes I stayed in led me to consider the role that time played in shaping people's ideas about an institution's reputation, as well as how people considered how their neighbors might act before making their own choices.

These observations and impressions influenced my decisions on how to collect the data in the next chapter. In order to focus on the underlying differences between legacy institutions, I needed to keep the role of the central state as constant as possible, so I focused on one narrow slice of legacy institutions: "real" chefs de canton. And rather than looking for observable differences between legacy institutions, I set out to compare legacy institutions that looked as similar as possible, except for the longevity that they had existed.

Chapter 6

Survey evidence

This chapter presents survey evidence evaluating whether there is a link between the duration a legacy institution has existed and the degree to which people comply with it. In order to gain empirical leverage, I focus on one type of legacy institution: *chefs de canton*. As in previous chapters, I divide legacy institutions into two categories based on their duration: CDL institutions and LDL institutions. To assess the extent to which patterns of compliance are consistent with the theory and case studies described in previous chapters, I conducted a survey of more than 2,300 villagers in two regions at opposite ends of Chad, the Mayo-Kebbi Ouest and Ouaddaï regions. In both a paired comparison and regression analysis, I show a link between the presence of a *longue-durée* institution and greater compliance with it.

6.1 Operationalizing *longue-durée*

Although the theory outlined in Chapter 2 suggests that compliance should vary continuously while beliefs are still being updated, the paired-comparison strategy transforms duration into a dichotomous variable. While it would be ideal to investigate duration as a continuous variable, such an analysis would require data about compliance decisions under a wide range of legacy institutions that are otherwise similar. In the absence of such data, this dissertation tests the simplest form of the argument, classifying legacy institutions dichotomously as *longue-durée* or *courte-durée*. As noted in Chapter 3.7, the duration after which people would stop updating would depend on the tempo of the chiefs' directives and punishments, as well as the density of information networks.

In the Chadian village context, I code any institution that has existed for fewer than 100 years as *courte-durée*. Village life proceeds slowly, and instances where a villager has an incentive to disobey the chief may arise rarely, on a scale of decades – perhaps a few times in a lifetime. Even then, the fact that punishment would be probabilistic means that villagers would need to observe a number of potential

instances of punishment in order to update their beliefs. Therefore, in this institutional context, fewer than 100 years, or the lifetime of a very elderly individual, should be considered a short duration. This coding is corroborated by the interview evidence above about continued updating in Galal and Djodo Gassa.

Institutions that have existed for at least 200 years should be considered *longue-durée* in the Chadian village context. Even if potential punishments occur only rarely on a scale of decades, 200 years should be an adequate duration for families to observe multiple potential instances of punishment. At this point, a number of generations would have had an opportunity to update their beliefs. Given that the theory outlined above predicts that compliance will shift gradually, institutions between 100 and 200 years old should be considered to be in transition. None are included in the data presented below.

6.2 Survey design

Key independent variables, including the duration which a legacy institution has existed, vary at the level of the legacy institution. Accordingly, my empirical strategies aimed to find appropriate cantons to compare to one another. Cantons within each region were selected to maximize variation on certain key axes to facilitate hypothesis tests. Information about canton-level covariates was collected in pre-survey interviews conducted in each canton in both regions. The project's survey coordinator visited all the cantons of the two regions, with the exception of the cantons of the Lac Léré Department, where I had previously conducted interviews. For each canton visited, he interviewed the *chef de canton*, the *sous-préfet*, and two other knowledgeable local sources (often a teacher and a store owner), in order to collect data about covariates. The data that he collected from interviews and observations included the age and history of the *chefferie*, the level of state presence as operationalized by the number of state-constructed buildings, the number of *goumiers*, and the ethnic groups that were present.

Some cantons were omitted for security reasons. In Binder, in the Mayo-Kebbi Ouest region, the survey coordinator conducted an interview with the *chef de canton*, who calls himself a sultan, but he was warned not to spend the night in the area because he might be targeted for violence due to the questions he was asking. In a previous interview, an informant had told me that the *chef de canton* there “kills lots of people.”¹ Thus, Binder represents an extreme case of coercive capacity and was not a site where the survey could have been safely conducted. In the Ouaddaï region, the cantons in the Adré department were omitted because of general insecurity in the region related to the border with Darfur, Sudan.

Nonetheless, high levels of insecurity were present in the cantons where the survey was conducted, as is the case in much of Chad. For example, some of the

¹Interview, Pala, March 2016.

survey sites in the Ouaddaï region were about a dozen kilometers from a place where a French citizen had been kidnapped and taken to Darfur a few weeks before the survey team traveled there.² The survey team established a secure location within each canton to which they returned each night. Villagers generally warned them that spending the night in outlying villages would likely result in the theft of the survey team's vehicle and survey equipment. Thus, I do not expect my results to be biased because of the omission of the handful of cantons mentioned in the previous paragraph.

Each canton contains between 20 and 150 villages, the smallest geographic unit. Additional information about the survey design is available in the pre-analysis plan, on file with the Evidence in Governance and Politics database.³ The survey team spent one day in each village, surveying between 24 and 36 respondents in each village. Survey sites are shown in Figures 6.1 through 6.3. Villages were selected randomly within cantons, households were selected randomly within villages, and individual respondents were selected randomly within households. Village selection in Abdi, Gagal, and Keuni was done by obtaining a list of all villages in the canton and using a random number generator to select villages. In Lagon, all villages were sampled. In Kognéré, randomization was done separately for Arab-majority villages and Ouaddaï-majority villages in order to over-sample Arab-majority villages. Households were selected through a random-walk procedure. Male individuals within households were selected randomly by writing a list of adult males in the household and using a random number generator to select one. The survey was conducted in French and Chadian Arabic.

Only men were surveyed, for three reasons. First, the core question of this research focuses on the organization of violence and the monopoly of force, and in Chad, organizations that produce violence (rebel groups or the army) are made of up men. Second, interviews revealed that the mechanisms by which legacy institutions would work would be very different for men and women, which would have complicated any research design. Third, as a man, it was almost impossible for me to obtain unbiased information from women, due to the social segregation of Chadian society. Thus, designing a survey to target both men and women would not have produced credible results, and it also would have been less theoretically interesting given the research question.

²TchadConvergence.com March 23, 2017.

³ID# 20170504AA. Copies of the full survey instruments, in French and Chadian Arabic, are available from the author.

6.3 Empirical strategies: paired comparison and regressions

I present two general types of empirical strategies: a paired comparison across cantons and regression analyses. The paired comparison in the Mayo-Kebbi Ouest region compares a set of chefferies which are as similar as possible except for the presence of CDL or LDL institutions. The regression analyses also include cantons from the Ouaddaï region, using individual-level and canton-level covariates to estimate differences in compliance rates between CDL and LDL institutions. In the Ouaddaï sample, I also over-sample ethnic Arabs, who are not co-ethnics of their local chief, in order to test the degree to which compliance with a chief is based on ethnic affinity or institutional characteristics. I use multiple regression specifications, as well as individual-level matching, as robustness checks.

A paired comparison of institutions that are as similar as possible except in their duration provides further corroboration of my hypothesis. An ideal comparison would be a set of institutions in places that were identical in terms of their economic activities, available resources, ethnic makeup, religious beliefs, and presence of other competing institutions. For comparability, I focus on chefs de canton. The canton is the place, the chefferie is the legacy institution, and the chef de canton is the leader of the institution.

One benefit of comparing these chefferies in Chad is the homogeneity among them induced by the French colonial state, which neutralized some axes of variation that may have previously existed. In particular, French administrators pushed legacy institutions to be organized into cantons with a single chef de canton, eliminating variation in the levels of hierarchy of these institutions. The interventions by French administrators help mitigate concerns about whether the difference between LDL and CDL institutions is driven by the timing of their formation with respect to the arrival of European colonists. The concern would be that the involvement of French administrators might taint the legitimacy of any institution they interacted with. However, the colonial administration's actions affected institutions across the board. Thus, French administrators had a hand in the organization of both the LDL and CDL institutions in this comparison. In locations with LDL institutions, the chefs des cantons were generally named by the previously established legacy institution leaders, who then vouched for the legitimacy and coercive capacity of the newly named chefs des cantons. Therefore, with LDL institutions, people's beliefs about the likelihood of punishment would have remained unchanged from earlier periods. Setting this comparison allows the greatest possible focus on the relationship between duration and compliance, given the limitations of the paired-comparison strategy.

For the paired comparison, I compare institutions located near one another in the Mayo-Kebbi Ouest region in southwest Chad, where other variables that might affect compliance are as similar as possible. The region is home to a mix of ethnic

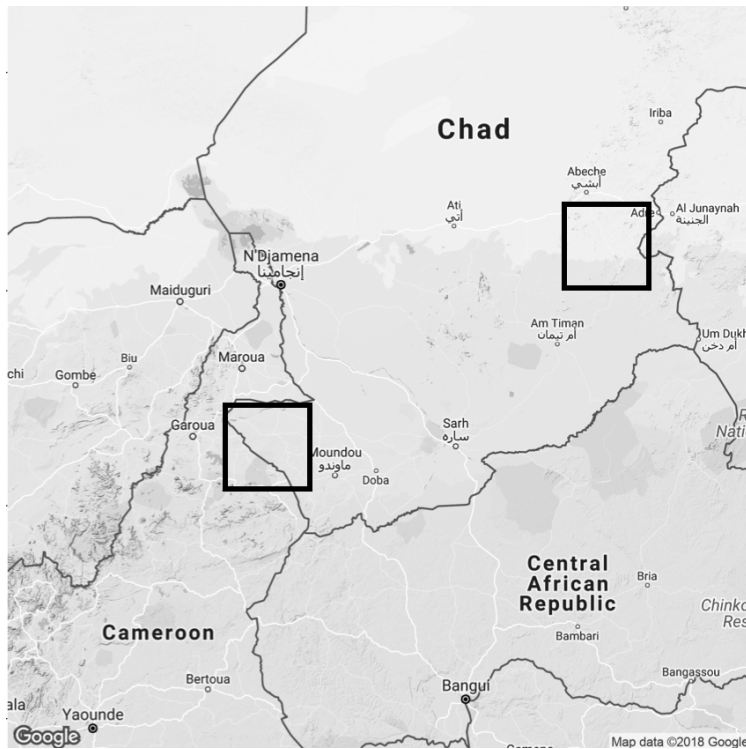


Figure 6.1: Location of survey regions

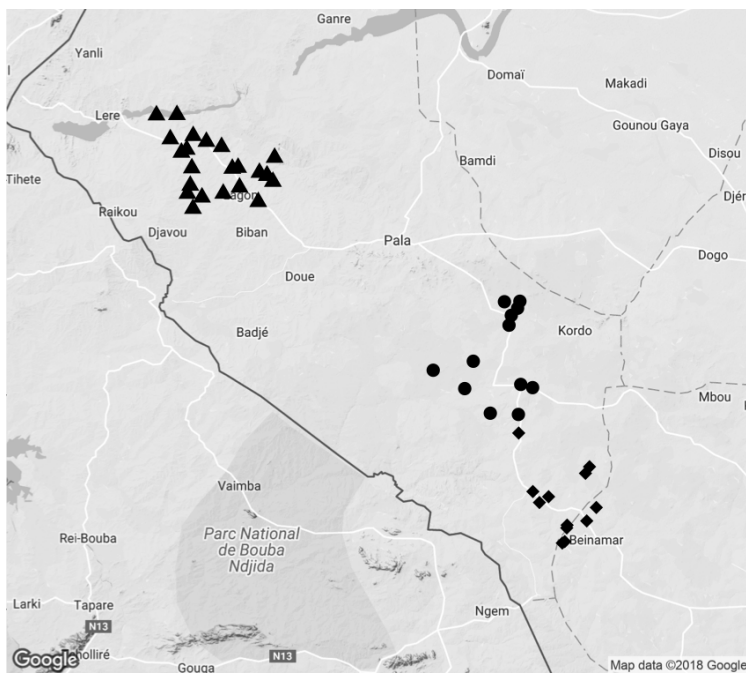


Figure 6.2: Survey sites in the Mayo-Kebbi Ouest region

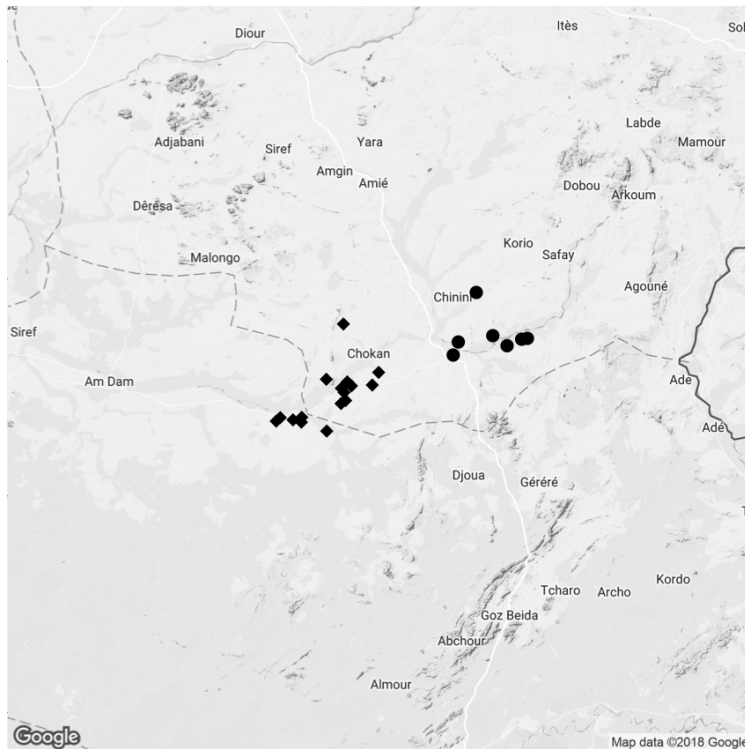


Figure 6.3: Survey sites in the Ouaddaï region

groups, all of which have historically practiced a similar mix of economic activities. All of the legacy institutions ostensibly perform similar functions, operating traditional courts where people bring issues such as theft, fights, and family disputes. Additional information about the cantons in the paired comparison is in Table 6.1.

The LDL institution in the paired comparison is the chefferie of Lagon. This institution draws its legitimacy from the neighboring institution in Léré, discussed in Chapter 4. The first gong of Lagon was named by the gong of Léré from among his own sons; the two institutions still share ties.⁴

The chefferies in Gagat and Keuni make up the CDL comparison with Lagon. As shown in Table 6.1, the three cantons are all similar, except that Gagat has a higher level of state presence than Lagon, while Keuni has a lower level of state presence than Lagon. The wealth index for Gagat and Keuni is slightly lower than in Lagon, which could be an endogenous result of differing institutions across the cantons. Thus, the combination of the chefferies of Gagat and Keuni makes up the most similar *courte-durée* comparison for the chefferie of Lagon.

In both Gagat and Keuni, the chief and the majority of the population are ethnic

⁴The gongs of Léré at times cooperated with the French, and at times were in conflict with them: one gong was arrested, detained, and deported in 1936. But the institution continued to use its own selection procedures to determine the next gong.

Table 6.1: Legacy institutions in the paired comparison

	Lagon	Gagal	Keuni
Longue-durée	Yes	No	No
Institutional Structure	Chief, secretaries, counselors, goumiers	Chief, secretaries, counselors, goumiers, interpreter	Chief, secretaries, counselors, goumiers
Economic activities	Farming: corn, red millet, peanuts, beans. Fishing.	Farming: corn, red millet, peanuts, cotton, sesame.	Farming: corn, red millet, peanuts, sorghum.
State presence	3 buildings	6 buildings	2 buildings
Mean years of schooling	10.5 years	8.5 years	9.4 years
Religion	88.7 percent Christian	89.3 percent Christian	95 percent Christian
Ethnicity	97.6 percent Mundang	65.1 percent Ngambai	90.2 percent Ngambai
Wealth index*	16.8	15	14.1
Insecurity Index*	2	1.9	1.9

* See measurement details in section 6.2.

Ngambai. Before the establishment of the chefferies in Gagal and Keuni, the populations generally lacked political institutions at a higher level than the family. As one government administrator who is an ethnic Ngambai told me, “People were closed in; they only got together to hunt.”⁵ While Ngambai traditions included ceremonies to bring rains and initiation ceremonies for the transition from youth to adulthood, none of these social institutions resembled a political authority capable of enforcing compliance. Thus, the chefferies established during the 1930s represent *courte-durée* institutions in comparison to the institutions in Lagon or Ouaddaï.

The other cantons in the survey are in the the Ouaddaï region, which is home to the sultanate of Ouaddaï. The chefferies in the Ouaddaï sample – Abdi and Kognéré – have a similar story to Lagon: They were split from the sultanate of Ouaddaï during the colonial period with the support of the sultan, who named the first chiefs of each chefferie. These regions were selected because of variation in the characteristics of their populations and their legacy institutions. Notably, the Ouaddaï region is majority-Muslim and depends on livestock-raising and sedentary agriculture, while the Mayo-Kebbi Ouest is majority-Christian and depends

⁵A2, July, 2013

primarily on sedentary agriculture and fishing.

6.4 Agricultural productivity in the paired comparison

Figures 6.4 through 6.6 show that the agricultural potential of the areas is similar, with marginally higher agricultural potential in the areas with CDL institutions. The maps depict the surveyed villages in each canton overlaid on the agricultural suitability indices for corn, millet, and peanuts developed by the Food and Agricultural Organization of the United Nations.

Figures 5.1 through 5.3 depict the locations of surveyed villages within the paired comparison overlaid on the Agricultural Suitability Index developed by the Global Agro-Ecological Zones program of the Food and Agriculture Organization (FAO) of the United Nations for maize, pearl millet, and groundnuts. (Pearl millet is similar but not identical to red millet. No FAO suitability data is available for red millet.) The scale for the Agricultural Suitability Index runs 1 to 100, where 0 is not at all suitable and 100 is perfectly suitable.

This data suggests that differences in agricultural productivity were not the underlying cause of the development of a *longue-durée* legacy institution in one canton in the sample compared to another. All maps are for the “intermediate” level of inputs, which would correspond to appropriate technology for the region.

Triangles represent villages in Lagon, the *longue-dure* institution in the paired comparison. Circles represent villages in Gagal and Keuni, the *courte-dure* institutions in the paired comparison. Maps for suitability for beans, cotton, and sorghum show nearly identical patterns to the maps below and are available from the author. Data is not available for sesame.

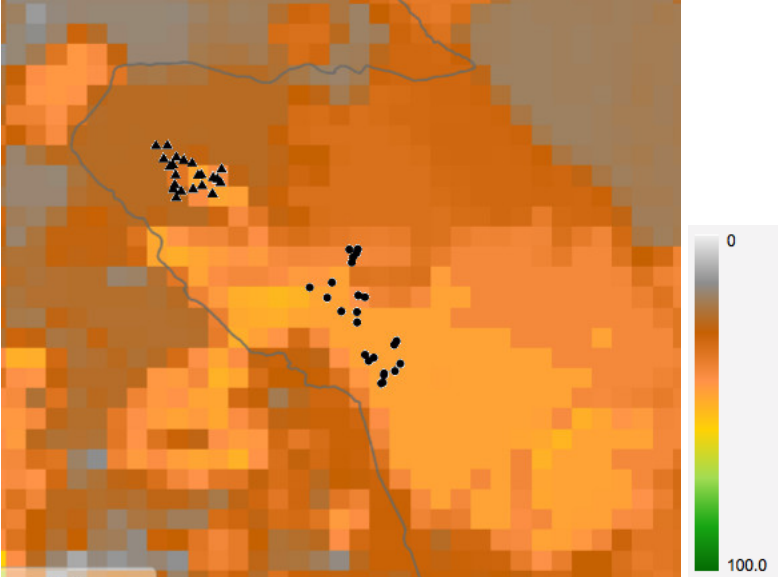


Figure 6.4: Groundnut suitability index

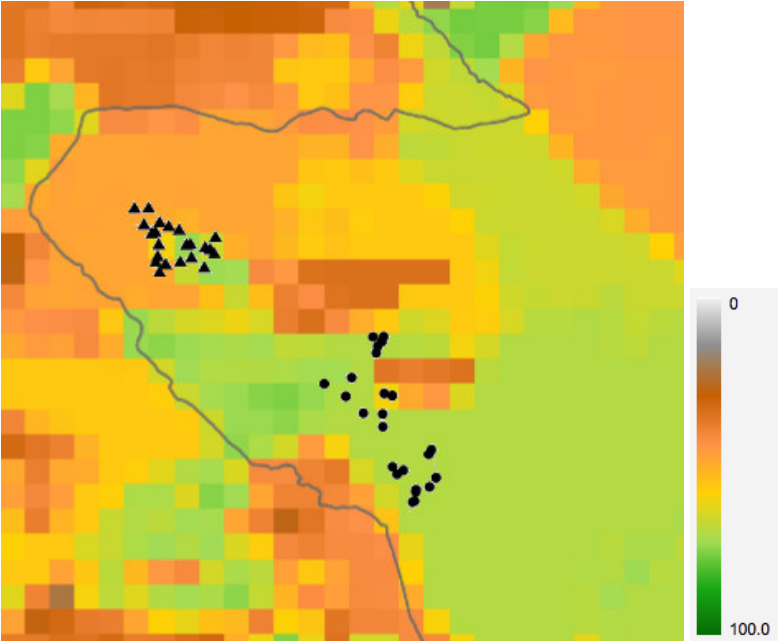


Figure 6.5: Maize suitability index

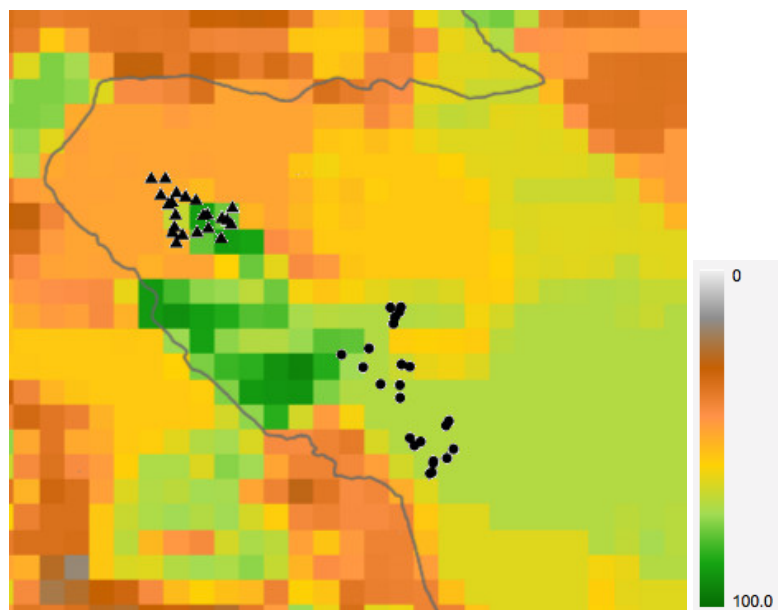


Figure 6.6: Millet suitability index

6.5 Descriptive statistics on legacy institutions

This section presents descriptive statistics about how people view and interact with their chefferies. All these measures are conceptually different from compliance, although many of them might be expected to be associated with higher or lower rates of compliance. Accordingly, some of these variables appear as covariates in the regression analyses presented below.

Table 6.2 shows the percentage of respondents in each village who knew the name of their chef de canton, how many times they visited the chefferie in the past year, and their ratings of whether they viewed the chief as fair or as doing a good job. These data show that a vast majority of villages are familiar with their chief, that their perceptions of them are generally positive, and that most people visit the chefferie at least once per year. None of these responses are strongly correlated with the presence of an LDL institution.

Counterintuitively, villages in villages with CDL institutions reported higher numbers of visits to the chefferie in the past year. However, this result is not necessarily a measure of the chefferie's effective, nor of compliance with it. People might visit repeatedly because they have issues that continue not to be resolved, despite repeated attempts. Furthermore, people might be more willing to bring problems to the chefferie if they know they will be comfortable disobeying any adverse decision. In contrast, if people are sure they will need to comply with any decision, they might be more hesitant to approach the chefferie in the first place.

Table 6.3 reports the fraction of respondents in each village who report that the chefferie provides a given service. Across all five cantons, resolving disputes

Table 6.2: Views of and interactions with the Chief

	Abdi LDL	Kognéré*	Lagon LDL	Gagal CDL	Keuni CDL
Know chief name	91%	87%	89%	94%	99%
Mean # visits to chief	1.6	0.8	1.4	1.8	1.9
Chief fairness (4=very, 1=not)	3.2	2.8	3.2	2.9	2.7
Job performance (4=high, 1=low)	3.3	2.7	3.2	2.7	2.6

*Arabs who are non-coethnics of the chief are oversampled in Kognéré

Table 6.3: Services from the chief

	Abdi LDL	Kognéré*	Lagon LDL	Gagal CDL	Keuni CDL
Crop Insurance	27%	13%	24%	12%	30%
Money for ceremonies	17%	6%	11%	8%	2%
Ceremonial role	24%	33%	68%	24%	42%
Resolve disputes	98%	97%	97 %	98%	99%
Fund a school	31%	16 %	43 %	28%	24%
Support the elderly	25%	10%	28%	11%	33%

*Arabs who are non-coethnics of the chief are oversampled in Kognéré

Table 6.4: Choice of venue: Chef de Canton before state

	Abdi LDL	Kognéré*	Lagon LDL	Gagal CDL	Keuni CDL
Land dispute	88%	41%	88%	95%	98%
Injury	53%	27%	74%	69%	79%
Death	31%	9%	57%	31%	57%
Business dispute	63%	24%	85%	84%	91%

*Arabs who are non-coethnics of the chief are oversampled in Kognéré

is the only service that a majority of respondents report their chefferie providing. The variation in the provision of other services is not obviously correlated with the presence of a CDL or LDL institution. These data support the proposition from the theory presented in Chapter 3 that there would not be any clearly observable difference between CDL and LDL institutions, or weak and strong institutions, because the weak ones would mimic the strong ones.

Table 6.4 reports statistics from a series of vignette questions that asked where villagers would go to resolve certain types of disputes. For each type of dispute,

respondents were asked the first, second, and third venues they would chose to resolve a stylized dispute. The first vignette described conflict over a piece of land. The second vignette described a fight which had resulted in a broken leg. The third vignette described a fight which resulted in death. The fourth vignette described a financial dispute between businesspeople. Villagers were given a range of central state and legacy institutions to which they could say that they would visit to resolve the dispute.

The percentages reported in Table 6.4 represent the percentage of respondents who said they would visit the chefferie of the chef de canton before any of the possible state institutions, including the sous prefecture, the gendarmes, or the courts. Because this measure talks only about the chef de canton specifically, these results are under-estimates of the salience of legacy institutions in general. The results show that people would visit the chefferie of the chef de canton before the state in many cases, especially for land disputes.

On this measure, results from Kognéré should be viewed differently from the other cantons, because of the over-sampling of ethnic Arabs there and the way this measure is constructed. Many Arabs would have turned neither to the chef de canton nor to the central state, but instead to their local chef de tribu – a different type of legacy institution. Since the measure in Table 6.4 only counts the chefferie of chef de canton, people who would turn neither to that chefferie nor to the state are still considered not to have prioritized the chefferie of the chef de canton.

The high reliance on the chefferie of the chef de canton in Keuni might also be a result of that canton's geographic distance from offices of the central state. Unlike in Lagon or Galgal, there is no sous prefecture or gendarmerie located in Keuni. Therefore, people may visit the chef de canton more frequently there simply as a matter of geography.

One interesting result in Table 6.4 is the difference between the treatment of injuries and deaths in Lagon and Galgal. In both cantons, a similar number of people would prioritize the chefferie of the chef de canton for fights that resulted in injury. However, in Galgal, many of those people would instead turn to the central state in the case of a death. In Lagon, however, people continue to prioritize the chefferie for fights that result in death. That result suggests that people in Lagon might trust the chefferie to deal with the most serious issues, while in Galgal people would instead turn to the central state.

6.6 The dependent variable: compliance

The operationalization of the dependent variable in the survey is a single question: "If the chef de canton makes a decision that affects all of this village, do you expect that: 1) everyone would follow it, 2) the majority would follow it, 3) some people

would follow it, 4) few people would follow it, or 5) no one would follow it.”⁶ For the analysis, the variable has been transformed so that higher numbers correspond to greater expected compliance, with 5 being the highest possible and 1 being the lowest possible. This question was registered as a dependent variable in the pre-analysis plan.⁷

The key interpretation of the outcome variable is in the differences across cantons, not the absolute level. Responses to this question should be expected to skew toward compliance across the board due to social desirability bias related to respect for elders, as well as the phrasing of the response choices. However, there is no reason to believe that these biases would vary from one canton to another.

6.7 Measures of covariates

Regressions also include a range of covariates, all measured at the individual level in the survey. For ethnicity and religion, I create dummy variables that indicate whether the respondent is of the same ethnicity or same religion as the chief in their canton. I include measures of other personal characteristics, such as the numbers of years of schooling, age, and family size,⁸ which could affect an individual’s perceptions of risk aversion and thus compliance.

To measure the degree to which wealth, land tenure status, and perceived insecurity might relate to compliance, I create index variables, coded as pre-registered. The land-security index is the sum of responses for those who are nomads, those who have land titles for their houses, and those who rent, rather than own, houses or fields. Individuals in each of these categories would depend less on a chef de canton’s enforcement of property rights than others, because they either do not own any property to enforce rights over, or they have a land title allowing them recourse to the central state’s institutions.⁹ The wealth index represents the sum of responses to several questions: whether a respondent owned a number of different types of goods, whether their roof was metal, their own perceived well-being

⁶In French, the question read: “Si le chef de canton prend une décision qui concerne tout le village ici, vous croyez que: 1) tout le monde le suivra, 2) la majorité des gens le suivront, 3) quelques gens le suivront, 4) peu des gens le suivront, 5) personne le suivra.”

⁷This question was the only observational outcome variable registered in the pre-analysis plan. The plan also included five experimental outcome questions. The data from three of those experimental questions is unusable because a technical problem with the survey software and tablets led to a missing data problem, where missing responses were not randomly distributed. For the other two questions, the research design proposed a difference-in-difference analysis, where the difference between treatment and control would be compared across cantons. However, the number of response choices were limited, and respondents clustered on the same responses, making comparisons of cantons impossible or meaningless.

⁸This variable is the sum of the number of the respondent’s wives and children.

⁹While renters might seem less land secure, unlike villagers who claim to own land, they would not depend on the chef de canton to determine their land allocation.

compared to other Chadians, whether they frequently went without enough food or water, and the amount of livestock owned by their family. The insecurity index represents the sum of responses to questions about whether the respondent has been victim to some types of violence or theft, or whether they have been forced to relocate because of conflict.

To measure the relationship between compliance with the chief and service provision by chiefs, the local government, or NGOs, I create index variables for the number of different services provided by each. Each of these indices represents the sum of responses to questions about whether those types of institutions provided a range of services, such as dispute resolution, aid in the case of crop loss, and services for the elderly. The government-services index represents services available at the sous-préfecture, which is generally the only government office present in these villages. These indices, as presented in the main regression table (Table 6.6), differ from the indices that were pre-registered for these concepts, which appeared not to measure the concepts they were intended to measure. Results including the pre-registered codings of these covariates appear in the section on robustness checks, as does a discussion of the problem with the original coding.

I also include a variable intended to measure the chief's coercive capacity, the chief punishment index. This variable represents the sum of responses to questions about what punishments the respondent expects the chef de canton can use, whether the respondent believes the chef de canton controls his own jail or holding cell, and how many private security officers (goumiers) the chef de canton controls.¹⁰

A final covariate is the individual's opinion of the chef de canton's job performance. This variable is operationalized by adding up the responses to questions about his honesty and whether he is doing a good job. However, this variable should be expected to be highly correlated with the presence of an LDL institution. Thus, including this variable as a covariate represents a hard test for finding a significant relationship between the presence of an LDL institution and compliance.

Regression analysis

The main regression estimates are obtained via ordered logit, given the categorical nature of the dependent variable. Significance of coefficients is determined via standard errors clustered at the canton level, with a total of five clusters. Because the main independent variable of interest – the presence of a *longue-durée* institution – varies at the canton level, this choice is appropriate. Clustering at the village (survey day) level results in tighter confidence intervals and stronger findings of significance. The results are also robust to the use of ordinary-least-

¹⁰Chefs des cantons are permitted to have a specific type of private security officers called goumiers.

squares regression, with clustered standard errors computed analytically or via the wild cluster bootstrap method recommended by Cameron, Gelbach, and Miller (2008), as shown in the following section on robustness checks, which also includes individual-level matching results.

6.8 Evidence on compliance

The data support a strong link between the presence of a *longue-durée* legacy institution and greater expected compliance with the *chef de canton*.

The direct comparison of the outcome variable across the paired comparison of cantons in the Mayo-Kebbi Ouest region supports this claim. As shown in Figure 6.7, the expected compliance is higher in Lagon, with an LDL institution, than in Galgal or Keuni, with CDL institutions. A difference-in-means t-test of the outcome in Lagon when compared with the outcome in Galgal and Keuni shows a highly significant difference.¹¹ This result from the paired comparison supports the proposition that people comply more with *longue-durée* institutions than with *courte-durée* ones.

Table 6.5 shows the results of the outcome variable across all cantons. The results for Abdi and Kognéré – the cantons in the Ouaddaï region – should not be compared directly with the results from the other three cantons – from the Mayo-Kebbi Ouest region – because the regions differ in many systematic ways. Abdi and Kognéré are much less educated, more spread out, larger, and poorer than the other three cantons. Theory and the regression results presented in Table 6.6 suggest that some of these factors may also reduce compliance in the Ouaddaï region, as compared to the Mayo-Kebbi Ouest region.

In the regression analysis shown in Table 6.6, the dummy variable indicating the presence of a *longue-durée* legacy institution has a highly significant and positive correlation with reported compliance. This finding is robust across regression specifications. There is no way to substantively interpret the log-odds coefficient on the variable for two reasons. First, it is impossible to interpret what the difference between “some people” and “most people” would mean on the outcome variable. Second, we should expect responses to the outcome variable to skew uniformly high due to social desirability bias. In sum, regression analysis strongly supports the hypothesis that *longue-durée* institutions are associated with greater reported compliance.

The significance of the coefficient for *longue-durée* legacy institutions in column 4 is particularly striking. That specification includes the measure of the chief’s job performance. As noted above, this measure of job performance was expected to be highly correlated with the presence of an LDL institution. Thus, this specifi-

¹¹ $p = 4.08E-15$. This result is not being driven by the slightly higher number of coethnics in Lagon. Limiting the sample to coethnics of the chief, the results are identical or stronger.

Table 6.5: Outcome variable means by canton, where 5 is universal compliance and 1 is no compliance

	Abdi	Kognéré	Lagon	Gagal	Keuni
Compliance with the <i>chef de canton</i>	4.50	4.56	4.77	4.49	4.58

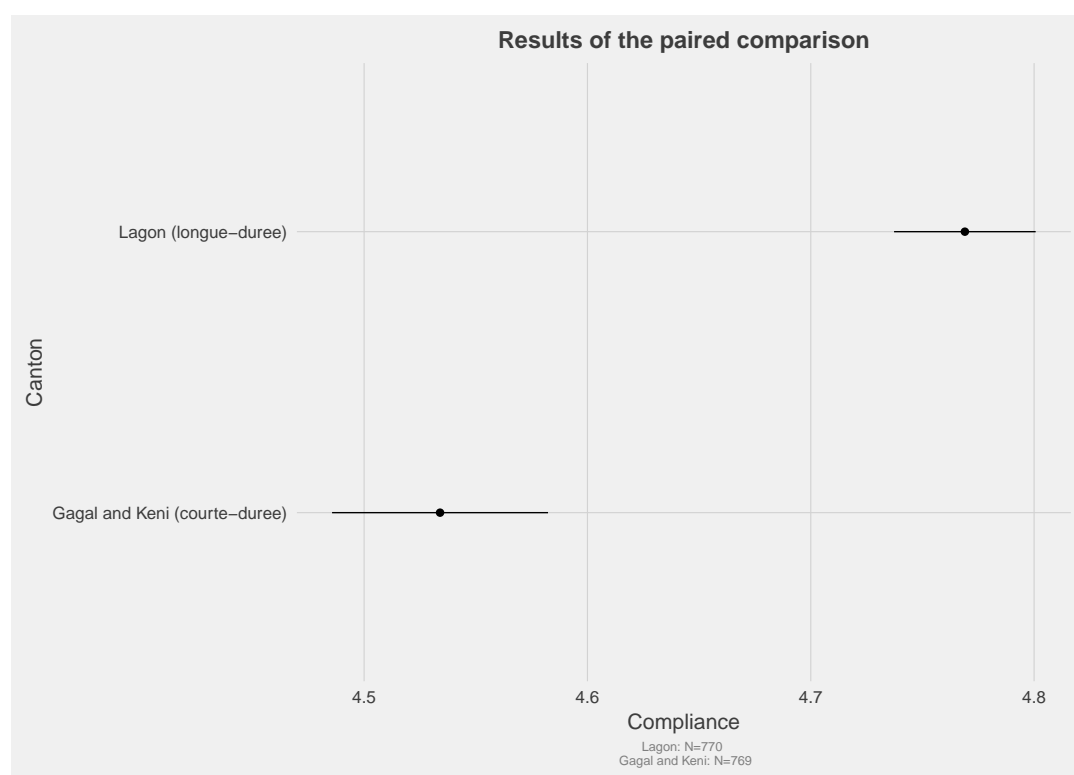


Figure 6.7: Results of the paired comparison

cation represents a hard test to find an association between LDL institutions and compliance.

The strong results for the role of *longue-durée* institutions in compliance contrasts with weak or null findings for other commonly posited drivers of compliance and cooperation, including ethnicity and religion. In the Ouaddaï region, where Arabs were over-sampled to test the role of ethnicity, a t-test between the level of expected compliance among Ouaddaïens (coethnics of the *chefs de canton*) and Arabs (non-coethnics of the *chefs de canton*) does not find a significant difference between the groups.¹² And in the regression analysis, the coefficient is insignificant on the dummy variable indicating that the respondent is the same ethnicity as the chief. Furthermore, individual-level matching of coethnics of the chief and

¹²Outcome for Arabs = 4.52; outcome for Ouaddaïens = 4.57, $p=0.27$

Table 6.6: Ordered logit estimates of longue-duree institutions on compliance

	<i>Dependent variable:</i>			
	Compliance			
	(1)	(2)	(3)	(4)
Longue-duree legacy institution	0.426* (0.192)	0.642*** (0.055)	0.770*** (0.118)	0.560** (0.163)
Same ethnicity as chief	0.386 (0.292)	0.033 (0.181)	-0.139 (0.176)	-0.243 (0.252)
Same religion as chief	-0.696** (0.244)	-0.660** (0.211)	-0.635** (0.227)	-0.436* (0.203)
Years of French-language school		0.095** (0.026)	0.099** (0.024)	0.100*** (0.020)
Years of Quranic school		0.049 (0.041)	0.023 (0.031)	0.013 (0.025)
Land security index		0.183 (0.160)	0.127 (0.142)	0.182 (0.176)
Wealth index		0.028 (0.026)	0.019 (0.027)	0.017 (0.025)
Age		-0.011 (0.007)	-0.009 (0.008)	-0.006 (0.008)
Family size		0.0002 (0.026)	-0.002 (0.029)	0.003 (0.027)
Insecurity index		0.013 (0.321)	-0.044 (0.278)	-0.060 (0.263)
Government services index			-0.310*** (0.065)	-0.206** (0.072)
Chefferie services index			0.082 (0.118)	-0.013 (0.110)
NGO services index			0.393*** (0.050)	0.479*** (0.064)
Chief punishment index			0.063** (0.021)	0.053* (0.021)
Chief job performance				0.348** (0.091)
Observations	2305	2295	2272	2263

Note:

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$
SEs in parentheses, clustered by canton

non-coethnics of the chief in the Ouaddaï sample shows no significant relationship between coethnicity and compliance. Those matching results are reported in Table 6.8. In all, these results suggest that the presence of a *longue-durée* institutions swamps the correlation between coethnicity and compliance.

The coefficient on the dummy variable indicating that the respondent is the same religion as the chief is negative in Table 6.6, contrary to expectations. However, this result should be interpreted with caution, since it is not stable across regression specifications, and the number of respondents in this category is small.¹³ The similarity of results across the majority-Christian sample in Mayo-Kebbi Ouest and the all-Muslim sample in the Ouaddaï region shows that the results presented here are not unique to either religious tradition.

The positive coefficients on the chief punishment index and the insignificance of the coefficient on the index for services from the *chefferie* are in line with the predictions of the theory. Punishment and the expectations of punishment – which would be very difficult to tease apart in this survey setting – are closely tied in with the theory of compliance outlined above. These results fit the theory: more punishment capacity by the chief, as reported by the members of the population, is associated with greater compliance. Furthermore, the insignificance of the coefficient on the index of services from the *chefferie* also corresponds to the theory. The question for the members of the population is not about what services are available; it is about whether the chief can enforce his decisions.

The results are mixed for the roles of services from other institutions. The significant negative coefficients on the index for government services suggests that the presence of the central state serves as a substitute for a *chefferie*. In contrast, the finding that greater access to NGO services is associated with greater compliance with the chief was surprising. One possible explanation for this relationship is that legacy institution leaders or other officials are able to direct NGO services to populations that were previously predisposed favorably toward the *chef de canton*. A different explanation is that NGO services are leading people to comply more with the *chef de canton*, possibly because they believe that noncompliance could jeopardize their access to services.

The strong correlation between years of French-language schooling and compliance suggests that legacy institutions are not challenged by modernity. It is possible that the memorize-and-repeat format of French-language schooling in Chad increases compliance with institutions more generally. It is also possible that succeeding in such a school is a process that selects for more compliant individuals.

¹³One hundred forty-seven out of 1,539 respondents. This regression result suggests that Muslims in the Mayo-Kebbi Ouest region – a minority population, where all the chiefs were Christian – comply at a higher level than their Christian neighbors, holding other factors constant.

6.9 Robustness checks on empirical analyses

The original pre-registered codings of the chefferie services index, the government services index, and the NGO services index also included counts of how many times the respondent had visited each of those institutions to seek services. In the results, the pre-registered codings seemed not to capture the concept they were intended to measure, as the number of visits to the institutions (such as the chefferie) seemed negatively correlated with other measures of the quality and importance of those institutions in those locations. That divergence suggested that the number of visits to an institution did not measure the prevalence of use of its services, but rather that people might have to visit ineffective institutions more frequently in order to accomplish anything. Table 6.10 presents the same ordered logit estimates as Table 6.6, but with the original, registered codings of the services indices.

Tables 6.7 through 6.12 present additional analyses to test the robustness of the correlation between the presence of a *longue-durée* institution and compliance. Tables 6.11 and 6.12 repeat the analysis from tables 6.6 and 6.10 using ordinary-least-squares regression. Table 6.7 presents p-values for the coefficients on *longue-durée* institutions found in tables 6.11 and 6.12, computed by the method of wild cluster bootstrapping of t-statistics, with the null hypothesis (no correlation) imposed, as recommended by Cameron, Gelbach, and Miller (2008). Table 6.8 presents p-values on the “treatment effect” of the presence of a *longue-durée* institution on compliance, as measured by individual-level matching computed via genetic matching (Sekhon 2011). Matching results from the full sample are of questionable validity, because all individuals in the Ouaddaï region are coded as “treated” and are therefore necessarily matched to individuals from the Mayo-Kebbi Ouest region, which is systematically different. For this reason, I also present matching results limited to the Mayo-Kebbi Ouest region, which do not have this problem. Across these different model specifications, matching criteria, and analytic strategies, the main result—that *longue-durée* institutions are associated with higher compliance – holds.

Table 6.9 presents an additional test of whether being a coethnic of the chief is associated with higher compliance. Using individual-level genetic matching, I computed the “treatment effect” on compliance of being a coethnic of the chief in the Ouaddaï region, where ethnic Arabs were over-sampled in order to provide variation on this variable. The results do not support a correlation between coethnicity with the chief and compliance.

6.10 Conclusion

This chapter has presented interview and survey evidence showing that people comply more with *longue-durée* legacy institutions than with *courte-durée* legacy

institutions. Interviews showed that with LDL institutions, people complied because they were confident that everyone else would, while people with CDL institutions were still updating their beliefs about the institution. A paired comparison of otherwise-similar LDL and CDL institutions in the Mayo-Kebbi Ouest region showed that compliance with the LDL institution was higher, both in average responses and using individual-level matching analyses. Regression analysis including LDL cantons in the Ouaddaï region corroborate this finding, with the presence of an LDL institution being associated with higher compliance, even including multiple covariates to control for other factors.

Table 6.7: Wild cluster bootstrap p-values for the coefficients on the presence of a *longue-durée* legacy institution

Model	p-value
Table 6.11 and 6.12, model 2	0.061
Table 6.11, model 3	0.12
Table 6.11, model 4	0.091
Table 6.12, model 3	0.032
Table 6.12, model 4	0.061

Table 6.8: “Treatment effect” of the presence of a *longue-durée* legacy institution computed via individual-level matching

Sample and matching criteria	p-value
Whole sample, matching based on covariates in Table 6.6, model 2	0.034
Whole sample, matching based on covariates in Table 6.6, model 3	0.12
Whole sample, matching based on covariates in Table 6.6, model 4	0.11
Mayo-Kebbi Ouest sample, matching based on covariates in Table 6.6, model 2	0.00016
Mayo-Kebbi Ouest sample, matching based on covariates in Table 6.6, model 3	0.00057
Mayo-Kebbi Ouest sample, matching based on covariates in Table 6.6, model 4	0.0032

Table 6.9: “Treatment effect” of being a coethnic of the *chef de canton*: null finding on ethnicity:

Matching criteria	p-value	Estimate direction
Matching based on covariates in Table 6.6, model 2	0.22	Positive
Matching based on covariates in Table 6.6, model 3	0.59	Positive
Matching based on covariates in Table 6.6, model 4	0.28	Negative

Table 6.10: Ordered logit estimates of longue-duree institutions on compliance, pre-registered codings

	<i>Dependent variable:</i>			
	Compliance			
	(1)	(2)	(3)	(4)
Longue-duree legacy institution	0.426* (0.192)	0.642*** (0.055)	0.708*** (0.113)	0.467** (0.150)
Same ethnicity as chief	0.386 (0.292)	0.033 (0.181)	-0.064 (0.214)	-0.150 (0.236)
Same religion as chief	-0.696** (0.244)	-0.660*** (0.211)	-0.607** (0.187)	-0.411* (0.185)
Years of French-language school		0.095*** (0.026)	0.095** (0.025)	0.093*** (0.017)
Years of Quranic school		0.049 (0.041)	0.028 (0.033)	0.014 (0.027)
Land security index		0.183 (0.160)	0.098 (0.157)	0.167 (0.197)
Wealth index		0.028 (0.026)	0.015 (0.026)	0.012 (0.025)
Age		-0.011 (0.007)	-0.009 (0.009)	-0.006 (0.009)
Family size		0.0002 (0.026)	0.003 (0.028)	0.006 (0.028)
Insecurity index		0.013 (0.321)	-0.063 (0.287)	-0.063 (0.286)
Government services index (as registered)			0.003 (0.018)	0.041 (0.027)
Chefferie services index (as registered)			-0.063 (0.034)	-0.085** (0.025)
NGO services index (as registered)			0.220*** (0.036)	0.271*** (0.056)
Chief punishment index			0.064* (0.028)	0.053 (0.027)
Chief job performance				0.342** (0.080)
Observations	2305	2295	2270	2261

Note:

*p<0.1; **p<0.05; ***p<0.01
SEs in parentheses, clustered by canton

Table 6.11: OLS estimates of longue-duree institutions on compliance

	<i>Dependent variable:</i>			
	Compliance			
	(1)	(2)	(3)	(4)
Longue-duree legacy institution	0.136* (0.060)	0.189*** (0.035)	0.199*** (0.040)	0.142* (0.052)
Same ethnicity as chief	0.103 (0.087)	-0.004 (0.063)	-0.043 (0.056)	-0.063 (0.054)
Same religion as chief	-0.143** (0.046)	-0.125** (0.042)	-0.100 (0.050)	-0.053 (0.059)
Years of French-language school		0.024*** (0.005)	0.023*** (0.004)	0.022*** (0.002)
Years of Quranic school		0.010 (0.008)	0.005 (0.006)	0.002 (0.005)
Land security index		0.023 (0.043)	0.007 (0.036)	0.022 (0.039)
Wealth index		0.006 (0.005)	0.003 (0.006)	0.002 (0.005)
Age		-0.003 (0.002)	-0.003 (0.003)	-0.002 (0.002)
Family size		0.001 (0.007)	0.0002 (0.007)	0.002 (0.007)
Insecurity index		-0.016 (0.078)	-0.037 (0.061)	-0.033 (0.060)
Government services index			-0.061** (0.014)	-0.032 (0.015)
Chefferie services index			0.025 (0.025)	0.0003 (0.020)
NGO services index			0.081*** (0.016)	0.092*** (0.013)
Chief punishment index			0.013** (0.004)	0.010** (0.003)
Chief job performance				0.088*** (0.014)
Constant	4.585*** (0.036)	4.459*** (0.144)	4.333*** (0.125)	3.640*** (0.204)
Observations	2305	2295	2272	2263

Note: *p<0.1; **p<0.05; ***p<0.01
SEs in parentheses, clustered by canton

Table 6.12: OLS estimates of longue-duree institutions on compliance, pre-registered codings

	<i>Dependent variable:</i>			
	Compliance			
	(1)	(2)	(3)	(4)
Longue-duree legacy institution	0.136* (0.060)	0.189*** (0.035)	0.193** (0.051)	0.122* (0.056)
Same ethnicity as chief	0.103 (0.087)	-0.004 (0.063)	-0.027 (0.069)	-0.047 (0.056)
Same religion as chief	-0.143** (0.046)	-0.125** (0.042)	-0.106* (0.039)	-0.059 (0.053)
Years of French-language school		0.024*** (0.005)	0.023*** (0.005)	0.021*** (0.002)
Years of Quranic school		0.010 (0.008)	0.005 (0.008)	0.001 (0.007)
Land security index		0.023 (0.043)	0.005 (0.038)	0.022 (0.041)
Wealth index		0.006 (0.005)	0.003 (0.006)	0.001 (0.006)
Age		-0.003 (0.002)	-0.002 (0.003)	-0.002 (0.003)
Family size		0.001 (0.007)	0.001 (0.007)	0.002 (0.007)
Insecurity index		-0.016 (0.078)	-0.033 (0.067)	-0.028 (0.068)
Government services index (as registered)			0.002 (0.005)	0.011 (0.006)
Chefferie services index (as registered)			-0.012 (0.006)	-0.016** (0.005)
NGO services index (as registered)			0.045** (0.010)	0.050*** (0.006)
Chief punishment index			0.013* (0.005)	0.009* (0.004)
Chief job performance				0.087*** (0.013)
Constant	4.585*** (0.036)	4.459*** (0.144)	4.344*** (0.139)	3.671*** (0.219)
Observations	2305	2295	2270	2261

Note:

*p<0.1; **p<0.05; ***p<0.01
SEs in parentheses, clustered by canton

Chapter 7

Conclusion

This dissertation argues that individuals will comply more with leaders of *longue-durée* legacy institutions than with leaders of *courte-durée* legacy institutions, based on a theory of gradually-increasing compliance and data comparing legacy institutions in Chad. Chapter 2 presents the conceptualization of legacy institutions, which include institutions which are based on longstanding local local traditions as well as other institutions which are sometimes referred to as “traditional” despite their more recent or imported origins. Chapter 3 outlines a gradual process of institutionalization, showing why individuals would take a long time to learn whether it makes sense to comply with the directives of a new institutional entrepreneur. The case studies in Chapter 4 illustrate the theoretical mechanisms from the previous chapter, based on interviews in Chad. Chapter 5 presents my research strategies in Chad, showing how the theory and evidence in this work were shaped by my decisions to work in the same sub-region for an extended period, to live in homes with local contacts, and to work only through local institutions. In Chapter 6, empirical evidence from an original survey in multiple peripheral regions of Chad supports the hypothesis developed in Chapter 3, that individuals should comply with leaders of *longue-durée* institutions at higher rates than with the leaders of *courte-durée* institutions.

I use the term *legacy institutions* to refer to locally-specific institutions which claim socio-political authority over a given group of people and have some independence from the central state. These institutions are more commonly referred to as “traditional,” “customary,” or “informal,” but all of these labels are inappropriate for the range of institutions discussed in this dissertation. Some chieftaincies in Chad, like the *chefferie* in Djodo-Gassa discussed in Chapter 5.2, have relatively recent origins and are not based on any longstanding traditions from the region where they are located. Calling such institutions “traditional” or “customary” stretches those conceptual definitions in potentially misleading ways. Others, like the Sultanate of Ouaddaï, have written records and some official state recognition, meaning that they are not “informal” institutions either. Some of these institutions do have origins with indigenous customs and traditions, like in Léré.

The commonality between all of these institutions is that they are a product of the historical legacy in the place where they are located. In order to have one encompassing concept to facilitate comparisons between all of these institutions, this dissertation refers to them as *legacy institutions*.

I theorize that when an institutional entrepreneur attempts to establish a new institution, the people affected by its rules are initially unsure of whether they need to abide by its directives. Some institutional entrepreneurs would have a greater ability to coerce people into following the new institution's rules than others, yet these differences would not be observable to the people who need to make compliance decisions. Strong institutional entrepreneurs are initially indistinguishable from weaker ones because the weak ones would do anything they could to mimic the signals or investments that the strong type would make. Given that there is nothing that people could see to differentiate strong institutional entrepreneurs from weak ones, the only way they are able to learn whether it makes sense to comply is by observing cycles of disobedience and punishment. However, that probability of punishment would depend not only the strength of the institutional entrepreneur, but also on everyone else's compliance decisions. If very few people are cheating, the likelihood of being caught is much higher than if everyone is cheating. Therefore, the process of updating beliefs by observing punishment would be a complicated information problem, because people would need to know both about everyone else's compliance decisions as well as how many people were punished. Given that people would be likely to get noisy signals, it could take a very long time for people to be sure what type of institution they face. So compliance with strong institutional entrepreneurs would slowly increase. On the other hand, compliance with weak institutional entrepreneurs would slowly decline, leaving them vulnerable to replacement, restarting the clock on the institution's duration. The result is that institutions that have existed for a long duration are likely to be associated with higher levels of compliance than those that have only existed for a short duration.

My research about legacy institutions in Chad is a product of the immersive research strategies I employed. I was able to observe differences between legacy institutions in otherwise-similar areas because of my travels through one subregion over a period of years. By staying in households, I experienced the disconnect between the utter unpredictability of state institutions and the regular and predictable social institutions which kept order in the household and the neighborhood. And relying only on Chadian institutions gave me first-hand experience dealing with governance institutions on the periphery. The theory of how compliance would gradually change as well as the empirical strategy presented in Chapter 5 were shaped by my immersive research approach.

The interview and survey data in Chapters 4 and 6 support the hypothesis developed in Chapter 3: compliance with legacy institutions is higher in areas where the institution has existed for a longer duration. Interviews with individuals in areas with *longue-durée* legacy institutions revealed that people complied, in part

because of how confident they were that everyone would also comply. However, in places with *courte-duré* legacy institutions, responses were more varied, and some people said they were still making up their mind about whether they would need to comply. Corroborating the interview findings, data from an original survey in peripheral regions also shows higher compliance in places with *longue-durée* legacy institutions as compared with *courte-durée* institutions. In a paired comparison of otherwise-similar *longue-durée* and *courte-durée* institutions in the Mayo-Kebbi Ouest region, reported compliance was markedly higher in the area with the *longue-durée* legacy institution. Regression analyses of the entire two-region sample reveal the same association between higher compliance and the presence of *longue-durée* institutions, even when controlling for a host of other factors which might affect compliance.

This finding has practical implications for both scholars of conflict and policymakers in humanitarian and development institutions. For scholars of conflict, groups with non-state institutions capable of compelling compliance would have a clear advantage in organizing rebellion when compared with groups that do not. Considering the existing institutional landscape in conflict-prone areas could help refine predictions about conflict onset. Relatedly, international aid organizations aim to cooperate with local chiefs wherever possible, yet they fail to consider differences among chiefs. One striking example emerged during the author's field research in Dar Tama, Chad. Employees of an international NGO operating in the region said they had met and worked with the local sultan. But they had no idea that many locals considered the current sultan illegitimate, because he came to power in 2007, after the previous sultan had been detained by the central state. For policymakers and scholars in these domains, the findings in this paper suggest that considering institutional duration might improve their predictions and policy choices.

More broadly, this dissertation contributes to the study of institutional formation and change by drawing attention to the relationship between institutional duration and compliance. Adding a dynamic component to the type of "stationary bandit" model pioneered by Olson shows how time factors into institutionalization. Understanding the role of institutions, and how they change, requires going beyond institutional rules and the resources available to enforce them. People's perceptions and expectations – often shaped by long histories – determine how they view any rule, and whether they follow it.

8

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Appendix A

Appendix

A.1 A signaling game with a new would-be strongman

In a stylized environment intended to capture the key features of the context discussed in Chapter 2, I model the tradeoffs faced by a new institutional entrepreneur who wishes to settle down and tax a village, as well as the tradeoffs faced by villagers. The institutional entrepreneur wishes to induce compliance, if possible, and to maximize the rents she can collect. The villagers, stylized as a continuum, produce a quantity of a good each period. Production occurs in unison across the population, so that everyone's production arrives at the same time. An example would be an agrarian society with a single annual growing season. In that example, one period would represent one year. Villagers do not have any capacity for collective action. The villagers want to keep as much of their production as possible, and are unsure whether they can get away with disobeying the institutional entrepreneur.

A.2 The strongman's types and choices

The model begins after the point at which a strongman has decided to attempt to impose a tax on a set of villagers. The strongman has already decided on how much the tax will be and what the punishment will be for villagers who fail to pay the tax and get caught.

There are two types of strongmen: strong and weak. The difference between the types is the fraction of the villagers they can coerce in any single period, represented by θ . The strong type can coerce more of the population in any period than the weak type ($\theta_s > \theta_w$).

I define the strong type as being strong enough that if villagers are sure that they face the strong type, all types of villagers will prefer to pay voluntarily. I define the weak type as being weak enough that if villagers are sure they face the weak type, some villagers will prefer to cheat by refusing to pay. These conditions would

match the question a villager might ask herself when faced with a new strongman: Is this institutional entrepreneur strong enough that everyone will end up paying? This condition depends on how villagers identify the number of cheaters, so formalization of these conceptual conditions comes below in section A.6, as part of the analysis of the number of villagers who cheat.

In the first move of the game, the strongman chooses whether to make a costly investment in a public good which would have two goals: 1) to signal her strength (in terms of his ability to punish individuals) and 2) to increase the overall production of the village and therefore the rents she can extract. In the canonical Olson stationary bandit model, this public good would be protection from roving bandits.

The decision to invest or not is the strongman's only choice in each period. It occurs at the beginning of each period, before the population does its work to make its output, so that the public good could benefit that production. The investment has a cost, represented by C , which the strongman pays if she chooses to invest. This investment also increases the taxable output of the entire village, a benefit to investment represented by B . B is assumed to be greater than C . One might think that the stronger strongman might also be more efficient or effective at producing public good. To allow this possibility, we allow $B_s \geq B_w$.

A.3 The villagers' characteristics, choices, and payoffs

The population of villagers is stylized as a continuum. In each period, each villager produces a quantity of the same good. Each villager's only choice, which comes at the end of the period after observing whether the strongman invests, is to pay the tax voluntarily, or to refuse to pay. Refusing to pay voluntarily, which I also refer to as cheating, comes with a risk of punishment. In order to focus on this choice between paying the tax and cheating, the baseline level of production for each villager is normalized to zero.

Individual villagers would vary in the ways they perceive the cost of the tax relative to cheating for two reasons: 1) people have different levels of wealth and declining marginal utility of whatever good is taxed, and 2) individuals have different risk-aversion. These differences can be viewed as a random draw at the beginning of each period, because in a village context, wealth, family status, and risk aversion change from year to year based on stochastic events like rainfall, crop yields, and illness.

I represent the cost of the tax to an individual villager as τ . Across the population of villagers, the values of τ are drawn from a uniform distribution $(0, 1)$. If a villager pays voluntarily, the cost she incurs is τ . If a villager does not pay, there are two possibilities: The first possibility is that the strongman will not be able to coerce her. In this case, she incurs no cost. The second possibility is that the strongman is able to coerce her. In this case, she pays 1, which is higher than the

maximum possible value of τ . Another equivalent way to conceptualize τ is as representing a villager's discount for paying voluntarily. If a villager draws a low value of τ , that villager strongly prefers paying voluntarily to being punished for cheating. If a villager draws a τ close to 1, that villager only slightly prefers paying the tax voluntarily to being punished.

The probability of getting caught cheating depends on two quantities: 1) the fraction of the population that the strongman can coerce, represented by θ , and 2) the fraction of the population which cheats, which is represented by σ . So if a villager cheats, the probability of getting caught is $\frac{\theta}{\sigma}$ if $\theta < \sigma$ and 1 if $\theta \geq \sigma$.

In sum, after observing the strongman's decision to invest or not, each villager chooses between paying voluntarily and cheating.

The payoff to a villager of paying voluntarily: $-\tau$.

The payoff to a villager of cheating: $-\min\{\frac{\theta}{\sigma}, 1\}$

A.4 The strongman's payoffs

The strongman's payoffs are aggregated to represent the payoffs she obtains from the entire village. The maximum possible value of the tax from everyone, without investment, is represented by V . With investment, this total possible tax value increases to $V + B$.

She collects the same taxes from the villagers who pay voluntarily and the villagers who she is able to coerce. The additional cost she imposes on cheaters neither benefits her nor costs her anything. She collects nothing from villagers who cheat and who she cannot coerce.

Thus the strongman's payoff comes from from two categories of villagers: 1) the fraction of the population that pays voluntarily, and 2) the villagers who do not pay voluntarily but who the strongman can coerce.

If the fraction of villagers who do not pay voluntarily is less than the fraction of villagers that the strongman can coerce ($\theta > \sigma$) then the strongman recoups the maximum possible taxation value village. In this case the probability of being caught for cheating is 1 and the probability of successful cheating is zero.

On the other hand, if the strongman cannot coerce all the villagers who do not pay voluntarily, he cannot obtain the production value from all the villagers. In this case, where $\theta < \sigma$, there exists a third category of villagers: those who successfully avoid taxation. If there are successful cheaters, the fraction of the population that are successfully cheats is represented by $\sigma - \theta$.

Strong type of strongman's payoff with no investment: $\min((1 - \sigma_{\sim I} + \theta_s), 1)V$

Weak type of strongman's payoff with no investment: $\min((1 - \sigma_{\sim I} + \theta_W), 1)V$

Strong type of strongman's payoff with investment: $-C + \min((1 - \sigma_I + \theta_S), 1)(V + B_S)$

Weak type of strongman's payoff with investment: $-C + \min((1 - \sigma_I + \theta_W), 1)(V + B_W)$

These payoffs depend on the number of cheaters, which is endogenous to the other parameters of the model, as well as to villagers' beliefs. Following the next section, which describes villagers' strategies and the number of cheaters, these payoffs are restated in terms of the parameters of the model and villagers' beliefs.

A.5 The sequence of the game

The game proceeds as follows:

1. Nature selects the type of strongman, which is unobservable to the villagers.
2. The strongman chooses whether to make an investment, or not.
3. Villagers choose whether to pay, or not.

At this point, payoffs are realized.

A.6 The villagers' strategies

Each type of villager, with her own draw of $0 < \tau < 1$, will make the choice to pay, or not pay (cheat), after she observes whether the strongman has invested or not. Each villager's strategy of whether to pay or to cheat will depend on whether she believes she is facing a strong type or a weak type. For simplicity, all villagers have the same beliefs.

Before the game, villagers' prior beliefs about the probability that they face a strong type are represented by α . These beliefs can then be updated after the villagers observe whether or not investment occurs. The villagers' updated beliefs that they are facing a strong type if they observe no investment is represented by μ . The villagers' updated beliefs that they are facing a strong type if they observe investment is represented by λ .

Regardless of whether the villagers observe investment or not, their basic choice remains the same: pay a tax, or refuse to pay and risk punishment. The cost of the tax and the cost of the additional punishment for cheating remain the same whether or not the strongman invests. Nonetheless there are two differences between their expected payoffs depending on whether they observe investment. The first is the difference in beliefs about the probability of facing a strong type (λ versus μ). The second is the difference in the fraction of other villagers who will cheat

Table A.1: Parameters and notation

Parameters	
θ_s	Fraction of villagers the strong type of strongman can coerce
θ_w	Fraction of villagers the weak type of strongman can coerce
V	Value of villagers' production to the strongman, no investment
C	The cost of investment to the strongman
B_s	Additional production surplus after investment, strong type
B_w	Additional production surplus after investment, weak type
Continuum of villagers	
τ	The cost to a type of villager for paying voluntarily, ranging (0,1)
Prior beliefs	
α	Villagers' prior beliefs on the likelihood they face a strong type
Updated beliefs	
λ	Villagers' updated beliefs after they observe investment
μ	Villagers' updated beliefs after they observe no investment
Endogenous quantities	
$\sigma_I, \sigma_{\sim I}$	Number of cheaters, with and without investment
τ^*	Type of villager that is indifferent between paying and cheating
Other notation	
$U_s(I)$	The payoff to the strong type of strongman to investing

(σ_I versus $\sigma_{\sim I}$), which are endogenously determined as a function of villagers' updated beliefs (λ and μ) and the other parameters of the model.

If investment is observed, a villager will with a draw of τ will pay if:

$$\tau < \lambda \min\left\{\frac{\theta_s}{\sigma_I}, 1\right\} + (1 - \lambda) \min\left\{\frac{\theta_w}{\sigma_I}, 1\right\} \quad (\text{A.1})$$

If no investment is observed, the equation is identical, except for the value of

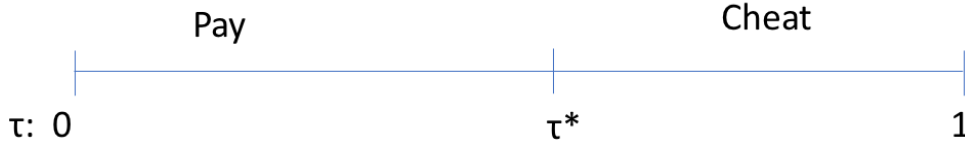


Figure A.1: Who pays and who cheats

σ , and substituting λ for μ . A villager will pay if:

$$\tau < \mu \min\left\{\frac{\theta_s}{\sigma_{\sim 1}}, 1\right\} + (1 - \mu) \min\left\{\frac{\theta_w}{\sigma_{\sim 1}}, 1\right\} \quad (\text{A.2})$$

Identifying the number of cheaters

If there are some villagers who will cheat, there exists a type of villager who is indifferent between paying the tax and cheating. This indifferent villager's type τ will be referred to as τ^* . Villagers whose values of τ are greater than τ^* will decide to cheat, and villagers whose values of τ are lower than τ^* will pay voluntarily.

This type is defined for the case of investment by setting equation 1 equal and solving for τ , so long as the resulting $\sigma_1 \geq \theta_s$. This yields:

$$\tau_1^* = \frac{\lambda\theta_s + (1 - \lambda)\theta_w}{\sigma_1} \text{ if } \sigma_1 > 0. \text{ Otherwise } \tau^* \text{ does not exist.} \quad (\text{A.3})$$

The fraction of cheaters is represented by: $\sigma_1 = 1 - \tau_1^*$.

Now σ_1 can be identified by plugging the equation for τ_1^* into $\sigma_1 = 1 - \tau_1^*$ and solving for σ_1 . This equation yields two solutions for σ_1 .

$$\sigma_1^a = \frac{1}{2} - \frac{\sqrt{1 - 4(\lambda\theta_s + (1 - \lambda)\theta_w)}}{2} \quad (\text{A.4})$$

$$\sigma_1^b = \frac{1}{2} + \frac{\sqrt{1 - 4(\lambda\theta_s + (1 - \lambda)\theta_w)}}{2} \quad (\text{A.5})$$

To visualize the relationship between the number of cheaters and the expected strength of the strongman, it is useful to collapse λ , θ_s , and θ_w into one variable, where $\theta_{\text{expected}} = \lambda\theta_s + (1 - \lambda)\theta_w$. If $\lambda = 1$ or $\lambda = 0$, then θ_{expected} simply represents the value of θ_s or θ_w .

Figure A.2 depicts how σ_a and σ_b are identified. Along the X axis, the number of cheaters increases from zero to one. The Y axis represents the cost to a villager. The downward-sloping straight line represents the cost to each type of villager of paying voluntarily, ordered from highest cost to lowest cost. Thus, the point on the straight line where it intersects with the vertical axis represents the cost of paying

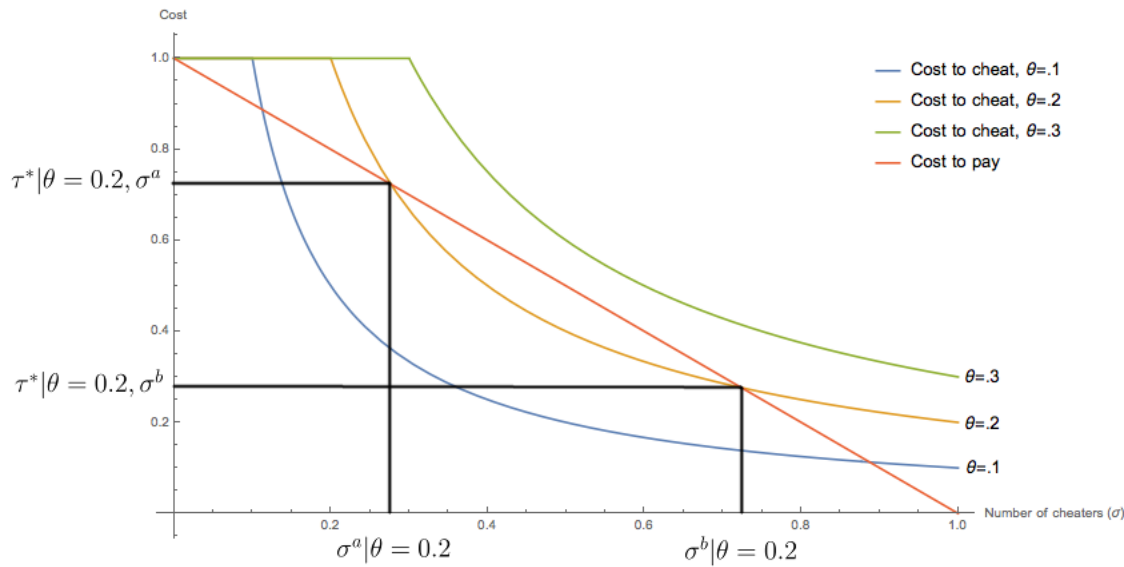


Figure A.2: The number of cheaters and the cost of cheating

voluntarily to the type of individual who is most likely to cheat, while the point on the straight line where it intersects with the horizontal axis represents the cost of paying voluntarily to the type of individual who is least likely to cheat. Each curve represents the cost of cheating to any type of villager, depending on the number of other villagers who cheat, for a given value of θ_{expected} . The two solutions for σ identified above are the points at which a curve crosses the straight line, with σ^a on the left and σ^b on the right.

When the number of cheaters is zero

As the graph shows, sufficiently high values of θ_{expected} yield no intersections, and thus no solutions for the number of cheaters. For these values of θ_{expected} , the cost of cheating is higher than the cost of paying voluntarily for all types of villagers for all possible number of cheaters. Thus in these cases, no villagers cheat. Analytically, this result occurs when the quantity under the radical in the equations for σ_a and σ_b is less than zero. That is, there are no cheaters when:

$$1 - 4(\lambda\theta_s + (1 - \lambda)\theta_w) = 1 - 4\theta_{\text{expected}} < 0 \tag{A.6}$$

This equation shows that there are no cheaters when $\theta_{\text{expected}} > 0.25$.

This quantity is the same for both solutions for sigma. Therefore, regardless of which expression for σ is used, the same ranges of parameters and beliefs result in no villagers deciding to cheat.

The types of strongman, precisely defined

In section A.2, the strong type of strongman was defined as being a type which, if villagers were sure they faced that type, no one would cheat. This condition can be formalized by setting $\lambda = 1$ in equation A.6. Therefore, the strong type of strongman is defined as having $\theta_s > 0.25$.

Similarly, section A.2 defined the weak type of strongman as being a type where some villagers would cheat if they were sure they faced the weak type. Setting $\lambda = 0$ in equation 6 shows then that $\theta_w \leq 0.25$.

Multiple solutions

One of the solutions, σ^a , only exists because of the properties of the villagers being stylized as a continuum. As depicted in Figure 2 and shown analytically in Appendix A, at the indifference point that produces σ^a , the downward slope of the cost-to-cheat curve is more negative than the downward slope of the cost-to-pay line. Conceptually, the slope of the cost-to-cheat curve represents the decrease in the cost of cheating per each additional individual who cheats. The slope of the cost-to-pay line represents the decrease in the cost of paying voluntarily for the individual who is the next most likely to cheat. With the former quantity being more negative than the latter quantity, it means that the the cost to cheat falls more for one additional cheater than the cost of paying voluntarily falls for the individual who is the next most likely to cheat. Thus if this setup were applied to a set of discrete individuals, that individual who was the next most likely to cheat would have an incentive to do so. This is because her decision to cheat would decrease the cost of cheating to be lower than her cost of paying voluntarily.

This problem does not exist at σ^b . Accordingly the remainder of the analysis below in the main text uses σ^b as the number of cheaters. Nonetheless, the result that there are no separating equilibria remains the same whether σ^a or σ^b is used, as noted in that section. Furthermore, a parallel analysis of the game using σ^a is presented in section A.12.

Characteristics of the number of cheaters

This section shows the number of cheaters (σ^b) is decreasing in θ_s , θ_w , λ , and μ .

This appendix presents comparative statics for σ^b and τ^* .

$$\frac{\partial \sigma^b}{\partial \lambda} = \frac{\theta_w - \theta_s}{\sqrt{1 - 4(\lambda \theta_s (1 - \lambda) \theta_w)}} \quad (\text{A.7})$$

Equation A.7 shows that the number of cheaters falls as λ rises, because this numerator is always negative. The result for μ in the case of no investment is iden-

tical, substituting μ for λ .

$$\frac{\partial \sigma_1^b}{\partial \theta_s} = \frac{-\lambda}{\sqrt{1 - 4(\lambda\theta_s(1-\lambda)\theta_w)}} \quad (\text{A.8})$$

Equation A.8 shows that the number of cheaters falls as θ_s rises, because this numerator is always negative. The result for the case of no investment is identical, substituting μ for λ .

$$\frac{\partial \sigma_1^b}{\partial \theta_w} = \frac{\lambda - 1}{\sqrt{1 - 4(\lambda\theta_s(1-\lambda)\theta_w)}} \quad (\text{A.9})$$

Equation A.9 shows that the number of cheaters falls as θ_s rises, because this numerator is always negative. The result for the case of no investment is identical, substituting μ for λ .

Since $\tau^* = 1 - \sigma$, the comparative statics are all opposite: τ^* is increasing in λ , θ_s , and θ_w .

Looking at the equation for σ^b shows that just before the fraction of cheaters becomes zero, it is equal to 1/2. This shows that there is no circumstance under which there are a positive number of cheaters that is less than 1/2 of the villagers.

Combining the definition of the maximum strength of the weak type $\theta_w \leq 0.25$ with the observation that the fraction of cheaters jumps from 1/2 to zero, this maximum strength of the weak type implies that if the number of cheaters is positive, the weak type will not be able to coerce them all.

Villagers' payoffs, updated

Whether or not villagers observe investment, and regardless of the type of the strongman, if they pay the tax, their payoff is the same:

$$U_V(\text{pay}) = -\tau \quad (\text{A.10})$$

If villagers observe investment and choose not to pay, their payoff if they face the strong type is:

$$U_V(\sim \text{pay} | I, \theta = \theta_s) = \begin{cases} -1, & \text{if } \lambda\theta_s + (1-\lambda)\theta_w > 0.25 \\ -\min\left(\left(\frac{\theta_s}{\frac{1}{2} + \frac{\sqrt{1-4(\lambda\theta_s+(1-\lambda)\theta_w)}}{2}}\right), 1\right), & \text{otherwise} \end{cases} \quad (\text{A.11})$$

If villagers observe investment and choose not to pay, their payoff if they face the weak type is:

$$U_V(\sim \text{pay}|I, \theta = \theta_W) = \begin{cases} -1, & \text{if } \lambda\theta_S + (1-\lambda)\theta_W > 0.25 \\ \frac{-\theta_W}{\frac{1}{2} + \frac{\sqrt{1-4(\lambda\theta_S+(1-\lambda)\theta_W)}}{2}}, & \text{otherwise} \end{cases} \quad (\text{A.12})$$

If villagers do not observe investment and choose not to pay, their payoff if they face the strong type is:

$$U_V(\sim \text{pay}| \sim I, \theta = \theta_S) = \begin{cases} -1, & \text{if } \mu\theta_S + (1-\mu)\theta_W > 0.25 \\ -\min\left(\left(\frac{\theta_S}{\frac{1}{2} + \frac{\sqrt{1-4(\mu\theta_S+(1-\mu)\theta_W)}}{2}}\right), 1\right), & \text{otherwise} \end{cases} \quad (\text{A.13})$$

If villagers do not observe investment and choose not to pay, their payoff if they face the weak type is:

$$U_V(\sim \text{pay}| \sim I, \theta = \theta_W) = \begin{cases} -1, & \text{if } \mu\theta_S + (1-\mu)\theta_W > 0.25 \\ \frac{-\theta_W}{\frac{1}{2} + \frac{\sqrt{1-4(\mu\theta_S+(1-\mu)\theta_W)}}{2}}, & \text{otherwise} \end{cases} \quad (\text{A.14})$$

For the parameter ranges for which these payoffs for cheating vary, they are decreasing (costs to cheat are increasing) as θ_S , θ_W , λ , and μ increase. These comparative statics stem from the analysis of the number of cheaters in the previous section. As θ_S or θ_W rise, the numerators increase and the denominators shrink. As λ or μ rise, the numerators remain fixed while the denominators shrink.

Villagers' decision rules

If the number of cheaters is zero, villages will always strictly prefer to pay. The logic is that if there are no other cheaters, punishment is certain regardless of the type of strongman, and punishment is strictly worse than paying voluntarily for all types of villagers. Therefore in the case of investment, if $\lambda\theta_S + (1-\lambda)\theta_W > 0.25$, there will be no cheaters and all villagers will strictly prefer to pay. The same logic applies in the case of no investment, substituting μ in the expression.

If a villager observes investment and $\lambda\theta_s + (1 - \lambda)\theta_w = \theta_{\text{expected}} > 0.25$, she will strictly prefer to pay if:

$$\tau < \lambda \min \left(\left(\frac{\theta_s}{\frac{1}{2} + \frac{\sqrt{1-4(\lambda\theta_s+(1-\lambda)\theta_w)}}{2}} \right), 1 \right) + (1 - \lambda) \left(\frac{\theta_w}{\frac{1}{2} + \frac{\sqrt{1-4(\lambda\theta_s+(1-\lambda)\theta_w)}}{2}} \right) \quad (\text{A.15})$$

Similarly, if a villager does not observe investment and $(\mu\theta_s + (1 - \mu)\theta_w) = \theta_{\text{expected}} \leq 0.25$, she will strictly prefer to pay if:

$$\tau < \mu \min \left(\left(\frac{\theta_s}{\frac{1}{2} + \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2}} \right), 1 \right) + (1 - \mu) \left(\frac{\theta_w}{\frac{1}{2} + \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2}} \right) \quad (\text{A.16})$$

A.7 Types and payoffs of strongmen, updated, with strategies

Sections A.2 and A.4 defined characteristics and payoffs of strongmen, but did so at times in terms of the number of cheaters. Having defined how the number of cheaters depends on other parameters of the model and villagers' beliefs, this section formalizes the payoffs for the strongman in terms of the model's parameters and villagers' beliefs.

Payoffs for strongmen

This section presents payoff functions for both types of strongman, after investment or no investment, in terms of the model's parameters and villagers' updated beliefs. The payoffs in this section are defined with $\sigma = \sigma^b$, for the reasons discussed in the previous section. Payoffs in terms of σ^a are included in Appendix B.

The weak strongman's payoff with no investment:

$$U_w(\sim I) = \begin{cases} V, & \text{if } \mu\theta_s + (1 - \mu)\theta_w > 0.25 \\ (1 + \theta_w - (\frac{1}{2} + \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2}))V, & \text{otherwise} \end{cases} \quad (\text{A.17})$$

The weak strongman's payoff with investment:

$$U_w(I) = \begin{cases} -C + V + B_w, & \text{if } \lambda\theta_s + (1 - \lambda)\theta_w > 0.25 \\ -C + (1 + \theta_w - (\frac{1}{2} + \frac{\sqrt{1-4(\lambda\theta_s+(1-\lambda)\theta_w)}}{2}))(V + B_w), & \text{otherwise} \end{cases} \quad (\text{A.18})$$

The strong type of strongman's payoff functions are more complicated, because there are sets of parameters and beliefs under which individuals would cheat, but a strong type of strongman would be able to coerce them all.

The strong strongman's payoff with no investment:

$$U_s(\sim I) = \begin{cases} V, & \text{if } \mu\theta_s + (1-\mu)\theta_w > 0.25 \\ & \text{or if } \theta_s \geq \frac{1}{2} + \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2} \\ (1 + \theta_s - (\frac{1}{2} + \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2}))V, & \text{otherwise} \end{cases} \quad (\text{A.19})$$

The strong strongman's payoff with investment:

$$U_s(I) = \begin{cases} -C + V + B_s, & \text{if } \lambda\theta_s + (1-\lambda)\theta_w > 0.25 \\ & \text{or if } \\ & \theta_s \geq \frac{1}{2} + \frac{\sqrt{1-4(\lambda\theta_s+(1-\lambda)\theta_w)}}{2} \\ -C + (1 + \theta_s - (\frac{1}{2} + \frac{\sqrt{1-4(\lambda\theta_s+(1-\lambda)\theta_w)}}{2})) (V + B_s), & \text{otherwise} \end{cases} \quad (\text{A.20})$$

These payoffs are increasing in V and B while decreasing in C . Also, the comparative statics on the number of cheaters shown in section A.6 imply that these payoffs are rising in θ_s , θ_w , λ , and μ , up to the point at which there are no cheaters, when they become flat in those variables.

Strategies for both types of strongmen

Each type of strongman, strong and weak, must have a strategy for whether to invest, or not. The strongman makes no other choices.

The strong type of strongman will strictly prefer to invest if: $U_s(I) > U_s(\sim I)$.

The weak type will strictly prefer to invest if: $U_w(I) > U_w(\sim I)$.

A.8 There are no separating equilibria

There are no separating equilibria in this game.

The intuition behind this result is two-fold. First, by definition of the types of strongman, if villagers are sure that they face the strong type, no villagers will want to cheat. This lack of cheaters results in high payoffs to investment for both strong

and weak types, meaning the weak type would then also want to invest and mimic the strong type. Second, if the weak type can profit by investing, the strong type can always profit more by investing, because she can always coerce more non-compliers. Put together, these two conditions mean that there is no equilibrium in which one type of strongman invests and the other does not.

This result is the same regardless of the expression used for the number of cheaters (σ^a or σ^b). Therefore in this section, expressions are written in terms of σ , even though it is endogenously determined by the other parameters of the model and villagers' beliefs. This choice is appropriate because it shows that, regardless of how the number of cheaters is defined, there are no separating equilibria.

No separation with the strong type investing

In a separating equilibrium with the strong type investing, villagers' updated beliefs (λ) after observing that investment would be that they were sure they faced the strong type ($\lambda = 1$). If villagers hold this belief, then the weak type of strongman would strictly prefer to invest as well. This finding falls from the fact that if villagers are sure they face the strong type, no one will cheat. As noted in section 2 and formalized in section 6.3, the strong type is defined such that no villagers would prefer to cheat if they are sure they face the strong type. Therefore, if $\lambda = 1$, then σ_I would be zero. The inequality below identifies the weak type's tradeoff, with the payoff to investing on the left side and the payoff to not investing on the right side. The weak type will also strictly prefer to invest if the inequality below is true.

$$V + B_W - C \stackrel{?}{>} \min\{(1 - \sigma_{\sim I} + \theta_w), 1\}(V) \quad (\text{A.21})$$

The largest possible payoff with no investment would be V . Since $B_W - C > 0$ by definition, then the payoff from investment, $V + B_W - C$, is greater than the largest possible payoff from no investment, which is V . This expression shows that if $\lambda = 1$ and $\sigma_I = 0$, then the weak type of strongman would strictly prefer to invest. Therefore, there is no possible equilibrium where the strong type of strongman invests and the weak type of strongman does not.

No separation with the weak type investing

There is also no separating equilibrium in which the weak type invests and the strong type does not. The logic is that the strong type can always profit more from investment than the weak type if there are any cheaters, because she can coerce a larger fraction of the cheaters than the weak type. And if there are no cheaters, both types of strongman strictly prefer to invest. In other words, if the weak type is at least indifferent between investing and not investing, then the strong type strictly prefers to invest.

This section shows that if the weak type of strongman prefers to invest or is indifferent between investing and not investing, then the strong type strictly prefers to invest. The equations in this section are the same regardless of the number of cheaters. Therefore all equations are written in terms of σ in this appendix, even though it is endogenous to parameters and beliefs.

If $\sigma_I > \theta_w$ and $\sigma_{\sim I} > \theta_w$:

In this case, the weak type's inequality that makes her weakly prefer to invest, with the payoff to investment on the left side of the equation and the payoff to not investing on the right side of the equation, is:

$$\text{Weak type: } V - \sigma_I V + \theta_w V + B_w - \sigma_I B_w + \theta_w B_w \stackrel{\checkmark}{\geq} V - \sigma_{\sim I} V + \theta_w V$$

The equation for the strong type is similar. The question is whether the same inequality is true, that is, whether the strong type would also strictly prefer to invest:

$$\text{Strong type: } V - \sigma_I V + \theta_s V + B_s - \sigma_I B_s + \theta_s B_s \stackrel{?}{>} V - \sigma_{\sim I} V + \theta_s V$$

Simplifying both equations shows that if the weak type weakly prefers to invest, the strong type also strictly prefers to invest.

$$\text{Weak type: } -\sigma_I V + B_w - \sigma_I B_w + \theta_s B_w \stackrel{\checkmark}{\geq} -\sigma_{\sim I} V$$

$$\text{Strong type: } -\sigma_I V + B_s - \sigma_I B_s + \theta_w B_s \stackrel{?}{>} -\sigma_{\sim I} V$$

The strong inequality for the strong type must also be true. The first term is identical. The second term is either equal or is greater for the strong type. The third term is either equal or is greater for the strong type. The fourth term is always greater for the strong type, because $\theta_s > \theta_w$ by definition of the types. And the term on the right hand side is equal for both types. Therefore, in this case, if the weak type weakly prefers to invest, the strong type also strictly prefers to invest.

If $\sigma_I > \theta_w$ and $\sigma_{\sim I} \leq \theta_w$:

In this case, the two types of strongman's tradeoffs between investing and not investing are below, with the payoff to investment on the left side of the equations and the payoff to not investing on the right side of the equations. The question is whether, if the weak type prefers to invest, the strong type also prefers to invest.

$$\begin{aligned} \text{Weak type: } & V - \sigma_I V + \theta_w V + B_w - \sigma_I B_w + \theta_w B_w \stackrel{\checkmark}{\geq} V \\ \text{Strong type: } & V - \sigma_I V + \theta_s V + B_s - \sigma_I B_s + \theta_s B_s \stackrel{?}{>} V \end{aligned}$$

Again, the strong inequality for the strong type must also be true. The first two terms are identical. The third term is strictly greater for the strong type because $\theta_s > \theta_w$ by definition of the types. The fourth and fifth terms are either equal or greater for the strong type. The sixth term is always greater for the strong type. And the term on the right hand side is equal for both types. Again, if the weak type weakly prefers to invest, the strong type also strictly prefers to invest.

All cases when $\sigma_I \leq \theta_w$:

Since $\theta_s > \theta_w$ by definition, in this case $\sigma_I \leq \theta_w < \theta_s$. Therefore, the equation below shows the strong type's tradeoff between investing, on the left side, and not investing, on the right side.

$$\text{Strong type: } V + B_s - I \stackrel{?}{>} \min\{(1 - \sigma_{\sim I} + \theta_s), 1\}(V)$$

The largest possible payoff with no investment would be V . Since $B_s - I > 0$ by definition, this inequality must be strictly true, and the strong type would also strictly prefer to invest. Therefore for all cases when $\sigma_I \leq \theta_w$, the strong type of strongman strictly prefers to invest.

A.9 Equilibria

Three perfect Bayesian equilibria exist for this game: 1) a pooling equilibrium in which both types of strongman invest, 2) a pooling equilibrium in which neither type of strongman invests, and 3) a hybrid equilibrium in which the strong type of strongman invests with certainty, while the weak type of strongman randomizes between investing and not investing. Not all sets of parameter values and beliefs create an equilibrium in this model; this case is discussed below after I identify the equilibria which exist.

This section presents equilibria using $\sigma = \sigma^b$, for the reasons outlined in section A.6. All the same types of equilibria exist using σ^a , for different ranges of parameter values, as defined in Appendix A.10.

Pooling on investment

If it is profitable for the weak type of strongman to invest, it is equally or more profitable for the strong type of strongman to invest. In this case, a pooling equilibrium exists in which both types of strongman invest with certainty. Each villager

will then pay the tax voluntarily if her individual $\tau \leq \tau^*$, or if τ^* does not exist, and not otherwise, where τ^* is τ_1^* or $\tau_{\sim I}^*$, depending on whether or not investment occurred. Villagers would believe $\mu = \alpha$ and $\lambda = \alpha$. This equilibrium exists when:

$$U_w(\sim I|\mu = \alpha) \leq U_w(I|\lambda = \alpha) \quad (\text{A.22})$$

Drawing from equations A.17 and A.18 shows that this happens in two cases. First, this equilibrium exists whenever there are no cheaters at investment based on initial beliefs:

$$\alpha\theta_s + (1 - \alpha)\theta_w > 0.25 \quad (\text{A.23})$$

If there are no cheaters, then both types strictly prefer to invest because $B_w > C$ and $B_s > C$ by definition of the game.

If that equation is not true and there are cheaters, the equilibrium also exists if the weak type is at least indifferent between investing and not investing. This is the case if the benefit to the weak type of investing is greater than or equal to the cost she incurs to make the investment, which is true when:

$$C \leq (1 + \theta_w - \left(\frac{1}{2} + \frac{\sqrt{1 - 4(\alpha\theta_s + (1 - \alpha)\theta_w)}}{2}\right))B_w \quad (\text{A.24})$$

As shown in section A.6, if the weak type is indifferent between investing and not investing, then the strong type strictly prefers to invest. Since equation A.24 shows when the weak type is indifferent between investing and not investing, then that logic shows the existence of this equilibrium.

Pooling on no investment

If it is not profitable for the strong type of strongman to invest, it is strictly not profitable for the weak type of strongman to invest. In this case, a pooling equilibrium exists in which neither type of strongman invests, with certainty. Each villager will then pay the tax voluntarily if her individual $\tau \leq \tau^*$, or if τ^* does not exist, and not otherwise, where τ^* is τ_1^* or $\tau_{\sim I}^*$, depending on whether or not investment occurred. Villagers would believe $\mu = \alpha$ and $\lambda = \alpha$. This equilibrium exists when:

$$U_s(\sim I|\mu = \alpha) \geq U_s(I|\mu = \alpha) \quad (\text{A.25})$$

This equilibrium only exists if there are cheaters based on the villagers' prior beliefs, and the the strong type of strongman cannot coerce them all. If those two conditions are true, then the benefit to the strongman of investing must not be sufficient to cover the costs of investment, or the quantities must be equal. Therefore, this equilibrium only exists if the following three conditions are all true:

$$\alpha\theta_s + (1 - \alpha)\theta_w \leq 0.25 \quad (\text{A.26})$$

$$\theta_s < \frac{1}{2} + \frac{\sqrt{1 - 4(\alpha\theta_s + (1 - \alpha)\theta_w)}}{2} \quad (\text{A.27})$$

$$C \geq (1 + \theta_s - (\frac{1}{2} + \frac{\sqrt{1 - 4(\alpha\theta_s + (1 - \alpha)\theta_w)}}{2}))B_s \quad (\text{A.28})$$

Showing the existence of this equilibrium is the inverse of what is presented in section A.8. If the strong type is either indifferent between investing or not investing or strictly prefers not to invest, then the weak type strictly prefers not to invest. Drawing from section A.8 and inverting the signs:

$$\begin{aligned} \text{Strong type: } & -\sigma_I V + B_s - \sigma_I B_s + \theta_w B_s \stackrel{\checkmark}{\leq} -\sigma_{\sim I} V \\ \text{Weak type: } & -\sigma_I V + B_w - \sigma_I B_w + \theta_s B_w \stackrel{?}{<} -\sigma_{\sim I} V \end{aligned}$$

The strong inequality for the weak type must also be true. The first term is identical. The second term is either equal or is greater for the strong type. The third term is either equal or is greater for the strong type. The fourth term is always greater for the strong type, because $\theta_s > \theta_w$ by definition of the types. And the term on the right hand side is equal for both types. Therefore, if the strong type is either indifferent between investing and not investing or strictly prefers not to invest, then the weak type strictly prefers not to invest.

There is no hybrid equilibrium in which the strong type of strongman randomizes between investing and not investing, because such an equilibrium would lead villagers to believe $\lambda = 1$. As shown in section A.8, that would lead the weak type to prefer to invest, so such a hybrid equilibrium cannot exist.

Hybrid equilibrium

This equilibrium would be a dominated strategy if there was any chance the game would be repeated. This is because, for the weak type of strongman, it would reveal her type as weak, and so she would strictly prefer to pool on investing, an equilibrium which also exists for the same parameter values and would not reveal her type as weak.

If the weak type of strongman is exactly indifferent between investing and not investing, a hybrid equilibrium exists in which the strong type invests with certainty and the weak type randomizes between investing and not investing with probability γ . Each villager will then pay the tax voluntarily if her individual $\tau \leq \tau^*$, or if τ^* does not exist, and not otherwise, where τ^* is τ_I^* or $\tau_{\sim I}^*$, depending on whether or not investment occurred. Villagers would believe $\mu = 0$ and $\lambda = \lambda$ as defined by equation A.30 below.

For this equilibrium to exist, with σ^b , equation A.26 must be true, and the following must also be true:

$$C = (1 + \theta_w - (\frac{1}{2} + \frac{\sqrt{1 - 4(\lambda\theta_s + (1 - \lambda)\theta_w)}}{2}))B_w \quad (\text{A.29})$$

Where

$$\lambda = 1 - \frac{\gamma(1 - \alpha)}{\gamma(1 - \alpha) + \alpha} \quad (\text{A.30})$$

and

$$\gamma = \frac{\alpha(-B_w C + C^2 + B_w^2 \theta_s + B_w^2 \theta_w - 2B_w C \theta_w + B_w^2 \theta_w^2)}{(-1 + \alpha)(-B_w C + C^2 + 2B_w^2 \theta_w - 2B_w C \theta_w + B_w^2 \theta_w^2)} \quad (\text{A.31})$$

For the same equilibrium with σ^a , equation A.29 becomes:

$$C = (1 + \theta_w - (\frac{1}{2} - \frac{\sqrt{1 - 4(\lambda\theta_s + (1 - \lambda)\theta_w)}}{2}))B_w \quad (\text{A.32})$$

Parameter values with no equilibrium

There is no equilibrium when:

$$U_w(\sim I | \mu = \alpha) > U_w(I | \lambda = \alpha) \quad (\text{A.33})$$

and

$$U_s(\sim I | \mu = \alpha) < U_s(I | \lambda = \alpha) \quad (\text{A.34})$$

If these two conditions hold: There is no pooling equilibrium on investing, because the weak type of strongman could profitably deviate by not investing. There is no pooling equilibrium on not investing, because the strong type could profitably deviate by investing. And there is no separating equilibrium with the strong type investing and the weak type not investing, for the reason identified in section 8.1.

This case exists when Equation A.26 is true and the following also holds:

$$\min((1 + \theta_s - (\frac{1}{2} + \frac{\sqrt{1 - 4(\alpha\theta_s + (1 - \alpha)\theta_w)}}{2})), 1)B_s > C > (1 + \theta_w - (\frac{1}{2} + \frac{\sqrt{1 - 4(\alpha\theta_s + (1 - \alpha)\theta_w)}}{2}))B_w \quad (\text{A.35})$$

A.10 Parallel analysis using σ^a

The number of cheaters jumps from 0.5 to zero

Looking at equation σ^a shows that there is no number of positive cheaters that is less than $\frac{1}{2}$.

Villagers' payoffs, updated, with comparative statics for σ^a

The expressions for σ^a would be as follows:

If villagers observe investment and choose not to pay, their payoff if they face the strong type is:

$$U_V(\sim \text{ pay} | I, \theta = \theta_S) = \begin{cases} -1, & \text{if } (\lambda\theta_S + (1-\lambda)\theta_W) > 0.25 \\ -\min\left(\left(\frac{\theta_S}{\frac{1}{2} - \frac{\sqrt{1-4(\lambda\theta_S + (1-\lambda)\theta_W)}}{2}}\right), 1\right), & \text{otherwise} \end{cases} \quad (\text{A.36})$$

If villagers observe investment and choose not to pay, their payoff if they face the weak type is:

$$U_V(\sim \text{ pay} | I, \theta = \theta_W) = \begin{cases} -1, & \text{if } (\lambda\theta_S + (1-\lambda)\theta_W) > 0.25 \\ -\min\left(\left(\frac{\theta_W}{\frac{1}{2} - \frac{\sqrt{1-4(\lambda\theta_S + (1-\lambda)\theta_W)}}{2}}\right), 1\right), & \text{otherwise} \end{cases} \quad (\text{A.37})$$

If villagers do not observe investment and choose not to pay, their payoff if they face the strong type is:

$$U_V(\sim \text{ pay} | \sim I, \theta = \theta_S) = \begin{cases} -1, & \text{if } (\mu\theta_S + (1-\mu)\theta_W) > 0.25 \\ -\min\left(\left(\frac{\theta_S}{\frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_S + (1-\mu)\theta_W)}}{2}}\right), 1\right), & \text{otherwise} \end{cases} \quad (\text{A.38})$$

If villagers do not observe investment and choose not to pay, their payoff if they face the weak type is:

$$U_V(\sim \text{pay} | \sim I, \theta = \theta_W) = \begin{cases} -1, & \text{if } (\mu\theta_s + (1-\mu)\theta_W) > 0.25 \\ -\min\left(\left(\frac{\theta_W}{\frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_s + (1-\mu)\theta_W)}}{2}}\right), 1\right), & \text{otherwise} \end{cases} \quad (\text{A.39})$$

Comparative statics on σ^a

$$\frac{\partial \sigma_I^a}{\partial \lambda} = \frac{-\theta_W + \theta_s}{\sqrt{1-4(\lambda\theta_s(1-\lambda)\theta_W)}} \quad (\text{A.40})$$

Equation A.40 shows that the number of cheaters rises as λ rises, because this numerator is always positive. The result for μ in the case of no investment is identical, substituting μ for λ .

$$\frac{\partial \sigma_I^a}{\partial \theta_s} = \frac{\lambda}{\sqrt{1-4(\lambda\theta_s(1-\lambda)\theta_W)}} \quad (\text{A.41})$$

Equation A.41 shows that the number of cheaters rises as θ_s rises, because this numerator is always positive. The result for the case of no investment is identical, substituting μ for λ .

$$\frac{\partial \sigma_I^a}{\partial \theta_W} = \frac{-\lambda + 1}{\sqrt{1-4(\lambda\theta_s(1-\lambda)\theta_W)}} \quad (\text{A.42})$$

Equation A.42 shows that the number of cheaters rises as θ_s rises, because this numerator is always positive. The result for the case of no investment is identical, substituting μ for λ .

Since $\tau^* = 1 - \sigma$, the comparative statics are all opposite: τ^* is decreasing in λ , θ_s , and θ_W .

Villagers' decision rules (using σ^a)

If the number of cheaters is zero, villages will always strictly prefer to pay. The logic here is that if there are no other cheaters, punishment is certain regardless of the type of strongman, and punishment is strictly worse than paying voluntarily for all types of villagers. Therefore, if $(\lambda\theta_s + (1-\lambda)\theta_W) = \theta_{\text{expected}} > 0.25$, there will be no cheaters and all villagers will strictly prefer to pay.

Thus if a villager observes investment and $(\lambda\theta_s + (1-\lambda)\theta_w) = \theta_{\text{expected}} > 0.25$, she will strictly prefer to pay if:

$$\tau < (\lambda) \min \left(\left(\frac{\theta_s}{\frac{1}{2} - \frac{\sqrt{1-4(\lambda\theta_s+(1-\lambda)\theta_w)}}{2}} \right), 1 \right) + (1-\lambda) \min \left(\left(\frac{\theta_w}{\frac{1}{2} - \frac{\sqrt{1-4(\lambda\theta_s+(1-\lambda)\theta_w)}}{2}} \right), 1 \right) \quad (\text{A.43})$$

Similarly, if a villager does not observe investment and $(\mu\theta_s + (1-\mu)\theta_w) = \theta_{\text{expected}} \leq 0.25$, she will strictly prefer to pay if:

$$\tau < (\mu) \min \left(\left(\frac{\theta_s}{\frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2}} \right), 1 \right) + (1-\mu) \min \left(\left(\frac{\theta_w}{\frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2}} \right), 1 \right) \quad (\text{A.44})$$

Payoffs for strongmen for σ^a

This section presents payoff functions for both types of strongman, after investment or no investment, in terms of the model's parameters and villagers' updated beliefs. The payoffs in this section are defined with $\sigma = \sigma^a$.

The weak strongman's payoff with no investment:

$$U_W(\sim I) = \begin{cases} V, & \text{if } (\mu\theta_s + (1-\mu)\theta_w) > 0.25 \\ & \text{or if } \theta_w \geq \frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2} \\ (1 + \theta_w - (\frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2}))V, & \text{otherwise} \end{cases} \quad (\text{A.45})$$

The weak strongman's payoff with investment:

$$U_W(I) = \begin{cases} -C + V + B_W, & \text{if } (\lambda\theta_s + (1-\lambda)\theta_w) > 0.25 \\ & \text{or if} \\ & \theta_w \geq \frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2} \\ -C + (1 + \theta_w - (\frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2}))(V + B_W), & \text{otherwise} \end{cases} \quad (\text{A.46})$$

The strong strongman's payoff with no investment:

$$U_s(\sim I) = \begin{cases} V, & \text{if } (\mu\theta_s + (1-\mu)\theta_w) > 0.25 \\ & \text{or if } \theta_s \geq \frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2} \\ (1 + \theta_s - (\frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2}))V, & \text{otherwise} \end{cases} \quad (\text{A.47})$$

The strong strongman's payoff with investment:

$$U_s(I) = \begin{cases} -C + V + B_s, & \text{if } (\lambda\theta_s + (1-\lambda)\theta_w) > 0.25 \\ & \text{or if} \\ & \theta_s \geq \frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2} \\ -C + (1 + \theta_s - (\frac{1}{2} - \frac{\sqrt{1-4(\mu\theta_s+(1-\mu)\theta_w)}}{2})) (V + B_s), & \text{otherwise} \end{cases} \quad (\text{A.48})$$

These payoffs are increasing in V and B while decreasing in C . Also, the comparative statics on the number of cheaters shown in section B.3 imply that these payoffs are decreasing in θ_s , θ_w , λ , and μ , up to the point at which there are no cheaters, when they become flat in those variables.

With σ^a Pooling on investment

Everything is identical to Section A.9 except that equation A.24 becomes:

$$C \leq \min \left((1 + \theta_w - (\frac{1}{2} - \frac{\sqrt{1-4(\alpha\theta_s + (1-\alpha)\theta_w)}}{2})), 1 \right) B_w \quad (\text{A.49})$$

Pooling on no investment with σ^a

Everything is identical to Section A.9 except that equations 27 and 28 become:

$$\theta_s < \frac{1}{2} - \frac{\sqrt{1-4(\alpha\theta_s + (1-\alpha)\theta_w)}}{2} \quad (\text{A.50})$$

$$C \geq (1 + \theta_s - (\frac{1}{2} - \frac{\sqrt{1-4(\alpha\theta_s + (1-\alpha)\theta_w)}}{2})) B_s \quad (\text{A.51})$$

Parameter values with no equilibrium with σ^a

Everything is identical to section A.9 except that equation A.35 becomes:

$$\min \left((1 + \theta_s - \left(\frac{1}{2} - \frac{\sqrt{1 - 4(\alpha\theta_s + (1 - \alpha)\theta_w)}}{2} \right)), 1 \right) B_s > C$$

and (A.52)

$$C > \min \left((1 + \theta_w - \left(\frac{1}{2} - \frac{\sqrt{1 - 4(\alpha\theta_s + (1 - \alpha)\theta_w)}}{2} \right)), 1 \right) B_w$$