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**Rule of Law against the Odds:  
Legal Knowledge, Poverty & Compliance along the India-Nepal Border**

by

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

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in

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## **Abstract**

This dissertation seeks to understand whether and how regulatory compliance can be achieved in areas of state weakness. The existing literature suggests that, absent a strong and capable state, compliance with law should be irregular, particularly when legal norms differ from social norms. It also generally assumes that the law is widely known and understood and that all parties are similarly situated to comply with it, assumptions that are untenable in areas of state weakness and where poverty is widespread. Utilizing a natural experiment along the open India-Nepal border, I examine compliance with three different regulations—those related to conservation, education and child labor. My large-N survey and qualitative data indicate that in areas of state weakness inaccurate legal knowledge and widespread poverty are significant barriers to widespread regulatory compliance, but that states that design and implement their regulations pragmatically can work around these obstacles and achieve widespread compliance at relatively little cost. In the cases I examined, regulatory pragmatism involves avoiding bureaucratic principal-agent problems and designing for legal knowledge dissemination via delegated enforcement or through local leaders. It also involves taking steps to reduce the cost of compliance for the poor so that they can afford to both comply and meet their own basic needs. The implications of these findings are potentially far-reaching. They suggest that regulatory pragmatism can guide weak or under-funded states to effective legal design and implementation choices in a variety of contexts. As a result, these states should be able to generate large-scale compliance in the absence of significant state capacity.

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I would like to thank Stu, my family (including my Nepali host-family, with whom I've been staying, whenever I'm in Nepal, for the last 16 years), my co-author Amit Ahuja, and the South Asian Politics Colloquium at UC Berkeley for being there every step of the way. Finally, I would like to dedicate this dissertation to Tom, who was always there, seemingly trying to prevent me from typing every single word.

## **Introduction**

The legal maxim *ignorantia legis non excusat* holds that ignorance of the law does not excuse one from blame for violating its dictates; it also admits, albeit somewhat inadvertently, that many do remain unaware of applicable laws. The law literature, in contrast, has generally assumed that the law is “widely known and understood” (Carothers 1998; Polinsky 1989; Priest 1981; Shavell 1980) and/or that it generates “implicit general deterrence” (Thornton, Gunningham & Kagan 2005) (*contra* Feest 1968; Winter & May 2000). These assumptions are important because law is the primary means by which states create order within their territories and shift individuals from social norms to legal norms or from old legal norms to new ones. If individuals are unaware of a legal norm, they are less likely to comply with it and the state’s project may fail. Knowledge of the law is, therefore, essential to compliance in the many situations in which law does more than simply codify social norms.

In this dissertation I ask how weak states achieve compliance in places where those targeted by regulations have limited means to learn about the law and the main channels through which the state communicates legal requirements are beset by principal-agent problems. Utilizing a natural experiment along the open India-Nepal border, I examine compliance behavior when legal norms and social norms differ—the only context in which we can analytically determine whether a state has the independent ability to produce compliance. The India-Nepal border also provides a setting in which the legal rules and those targeted by them<sup>1</sup> are similar, but state regulatory design and implementation strategies differ. More specifically, with respect to the conservation regulations examined in this dissertation, the Indian state’s approach was legally doctrinaire, emphasizing deterrence, while the Nepali state behaved pragmatically, implementing a system that worked around principal-agent problems—between state and bureaucrats—to foster accurate legal knowledge. I conclude that when a state employs *regulatory pragmatism*,<sup>2</sup> it can foster legal knowledge in the relevant target population. This, in turn, allows it to “punch above its weight” and bring about widespread compliance in even the most unexpected of places.

The introduction to this dissertation proceeds as follows: I first examine the literature, focusing on legal knowledge and its acquisition and providing a foundation for the concept of ‘regulatory pragmatism’. I then go into greater detail regarding the natural experiment at the heart of this project, demonstrate how this natural experiment can answer long-standing questions in the existing literature, lay out my hypotheses, and briefly explain both the design and the methods I used to test them. Finally, I give an overview of my findings and the chapters that follow.

### **I. Literature**

Legal knowledge is a prerequisite for compliance. Consider compliance with the United States tax code, particularly as applied to forms of income and deductions that are not

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<sup>1</sup> A target population is the group of individuals, business or organizations whose behavior is targeted by a particular regulation. It is the behavior of the target population which constitutes compliance, or a lack thereof.

<sup>2</sup> *Regulatory pragmatism* is a flexible—rather than legally doctrinaire or dogmatic—approach to the design and implementation of a regulatory system that is specifically adapted for the context in which regulation will occur.

encompassed by employer withholding. While knowledge of the code itself is certainly not widespread, tax preparation services and lawyers increase the dissemination of this information (Klepper & Nagin 1989; Klepper, Mazur & Nagin 1991). Ordinary individuals and businesses alike make decisions and change their behavior in an effort to both minimize their tax burden and achieve compliance. (Posner 2000). Some even over-comply in response to uncertainty about legal requirements (Alm, Jackson & McKee 1992).<sup>3</sup> They do so despite the fact that the likelihood of an IRS audit for all but the wealthiest individuals is exceedingly unlikely<sup>4</sup> (Posner 2000; Andreoni 1998; Feld & Frey 2007; Hofman, Hoelzl & Kirchler 2008).

Undoubtedly, information helps to foster compliance. This is perhaps why we often assume people know the law when we see them comply with it (Carnes & Cuccia 1996; Webley, Robben, Elffers & Hessing 1991; *contra* Hofman, Hoelzl & Kirchler 2008; Feest 1968). As Feest explains, when someone stops at a stop sign, we often assume she is doing so because she is aware that *not* doing so is illegal, even if she stopped for other reasons (cross-traffic, for instance). Similarly, when we see non-compliance, we often assume it is willful (Feest 1968; *contra* Sorg 2005; Brehm & Hamilton 1996). If someone renovates her home without securing approval from the appropriate authorities, we often assume that she did so intentionally, perhaps to avoid an outlay of both time and money, even if she was actually unaware of the requirement. These inferential problems highlight a fact first brought to the fore by Winter & May (2001): that many do not actually know what the law requires of them and some fail to comply as a result.

This prompts an important question: how do those who have accurate legal knowledge learn about the law? Information about the law is thought to be transmitted in three ways: 1) by the state, directly, through printed materials, including statutes and case law, or through public awareness campaigns (Feest 1968); 2) by experts or other interested parties, including lawyers (Muir 1973; Klepper & Nagin 1989; Klepper, Mazur & Nagin 1991; Hillman 1998); and 3) by the state, indirectly, through its actions and those of its agents, which target populations can observe and use to deduce legal requirements (Thornton, Gunningham & Kagan 2005).

But in order to fully understand legal knowledge acquisition, we need to consider the circumstances under which legal information transmission breaks down. Here an analogy is helpful: the assumption that the law is “widely known and understood” is similar to the assumption of perfect information in economics. As the economics literature has demonstrated at length, asymmetries of information exist and undercut the efficient markets hypothesis, as well as some of the other bedrock principles of modern economic theory. (Akerlof 1970; Stiglitz 1975; Rothschild & Stiglitz 1976; Radner & Stiglitz 1984; Arnott & Stiglitz 1988; Greenwald & Stiglitz 1987; Greenwald & Stiglitz 1988). As Joseph Stiglitz, explains, information asymmetries can be exacerbated by agency problems. (Stiglitz 2000; Stiglitz 2002). In economics, this is the idea that the person who owns the land is different from the one who works the land and that they behave differently as a result of their different positions. In political science, a principal-agent problem exists between the state and its agents, those who do its bidding and through whom it accomplishes its prerogatives. (McCubbins, Noll & Weingast 1987). Most agree that the state’s agents are distinct from the state and have their own set of motivations. (Weingast

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<sup>3</sup> This is something they are positioned to do, despite uncertainty about the law, because they know that a higher payment is likely to constitute compliance

<sup>4</sup> The IRS audit rate for the 2014 fiscal year stood at 0.85% and typically hovers at about 1%.

1984; Cook 1988; Prendergast 2007; Gailmard 2010). As a result, the state's agents can create and perpetuate information asymmetries regarding what exactly the state is demanding with its laws and the penalties associated with non-compliance. This is true in almost any legal context, but it is particularly true when the state is weak and cannot properly train its agents, or when corruption is rampant.

When target populations have little ability to learn about the law on their own, a condition that is common when the state is weak, agency problems are compounded. As the economics literature did earlier, the literatures that examine compliance and rule of law often assume perfect information,<sup>5</sup> largely because this assumption greatly simplifies analysis. Joseph Stiglitz writes that, in economics, it was hoped that “the same optimality properties... that held for economies with perfect information would hold for economies with imperfect information.” (Stiglitz 2000). There was, however, empirical evidence that this was not the case. The same is true with respect to compliance. (Snortum, Berger & Hauge 1988; Beck, Ogloff & Corbishley 1994; Kim 1998). The basic demographics of places where the state tends to be weak, including lack of education and poverty, suggest that the costs of acquiring legal knowledge—information about what the state is demanding and the penalties associated with non-compliance—from the state directly remain high. In addition, anyone who has tried to discern what the law is, even when armed with a law degree, knows that it is a costly endeavor even under the best of circumstances. When legal experts are poorly trained, limited in number or very costly, the cost of acquiring legal knowledge becomes untenable for the average person. That is, unless that person can learn about the law by observing the state.

When the state's agents have reason to transmit accurate information about the law to target populations and to behave consistently with respect to enforcement, they communicate information about the law in the same way that economic actors transmit information: through their observable behavior (Stiglitz 2002). If principal and agent—state and bureaucrat—share similar interests, principal-agent problems are far less likely to develop and state behavior will be consistent, leading to fewer information asymmetries. For instance, in the US, with respect to the tax code, it is assumed that everyone knows roughly what the law is, whether they acquire their knowledge by reading about the law, through experts or by observation; it is also assumed that the interests of the state and IRS agents are similar.<sup>6</sup> As a result, information asymmetries with respect to the tax code are limited and the surprisingly high levels of compliance we see seem to bear this out.

But what happens when the cost of acquiring legal knowledge is high and the interests of the state and its agents vary enormously? In such a situation, target populations are reliant on observation of bureaucrat actions for information about the law and the principal-agent problems that are well-recognized in both the political science and economics literatures come to the fore (Ross 1973; Stiglitz 2002; Moynihan 1998; Weingast 1984; Cook 1989; Prendergast 2007; Gailmard 2010). When principal-agent problems exist, whether they result from poor training or

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<sup>5</sup> This is not as true of the socio-legal compliance literature. See Winter & May 2001.

<sup>6</sup> Note that this may not be true in all cases. In the 2013 U.S. audit targeting controversy, the Internal Revenue Service was accused of disproportionately enforcing the tax code against right wing organizations, seemingly at the direction of IRS agents who pursued their own agenda rather than the state's. After probing the matter, however, the FBI found little evidence to support this claim. See also Hacker & Pierson (2016).



corruption, communication of legal information can get muddled. Some agents, by their actions, send one message, while others, by behaving differently, send a different one (Stiglitz 2002). For instance, enforcement of a law that *does not* exist can lead target populations to believe that it does, while frequent non-enforcement of laws that *do* exist can lead to the opposite result. As a result, asymmetries of legal information grow and target populations often end up with inaccurate information about the law. If individuals do not know what the state's demands are, as well as the penalties associated with non-compliance, they cannot make decisions about whether or not to comply.

These parameters are commonplace in many parts of the world, especially where state capacity is weak. Populations have limited education and cannot read the law themselves; lawyers are poorly trained and often too expensive to provide advice to average people; corrupt officials enforce the law capriciously, resulting in a lack of consistent behavior to watch and learn from. We, therefore, are unlikely to see compliance with the law in weak states unless those states are able to increase education, the availability of affordable lawyers or the consistency with which their agents enforce the law. These are tall, rigid demands for states with limited capacity and, at least at first glance, it appears as if we might as well wait for Godot.

But, even in unexpected places, there are areas where laws, including ones that run counter to customary norms, are followed. Take, for instance, compliance with wood collection prohibitions in Nepal's Chitwan National Park ("Chitwan") and India's Valmiki National Park and Tiger Reserve ("Valmiki"). Individuals living in this region need fuelwood in order to cook and heat their homes, have been sourcing it for centuries from what is now park-land, and have few other sources of fuel. Wood taking prohibitions are, thus, an attempt by the Nepali and Indian states to shift individuals from social norms to legal norms. Unlike areas where the state is strong, however, the states on either side of the India-Nepal border simply do not have the resources to engage in large-scale enforcement, nor have they conducted massive public awareness campaigns regarding these regulations. The populations living in this area have, for their part, little means to learn about wood collection prohibitions on their own, as education levels are low and competent lawyers are expensive and few in number. Despite this, in Nepal in particular, we see surprisingly high rates of both legal knowledge and compliance.

Given that wood taking prohibitions require behavior that differs from that dictated by both social norms and given the massive information asymmetries that exist between the Indian and Nepali states and relevant target populations, how do some people come to know about and consequently obey the law?

### *Regulatory Pragmatism*

Many are able to learn about the law because of the Nepali state's use of *regulatory pragmatism*, a flexible—rather than legally doctrinaire or dogmatic—approach to the design and implementation of a regulatory system that is specifically adapted for the context in which regulation will occur. Such an approach prizes effectiveness and durability over all other goals and typically takes into account on-the-ground realities of state capacity, the irregular behavior of state agents and the needs of populations targeted by particular regulations. In the U.S., regulatory pragmatism is behind the employer income tax withholding requirement and the use

of grandfather clauses for new regulations (Huber 2011). Approaches that do not employ regulatory pragmatism are those that largely rely on threat of legal sanctions and fail to design for regulatory context. Examples of this latter category include regulations that require individuals to desist from activities necessary to their basic survival (Ostermann 2016) or the persistence of 55 mph speed limits on interstates in rural areas of the U.S. (Keeler 1994) long after the 1970's oil crisis had ended and despite dramatic improvements in both highway and vehicle safety.

Though law has long been a province of absolutes and ideals, regulatory pragmatism suggests a middle path. According to William James (1906), pragmatism is a method of settling metaphysical disputes that otherwise might be interminable. Descended etymologically from the Greek word, *pragma*, for action, it has made inroads in law more recently. Though the classical view of law emphasizes argument by analogy and the need for judges to follow an abstract and consistent jurisprudence when making decisions, legal pragmatism emphasizes the need to include a more diverse set of data and claims. For the legal pragmatist all legal issues are grounded in a specific context. As Posner (1995) explains, avoiding context “disconnects the whirring machinery of philosophical abstraction from the practical business of governing our lives and our societies.” Thus, legal pragmatists like Thomas Grey, Daniel Farber, Richard Posner and Margaret Radin emphasize: 1) the importance of context; 2) the instrumental nature of law; 3) the unavoidable presence of alternate perspectives; and 4) the problematical nature of utilizing any particular foundation for legal reasoning.

Regulatory pragmatism is an extension of this line of reasoning beyond the judge's chambers. An effective regulatory system need not be backed by a strong state. It must, however, be grounded in a specific regulatory context and respond to on-the-ground realities and challenges. It must recognize that law is instrumental and that the purpose of law, from the state's perspective, is to produce particular behavior. It must account for alternative perspectives, including those of individuals who believe the law should require entirely different behavior. And, finally, it must be designed to be effective, first and foremost, rather than to be consistent with a particular theory or set of foundations.

In the U.S., the private rights of action that Sean Farhang discusses at length in “The Litigation State” (2006) are an example of regulatory pragmatism. For instance, the environment cannot advocate for itself or hire its own lawyer and it isn't clear that a bureaucracy would cheaply and effectively fill that role. A private right of action in this context gives lawyers an incentive to act as environmental advocates; if they win the cases they bring, they are paid for the time they spend on them. Lawyers rather than bureaucrats become the state's agents and the interests of both are aligned. Regulatory pragmatism is also behind the Amber Alert system used in the U.S. to crowd-source information about child abductions. The time and effort required to for law enforcement to track down a missing child is enormous and costly. The population at large, however, is well-positioned to do so and, importantly, has an incentive to assist. Few are opposed, ideologically or otherwise, to resolving missing child cases and providing information is quick and easy. Principal-agent problems are, thus, unlikely. In the forested border-lands between India and Nepal, where populations are poorly educated and lack access to legal services and where bureaucrats are often corrupt and/or poorly trained, regulatory pragmatism necessarily involves designing for legal knowledge transmission. This means resolving

principal-agent problems by designing around anyone or anything that prevents diffusion of accurate legal information (e.g. bureaucrats who behave inconsistently), as well as designing for observational learning, since education is limited and acquisition from legal experts is unrealistic.

### *Compliance after Knowledge*

Once individuals know what the law demands of them, they are in a position to choose whether or not to comply. To a great degree it goes without saying that if the law requires behavior that aligns with cultural norms or self-interest, many will comply. Thus, the real questions, for those who want to understand the extent to which the state can achieve compliance, are: Can law be used to change norms? And, under what circumstances will people comply with law when compliance requires a costly, non-habitual or non-customary behavior?

The socio-legal compliance literature takes up these questions, examining the circumstances under which law can be used as an instrument of change when the individuals or entities targeted by it are not particularly receptive to the change required. Early figures like sociologist William Graham Sumner (1907) stated that the law must always reflect social practice and predicted that if law-ways were to come into conflict with folk-ways, the latter would surely win. For example, the fact that murder is almost universally categorized as illegal is not problematical because nearly everyone agrees that murder is “wrong” and should be illegal. Meanwhile, the “wrongness” of alcohol consumption in the United States (“U.S.”) has been a far more contested matter. While some segments of the population have always found it to be reasonable and permissible adult behavior, others have found it damaging to public health and/or morality. When the latter group won and the 18th Amendment ushered in the prohibition era, the state struggled to enforce this new law. By all accounts, alcohol remained readily available and large swaths of the population continued to consume it, albeit slightly less openly and with greater risk than before. And, eventually, the 21st Amendment served as an admission of the failure of this seemingly well-intentioned project. So, was Sumner right, that law-ways can’t change folkways? This particular example seems to support Sumner’s position. However, other scholars have pointed to situations in which law *has* changed individual behavior.

For instance, Prothro and Matthews (1963) found that law, in this case state laws that removed poll taxes and literacy tests, did have a positive influence on black voter registration in the south, even before the intrusive remedies provided by the 1965 Federal Voting Rights Act. Later, Orfield (1987) found that the exclusionary rule, which bans improperly collected evidence from a trial record, effectively deterred narcotics officers in Chicago from illegal collection of evidence. Kagan & Skolnick (1993) examined no-smoking ordinances in U.S. cities in the late 1980s and early ‘90s and found that compliance without enforcement was common, but only as abetted by certain circumstances—in this case, infractions were highly visible; cost of compliance was low (which was only temporary); there was not a strong culture of resistance among smokers (by then, generally aware smoking was dangerous to themselves as well as others); non-smokers and businesses, rather than the state, could and would carry out much of the enforcement. Later, Kagan, Thornton & Gunningham (2003) examined corporate performance vis-à-vis environmental regulation in Australia, New Zealand, Canada and the U.S. and found that the behavior of businesses like paper mills—which are highly visible and, thus,

their infractions easily detectable—is fairly susceptible to change by regulation, but that social pressures were instrumental as well. That study and others (for a summary, see Kagan *et al.*, 2012), found that, in addition to fear and social pressure, a sense of duty to comply with law, or with the norm underlying the law in question, often provides a significant incentive to comply. Meanwhile, in contrast, Pager and Western (2009), who took an experimental approach to examining patterns of discrimination in the low-wage labor market in New York City, found that compliance with civil rights and anti-discrimination laws was poor, suggesting that businesses and organizations are not as willing to comply with laws if infractions are not readily detectable and enforcement is difficult and minimal. In such situations, Winter and May's (2001) work on the compliance of Danish farmers with agricultural/environmental regulations suggests that peer pressure, when set against a legal backdrop, may also foster compliance. In sum, according to the compliance literature, the answer to the basic question of whether law can generate compliant social practice despite adversity is: yes, under certain conditions.

According to the standard deterrence model, three main factors drive compliance: **fear** (Gibbs 1968; Jensen 1969; Tittle 1977; Friedman 1975), **duty** (Braithwaite & Makkai 1994; Scholz & Pinney 1995; May 2004), **social license pressure** (Kagan, Thornton & Gunningham 2003). There are then a host of other factors that enhance or detract from the power and effectiveness of these main three. Among them are likelihood of detection (of non-compliance) (Klepper and Nagin 1989), severity of penalty (Klepper and Nagin 1989; Scholz and Gray 1990), cost of compliance in both time and money (Gerstenfeld and Roberts 2000; Yapp and Fairman 2004; Hillary 1995; Bowman, Heilman and Seetharaman 2004), knowledge of the law and of enforcement odds (Gerstenfeld and Roberts 2000; Hillary 1995; Hutchinson and Chaston 1995; Petts 1999 and 2000; Yapp and Fairman 2004; van der Wal et al. 2005), attitude towards and/or treatment by regulators (Braithwaite and Makkai 1994; Yapp and Fairman 2004), attitude towards regulation (Bardach and Kagan 1982; Kagan, Thornton and Gunningham 2003; Tyler 1990; Makkai and Braithwaite 1996; Kagan and Scholz 1984), formal management systems—in the case of businesses, organizations or governments (Palmer and van der Vorst 1996), social pressure (Kagan, Thornton and Gunningham 2003), the belief that others are complying (Coleman 1996; Kagan, Thornton and Gunningham 2003), the saliency of the need for compliance (Gray and Scholz 1991; Siskind 1980; Weil 1996; Ko et al. 2010; Bowman, Heilman and Seetharaman 2004), and formal allowances for self-regulation (Rees 1994). Yet, the evidence for these factors comes largely from places where the state is strong—places where traditional legal enforcement, even if largely not used in practice, retains its deterrent value.<sup>7</sup> In light of this fact, what should we expect to find in areas of state weakness, where principal-agent problems often limit effective and predictable enforcement?

Limited research has examined compliance in such contexts. Gezelius and Hauck (2011), in their examination of compliance with fishery regulations in Norway, Canada and South Africa, explain that the source of a motivation to comply with the law can vary from context to context and, as a result, a state's strategy for ensuring compliance must change accordingly. Boittin (2013), in her study of sex workers in China, reveals that many individuals who break

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<sup>7</sup> Interestingly, the lack of developing world evidence may stem from a bias in academia itself. When preparing to conduct this research, I spoke with legal academics who stated quite plainly that law schools are not interested in hiring individuals who study compliance in the context of the developing world. The same is largely true of Political Science and Sociology Departments.

laws prohibiting prostitution often do so out of necessity, but, interestingly, that poverty-driven non-compliance does not imply rejection of the legal system in other contexts. James Scott (1987) and Mauricio Villegas (2012) find that attitudes towards the law and the state are often different in areas of state weakness and that responses to same reflect this fact.

Against this backdrop, Kagan, Thornton and Gunningham (2012, 2005, and 2003) tell us that enforcement, even if only used against a small percentage of the regulated, is important for getting the rest of a given target population to comply. This assertion suggests that state capacity need not be terribly great in order for deterrence-based enforcement to work. But it also, I believe, assumes that deterrence works similarly for all individuals and organizations, an untenable assumption in contexts in which many of the individuals in the population targeted by a particular regulation desperately need the very resource they are prohibited from taking from a relatively accessible source. Sibley (2005), Pogarsky (2009), Piquero et al. (2011) and, in particular, Christine Parker's (2013) recent work on cartel compliance with financial regulation suggest as much. Parker finds that elite and non-elite actors are situated differently with respect to the law, at greater or lesser distance from it, and, as a result, are more or less susceptible to deterrence. Parker (2013) builds on Peter May's (2005) conclusion that individuals are often differently motivated towards compliance, Tetty Havinga's (2006) finding that private entities can have more of a deterrent effect than public ones, Judith van Erp's (2011) argument that corporate perceptions of sanctions are socially embedded, and her own work with Viebeke Nielson (2011), which suggests that a "business case" for compliance can be as important as deterrence in terms of determining behavior. Each of these pieces suggests that deterrence is in the eye of the beholder. And, yet, none of these authors consider cases in which enforcement is nearly impossible given resource and other constraints. This dissertation takes up this latter issue: what happens when limited state capacity means that enforcement is nearly non-existent and when target populations have little to lose and quite a bit to gain from non-compliance? Are there ways to overcome the poverty problem (i.e. target populations situated in such a way that deterrence, even if it existed, would likely not work) and generate compliance against the odds?

A growing literature suggests that developing-world actors still conduct cost benefit analyses when considering compliance, but that their analyses may have more and different factors, particularly with respect to environmental issues, than those of their developed-world counterparts. In a study of illegal pesticide use in China, Yan, Rooij and van der Heijden (2015a) find that farmers are more likely to respond to operational costs and benefits than deterrence when considering non-compliance. Schmidt and McDermott (2015) add that non-compliance with deforestation laws in the Amazon basin is associated with both stress and the perception that legal processes are contradictory, often because of inconsistent local law enforcement. Tacconi (2007) finds that the subjective interpretation of which forest practices are 'harmful' can lead to non-compliance with related laws. Along the same lines, Pendleton (2007) shows that non-compliance with conservation regulations was only subjectively considered illegal when it met certain community-level, extra-legal criteria. This may be because, as Yan, Rooij and van der Heijden (2015b) point out in a separate paper on compliance with pesticide regulations, motivations for compliance are not necessarily different from those for non-compliance, but that deterrence may be more important to the former than the latter.

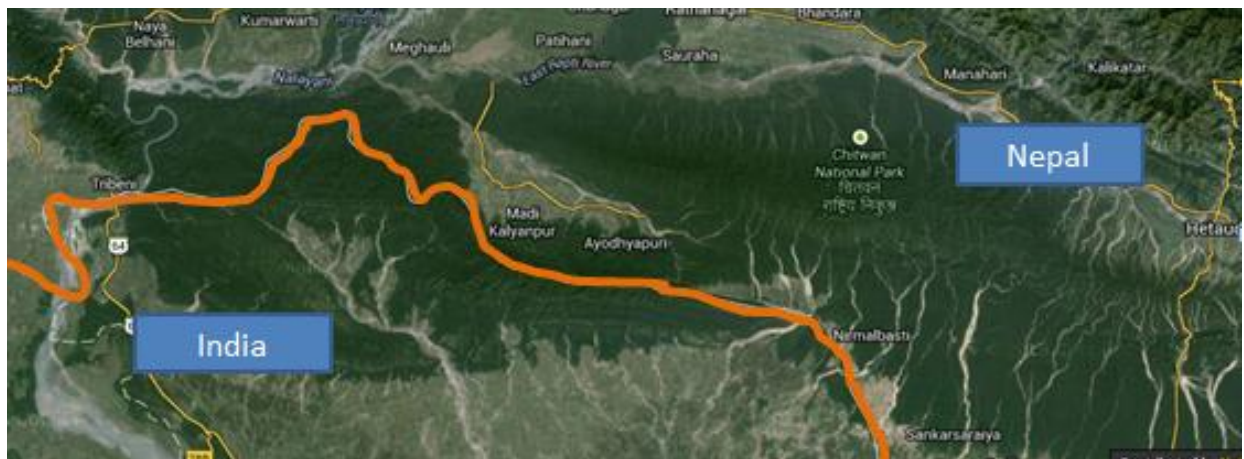
Despite the complicated cost-benefit analysis that developing-world actors must consider when choosing whether or not to comply with conservation regulations, a number of papers suggest that compliance with these types of regulations is possible. (Barr 2000; Contreras-Hermosilla 1997, 2000, 2007). This literature, however, provides limited empirical evidence for the claims it makes and instead relies largely on “best practices” evidence derived from years of policy-promotion work.

To get a better handle on whether weak states can generate compliance with conservation laws in spite of widespread poverty, I conducted research in a region in which the states involved have relatively weak deterrence-based enforcement capacity. Thus, this area is one in which the *a priori* likelihood that members of the target population will feel a strong duty to obey state-propounded regulations is low. In other words, I conducted research in places where legal norms’ chances, vis-à-vis social norms’, are quite unfavorable—a so-called “hard case.”

## II. The Natural Experiment

Experimental methods, originally the province of the “hard” or “natural sciences,” have proven to be useful for testing causal hypotheses in the social sciences as well. To date, however, few have used experimental approaches to study law. Doing so is often unethical or simply too difficult. In contrast, *natural* experiments—admittedly rare and often difficult to find—present few of the same obstacles. This paper utilizes the natural experiment created by the open India-Nepal border to consider the consequences of different design and implementation strategies for the same basic regulations.

**Figure I. Satellite Map of the Study Region**



More specifically, I use the India-Nepal border, a border which is and has been open for as long as record have been kept, to study regulatory pragmatism and to determine whether strategies consistent with this approach bring about legal knowledge and compliance more effectively than legally doctrinaire tactics.

The border was first formally delineated like many other colonially drawn borders: on a semi-random basis by the British when they ceded back territory that they took from Nepal

during the Anglo-Nepal War (1814 to 1816). Due to the subsequent India-Nepal Peace and Friendship Treaty, residents of this region have been permitted to cross the border, unimpeded by legal restrictions, for as long as it has existed. Indians and Nepalis need not present documentation to cross and they do so to work, shop, and marry. As a result of the unusual relationship that India and Nepal have enjoyed along their border, the populations living on either side of it do not differ significantly: the same ethnic group (Tharu) is dominant, individuals generally speak the same set of three languages (Bhojpuri, Nepali and Hindi), and people are generally poor and uneducated. Many of those living in Nepal are originally from India. Some Nepalis also live across the border in India.

In addition, the India-Nepal border is a region in which the *a priori* likelihood that members of the target population will have knowledge of those state-propounded laws that differ from customary norms and feel a strong duty to obey the former is low. This is, in part, because state capacity—at least at the local level—does not vary as one travels across the border. Up until recently, this border region was plagued, both in India and Nepal, by Maoist insurgencies. During these conflicts, the state almost ceased to exist at the local level. In the intervening time, the Nepali and Indian states have re-entered the region, but only minimally: signs of the state remain limited.

The most notable state projects in this region are Chitwan National Park, in Nepal, and Valmiki National Park, in India. Contiguous and divided only by the border, these parks are ostensibly managed for the same purposes: to protect endangered big-game species and to protect the environment in which they reside. Both parks employ the same total prohibition on wood collection, a prohibition that runs counter to both customary norms<sup>8</sup> and the self-interest of many in the region. Residents have been collecting wood from what is now park area for centuries, if not millennia—and refraining from doing so means that they have difficulty cooking and keeping warm during the winter.

Distributing legal knowledge is challenging on both sides of the border. Implementation budgets are limited and do not allow for large-scale awareness-raising campaigns. Individuals generally lack the means to read the law themselves or to acquire knowledge from experts. The states on either side of the border do not consistently punish wood collection, behavior that would communicate information about this legal norm to the populations targeted by it. Agents of the Indian and Nepali states' are charged with enforcement across thousands of square kilometers of jungle augmented with only minimal infrastructure. Whether because of the difficult terrain, lack of will, poor training or corruption, these agents, regardless of the state that employs them, often behave inconsistently when enforcing wood-taking prohibitions.

Some individuals living in this area have, however, been exposed to an implementation strategy that embodies regulatory pragmatism. In Nepal, the state has delegated management of some government-owned forest land just outside Chitwan to "User Groups," groups of citizens who come forward with an approvable plan to sustainably manage nearby forest resources. Nepal's Community Forestry Program allows citizens to create consistency where the state struggles to do so, thus communicating legal norms more effectively than that state might do on its own. The contrast between the state's inconsistent enforcement of wood collection

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<sup>8</sup> These customary norms are often cultural in origin.

prohibitions in Chitwan, where wood collection is illegal, and the consistent, penalty-free access to wood in Community Forests, where wood collection is allowed, may allow target populations to develop more accurate understandings of the law. This strategy should, at least *ex ante*, foster accurate legal knowledge. India, in contrast, has used a more traditional, deterrence-based approach. I exploit this variation in policy implementation strategy to discern whether policies consistent with regulatory pragmatism can improve legal knowledge and lead to higher compliance rates.

### III. Hypotheses

In this dissertation I examine two distinct sets of hypotheses related to the proposition that regulatory pragmatism can guide states to design and implementation strategies that are capable of achieving high rates of compliance in spite of state weakness. The first relates to the production of accurate legal knowledge. The second relates to the amelioration of poverty-driven non-compliance. I explore each in turn below before turning to shadow cases.

#### *a. Accurate Legal Knowledge*

How do populations that live along the India-Nepal border know what the law is, particularly when it differs from cultural norms? The simple answer is that many of them do not. I find that, overall, 61.5% of my respondents hold *inaccurate* understandings of the wood-taking prohibitions in place in Chitwan and Valmiki. Yet, many individuals seem to want to avoid legal penalties—and the state more generally. This motivates them to try to determine the legal requirements that affect their lives in whatever way they can, using whatever resources available to them.

But what does this mean in practice? Individuals improve their guesses by constructing and iteratively reconstructing what the law “must be” based upon the information available to them at any particular moment. Individuals seem to draw information for updating from many different sources, ranging from prior interactions with the state, to their beliefs about what types of regulations the state might make, to what amounts to rumors circulated by neighbors and friends regarding legal requirements. The result is an individually held understanding of what type of behavior is required or prohibited in a given situation that may or may not be accurate depending upon the pattern of observations and interactions that individual has witnessed.

The state and its actions are important sources of information regarding the law. In my open-ended interviews, I asked respondents how they determine whether something is illegal. The overwhelming sentiment was that something that incurs a negative government reaction is illegal. One respondent described the fact that when she rode her scooter out to the main road a policeman stopped her and told her that she had to wear a helmet; he then made her pay a fine. As a result, she believed that not wearing a helmet on a scooter was illegal. Another respondent described the fact that the government had forced her to move her house during a road-widening campaign; she concluded that it was illegal to have your house too close to the road. Interestingly, when I asked respondents how they tell if something is legal, I received far fewer elaborations and many were unsure how to tell if something is legal other than to do it and see if punishment follows; if it does not, then that action is allowed. Some suggested that one can ask



family and neighbors, but few came up with a definitive answer, save for one older man who sagely observed that “everything is legal unless the government makes it illegal.”

Along the same lines, those who knew someone who took a particular action and was punished tended to believe that the punished behavior was illegal, while those who knew someone who took the same action and was not punished believe it to be legal. As one respondent put it, “Sometimes your friend gets in trouble for something and he tells you about it. My friend had too much alcohol and tried to get on the bus. The driver would not let him and said he would call the police. My friend had to stay the night at the bus stand. Now I know that you can’t get on the bus if you are drunk.” Another respondent stated that many of her neighbors had hired a local man to tap into the electric line for them and that she had thought this was legal, but that when the government came around to replace the electric poles, it removed all of the lines that the local man had created and only left the ones that the power company had put in place; as a result, she concluded the local man had acted illegally. Something that seemed legal, due to its commonplace nature, transformed into something that seemed illegal because of the consistency with which her neighbors had lost both their electricity connections. The state’s inconsistency, then, can prevent even careful observers from developing accurate legal knowledge. States that employ regulatory pragmatism and avoid both principal-agent problems and the resulting inconsistency stand a much better chance of doing the opposite. I develop this idea more fully below.

In a low-information environment and when target populations are poorly educated, one would expect that principal-agent problems and the resulting inconsistent behavior ensure that misunderstandings of legal requirements remain pervasive. When the state punishes or appears to punish a particular action some of the time, while failing to punish the same behavior at other times, these mixed signals propagate through the legal understandings of the relevant target population. Those who have been punished or have seen or heard about others being punished, receive information that suggests that the punished behavior is illegal. Many of these same individuals will later receive conflicting information and this may cause them to question their original assumptions, as well as to update them based upon new information. In this way, when principal-agent problems result in inconsistent state behavior, inaccurate legal knowledge can be widespread.

#### *b. Accurate Legal Knowledge in the Absence of Consistent State Action*

But if individuals struggle to learn about the law themselves and the state’s principal-agent problems prevent consistent action, is non-compliance a foregone conclusion when legal norms differ from social norms? Regulatory pragmatism suggests at least two strategies that may be able to foster accurate legal understandings: delegated enforcement and information transmission through local leaders. Delegated enforcement can mimic consistent state action with respect to a particular law and, in so doing, help foster accurate legal understandings. Leaders can make information about the law more trustworthy and believable.

#### *Delegated Enforcement*

States employing regulatory pragmatism may be able to circumvent principal-agent problems by delegating enforcement responsibility to *different* agents. If there are individuals,

groups, and organizations at the local level that have the capacity to consistently carry out certain proscribed tasks, possibly under government oversight, and have reason to want to take over these tasks, a state that employs regulatory pragmatism may be able to take advantage of this resource and get help in carrying out its prerogatives by outsourcing specific functions to citizens and/or civil society. In this way, a state that has only minimal capacity can “punch above its weight” and reap the associated benefits without incurring tremendous costs. So long as the parties to whom responsibility is delegated benefit when they realize compliant behavior, more accurate legal knowledge and higher rates of compliance should result.

The psychology literature is helpful in terms of understanding how such an arrangement might foster accurate legal knowledge. Constructivist learning theory, which is based upon concepts first introduced by Dewey (1938), Vygotsky (1962) and Piaget (1967), suggests that individuals, when learning or trying to learn, construct knowledge out of their experiences by continually making and re-making their sense of truth and reality. As individuals have new experiences, they update their knowledge accordingly. Piaget focused, at least initially on children and argued that as children learn they use the processes of accommodation and assimilation to construct and then re-construct their world view and understanding of how particular aspects of the world work. Learning about the law may well follow a similar pattern. As individuals go about their daily business, my qualitative evidence indicates that they do focus on the state’s behavior and their own when trying to determine what is legal and what is not. As they have new experiences, they update their understandings to reflect newly acquired information. In this way, consistent state action helps individuals to gain accurate information and inconsistent state action does the opposite. If the state were to delegate enforcement to an individual or group that could behave more consistently than itself, it follows that this increased consistency should help individuals to construct more accurate legal understandings.

Turning to the case at hand, those with Community Forest access have been able to observe, first hand, the relatively consistent availability of penalty-free wood collection in Community Forests and the state’s inconsistent enforcement of wood-taking prohibitions in Chitwan. This contrasting information should be helpful for the development of accurate legal understandings. Meanwhile, those without Community Forest access are forced to resolve discrepancies between observed or reported enforcement behaviors of individual bureaucrats over time, a situation which could just as easily resolve into inaccurate understandings as accurate ones. The former slate of contrasting information is easier to resolve into an accurate legal understanding of wood-taking restrictions than the latter.

In light of the above, I hypothesize that low state capacity need not result in non-compliance, even when legal norms differ from social norms. States that use regulatory pragmatism to guide their regulatory design and implementation decisions can achieve high levels of compliance. However, in order for legal institutions to work under these circumstances, states must overcome the obstacle presented by their own principal-agent problems and the attendant widespread misunderstandings of the law. When a state cannot get its agents to behave consistently, it may still be able to deliver legal knowledge if it can design a system that circumvents principal-agent problems and the attendant information asymmetries.

More specifically, in the case at hand, the Nepali state has delegated management of and enforcement in Community Forests, wooded areas just outside of Chitwan, to “User Groups” from the community. Individuals who have access to a Community Forest are, thus, exposed to delegated enforcement and are able to observe the contrast between the norms in place in Community Forests and in Chitwan. I therefore expect to find higher rates of compliance on the Nepal side of the border and, in particular, amongst those who have been exposed to delegated enforcement.

### *Information Transmission through Local Leaders*

Individuals can, of course, also learn about the law themselves, so long as they have the requisite skills: education. But in most locations, this last statement should read “legal education,” as determining what the law is has quite a bit to do with knowing where to look for it and how to read statutes and, in common law jurisdictions, case-law. Possession of these skills is not common amongst average citizens. As a result, lawyers are thought to be the primary, though indirect, source of legal knowledge. Muir (1973), writing about prayer in public schools, finds lawyers to be one of the agents responsible for distributing information about the law and key proponents of the attitude changes that some laws are designed to bring about. However, if lawyers are not present at the local level, or are either too costly or poorly educated, then they cannot serve as sources of accurate legal knowledge. This is the case in rural South Asia, as well as in many other places in which the state is weak.

There are, however, individuals who are situated in such a way that they might, at least partially, fill the role of lawyers in terms of distribution of legal information: local leaders. In rural South Asia, local leaders often act as information distribution agents and frequently achieve their positions, whether formal or informal, because of their perceived connections to the state. These are individuals who know the right person to talk to within the government or the right place to go when, for instance, an individual needs to procure a voter ID card. They are trusted and the information they provide is considered credible. Wilson and Rhodes (1997) use a formal model to demonstrate that leaders play an important role in distributing information and coordinating followers. Along these same lines, Dixit (2003) and Banerjee et al (2010) show that, when the state is weak, trusted contacts can facilitate information sharing; indeed, when they do so they can further informal institutions that are capable of providing law, order, and other services. Varshney (2003) and Bhavnani et al (2009) also recognize the power of local leaders in information distribution and demonstrate that these individuals need *not* act as agents of the state. It follows that local leaders, if they can be persuaded to act on the state’s behalf, may be able to at least partially fill the information distribution demand that remains unmet in the absence of an active, affordable and well-educated legal profession at the local level.

In light of the above, I expect that even in areas of state weakness institutions *can* generate compliance from a variety of different target populations. However, in order for legal institutions to work under these circumstances, state and/or non-state actors must use regulatory pragmatism to overcome the obstacle presented by widespread misunderstandings of the conduct required or prohibited by law. States may be able to do so in at least two ways: by delegating enforcement to interested parties or by communicating information about the law to target populations through local leaders.

To test these hypotheses, I first establish, in Chapter 2, that the states on either side of the border generally behave inconsistently with respect to enforcement, suggesting that principal-agent problems are rampant in both India and Nepal (at least in this region). I then examine the distribution of accurate legal understandings and compare the compliance behavior of those who possess them with those who do not. In Chapter 3, I use data on Community Forest Access to determine whether delegated enforcement can, as hypothesized, significantly influence the accuracy of legal knowledge. I also use a field experiment to determine whether local leaders can influence the accuracy of legal understandings, comparing the legal knowledge of those who received accurate information from a local leader to a control group and to those who received accurate information via a written statement. Finally, in Chapter 5, I seek to confirm these findings by examining shadow cases involving compliance with teacher-student ratio regulations in private schools and compliance with child labor regulations in brick kilns.

*c. Poverty-Driven Non-Compliance*

Once individuals hold accurate legal understandings, fear and duty work as one would expect them to. The majority of my respondents are motivated by either fear or duty to comply with wood-taking restrictions and there is no significant difference between the rates at which my respondents report these motivations when I sub-set them into those who hold accurate understandings of the law and those who do not.<sup>9</sup> Thus, we should expect large scale compliance amongst the former. That is, unless there is poverty-driven non-compliance. Even if efforts by the state or other non-state actors have affected accurate understandings of the conduct required by law and brought about a threshold attitudinal change in the target population's consciousness, many individuals, businesses and organizations in the developing world will still fail to comply. Why? Doing so is often so costly that it would undercut the abilities of these individuals, businesses and organizations to meet their own basic needs.

Indeed, an individual might comply with a particular law or regulation because compliant action either aligns with or doesn't undercut that individual's pursuit of her/herself-interest (Pearce and Tombs 1990; Pearce and Tombs 1997; Pearce and Tombs 1998; Parker 2002; Molnar et al 2004). For instance, at least in theory, an individual who has ample material resources is less likely to break a law that prohibits stealing than an individual who has few resources and is desperate for, say, food. This means that while "in its majestic equality, the law forbids rich and poor alike to sleep under bridges, beg in the streets and steal loaves of bread,"<sup>10</sup> all individuals are not similarly situated to comply.

Throughout much of the developed world, poverty is fairly low and thus, we can assume that non-compliance owing to poverty alone must also be relatively low. The fact that such a relatively small percentage of the population is poor means that deterring or motivating these

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<sup>9</sup> Two tangential points may be of interest here. The first is that the Indian and Nepali states, despite minimal capacity, have managed to generate these motivations, suggesting that state capacity may not be to blame in the many situations throughout the world in which weak states do not manage to generate rule of law. The second is that individuals are motivated to comply, even if they hold inaccurate understandings of what might constitute compliance, suggesting that distribution of accurate information in areas plagued by non-compliance, when combined with consistent state action, might make a difference in overall compliance rates.

<sup>10</sup> Anatole France 1894: "*La majestueuse égalité des lois, qui interdit au riche comme au pauvre de coucher sous les ponts, de mendier dans les rues et de voler du pain.*"

individuals away from non-compliance is somewhat manageable<sup>11</sup> given the strength and resources that most developed world states possess. In a place like India or Nepal, where more than half of the population is poor, the effort required to deter or otherwise motivate individuals away from poverty-driven non-compliance would be quite high. Such a high degree of effort/cost would be unmanageable for these states, because it represents such a significant portion of GDP and state resources. In contrast, states with ample resources have many options at their disposal to motivate compliance. Some choose to manipulate the incentives that individuals face so that individual pursuit of self-interest and compliant behavior are not mutually exclusive, thus aligning the self-interest of a larger swath of the population with compliant behavior. The financial capacity of regulated entities to comply with existing or proposed laws has been shown to affect the design of regulatory programs in the United States (Kagan *et al* 2008; Huber 2011). Examples of such efforts include tax breaks or credits, subsidized government loans to cover the costs of compliance, certification regimes that help consumers identify compliant organizations (possibly generating higher revenues), payouts for compliant behavior, etc. (Huber, 2011). The U.S. Affordable Care Act (aka “Obamacare”) includes many such components: all U.S. citizens and legal residents are now required to carry health insurance, but this insurance is heavily subsidized for low-income individuals who would otherwise have difficulty covering this type of expense and, as a result, might not comply with the insurance mandate. Interestingly, states with the strength and resources to do so also use such approaches when the underlying behavior the state wants to change is not prohibited, but remains, in the eyes of many, against the public interest or public health. In the U.S., steep taxes on cigarettes and gun buy-back programs would be examples of this type of approach to behavioral change. But all of these are programs and approaches that are far more easily carried off in a strongly institutionalized regulatory environments, by states with substantial state capacity, and when targeting a relatively small percentage of the population.

In the developing world, poverty is widespread and poverty-driven non-compliance can be endemic. Along the India-Nepal border, where most live at or below the poverty line and where many struggle to feed and clothe themselves, it is difficult to imagine compliance with regulations that run contrary to the basic needs of the majority of a population targeted by a given regulation. For instance, school attendance is mandatory and holidays do not always coincide with periods of intense agricultural activity. As a result, large numbers of students, whose families rely on subsistence agriculture, skip school during certain parts of the year to work on their parents’ farmland. Compliance with regulations that run counter to basic needs is particularly problematical in this region because the governments in the area are weakly institutionalized and the states on either side of the border are limited in the degree to which they can engage in deterrence-based enforcement. Yet, some compliance with wood-gathering restrictions is happening: 66% of Nepali respondents and 29% of Indian respondents act in a manner that is compliant with wood-collecting restrictions in place in both Chitwan and Valmiki National Parks. This suggests that not all individuals find compliance to be against their respective self-interests.

In areas that suffer from low state capacity, individuals, businesses and organizations often exist at the margins and it doesn’t take much for a regulation to impose an unduly high cost

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<sup>11</sup> I use the word manageable here because the cost of deterring or motivating individuals away from poverty-driven non-compliance would, generally speaking, be small relative to both GDP and state resources.

of compliance on them. Therefore, large-scale compliance is only possible in places in which the state and/or non-state actors or other factors have ameliorated conditions to such a degree (for instance, by lowering the cost of compliance) that the targets of a particular regulation can both meet their basic needs *and* comply.

Given this information, I hypothesize that many of those individuals who *can* afford to comply will do so. More specifically, amongst the relatively small segments of the population for whom the cost of compliance is low relative to their incomes, we should expect compliance so long as (a) the cost of compliance is lower than the perceived cost of non-compliance and/or (b) so long as individuals believe that it is their duty to comply. Indeed, those who are relatively well off in the area surrounding Chitwan and Valmiki cook with gas and, thus, do not need firewood. As one relatively well-off female business owner explained to me, “We use gas. It is easier and there is no facility for an open fire in a modern house.”<sup>12</sup> The poor, however, do need firewood on a regular basis, and must weigh this need against their motivation to comply. As a result, my expectations regarding their behavior are quite different. These latter individuals face a very high cost of compliance and, even if the cost of *non-compliance* were very high, many of them would rather risk enforcement-related penalties than face the alternatives. As one of my respondents explained, rationalizing her non-compliance, “They make us steal it. But even if we are thieves, we are alive.”<sup>13</sup> Furthermore, even if these individuals believe they have a duty to comply, it is likely not powerful enough to overcome their poverty-driven non-compliance.

Finally, I hypothesize that amongst those individuals who have the option to both comply and attend to their basic needs, those motivated by either fear or duty will comply in significantly higher numbers than those of their low-income counterparts who have no viable option other than non-compliance.

### *Shadow Cases*

An example like the one I’ve been discussing, in which state regulations target ordinary individuals for compliance, could, on its own, be anomalous. I therefore include two shadow cases. Through these shadow cases I explore the compliance-related behavior of two additional layers of Indian and Nepali society: businesses and organizations. More specifically, I examine: 1) the compliance of private school administrators/principals with regulations requiring particular, smaller-than-customary, teacher-student ratios in the classroom; and 2) the compliance of brick kiln owners/managers with child labor regulations.

These shadow cases help to illuminate one of the more interesting findings of this dissertation: that when state capacity is weak, but the social fabric at the local level is strong, states can delegate enforcement to interested parties, those who have both an incentive to get involved and act according to law, and achieve significantly higher rates of compliance. In the conservation case, the Nepali government adopted a policy that fosters accurate legal knowledge through the delegation of regulatory responsibility to User Groups that then manage Community Forests. User Group members have reason to get involved because they are able to secure access to an important resource and are continually incentivized to comply with law and encourage

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<sup>12</sup> Interview conducted at Gitanagar, Nepal on February 23, 2013.

<sup>13</sup> Interview conducted at Jagatpur, Nepal on December 15, 2012.

others to do so by the threat that the state could re-assert its right to the land on which the Community Forest is located. In the schools case, it is the Indian government that delegation enforcement. The 2009 Right to Education Act in India allows individuals (parents) to take an active role in enforcing teacher-student ratio regulations by removing or threatening to remove their students from schools with high ratios and send them to presumably better schools with lower ratios. Meanwhile, in the brick kilns case, neither government has done much to enforce child labor regulations, nor have they adopted strategies consistent with regulatory pragmatism.<sup>14</sup> We should therefore expect to find little cross-border variation in both consistency of enforcement and rates of compliance. Exploring these shadow cases allows me to confirm my findings regarding regulatory pragmatism and accurate legal knowledge from the conservation case.

I chose these shadow cases as much for their similarity with my main conservation case as for the opportunity to observe the effects of varied state behavior they offer. Education and brick manufacturing are major economic activities present on both sides of the border. Regulations governing these types of activities are commonly used by governments to try to change behaviors that are perceived to be harmful. Moreover, the behavior required by law in each of these cases stands in contrast to customary social practice and to self-interest. Yet, the efforts made by the governments on either side of the border vary distinctly in the schools case and not at all in the brick kilns case, allowing me to test the proposition that strategies consistent with regulatory pragmatism can foster accurate legal knowledge and, in turn, compliance across multiple regulatory contexts.

#### **IV. Research Design & Methods**

This dissertation project takes the form of a least favorable case research design; as such, I examine only one case in geographical terms: the cross-border region of India and Nepal that I describe above. I selected Chitwan and Valmiki and *not* other parks in India and Nepal because of the natural experiment created by the border and because this design provided methodological traction (*see* Dunning 2012) on one of the literature's least explored questions. With the culture, income and education of ordinary individuals being similar across this region, I was not forced to control for these potentially important causal variables.<sup>15</sup> I did, however, measure each of these variables in order to be reasonably confident that cross-border differences in compliance stem from variation in the independent variables I measure and discuss in Chapter 1.

While staying within the border region, I also examine two additional types of regulations in terms of subject-matter and target population. For these shadow cases I utilize the same variables present in the main conservation case: compliance, delegated enforcement and accurate legal knowledge. I do, however, measure these variables differently. In the schools and brick kilns cases, as described more fully in Chapter 1, I measure compliance via observation, rating each school or kiln on the degree to which I observed it to be in compliance during my visit. In terms of delegated enforcement, I use this variable to distinguish between the two shadow cases,

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<sup>14</sup> In this particular case, it's hard to imagine how delegated regulation might be implemented, since there are no obvious interested parties to which a government might delegate. Parents often request that their children be employed at brick kilns and managers are always looking for ways to reduce costs.

<sup>15</sup> For a balance table, including relevant demographic variables, please see Appendix 2.

since none occurs in the brick kilns case, while the Indian government delegates to parents in the schools case via the 2009 Right to Education Act. Finally, I measure accurate legal knowledge in a manner that is quite similar to the method used in the conservation case. In the schools case, I ask principals/headmasters whether it is true that “[s]chools must provide at least one teacher for every 40 students (30 in India); I also ask, amongst other things, whether “[s]chools must ensure that all students have clean clothing to wear to school.” In the brick kilns case, I ask managers/owners whether it is true that “[e]mployers must not hire workers under age 18” (the legal age of employment is actually 14); I also ask whether managers/owners “must provide workers with food and shelter in addition to pay.”

## **V. Summary of Findings**

I generally find support for four important compliance-related relationships. The first runs between consistent state action and accurate legal knowledge; the second runs between accurate legal understandings and compliance; and the third runs between poverty and non-compliance. I also find that, in the absence of consistent state action or when large-scale poverty may lead to significant non-compliance, a fourth relationship is important: the positive relationship between regulatory pragmatism and compliance. I’ll examine each of these relationships below.

The first relationship, between consistent state action and accurate legal understandings is perhaps the most crucial in the chain and the one most often absent when the state is weak. In the absence of accurate information, individuals and entities struggle to shift from cultural norms to legal norms, or from old legal norms to new ones, even if they are motivated to comply with government-propounded rules and regulations. I found this to be particularly true in a context in which the availability of information about the law is low, either due to illiteracy or poor communication of legal or regulatory norms on the state’s behalf. Interestingly, in such a context, individuals still look to the state, even if only observationally, when forming legal understandings. In situations in which the state has behaved consistently—regularly and visibly punishing a particular illegal behavior—target populations observe the state’s actions and infer that punished behavior is illegal. However, when the state behaves inconsistently, target populations receive mixed messages, depending upon what they observed and what those who they know observe. For instance, those who knew someone who took a particular action and was punished believed that behavior to be illegal, while those who knew someone who took the same action and was not punished believed that behavior to be legal. The Indian and Nepali states, at least in the region in which I conducted my research, suffer from principal-agent problems and tend to behave inconsistently. It is, therefore, not surprising that my respondents’ legal understandings were often inaccurate.

Inconstant state action and the resulting lack of accurate legal knowledge can be overcome, however, if states let regulatory pragmatism guide their legal design and implementation strategies. I examine two such strategies: delegated enforcement and information dissemination through local leaders. With respect to the first, I was also able to demonstrate that delegated enforcement plays an important role in fostering accurate legal knowledge. The Nepali state was consistent in its non-interference in delegated Community Forest management, allowing many of those living near these areas of self-regulation to develop



the understanding that taking wood from Community Forests is legal, while taking wood from Chitwan National Park is illegal. In particular, those with Community Forest access were able to observe the contrast between the state's consistent non-interference in Community Forests and inconsistent enforcement of wood-taking prohibitions in the National Park. Observation of this contrast helps those who have Community Forest access to arrive at more accurate legal understandings than their counterparts who lack access. Of those who report having access to a Community Forest, 74.6% hold an accurate understanding of the wood-taking prohibitions in place in Chitwan National Park; the same number amongst those who do not have access to a Community Forest is 53.2%.

A similar pattern has developed in the private schools case in India. While the District Education Officers in both India and Nepal are largely absent and only occasionally engage in enforcement action, delegated enforcement is in place in India. The 2009 Right to Education Act in India empowers parents to remove their children from schools that they believe are performing poorly by allowing parents to take state funding with them to whichever school, public or private, their children ultimately attend. It is essentially a voucher program. And school administrators on the Indian side of the border have generally taken note. When asked whether a parent would remove a student from his or her school if the teacher-student ratio exceeded legal limits, 22.2% of administrators in India stated that parents "sometimes" do so and another 19.4% stated that parents "often" do so. Across the border in Nepal, 33.3% of administrators stated that parents "sometimes" do so and no administrator stated that parents "often" do so. In other words the enforcement of teacher-student ratio regulations in India, even if achieved via delegation, is more consistent than that in Nepal. And, importantly, delegated enforcement is associated with more administrators holding accurate legal understandings. I find that 83.3% of private school administrators in India hold accurate legal understandings of the maximum teacher-student ratio proscribed by law, while only 59.0% of their counterparts in Nepal hold the same.

My experimental findings with respect to information dissemination through local leaders are similar. The data indicate that local leaders, who often act as a conduit for communication from the state and/or local bureaucrats, are an important vector for legal knowledge. This is consistent with the psychology literature that indicates that length of relationship is predictive of whether individuals will find a source of information trustworthy. (Levin, Whitener & Cross 2006). More specifically, I find no significant differences in terms of the pre- and post-treatment accuracy of legal understanding in either of the control of "flier" villages. However, in the "local leader" village, there was a significant difference ( $p = 0.017$ ). Before my intervention, about 58.8% of my semi-random sample of villagers knew that collecting wood in Chitwan is illegal. After my intervention, this number jumped to 78.7%, suggesting that local leaders can be effective conduits for Accurate Legal Knowledge. Local leaders are widely believed to be an accurate source of information about the state. Thus, what they say matters and villagers update their understandings of the law accordingly, with many seemingly privileging this information over both first-hand observation and information received from other sources like printed materials or neighbors, family and friends. Like my findings with respect to delegated enforcement, these findings with respect to information dissemination through local leaders suggest that even a weak state, so long as it employs regulatory pragmatism when considering how to disseminate information about the law, may be able to achieve accurate legal understandings.

The accuracy of the legal understandings that target populations hold are important and relate to the second relationship I mention above, the one between legal knowledge and compliance. In the conservation case, as well as in my two shadow cases, when I subset by accurate legal understanding, I find significant differences in compliance behavior. In the conservation case those who hold accurate legal understandings, on either side of the border, report behavior consistent with compliance 70.2% of the time. Meanwhile, those of their counterparts who hold inaccurate legal understandings comply 39.1% of the time. In the private schools these numbers are 72.5% and 30.8%; and in the brick kilns, they are 70.6% and 43.8%. Yet, members of these subsets are not differentially motivated toward compliance. I find no significant differences across groups in terms of either fear of being punished or the felt sense of duty to obey the law. This suggests that many of those who are not complying are doing so unintentionally—many of them likely believe they are complying—and that, if those holding inaccurate understandings of the law were provided with accurate information, quite a few of them would be motivated to alter their behavior in the direction of compliance.

But my data suggest that not all of them would end up complying, however. Even those who hold accurate legal understandings and report being motivated, by either fear or duty, to comply with the law, do not always comply. This begs the question of whether something else is going on or they are simply being disingenuous about their motivations when responding to my survey questions. I am confident it is the former. Unlike their counterparts in developed countries, many of my respondents must overcome a difficult hurdle in order to comply with the regulations I examine: the cost of compliance. Each of the regulations I examine imposes a cost on its target population and many of my respondents are extremely cost-sensitive. Most of them live below the poverty line and, when a regulation imposes a cost, many of those who cannot afford such a cost, even if aware of the particular regulation and otherwise motivated to comply with it, will choose satisfaction of their basic needs, fuel for cooking and heating in the conservation case, over compliance. When I subset my conservation case respondents into two groups, those living above the poverty line and those living below it, I find significant differences in compliance. Compliance amongst the former is 64%, while amongst the latter it is 49%.<sup>16</sup> The same basic relationship exists amongst respondents in brick kilns and schools facing tight margins, though, interestingly, I find that the elite schools, those that can easily afford to comply with teacher-student ratio regulations, are rarely in compliance, a fact I will discuss later in terms of the limitations of accurate legal understandings. But the broader point remains: poverty, something that is often endemic in places where the state is weak, can drive individuals who are aware of the law and otherwise motivated to comply with it towards non-compliance.

Thus, if one is trying to regulate in areas plagued by poverty and one wants individuals to comply with laws that impose costs on them, one has to lower the cost of compliance to one that the poor can bear. This is exactly what regulatory pragmatism demands and it is also precisely what Nepal's Community Forests do. They provide those who have access to them with an alternative source of fuel-wood, thus allowing these individuals to both comply and meet their basic needs. I find that when I subset my data by "access to a Community Forest," respondents living below the poverty line are much more likely to be in compliance than their counterparts without such access: 79% vs. 39%. This is fascinating because a second regulation that is

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<sup>16</sup> These numbers are low because they include many individuals who hold inaccurate legal understandings.

seemingly orthogonal to the wood-taking prohibition in place in Chitwan National Park, one which permits conduct that is prohibited in the park, appears to be aiding compliance with wood-taking prohibitions in the park. It also suggests that regulatory design and implementation strategies that are consistent with regulatory pragmatism—ones that take care to lower the cost of compliance for those who can least afford it—can result in significantly higher compliance rates than regulations which simply impose a cost.

When looked at together, my findings indicate that weak states *can* generate compliant behavior so long as they can: 1) substantially increase the number of individuals who hold accurate legal understandings; and 2) lower the cost of compliance for those who will be forced to choose between complying with the law and meeting their own basic needs. My findings also suggest that, when principal-agent problems result in inconsistent state action, states can still achieve accurate legal knowledge (and compliance) if they allow regulatory pragmatism to guide their actions: delegated enforcement and information dissemination through local leaders are just two examples of implementation strategies that can accomplish this goal. This information not only adds to the existing academic understanding of compliance by exploring the circumstances under which it can be brought about in areas of low state capacity, it also goes a long way towards providing information to governments and non-state actors in developing and/or weak states about strategies they can adopt to foster compliance, even if they cannot muster the capacity necessary to do so by force.

## **VI. Organization of the Dissertation**

This dissertation is organized as follows. After this introductory chapter, I turn, in Chapter 1, to research design and methodology. I provide some historical and anthropological background on the region in which I conducted this research and substantiate the manner in which the border was delineated. I then turn to a thorough explication of my hypotheses and specific information about data collection and analysis.

In Chapter 2, I examine the relationship between consistent state action and the accuracy of individually-held legal understandings in the region surrounding Chitwan and Valmiki National Parks. I then turn to the positive externalities associated with accurate legal knowledge, demonstrating that knowledge of the law, so long it is accurate, is a useful predictor of compliance with wood-taking prohibitions.

In Chapter 3, I explore two distinct ways that states can foster accurate legal knowledge even if they cannot behave consistently. In particular, I examine the roles of delegated enforcement and information dissemination through local leaders in fostering accurate legal knowledge, even when state capacity is low.

In Chapter 4, I examine poverty-drive non-compliance, a phenomenon which occurs when those who have accurate legal understandings and are otherwise motivated to comply with the law are forced by their economic circumstances and the high cost of compliance to continue their illegal behavior. I then demonstrate how states guided by regulatory pragmatism, even cash-strapped ones, can lower the cost of compliance for the poor and allow these individuals to behave in a manner that is consistent with the accuracy of their legal understandings and their motivation to comply with the law.

In Chapter 5, I turn to my shadow cases, teacher-student ratio regulations governing private schools and child labor regulations in brick kilns. In the former, I demonstrate that the 2009 Right to Education Act effectively delegates enforcement to parents of enrolled children, much as with Community Forest management in the conservation case, and this allows for consistency of enforcement. This regularity, in turn, fosters both more accurate legal understandings amongst administrators and higher observed rates of compliance. After further developing the concept of delegated enforcement in dialogue with evidence from the conservation case, I explore its limits. On both sides of the border, the schools with the most resources are the least likely to be compliant. Here I argue that while poverty-driven non-compliance, akin to that seen in the conservation case, continues to drive the behavior of administrators at the poorest schools, administrators at schools with the most resources behave differently because they remain unconcerned about enforcement of any variety and also believe that their schools are above the law because of the high quality education they provide. In other words, administrators at these schools feel neither a sense of fear nor a sense of duty and, as a result, it is hardly surprising that their schools are non-compliant. Finally, I examine compliance with child labor law in brick kilns. Here I argue that inconsistent state action on both sides of the border has led to widespread misunderstandings of the law and that, as a result, non-compliance is common amongst those with inaccurate information. Those who do have accurate information and are motivated to comply often do so, but that, as with the poor in the conservation case, brick kiln managers who face tight margins engage in poverty-driven non-compliance, whereas their counterparts, at more economically viable kilns, do just the opposite.

Finally, in Chapter 6, I attempt to tie all three cases together, offering my thoughts about observed variation and associated effects across all of them. I then explore the implications of these findings for other countries and regions and provide some concluding remarks focused on important areas of future research.

## **Chapter 1: Design & Methods**

### **I. Case Selection: Location**

I chose to conduct my research in the *Terai* region in the South of Nepal and in the North-Indian state of Bihar, principally because this area fits squarely within a least favorable case research design: the states on both sides of the border are weak at the local level, especially in the area in which I collected data.

Bihar, more generally, and the districts of Paschim and Purba Champaran, in particular, are just emerging from the severe law and order problems they experienced under Lalu Prasad Yadav's corrupt tenure as Chief Minister, as well as from the problems associated with a long-running, but now largely on-the-run Maoist insurgency. For instance, the police post just outside of Valmiki National Park and quite near to the village of Singhai, where I stayed during part of my fieldwork, was largely destroyed by a bomb almost a decade ago, yet it is only over the last year or so (in 2015) that the government started building a new one alongside the broken concrete and rebar shell of the old. Nepal, too, has recently experienced a protracted Maoist conflict, during which the government largely withdrew from Maoist-held areas outside of the capital city of Kathmandu. The only presence locals outside of Chitwan remember was the occasional army patrol and a bare-bones National Park staff, but otherwise many government offices and schools closed for months and even years at a time. This is on top of the fact that the Indian and Nepali states, particularly in this area, were largely acknowledged to be weak at the local level before these insurgencies. Under this set of circumstances the literature suggests that we should not expect to see compliance on either side of the border. Yet there *are*, in fact, cross-border differences in compliance, which help to reveal what factors contribute to this surprising behavior in such low predicted-compliance conditions.

The fact of weak governance at the local level is not the only factor that makes the location in which I've chosen to conduct my research a hard-case. In addition, the populations on either side of the border are generally poor and uneducated and the literature suggests that such conditions do not lend themselves to compliance. According to my own survey data,<sup>17</sup> in Paschim Champaran, the primary district in which I conduct research in Bihar, 73% percent of respondents living near the border in this region live on less than \$1 per day. On the face of it, Purba Champaran, where I conducted additional data collection, is not different. Meanwhile, in the four districts in which I conducted research in Nepal, the percentage of respondents living on less than \$1 per day is the same as it is in India, 73%. By way of comparison, according to World Bank data, average per capita income in India and Nepal, is \$1503 and \$690, respectively: far more than \$1/day and quite unevenly distributed between the two countries, suggesting that the districts I study are more like each other than like other parts of their respective countries. Moreover, literacy in the two districts<sup>18</sup> surrounding the park on the Indian side of the border is 56%. On the Nepal side of the border literacy in the four districts<sup>19</sup> surrounding the park ranges from a high of 77% to a low of 55%.<sup>20</sup> Meanwhile, the overall literacy rates in India and Nepal

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<sup>17</sup> I use my own survey data because government district-level data on income is either not collected or missing across all districts in which I conduct research.

<sup>18</sup> Paschim and Purba Champaran.

<sup>19</sup> Chitwan, Parsa, Makwanpur and Nawalparasi.

<sup>20</sup> Nepal Census (2011).

are 74.0% and 66.0%, respectively.<sup>21</sup> In other words, income and literacy do not differ substantially across the border in this region, ensuring that variation in either of these two variables is not responsible for cross-border variation in compliance. This region is also not particularly well-off or well-educated when compared to the broader populations of the two countries in which it lies, making compliance with government-propounded regulations somewhat unlikely. This is compounded by the fact that the state, as mentioned above, remains locally weak in this region.

The third reason for my choice of research location is that this area is dominated by the same geography and culture. Indeed, the same ethnic group—the Tharus—and dominant “culture” is present on both sides of the border and this has been so for as long as memory and record-books bear witness. This fact is not incidental. Prior to malaria eradication in the region, which occurred in the 1960’s, geography made it difficult for any other groups to settle here. At the time, the area was a vast swath of mostly un-cleared tropical jungle and it was literally deathly to anyone but the Tharus, who do not typically get malaria due to a natural—or more likely, evolved—resistance. Thus, on both sides of the border, one will find large numbers of Tharus and Tharu culture, which even newcomers to the region adopt, celebrating Magi (the Tharu New Year) in droves. Language is also similar on both sides of the border. Most speak Tharu or Bhojpuri, which are closely related, at home, while Hindi and Nepali are both understood on either side of the border. With the geography and culture being so similar throughout this region, I was not forced to control for these potentially important causal variables—though I did measure them in order to be reasonably confident that cross-border differences in compliance stem from variation in the independent variables I measure and discuss below.

Fourth, and finally, I chose to do research along the India-Nepal border in particular because this border: 1) was not delineated with special attention to culture or geography; and 2) is and has been open as far back as records bear witness. Prior to the East India Company’s (“the Company”) advances across the subcontinent, this region was part of two different kingdoms or areas of control: to the North, the region was controlled by the King of Nepal and to the South by the Champaran Raj. But thinking of this area as having been split into two kingdoms is a bit misleading, as I have found no evidence of actual delineation during this period or prior.

Subsequently, starting in the late 18<sup>th</sup> century, the King of Nepal’s territory crept southward, mainly by peaceful occupation rather than by forceful taking of land, but the Company, which had made agreements with all of the surrounding fiefdoms, took notice. In 1814, after a long diplomatic correspondence in which the Company requested that the King of Nepal withdraw from all territories taken during the previous 25 years, the little known Anglo-Nepal War broke out. Though it took some time, the Company won fairly handily and took not only the territory that Nepal had encroached upon in the late 18<sup>th</sup> and early 19<sup>th</sup> centuries, but all of Nepal’s “lowlands,” the *Terai*.<sup>22</sup> The King of Nepal negotiated fiercely to keep that part of

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<sup>21</sup> India Census (2011) and Nepal Census (2011).

<sup>22</sup> “[A]ll the lowlands from the Kali Eastward to the Teesta, rendering either the foot or the ridge of the lowest Rang of Hills, the common boundary through that line.” IOR/Home/Misc/515, 1814-1816 Nepalese War, Vol 58, No. 116.

the *Terai* that had “historically” been Nepali territory,<sup>23</sup> not on ethnic grounds, but seemingly because he had used gifts of this land, which was thought to be unlivable much of the year,<sup>24</sup> as pensions for high-level government bureaucrats and military officers.<sup>25</sup> Unfortunately, his intense interest in retaining control over the Nepali *Terai* appears to have spurred the Company’s interest in same<sup>26</sup> and in 1816 the two parties finally signed and ratified the Sugauli (sometimes “Sugowlee”) Treaty, leaving the Nepali *Terai* in British hands, but allowing for the free movement of people between the territories.

The Company did not forget the King of Nepal’s interest in the *Terai*, however, and, when Gurka troops sent to the Company by the King of Nepal remained loyal and helped to put down the Sepoy uprising in 1857, the Company decided to reward this show of trust and loyalty by granting back to Nepal “the whole of the former Ghoorkha possessions below the Hills,”<sup>27</sup> an action that was problematical only in the particulars, as it wasn’t clear exactly where Nepal’s territory had been. Ultimately both parties agreed that the cession back to Nepal would include “[t]he whole of the lowlands between the rivers Kali and Raptee, and the whole of the lowlands lying between the river Raptee and the district of Goruckpore”<sup>28</sup> and that “[w]here the line traverses cultivated land, it should not be carried through, but should follow the village boundaries in the principle of giving and taking. . . . But where the line runs through forest, it should pass straight from Pillar . . . .”<sup>29</sup> Moreover, since the 1860 treaty which finally “fixed” the India-Nepal border in this seemingly random manner, it has remained open to both Indians and Nepalis who, to this day, can legally cross it without paperwork and can even legally take up work and/or residence in either country. It is hard to imagine a better location in which to test whether compliance with regulations has resulted from state action.

#### a. *The Freedom of Movement Problem*

The fact that Indians and Nepalis can move freely across the border between the two countries is both a boon and a potential problem for this project because rational individuals from either side of the border with information about compliance patterns could, in theory, seek out low law-enforcement and/or low-compliance areas for non-complying activities, while

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<sup>23</sup> When Nepal solicited a peace treaty with the East India Company to end the Anglo-Nepal War, the negotiations were repeatedly suspended because of the King’s “extreme aversion to cede the whole of the *Terrai* or lowlands which the Governor General had demanded.” IOR/Home/Misc/515, Record of B. J. Jones to Indian Board, Decemb 1816.

<sup>24</sup> “In our eastern terai no Sirdars can live. No one will accept an appointment there even upon double pay. The Gorkhas are masters there for 6 months only in the year. The Tharoos are the masters for the other 6 months.” IOR/L/PS/6/512, 6th August 1860. Nepal Residency. Colonel G. Ramsay. Resident. Letter to Cecil Beadon Esq. Sec.y to the gov.t of India in the Foreign Department, For William.

<sup>25</sup> H/MISC/655, in a letter from J. Adam to E. Gardner 22 July 1815 J. Adam suggests that the reason the Maharajah of Nepal didn’t want to let the *terai* go was that much of the monarchy’s land and land held by soldiers and other elites was located there. They were willing to risk all to keep their personal real estate.

<sup>26</sup> H/MISC/655. Correspondence between J. Adam and E. Gardner through in 1815.

<sup>27</sup> Letter from Ross D. Mangles (Secret Committee to Governor General of India), February 9, 1858, London, India Political Department Collection: Cession of the Oude Terai to Nepal, L/PS/6.

<sup>28</sup> Ibid, quoting Article II from the “Treaty of Segowlee”.

<sup>29</sup> India Political Department Collection: Cession of the Oude Terai to Nepal, L/PS/6.

complying with regulations in their own village, or similar. In other words, a Nepali from an area in which compliance is high, but who nevertheless wants or needs forest products, might travel to a low-enforcement and/or low-compliance area, either in Nepal or across the border, to collect wood. It is difficult to account for such patterns with the survey data I collect. However, I spent nearly two years in this region and spoke with many people about where and how they collect firewood, in addition to observing it being done. Based on that data, I do not believe that potentially confounding cross-border strategic behavior is happening on a large scale, at least not when it comes to firewood collection by ordinary individuals. And, while I did get a sense that the situation is quite different when it comes to the felling of live trees and timber smuggling, this is an altogether different set of activities (sophisticated/organized and specifically criminal) and not the set I am trying to explain here.

## II. Hypotheses & Variables

I broadly hypothesize that even when the state is weak, it *can* still generate compliance in some circumstances and without great expenditure or state capacity. Legal institutions can work in this context if the state uses regulatory pragmatism to choose legal design and implementation strategies that will help target populations overcome the obstacles presented by lack of accurate legal knowledge and poverty-driven non-compliance.

### *a. Dependent Variable – Compliance*

The major dependent variable I investigate is compliance.<sup>30</sup> Compliance occurs when an individual acts or refrains from acting in such a way that his or her behavior is consistent with that required by law. In the main conservation case, this involves refraining from taking wood out of either Chitwan National Park or Valmiki National Park and Tiger Reserve. I measure compliance by asking respondents whether they need wood and where they source it.<sup>31</sup>

It is important to note here that when I say compliance, I mean behaving in a manner consistent with a complete prohibition on collecting wood in these parks. I do *not* measure or analyze forest loss, deforestation or any other possible result of widespread non-compliant behavior. While deforestation is certainly a problem in both India and Nepal and illegal logging, which seems to be carried out by criminal gangs, does threaten the large stands of lucrative teak trees that are indigenous to these parks, it is not clear to me that the non-compliant wood collection of ordinary individuals living just outside of these parks contributes to this problem. Indeed, there are few indications of deforestation in these parks. This is perhaps because the roads in these parks on which one could transport illegally logged trees are so limited and because tropical jungles like these regenerate at an incredible rate during the monsoon season. Forest loss and deforestation in other areas of both India and Nepal varies quite dramatically. In the high Himalaya, where trees only end up growing to the height of shrubs, but where people nonetheless need firewood, forest loss is substantial. In the plains of India, many of the forests have been converted to farmland to support a large and still growing population. This variation

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<sup>30</sup> I measure compliance at the individual level via self-reporting, but I verify my country-wise results with observational data collected over the course of 3 months in similar locations on either side of the border.

<sup>31</sup> I did so before inquiring about their legal knowledge in order to avoid any priming effects.



is one of the reasons I chose to focus on a location along the border in which little varies, save for the state or government and its practices.

*b. Independent Variables*

To determine the circumstances under which institutions can generate compliance in areas of state weakness, I examine, as noted above, a region that is characterized by the same rules, the same culture and, seemingly, the same basic incentives to comply with or break the law. With many of the variables that are customarily used to explain rule-following behavior held constant, I am able to focus on one key factor that does vary across the border: the use of legal design and implementation strategies that are consistent with regulatory pragmatism. In the main conservation case, I explore three different implementation strategies that are consistent with regulatory pragmatism: delegated enforcement, information dissemination through local leaders, and amelioration of poverty-driven non-compliance.

Beforehand, however, I focus on two important intervening variables which represent some of the most important hurdles any weak state must overcome if it hopes to achieve compliance: 1) the accuracy of individually held legal knowledge; and 2) the amelioration of poverty driven non-compliance which, in this case, I consider to be proportion of individuals for whom compliance with formal legal rules and institutions remains incompatible with basic survival.

*i. Intervening Variable: Accurate Legal Knowledge*

The often unstated assumption embedded in much of the socio-legal compliance literature is that before individuals can choose whether or not to comply with a given regulation they must first be aware that the regulation exists at all and have a decently accurate understanding of what compliance would entail. This seemingly common sense assumption, however, is problematical, even in the strong-state contexts on which the socio-legal compliance literature has focused its inquiries. When the state is strong, the job of disseminating legal knowledge is often ascribed to the state, particularly in civil law jurisdictions, and to lawyers, particularly in common law jurisdictions.

But reality is more complicated. People tend to get information about the law from many different sources: the media, friends & family, government publicity, etc. They then distill this information with other information they have, for instance about whether they've ever heard of or seen someone getting punished for a particular behavior and the state's known actions in other analogous situations, into a legal understanding, which they then update from time to time when they come across new information. Certainly a sophisticated individual or corporation might consult a lawyer or a regulatory body if the issue was unclear and important enough to merit such an effort. But this happens less often than the literature would have us believe. Still, where the state is strong, people, corporations, organizations, etc. do seem to develop a fairly accurate understanding of the regulations that govern their respective existences. This is often not the case in places where the state is weak.

Though I do not think individual actors behave differently in the way that they attempt to arrive at an accurate legal understanding depending upon the context of a locally strong or weak

state, the outcomes of their efforts sometimes differ sharply. Where the state is locally strong, it often behaves consistently and, thus, the information that individual actors receive about the state's treatment of particular behavior tends to be fairly consistent and accurate. Legal understandings in areas of state weakness are sometimes wildly inaccurate. Here the state either does not appear to be present or, due to inconsistent enforcement, does not behave like a single entity. In such environments, in which the state makes little or no attempt to communicate legal requirements with target populations and in which one bureaucrat never enforces a particular law, the next enforces only when a bribe hasn't been paid, and a third always enforces, the information that filters down to individual actors is fuzzy at best. And yet, this information is all individuals have to go on, so they form legal understandings and continue to update them, just as their counterparts in areas of state strength do. But, without consistent state action, these legal understandings can sometimes be quite inaccurate when measured against the law in the codebooks or even informal legal norms and, perhaps more importantly, behavior predicated on these inaccurate legal understandings often undercuts the very purpose for which the regulation was put in place.

To understand the power of consistent state action, consider an example from an area where the state is strong. At the time of writing, I lived in San Francisco and had reason to drive I-280 down to Silicon Valley on many occasions over the previous 13 years. When I first drove this stretch of interstate, I observed the posted speed limit—which is, incidentally, 65 mph—and, fearful of what I knew from the media, past experience and information provided by acquaintances to be an expensive violation, I kept my driving speed within the legal requirements. But, over time, I observed that many of the other individuals driving on this road felt comfortable going well over the speed limit. Knowing that this is a commute road for many, I intuited that they must have known something from experience that I didn't know: that enforcement was unlikely. Observing their behavior, I noted that most drivers still kept their speed below 80mph. I also noted that those who were in a real rush, flying by the crowds of 80mph drivers, did often end up pulled over on the side of the highway a few miles later. This allowed me to update my legal understanding to reflect the realities of driving on I-280 in this particular corridor: stay below 80mph and the likelihood that you will be punished for a violation of the speed limit is minimal. Even though this legal understanding is at odds with the law on the books, it remains useful and accurate because of the consistency of state action.

Now consider an example from an area in which the state is weak, like that found along the India-Nepal border near Chitwan and Valmiki. A woman who could not read and had never attended school herself went down to the district office to try to enroll her child in school because this is what one of her neighbors said she had done to get her own child admitted to the local government school.<sup>32</sup> When this woman arrived at the district office, she found some staff on site, but the District Education Officer (“DEO”) was not in and she was told to come back another time. One of the staff members also told her that she could simply bring her child to the local government school. Thinking that this was all that was required, she returned home and brought her child to school the next day. Here the staff told her that her child had to have a uniform in order to attend. Seemingly updating her legal understanding as she went, she did not

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<sup>32</sup> This anecdote is real and comes from a woman I met while on a local bus in Nawalparasi District, in Nepal. I did not ask her to relate this story. She shared it of her own accord and I am relating it here because it is illustrative, but it was not collected in a research capacity.

bother to return to the DEO and used what little money she had to have a uniform tailored and then once again brought her child to school. The uniform seemed to work and the woman's child was admitted to the classroom; yet, two weeks later the woman's child was rebuffed once again for lack of appropriate paperwork. Weeks passed as the woman struggled to collect the appropriate paperwork and had to eventually pay small bribes to get what she needed. Having finally done so, she returned with her child to school and was told that her papers were in order but that she had illegally been keeping her child out of school and would have to pay a fine before her child could be re-admitted. Despairing, the woman returned home with her child. Some months later, having saved enough to pay the fine she had incurred, she then returned to the school and her child was admitted without incident and, perhaps more importantly, without her having had to pay a fine. She felt lucky for having gotten away without paying the fine, but she did not get away with an accurate legal understanding. The state behaved so inconsistently that she came away with little idea of what was required for school enrollment. Instead, she held the inaccurate understanding that enrollment is compulsory in Nepal when, in fact, it is not. Setting aside the fact that it might be normatively useful for the rural poor to think that school is compulsory, the troubling fact is that, when this woman relates her story to neighbors, friends and family, as she did with me, others will likely end up with inaccurate legal understandings as well. And when they attempt to comply with what they believe the law to be, they may run into further trouble for lack of compliance.

In light of the above, where state action is consistent and/or where alternative systems to disseminate accurate legal information have developed, I expect to find that locally held understandings of what constitutes compliance are consistent with legal requirements. In all other areas, I hypothesize that locally held legal understandings will be inaccurate. Moreover, because accurate information about the law is required before individuals can *choose* between compliant and non-compliant actions, I anticipate that those who have accurate information about what constitutes compliance will be more likely to comply than those of their counterparts whose legal understandings are inaccurate.

This latter hypothesis requires a bit more explication. First, I do not mean to suggest that accurate information about the law is required for behavior that looks like compliance. In fact, it is not. A person who has an inaccurate legal understanding of whether a particular behavior is required or prohibited can still appear to comply if ostensibly compliant behavior is in his or her self-interest; as in, this person may actually believe that he or she is not compliant but, because of a happy coincidence, his or her behavior looks compliant when viewed from the outside. Still, if we assume that the distribution of similarly situated individuals is random, then the remainder of the population must fit into three categories: 1) those who have inaccurate understandings of the law and appear to be non-compliant; 2) those who have accurate understandings of the law and appear to be compliant; and 3) those who have accurate understandings of the law and appear to be non-compliant. If we further assume that once aware of a legal requirement individuals on both sides of the border will be similarly motivated (or unmotivated) to comply, then it follows that we should see higher rates of compliance in those locations in which legal understandings are more accurate. That is, unless something like poverty driven non-compliance, which I discuss below, pushes the cost of compliance to untenable heights for a substantial proportion of the population, effectively preventing individuals who are both aware of the law and motivated to comply with it from doing so.

I test the hypothesis that more widespread accurate legal knowledge leads to higher rates of compliance directly, by measuring legal knowledge amongst my respondents and determining whether it is correlated with compliant behavior. If accurate legal knowledge is predictive of compliance, we should expect to see higher levels of compliance when accurate legal knowledge is more widespread, regardless of whether accurate legal knowledge results from consistent state action, delegated enforcement, information dissemination through local leaders, or some other source. Along these lines, variation in the proportion of the relevant target population holding accurate legal knowledge should explain a significant amount of the cross-border variation in compliance with wood-taking restrictions around Valmiki and Chitwan, as well as the magnitude of compliance found in different locations on the same side of the border.

I measure accuracy of legal knowledge by asking members of each target population true-false questions regarding the conduct required or prohibited by law and then by aggregating their responses geographically. For instance, in the conservation case, I ask ordinary individuals whether it is true that “[p]eople must not collect fallen wood.” I also ask, amongst other things, whether it is true or false they “must stay on roadways at all times.” By asking these questions of target population members, questions which pertain to both regulated and unregulated conduct and require individuals to recognize both false statements about the law and true ones, I am able to get a fairly clear picture of what individuals believe is required or prohibited by law. Then, by aggregating their responses geographically, I am able to see the proportion of people in a given location who hold an accurate understanding of the law and whether higher or lower proportions are associated with compliance.

*ii. Intervening Variable: Cost of Compliance*

Not all actors face the same costs when it comes to compliance. While a speeding ticket may be “pocket-change” for a famous Hollywood actor, it is substantial for the average person. Along the India-Nepal border, the cost of compliance with wood-taking prohibitions is extraordinarily high for those who depend upon wood to cook and keep warm during the winter; this population is also often quite poor and not able to afford alternative fuel. The wealthy in this region typically cook with gas. As a result, the cost of complying with wood-taking prohibitions is much higher for the poor than for the wealthy, who are less reliant on wood as a fuel source.

In this situation and ones like it, I posit that an individual is less likely to comply with a particular regulation, even if he or she knows a particular action is required or prohibited, if compliant action undercuts that individual’s pursuit of her/his self-interest.<sup>33</sup> For instance, at least in theory, an individual who has ample material resources is less likely to break a law that prohibits stealing than an individual who has few resources and is desperate for, say, food. This means that all individuals are not similarly situated to engage in compliant behavior. Some have powerful, perhaps overwhelming, incentives to break the law in order to survive, while others can afford to comply. Put another way, the cost of compliance with a regulation that prohibits

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<sup>33</sup> Pearce & Tombs (1990); Pearce & Tombs (1997); Pearce & Tombs (1998); Parker (2002); Molnar et al (2004).

stealing is relatively low for an individual who can afford to buy food, while for someone who is poor, it is quite high.<sup>34</sup>

Throughout much of the developed world, poverty-driven non-compliance is relatively low and, therefore, manageable. Some states manipulate the incentives that individuals face so that individual pursuit of self-interest and compliant behavior are not mutually exclusive. In so doing, states act to align the self-interest of a larger swath of the population with compliant behavior. Examples of such efforts include tax breaks or credits, subsidized government loans to cover the cost of compliance, certification regimes that help consumers identify compliant organizations (possibly generating higher revenues), payouts for compliant behavior, etc. (Huber, 2011). The U.S. Affordable Care Act (aka “Obamacare”) includes many such components: all U.S. citizens and legal residents are now required to carry health insurance, but this insurance is heavily subsidized for low-income individuals who would otherwise have difficulty covering this type of expense and, as a result, might not comply with the insurance mandate. States also use such approaches when the underlying behavior the state wants to change is not prohibited, but remains, in the eyes of many, against the public interest or public health. In the U.S., steep taxes on cigarettes and gun buy-back programs would be examples of this type of approach to behavioral change. But all of these are programs and approaches that are far more easily carried off by governments with substantial state capacity and when targeting relatively small percentages of the population.

In the developing world, poverty is widespread and poverty-driven non-compliance can be endemic. Along the India-Nepal border, where most live at or below the poverty line and where many struggle to feed and clothe themselves, it is difficult to imagine compliance with regulations that run contrary to the self-interest of the majority of the population. This is particularly true because the states on either side of the border are limited in the degree to which they can engage in deterrence-based enforcement. Yet, some compliance with wood-gathering restrictions is happening, which suggests that not all individuals find compliance to be against their respective self-interests.

I hypothesize, therefore, that many of those individuals who *can* afford to comply will do so. More specifically, amongst the relatively small segments of the population for whom the cost of compliance is low relative to their incomes, I expect compliance, so long as (a) this cost is lower than the perceived cost of non-compliance and/or (b) so long as they believe that it is their duty to comply. Indeed, as mentioned briefly above, those who are relatively well off in the area surrounding Chitwan and Valmiki cook with gas and, thus, do not need the very resource—firewood—that they are prohibited from removing from these conservation areas. It is the poor, who cannot afford to cook with gas, who must choose between survival and compliance. As a result, my expectations regarding their behavior are quite different. These individuals face a very high cost of compliance and, even if the cost of non-compliance were very high, many of them would rather risk enforcement-related penalties than face the alternatives. Furthermore,

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<sup>34</sup> The financial capacity of regulated entities to comply with existing or proposed laws has been shown to affect the design of regulatory programs in the United States (Kagan *et al*, 2008), Bruce Huber (2011).

even if these individuals believe they have a duty to comply, it is likely not powerful enough to overcome poverty-driven non-compliance.

Finally, amongst individuals who have the option to both comply and attend to their basic needs, fear and duty will kick in and this segment of a target population will comply in significantly higher numbers than those of their low-income counterparts who have no viable option other than non-compliance.

I expect to find higher rates of compliance amongst those for whom the cost of compliance is lower. To test this hypothesis, I first compare, in Chapter 4, the compliance behavior of those for whom the cost of compliance is relatively high to those for whom the cost of compliance is relatively low, using self-reported income or profits as a means to determine relative cost of compliance. More specifically, I look for significant differences in compliance between those living above and below the poverty line.<sup>35</sup> I then check to make sure that these two income groups do not report different levels of both fear and duty.

*iii. Main Independent Variable: State Use of a Strategy Consistent with Regulatory Pragmatism*

Given the low state capacity, inconsistent state action and poverty present on both sides of the India-Nepal border, neither accurate legal knowledge nor poverty-driven non-compliance should vary as one moves across it. That is, unless regulatory pragmatism has been employed to alleviate principal-agent problems and to lower the cost of compliance with wood-taking prohibitions. In Nepal, the state has delegated enforcement of government-owned forest land just outside of Chitwan National Park to Community Forest User Groups.<sup>36</sup> In their management of these forest areas, User Groups can and do behave consistently, something that stands in stark contrast to the state's behavior in the national park; this contrast may be able to foster accurate legal knowledge amongst those who learn about the law via observation. Another way that individuals might acquire accurate legal knowledge is if local leaders are involved in information dissemination. Local leaders—who are trusted at the local level and often perceived to have connections to the state, even if informal—represent a possible pathway by which the state might disseminate accurate information about the law.

I explore each of these strategies—delegated enforcement, information dissemination through local leaders and amelioration of poverty-driven non-compliance—below.

*Delegated Enforcement*

The Nepali state has given control over large swaths of government-owned forest land just outside of Chitwan to over fifty different Community Forest “User Groups.” Each of these groups is responsible for ensuring compliance with applicable regulations in its Community

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<sup>35</sup> I measure compliance via indirect self-reporting in the conservation case and by observation in the private schools and brick kilns cases.

<sup>36</sup> I also consider Chitwan's Buffer Zone Management Committee to have accurate legal information, but I found its reach to be so limited that I could not properly test my hypotheses in locations in which it had and had not disseminated accurate legal information.

Forest and, if a group fails in this, the state may strip it of the land-grant and all of the benefits<sup>37</sup> that flow from that land. Thus, if delegation can solve the state's principal agent-problem and foster accurate legal knowledge, we should expect to see more accurate legal knowledge when the state delegates. I expect that delegated enforcement, in the form of Community Forests, is positively correlated with accurate legal knowledge. I measure exposure to delegated enforcement by asking respondents whether they have access to a Community Forest. I then conduct cross-border and within-country (for Nepal) analyses to determine whether exposure to delegated enforcement is associated with more accurate legal knowledge.

### *Information Dissemination through Local Leaders*

Not all sources of information are treated equally when individuals are trying to gain accurate legal knowledge. Ideally, individuals would read about the law themselves, but when education rates are low, individuals must rely upon second-hand information. In areas where lawyers are well-trained, plentiful and affordable, the legal knowledge that they provide is considered trustworthy and they are one of the main sources of second-hand legal knowledge (Muir 1973). These conditions are not always met, however, as is the case in the areas surrounding Chitwan and Valmiki. In places where lawyers fail to meet any one of the above conditions, local leaders may be able to act as reliable sources of information about the law.

These leaders may be elected or unelected, but are considered leaders, at least in part, because of their recognized and reliable connection to the state, whether formal or informal. Thus, the information they provide about the law is considered more credible or trustworthy than information provided by laymen. As one respondent put it, as he was trying to explain why he believed his source of information regarding the law, “[t]he village headman is a savvy man and many in the government are known to him. We know his family.” In situations in which ground-level bureaucrats are often corrupt, as is the case in South Asia, the information local leaders provide may be privileged over that provided even by agents of the state. A state with limited capacity that lacks the ability to behave consistently should nevertheless be able to foster accurate legal knowledge if it can circumvent its principal-agent problem (and the resulting information asymmetries). One way it may be able to do so is through local leaders.

To determine whether local leaders can foster accurate legal knowledge, I randomly selected three villages from the set of villages included in my larger survey. I had baseline data for approximately 50 individuals in each of these villages, all of which were within walking distance (10km) of the park. I returned to each of these villages to conduct a series of interventions. In the first village, the control village, I simply visited the village and said that I was there to research the park. In the second village I distributed fliers that accurately depicted Chitwan's wood collection prohibitions to 40 individuals and explained the logic behind these prohibitions, as well as the importance of the park to the local economy and ecology. In a third village, I had a local leader convey the same information included in the flier that I had distributed in the second village; he did so in an interactive session with 43 individuals present and I accompanied him and participated in this session. After conducting all three interventions,

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<sup>37</sup> Some User Groups use Community Forests as sources of medicinal plants, in addition to sources of firewood. Other User Groups have gone so far as to set up revenue generating businesses that rely on the preservation of the Community Forest. One such User Group offers elephant rides through the jungle to tourists.

I returned two months afterward to measure post-treatment effects. I did so using a condensed form of the survey I used for pre-treatment measures and using similar methodology, including surveying approximately 50 individuals in each location, but this time being careful to use different starting points for right-hand rule randomization.

### *Amelioration of Poverty-Driven Non-Compliance*

Regulatory pragmatism suggests that states that design implementation strategies around known obstacles can achieve high levels of compliance in spite of low state capacity. Nepal's Community Forests, which have the potential to foster accurate legal knowledge, also have the power to ameliorate another known obstacle to compliance along the India-Nepal border: poverty-driven non-compliance. As the population in this area is largely poor and reliant on fuelwood for cooking and keeping warm during the winter, many may be driven towards non-compliance by their poverty alone and not by a lack of motivation to comply with law. If this is the case, providing these individuals with an alternative fuel source, one that does not involve wood taken from national park land, should facilitate their compliance. I measure amelioration of poverty-driven non-compliance by asking respondents whether they need fuelwood and whether they have access to a Community Forest. I then analyze this data by income level (below poverty line v. above).

### **III. Methodology**

I utilize both survey data and interviews with relevant actors to explain variation in compliance. I first collected<sup>38</sup> survey data from over 1300 respondents, randomly sampling villages within walking distance of each park (10km) and collecting randomized convenience samples<sup>39</sup> within each village. Each respondent was asked, in person, a series of questions that started with demographic information and proceeded to questions designed to help measure my variables of interest, including possible confounding variables. Both before and after survey data collection I conducted a series of 35 semi-structured, qualitative interviews.

In addition, to complement my survey data and to explore regulatory pragmatism further, I carried out an experiment designed to test the idea that local leaders can transmit legal knowledge. To do so, I first randomly selected three villages from the set of villages included in my larger survey and for which I had baseline data for approximately 50 individuals. I returned to each of these villages to conduct the series of interventions I described briefly above and then to measure post-treatment effects. This post-treatment survey also allowed me to partially replicate my findings from the larger survey.

#### *a. Quantitative Data Collection*

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<sup>38</sup> To do so, I trained and managed two teams of approximately 10 interviewers, one on each side of the border. Each individual spoke the dominant language in the area, Bhojpuri/Tharu, in addition to Nepali or Hindi (depending upon the context). Since surveys were conducted simultaneously on both sides of the border, I also hired a local manager to handle day-to-day problems on the Indian side of the border.

<sup>39</sup> In each village, survey teams started from a common point (a cross-roads, a well, etc.) and fanned out in multiple directions, stopping at every seventh house to conduct an interview. Interviewers were instructed to interview men and women in roughly equal proportions and to consciously seek to interview individuals of varying ages.



In order to avoid both reporting and response biases, I use indirect measures to assess accuracy of legal understandings and compliance with national park regulations.<sup>40</sup> For accuracy of legal understandings, I asked respondents a series of true-false questions about legal requirements, which allowed me to test the accuracy of their knowledge. For compliance, I asked respondents where they collected their firewood and then coded whether this was inside the national park (“illegal”) or outside of it (“legal”). Importantly, I asked this compliance question well before the accurate legal knowledge questions, so that respondents were not primed to answer in a compliant manner. I then coded responses based upon location-specific lists I developed for each country during preliminary field work, as well as during the pilot for this survey. These lists roughly corresponded to the answers I received on either side of the border during the early phases of the project when I used a more open-ended question. The fact that the only substantial “other” response that I received during actual data collection was “purchase” indicates that these categorizations are fairly accurate. Also, while concerns about the self-reported nature of this data are not unfounded, my experience has been that respondents on both sides of the border are quite forthcoming about where they collect wood, regardless of the legality of doing so in those locations. The fact that so many of my respondents on both sides of the border admit to collecting wood in the national parks suggests that self-reported compliance data is not problematical in this case.

In contrast, I use direct measures, delivered via survey, in order to assess Community Forest access, income levels, need for firewood, fear, duty, and a number of possible confounding variables, including dependence on eco-tourism, receipt of “goodwill program” benefits, and attitudes towards the national parks.<sup>41</sup> As questions related to Community Forest access, income levels, need for firewood, or any of my confounding variables are not likely to suffering from reporting or response bias in this context, direct assessment is not problematical. Direct questions related to fear and duty, however, may well suffer from either or both of these biases. In an effort to avoid same, I did test a number of indirect measures during the piloting phase of this project. In particular, I tried using short, scenario-based questions to motivate and contextualize questions about fear and duty. Unfortunately, these stories merely confused my respondents and many of them did not appear to have the patience to listen to them and make thoughtful decisions afterward. In fact, I got the impression that these measures were more likely to lead to bias than the direct measures I piloted. Indeed, my respondents did not seem shy about reporting their fear of the state; they also didn’t seem over-eager to report that fear. The same was true for duty, though my subsequent qualitative interviews suggest that duty is the most complicated variable I measure. Many individuals seem to feel a genuine duty to obey the law, but they also feel other competing duties, like a duty to provide for their families. How they resolve these duties into action or inaction is not something I tackle in this dissertation, but, instead, is something I plan to examine in a subsequent project.

#### *b. Qualitative Data Collection*

In addition to the above-described large-N survey, I also personally conducted 35 follow-up interviews using snowball samples in three different locations and one focus group of 43

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<sup>40</sup> These measures can be found in the Appendix.

<sup>41</sup> These measures can be found in the Appendix.

women,<sup>42</sup> to better understand my survey data. I used semi-structured interviews during the first of these latter data collection endeavors in order to target particular information while still allowing respondents to communicate a wide range of answers. This technique allowed conversations to stray in sometimes unexpected directions and allowed me to gain quite a bit of insight into how and where respondents source information about the law. For the focus group, however, I used a slightly different technique. Here I chose to focus on women, as they are the members of a family who are typically responsible for wood collection and I believed they would speak more freely in a women's-only environment. I introduced the topic by asking the group whether and why needed wood, eventually steering the conversation towards regulations that govern wood-collection. Group members started responding to one another and many of the women seemed to feel more comfortable speaking freely amongst their friends and neighbors than they might in a one-on-one interview. This allowed me to sit back and observe not only the level of knowledge of wood-collection regulations, but who amongst the group was seen as authoritative on this particular subject and how information was passed between group members.

#### **IV. External Validity: Shadow Cases**

An externally valid theory of cross-border variation in compliance with wood-taking regulations in Chitwan and Valmiki National Parks should be able to withstand shifts to different regulatory contexts without generating contradictory findings. In order to probe the external validity of my conclusions with respect to compliance in the parks, I examine two shadow cases. Doing so allows me to gain insight from a total of three different types of regulations in terms of subject-matter and, perhaps more importantly, regulations aimed at three different target populations.

I look at three different types of regulations, ones related to conservation, education and labor, because each regulatory context is, in many ways, unique and a good theory of compliance should retain its explanatory power as it travels amongst them. I did, however chose each of these regulatory contexts because they relate to major economic activities in the border region. In addition, regulations in both of these areas, as with the conservation regulations in the parks, attempt to bring about a public good, are of interest to most people, impose a cost on those who must comply, and have not been unduly influenced by India's colonial past.<sup>43</sup> I have also chosen these subject areas because, in both cases, compliance requires behavior that is, at least to some degree, at odds with local cultural norms, while my key explanatory variable—use of regulatory pragmatism—varies in the education case and not in the child labor/brick kilns case. In other words, I have chosen my shadow cases for variation on both the independent variable and the subject area of regulation, while taking care not to conduct my research in regulatory contexts in which confounding variables may limit my ability to test my hypotheses.

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<sup>42</sup> I held this focus group in Jagatpur VDC, Nepal—a village which is adjacent to both Chitwan National Park and a Community Forest, in addition to being two kilometers from park headquarters.

<sup>43</sup> As Nepal was never formally colonized, individuals, business and organizations in India might comply (or not comply) with a regulation that relates to the colonial experience differently from their Nepali counterparts because of the well-documented historical baggage that flows from colonization.

I have also chosen the three subject areas listed above because of their respective target populations (i.e. the individuals or entities that are subject to regulation).<sup>44</sup> A good theory of compliance should continue to function even as the target population varies. Different target populations may prove more or less amenable to regulation for a number of reasons. For instance, target populations that are organizations or corporations may be more likely, because of their structure and purpose, to try to “game” a regulation which affects their financial interests by complying in only the most superficial manner. Such target populations, unlike individuals, may also feel less of a duty to comply with regulations because they do not “feel” in the traditional sense. Yet, this does not mean that corporate target populations do not respond to societal pressure. In fact, they may require what Gunningham, Kagan & Thornton (2004) refer to as a “social license” to operate, something that individuals do not necessarily require and which can drive over-compliance.<sup>45</sup> Thus, with the variation in compliance that can result from examining different target populations in mind, I examine whether ordinary individuals obey conservation regulations, whether private schools (organizations) follow teacher-student ratio regulations, and whether brick kilns (businesses) adhere to child labor regulations. Having conducted research that examines the compliance behavior of three commonly regulated target populations allows me to provide deeper analysis of the circumstances in which regulations generate compliance in weakly institutionalized regulatory environments. I discuss the methodology and measurement issues related to each of these shadow cases when I discuss the cases themselves in Chapter 5.

#### *a. Data Collection*

As few compliance-specific data have been collected throughout the world, never mind in India or Nepal, one of the primary purposes of my fieldwork and significant contributions of my dissertation is the data itself. After briefly describing the units of analysis and units of observation, I will outline data sources for each of my cases below.

#### *i. Units of Analysis and Units of Observation*

Though this project is inherently local in focus and though I do not attempt to collect any generalizable, national-level data, I do analyze the data I collect at the inter-state level. In other words, I compare behavior on both sides of the India-Nepal border. As *intra*-state differences also exist and are illuminating, I conduct analysis at lower-levels as well.

In order to avoid ecological inference problems, I make my units of observation correspond with my target populations. In the conservation case, individual behavior is regulated, so I collect individual-level data. In the case of private school and brick kiln regulation, I collect data at the school-level and brick-kiln-level, as individual schools and brick kilns are the units being regulated. In doing so, I was careful to collect data about the various higher-level units in which each target population is embedded to enable analysis at different levels of aggregation.

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<sup>44</sup> That said, I have chosen the subject material of each of these cases because it is an area that is of current concern to a large number of individuals in both India and Nepal. Examining securities laws, in comparison, would only be important and topical to a small subset of the Indian and Nepali populations.

<sup>45</sup> Gunningham, Kagan & Thornton, 2004. “Social License and Environmental Protection: Why Businesses Go Beyond Compliance,” *Law & Social Inquiry*, Vol. 29(2), pp. 307-341.

## *ii. Data Sources*

**Ordinary Individuals (Conservation Regulation):** I collected survey data from over 1300 individuals living and/or working in close proximity to Chitwan and Valmiki National Parks in order to assess compliance, accuracy of legal understandings, and poverty-driven non-compliance. As the population of the districts surrounding these conservations areas is in excess of 1 million persons and no master list of these individuals is available, I sampled villages—a list of which is available—instead and then conducted convenience samples within these villages, with interviewers fanning out from a central point and conducting interviews at every seventh house. Sampling villages allowed me to collect data from individuals embedded in a variety of different geographical and administrative contexts.

In order to assess compliance, I asked respondents to state whether people “in this area” collect wood in the national park. Collecting data on compliance in this manner allowed individuals to freely report what they observe without forcing individuals—who are sometimes aware that this activity is illegal—into a situation in which they feel they should answer untruthfully in order to present themselves as law-abiding citizens or in order to avoid punishment.<sup>46</sup> In addition, I asked individual where they collect wood. I backed this approach up with observational data collected from two similarly situated sites, one at each of the park borders of Valmiki and Chitwan. At each site I collected data on 25 randomly sampled days, spread out over 3 months, observing and counting individuals exiting the forest with firewood.

I assess accuracy of legal understandings somewhat differently. First, I asked all respondents a series of four to five “true-false” questions. I tailored these questions to assess respondents’ understanding of both the law I was looking to investigate and closely related laws. Respondents in this case received questions about park regulations. After the fact, I was then able to compare respondents’ answers, at different levels of aggregation, to the behavior required or prohibited by law, using the absolute value of the difference between average responses in a particular area—ones for true and zeros for false—and the “correct response.” On the Nepal side of the border I also use a question regarding whether respondents have access to a Community Forest to assess whether individuals are privy to the legal understanding that wood collection in Community Forests is permissible under the law and preferable to wood collection in Chitwan National Park. As there is no Joint Forest Management Program surrounding Valmiki Tiger Reserve, I did not ask this question in India.

Finally, I assess poverty-driven non-compliance by first examining individual’s reported earnings, since low earnings mean that individuals will almost certainly be dependent upon wood for cooking and heating. I then cross-reference earnings with respondents’ housing-type, with poor housing being an indication that low reported-earnings are indicative of meager resources and good housing being an indication that low reported-earnings are inaccurate. Next I separate

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<sup>46</sup> While the survey responses I get in response to such questions are almost certainly unreliable in terms of absolute numbers regarding both compliance, since many of the responses required are subjective, surveys are still the appropriate way to proceed because I was not looking for absolute numbers; I was looking for relative numbers and I have no reason to believe that ordinary individuals on either side of the India-Nepal border would respond to the same questions in systematically different ways unless, of course, they actually observe different behavior. Also, I’ve found individuals to be quite forthcoming about their activities inside and outside of the park and many individuals readily admitted to behavior that would constitute non-compliance.

out those respondents who report having access to a Community Forest<sup>47</sup> and being motivated by fear or duty to comply with the law, from those who are motivated by either fear or duty, but lack access to a Community Forest. I then compare the locations that individuals in these two groups report that they get their wood, measuring poverty-driven non-compliance with the proportion of respondents, at a particular level of aggregation, who are poor, lack access to a community forest, are motivated by either fear or duty, and report wood collection in “the National Park.”

I supplement the above-described survey data with qualitative data.<sup>48</sup> I conducted a number of interviews with bureaucrats, local leaders and ordinary individuals to explore different aspects of my data and to understand what attempts the states on either side of the border have made to bring about compliance with wood-collection regulations.

**Organizations (Private School Regulation):** I examine compliance with teacher-student ratio regulations observationally, at least in part because this is the cleanest and most straightforward way to get accurate compliance data with respect to this more-sophisticated target population. I did so under the premise of collecting survey data on the schools themselves and on how administrators perceive regulations, which I accomplished in much the same way as in the conservation case, asking respondents education law-related questions. This allowed me to collect data on the accuracy of legal understandings at the same time. I employ these data to measure the degree of overlap between legal understandings and behavior required by law in the same way I do in the conservation case above and the brick kilns case below. I do not assess poverty-driven non-compliance in this case because there is no “community forest option” that would allow me to compare the compliance of those of the poor who are who are given a low-cost compliance option to those who are not. I was able, however, to collect economic data, using revenue and fees, which allow me to evaluate whether compliance at the “poorest schools” is worse than that at the “wealthiest schools.”

As the number of private schools in the region is manageable, I used lists acquired from the Ministries of Education in both India and Nepal to census rather than sample this “population” of entities—collecting survey data from senior administrators at each school. While there were three schools on the government lists that I was unable to locate in the field, I have no *a priori* reason to believe that this missing data limits the conclusions drawn from my census. Private schools regularly go out of business in both India and Nepal and my interviews indicate that it is not likely that these schools were driven “underground” by deterrence-based enforcement.

I also conducted a number of interviews with bureaucrats and parents to add richness to the quantitative data I collected and to explore interesting patterns in the data.

**Businesses (Child Labor Regulation):** I assess compliance with child labor regulations at brick kilns observationally because this strategy bypasses owners and managers and is the

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<sup>47</sup> Here I use respondents’ reports that they have access to a community forest as a proxy for their knowledge of the legal understanding that wood collection in community forests is allowed under the law and preferable to collection in Chitwan National Park.

<sup>48</sup> I found it remarkably easy to observe individuals complying with or—as was more often the case in Valmiki—breaking park regulations.

cleanest and most straightforward way to get accurate compliance data. Under the premise of collecting survey data on labor in brick kilns and on how brick kilns owners and managers perceive regulations, I was able to observe child labor, in much the same way as in the conservation and private schools cases, while assessing the accuracy of legal knowledge and asking respondents labor law-related questions. I employ these data to measure the degree of overlap between legal understandings and behavior required by law in the same way as in the conservation and private schools cases above. As with the private schools case, I do not attempt to assess poverty-driven non-compliance in brick kilns, as in this case too there is no “community forest option” that would allow me to determine whether a low-cost route to compliance makes a difference in terms of demonstrated behavior. That said, I collected data on revenue and brick prices at each kiln and use this data to evaluate whether compliance is more common at the more profitable kilns than at the least profitable.

As the number of brick kilns in the region is manageable and as brick kilns are large and quite visible operations, I used satellite imagery to locate all brick kilns in the region surrounding Birgunj and Raxaul Bazaar, the twin border cities located in Nepal and India, respectively. I was then able to collect data on a census basis, from just over 50 brick kilns. I was also careful to look for brick kilns that had been built since Google Earth last updated its images of the region. These are easy to find since the region is completely flat and the chimney of a brick kiln can be seen from many miles away. While I found no new kilns, several of the kilns I found via satellite imagery were no longer in business at the time of data collection. In addition, four kilns in my census refused to complete my survey. Each of these is located quite close to Raxaul Bazaar and all were very concerned about their responses to child labor related questions somehow getting into government hands. I will elaborate on this anomalous group later, but, for the moment, it is sufficient to state that observed use of child labor at these kilns was no more frequent than elsewhere in the region and I have no a priori reason to believe that this missing data under-cuts my census.

Though I had hoped to conduct a number of interviews with brick kiln workers to add richness to the quantitative data I collected and to explore interesting patterns in the data, I found that brick kiln owners and managers were unwilling, for somewhat obvious business reasons, to let me interview their workers.

## **Chapter 2: Inconsistent State Action, Inaccurate Legal Knowledge & Non-Compliance**

In the socio-legal compliance and rule of law literatures, it is often assumed that the law is both widely known and understood. The importance of this requirement cannot be overstated: knowledge of the law is essential for compliance in the many situations<sup>49</sup> in which legal requirements do not coincide with cultural norms. If individuals do not know what the law is, they cannot change their behavior to conform to its requirements.

For instance, when I was an undergraduate, I regularly led hiking trips for my college's outdoor club and on one such trip, to Joshua Tree National Park, we were awakened at our wilderness campsite—at approximately 7am on Easter Sunday, no less—by a park ranger who informed us that we were in violation of a regulation regarding back-country camping. We were shocked. Having every desire to minimize our impact on the natural environment and comply with relevant regulations, we had examined all of the posted materials at the parking lot regarding backcountry camping the previous day and duly filled out a report on our proposed route, attached back-country tags to our bags, etc. What's more, we had complied with all other back-country norms, from refraining from cooking on open fires, cooking on tiny gas stoves instead, to disposing of human waste in the “proper” manner.

Since no one in the group had any idea what we had done to incur the ranger's early morning visit, we asked him and he indicated that we were sleeping less than a mile from human improvements (i.e. a road or building) and, thus, were not in the back-country per se. We could not see the road from our location, but even if we could have, we would not have known that our location was problematical, as none of us had heard of this regulation before. We explained as much, apologized and promised to leave immediately. The ranger, for his part, decided to give us two citations, one for every two members of our group. Though the citations, at \$25 each, were not costly enough to motivate future compliance on their own, we all had a healthy respect for the rules themselves and came away from the experience hoping to avoid such violations, and the associated hassle, in the future. Ever since, I have always carried up-to-date maps and checked at ranger stations prior to any backcountry excursion about where exactly I am and am not allowed to camp.

The above anecdote and similar ones notwithstanding, it is true that in many parts of the world academics can generally get away with assuming that the law is widely known and understood and move on to exploring other explanatory variables. In the developing world, however, lack of education and state capacity hinder the public's efforts to learn about the law. As the state has limited ability to disseminate information about same, one cannot assume that this precondition for both rule of law and compliance is met. If one understands this, individual behavior in the developing world begins to make more sense. For instance, if an individual does not know that taking timber from public land is illegal and needs or wants it, then he or she will likely take it. However, if that individual is told by a reliable source that such an action is illegal or observes someone being punished for doing so, his or her calculus changes; now he or she may consider other factors, like the likelihood of being caught, the harshness of the penalty, reasons for voluntary compliance (i.e. desire to protect a natural resource), etc., when choosing whether or not to comply. It is because knowledge of the law matters so much for compliance

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<sup>49</sup> Winter and May (2000).

that states sometimes reach out to those they regulate to inform them about the rules or changes in them.

This isn't usually necessary for landmark legislation, which often generates its own press and a large national debate. For less well-known regulations, those governments which have the capacity to do so seem to go the "PR" or "awareness" routes before enforcement. For instance, in September of 2013, the Scottish government started raising awareness, both amongst the general public and amongst business owners, regarding a "zero-waste" law, which would go into effect on January 1, 2014 and require recycling of certain materials. The awareness-related materials the Scottish government distributed, via multiple different media, included information on what the law required, penalties for non-compliance, the rationale behind the law, and information on the financial support the government would provide to blunt the financial impact of the legal change. Similar efforts have taken place in the subcontinent. Delhi has experienced a large-scale PR campaign to raise awareness of the importance of road safety. Materials connected to this campaign informed the masses of the scale of the problem and the impact of non-compliance, referred to existing regulations and urged the public, seemingly "for their own sake," to comply. Another aspect of this campaign involved government officials—seemingly hoping to make an impact on impressionable young minds—going around to different Delhi schools to make presentations regarding road safety. Meanwhile, in Kathmandu, there have been large-scale campaigns, largely mediated by the NGO sector, to raise awareness of the existence and illegality of sex trafficking across the India-Nepal border. But campaigns such as these, at least in India and Nepal, are few and far between. Where they exist, they tend to focus—for arguably good, cost-effectiveness reasons—on urban areas.

In the case at hand, the Indian and Nepali states have not been involved, in a widespread and regular manner, in informing ordinary individuals living near Chitwan and Valmiki National Parks about wood-taking prohibitions. When I examined Chitwan National Park's Annual Reports, which do contain information about awareness-raising campaigns conducted to prevent Rhino poaching, I found no evidence that such an effort had been made for wood-taking regulations. I also found little evidence that such a thing had taken place from my longer-form interview respondents. I was, however, told by frontline bureaucrats that they have occasionally gone to village headmen in locations in which wood-collection was a problem (i.e. harming animal populations) and requested their assistance in preventing such widespread incursions. These efforts, however, per the accounts of the bureaucrats involved in them, were isolated rather than widespread and, perhaps more importantly, from the perspective of accurate *legal* knowledge, requests to move wood-collection elsewhere, when mediated by village headmen, may not appear to villagers to be government regulations.

I found a similarly low level of awareness-raising efforts with respect to wood-taking regulations in the area just outside Valmiki. When I examined Valmiki Tiger Reserve's Annual Plans of Operation, I did find that at least one recent budget included line-items for awareness activities: "Brochure and handbills website of Valmiki TR" and "public awareness campaign in villages."<sup>50</sup> Subsequent budgets, however, including the one for 2014-2015,<sup>51</sup> do not include such allotments. Still, high level park staff indicate that they have recently set up more the 90

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<sup>50</sup> Sanction of Valmiki Tiger Reserve APO from the National Tiger Conservation Authority, 2012-2013.

<sup>51</sup> Sanction of Valmiki Tiger Reserve APO from the National Tiger Conservation Authority, 2014-2015.



eco-development committees in villages near the park boundary and use these committees to communicate park “do’s and don’ts.” My conversations with frontline staff indicate, however, that these activities largely focus on wildlife rather than wood-collection. Interviews with villagers living just outside of Valmiki also failed to turn up any evidence of awareness-raising efforts related to wood-collection, but this may have been because such efforts were conducted through intermediaries, as with efforts across the border near Chitwan.

## I. Literature

The standard deterrence model suggests that individuals conduct a cost-benefit analysis when considering compliance and that fear (Gibbs 1968; Jensen 1969; Tittle 1977; Friedman 1975), duty (Braithwaite & Makkai 1994; Sholz & Pinney 1995; May 2004; Mazar, Amir, and Ariely 2008; Pruckner and Sausgruber 2013) and social license pressure (Kagan, Thornton & Gunningham 2003) are the main factors which have the power to augment this analysis.

One can also glean from the rule of law, socio-legal compliance and economic compliance literatures a list of the conditions under which fear, duty and social license pressures are likely to impact compliance. Among them are likelihood of detection (of non-compliance) (Kleven et al 2011; Blumenthal, Christian and Slemrod 2001; Klepper and Nagin 1989), severity of penalty (Klepper and Nagin 1989; Scholz and Gray 1990), cost of compliance in both time and money (Gerstenfeld and Roberts 2000; Yapp and Fairman 2004; Hillary 1995; Bowman, Heilman and Seetharaman 2004), knowledge of enforcement odds (Gerstenfeld and Roberts 2000; Hillary 1995; Hutchinson and Chaston 1995; Petts 1999 and 2000; Yapp and Fairman 2004; van der Wal et al. 2005), perception of regulators (Wilson and Kelling 1982; Braithwaite and Makkai 1994; Yapp and Fairman 2004), attitude towards regulation (Bardach and Kagan 1982; Kagan, Thornton and Gunningham 2003; Tyler 1990; Makkai and Braithwaite 1996; Kagan and Scholz 1984), formal management systems—in the case of businesses, organizations or governments (Palmer and van der Vorst 1996), social pressure (Sandmo 2005; Kagan, Thornton and Gunningham 2003), the belief that others are complying (Gachter 2007; Elster 1989; Fellner et al 2013; Coleman 1996; Kagan, Thornton and Gunningham 2003), the saliency of the need for compliance (Thaler and Sunstein 2008; Gray and Scholz 1991; Siskind 1980; Weil 1996; Ko et al. 2010; Bowman, Heilman and Seetharaman 2004), and formal allowances for self-regulation (Rees 1994).

Implicit in almost every single one of these articles is the fact that another factor—a factor so basic and integral that the literature rarely considers it a variable—is required in order to achieve compliance when law differs from social custom: legal knowledge. In fact, Thomas Carothers, one of the main proponents of the rule of law and development movement, defines rule of law as that stage at which laws have become widely known and understood. It follows that accurate legal knowledge should be predictive of compliance. The socio-legal compliance literature also acknowledges the importance of what it calls “implicit general deterrence,” the assumption that populations targeted by particular regulations are aware of those regulations and are, on average, deterred from non-compliance. (Thornton, Gunningham & Kagan 2005). Though both the more normative rule of law literature and the socio-legal compliance literature acknowledge the importance of accurate legal knowledge, they rarely admit its absence (*contra* Winter & May 2000)

Aid organizations are more practical, however. Starting in 2001, the University of Maryland implemented a USAID Rule of Law program in Georgia designed to increase citizen awareness of laws. A 2006 evaluation of the program testifies to the efficacy of this approach. This empirical validation of the importance of legal knowledge suggests that this factor alone may explain a significant amount of the non-compliance we see in areas that suffer from low state capacity—as well as the remaining pockets of non-compliance that we see in places where the state is quite strong. Indeed, Fellner et al (2013) find that, in Austria, where the state is strong and deterrence is a viable option, information about the law, when combined with a threat of enforcement, substantially increases compliance rates.

To explore whether knowledge of the law remains powerful in the absence of significant enforcement capacity, I conducted research in an area of low state capacity: the India-Nepal border. Up until recently this border region has been plagued, both in India and Nepal, by Maoist insurgency. During this period the state almost ceased to exist at the local level. In the intervening time, the Nepali and Indian states have re-entered this region, but only minimally and signs of the state remain few and far between. This region is also one in which the *a priori* likelihood that members of the target population will have knowledge of laws that different from customary norms and feel a strong duty to obey state-propounded regulations is low. Put differently, this research was conducted in a location in which legal norms' chances, vis-à-vis social norms', are quite unfavorable—a so-called “hard case.”

## II. Formation of Accurate Legal Understandings

So, how do people know that taking wood from park land is illegal, particularly when the cultural norm in the area is to do so? The simple answer, as I alluded to in the Introduction to this dissertation, is that many of them do not. I find that, overall, 61.7% of those respondents who answered both my compliance and legal knowledge questions hold *inaccurate* understandings of the wood-taking prohibitions in place in Chitwan National Park and Valmiki National Park and Tiger Reserve. Yet, many individuals seem to want to avoid legal penalties—and the state more generally. This motivates them to try to determine the legal requirements that affect their lives in whatever way they can, using whatever resources available to them. What's more, I suspect that this may be true even if they do not plan to comply. After all, even someone dealing illicit drugs may want to know what the law is so that he or she can better skirt it or defend him or herself if caught. Thus, I assume that most individuals at least try to make educated guesses about the legality of the things they do on a regular basis.

But how do they go about doing so? Drawing on the dominant theories of knowledge acquisition, constructivism and cognitive flexibility theory,<sup>52</sup> particularly as applied to “ill-structured domains,”<sup>53</sup> I suspect that individuals improve their guesses by constructing and iteratively reconstructing what the law “must be” based upon the information available to them at any particular moment. In the case at hand, in which ordinary individuals with little formal education are tasked with acquiring advanced knowledge on legal requirements, I suspect that these individuals draw information for updating from many different sources, ranging from prior

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<sup>52</sup> Bereiter & Scardamalia (1985); Bransford, Franks, Vye & Sherwood (1989); Spiro et al (1987, 1988); Spiro and Jheng (1990); Brown (1989).

<sup>53</sup> Spiro et al (1992).

interactions with the state, to their beliefs about what types of regulations the state might make, to what amounts to rumors circulated by neighbors and friends regarding legal requirements. The result is an individually held understanding of what type of behavior is required or prohibited in a given situation that may or may not be accurate depending upon the pattern of observations and interactions that individual has witnessed.

My qualitative evidence suggests that this is approximately what is going on amongst individuals living just outside of Chitwan and Valmiki National Parks. Having completed my first round of survey data collection, I found myself struggling to interpret responses to questions I had designed to measure legal knowledge, so I conducted a number of long-form, open-ended qualitative interviews in order to better understand how people came to their legal understandings. What I found was that much of my respondents' legal knowledge was based upon rumor: rumors about what other villagers said about the law, rumors about what the park employees said about the law, rumors about enforcement experiences, etc. But it wasn't all rumor. People seemed to both privilege direct experiences, whether personal or observational, and information from what they viewed as a knowledgeable and/or trustworthy source. As one respondent put it, as he was trying to explain why he believed his source of information regarding the law, "[t]he village headman is a savvy man and many in the government are known to him. We know his family." After considering evidence from various sources of varying trustworthiness, people then seem to form their legal understandings by trying to use all evidence available to them while also resolving inconsistencies between different evidence. For example, one respondent explained to me that wood collection is allowed in the park in some places and not in others and, when asked how she knew this to be true, she clarified that her neighbor got in trouble for wood collection, but that "[her] sister married and left for Thori and that everyone collects wood in the park there,"<sup>54</sup> seemingly privileging trustworthy information and resolving inconsistencies to form a generalization. And this is probably a useful generalization for her, in that enforcement near both Valmiki and Chitwan is inconsistent and does not necessarily reflect the law on the books. But all of this makes one wonder, in that the focus of this dissertation is on compliance with the law on the books: under what circumstances do accurate legal understandings develop?

In a low-information environment, in which target populations have little means to read about the law on their own, I expect that principal-agent problems and the resulting inconsistent state behavior will ensure that misunderstandings of legal requirements remain pervasive. When the state punishes or appears to punish a particular action some of the time, while failing to punish the same behavior at other times, these mixed signals propagate through the legal understandings of the relevant target population. Those who have been punished or have seen others punished or heard about others being punished, receive information that suggests that the punished behavior is illegal. Many of these same individuals will then receive conflicting information at some later point in time and this will likely cause them to question whether their original assumptions regarding prohibited behavior were correct and update them based upon new information. As one of my respondents explained, "I have been fishing from this stream my whole life. This must be allowed. The fish are God's, not the government's. But I hear that if you stand on the bridge near the guard post and fish they will tell you it is not allowed. It is their

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<sup>54</sup> The implication of this respondent's statement, to my mind, based upon the longer interview, is that if everyone is collecting wood, then it must not be illegal.

bridge.” Of course, it is fishing itself, rather than fishing from the bridge, that is not allowed in the park, but this respondent came to a different—although not entirely illogical—legal understanding based upon his experience, what he has heard and his understanding of the world and the government. In this way, in the context of inconsistent state action with respect to a particular rule or regulation, many individuals at any given point in time can end up with inaccurate legal understandings.

Consistent state action with respect to a particular law helps produce accurate legal understandings. The more regularly and visibly the state either punishes or disallows behavior that is prohibited and allows behavior that is permitted, the more individuals observe this to be the case and can, in turn, tell others what they have observed. When the state behaves consistently, assuming it does so in a manner that is in line with the law on the books, personal observations, beliefs about the state and rumors about what the state, or its delegates, has done are more likely to be similar and individuals are more likely to form legal understandings that are accurate. Under conditions of consistent state action, individuals will rarely be presented with conflicting information about the law and, as a result, will only occasionally have to resolve discrepancies into an updated legal understanding. Moreover, when they do resolve contradictions, they are more likely to end up with accurate legal knowledge.

#### *a. Consistent State Action in South Asia*

Despite the fact that South Asian countries are all still “developing,” there are examples of significant state capacity and consistent state action in the region. A good example of this is the Indian Election Commission, which does not appear to suffer from principal-agent problems and regularly achieves a high level of consistency. It behaves similarly from election to election and from place to place, so much so that Indians know that on Election Day they can go to the polls and vote freely and without interference. They also know that once they have voted, they will receive a deep purple mark on their right index finger. If they already have this mark, they will not be allowed to vote. Their own observations, their beliefs about the state and the observations of their friends and family will almost certainly align with one another in this regard. Because the Election Commission behaves so consistently, I would also venture a guess that the vast majority of voters have accurate legal understandings of the prohibition on double-voting. These accurate legal understandings, in turn, are of fundamental importance to both individual-level compliance and to rule of law more generally. Few attempt to vote twice and Indian elections are some of the most free and fair, not to mention institutionalized, in the world.

The problem, of course, is that the Indian Election Commission is unusual in its consistency. In the areas surrounding Chitwan and Valmiki, consistent state action is rare, largely owing to meager state resources and large-scale corruption. Honest bureaucrats rarely have the resources or support to do their jobs properly and, moreover, the behavior of dishonest bureaucrats, who are more numerable, undercuts the consistency of their efforts. Thus, consistent state action, while achievable in South Asia, is far from normal.

### **III. Hypotheses**

I expect, first, that consistent state action is correlated with accurate understandings of the conduct required or prohibited by law in a particular situation, and, second, that accurate legal

understandings are predictive of compliance: the more widespread these accurate understandings are, the higher the rate of compliance and vice versa. I also anticipate that variation in the proportion of the population holding accurate legal knowledge explains, at least in part, the cross-border variation in compliance with wood-taking restrictions around Valmiki and Chitwan. Finally, I hypothesize that accuracy of legal understandings at least partially explain variation in compliance amongst individuals on the same side of the border.

#### **IV. Methods**

As described in greater detail in the preceding chapter, I measure the accuracy of legal understandings by asking members of each target population true-false questions regarding the conduct required or prohibited by law and then by aggregating their responses geographically. I ask ordinary individuals whether it is true that “[p]eople must not collect fallen wood.” I also ask, amongst other things, whether it is true or false they “must stay on roadways at all times.” By asking these questions of the target population for wood-taking prohibitions in Chitwan and Valmiki National Parks, questions which pertain to both regulated and unregulated conduct and require individuals to recognize both false statements about the law and true ones, I am able to get a fairly clear picture of what individuals believe is required or prohibited by law. Then, after aggregating responses geographically, I examine the proportion of people in a given location who hold an accurate understanding of the law and whether higher or lower proportions are associated with compliance.

#### **V. Findings & Discussion**

In the absence of accurate information, individuals and entities often do not make the shift from cultural norms to legal norms or from old legal norms to new ones, even if they are motivated to comply with government-propounded rules and regulations. Still, amongst individuals who possess accurate legal knowledge, compliance is significantly higher than amongst those whose legal knowledge is inaccurate. In the text that follows, I will substantiate these claims.

##### *a. Consistent State Action & Accurate Legal Understandings*

Given that legal understandings are so consequential, it is important to understand how they are formed. Generally speaking, I find that those who take a particular action and are punished believe that behavior to be illegal, while those who take a particular action and are not punished believe that behavior to be legal. In my qualitative follow-up interviews, I asked respondents how they determine whether something is illegal. The overwhelming sentiment amongst my respondents was that something that you get in trouble for with the government is illegal. Many of my respondents focused on punishment as a source of information and elaborated with examples. One described the fact that she had ridden her scooter out to the main road and a policeman had stopped her; he told her she had to wear a helmet and made her pay a fine. As a result, this respondent believed that not wearing a helmet on a scooter was illegal.<sup>55</sup> Another respondent described the fact that the government had forced her to move her house during a road-widening campaign; she concluded that it was illegal to have your house too near

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<sup>55</sup> In this particular case she is right.

to the road.<sup>56</sup> Interestingly, when I asked respondents how they can tell if something is legal, I received far fewer elaborations and many were unsure how to tell if something is legal other than to do it and see if punishment follows; if it does not, then that action is allowed. Some suggested that one can ask family and neighbors if something is legal. But few came up with a definitive answer, save for one older man who sagely observed that “everything is legal unless the government makes it illegal.” In other words, for him, legal is the default and one doesn’t need to find out if something is legal, one just needs to find out if it is illegal.

Along the same lines, those who know someone who took a particular action and was punished tend to believe that the punished behavior is illegal, while those who know someone who took the same action and was not punished believe the same behavior to be legal. If lacking personal experience with respect to the legality or illegality of a particular action, respondents seem to look first to the experiences of others. As one respondent put it, “Sometimes your friend gets in trouble for something and he tells you about it. My friend had too much alcohol when he tried to get on the bus. The driver would not let him on and said he would call the police. My friend had to stay the night at the bus stand. Now I know that you can’t get on the bus if you are drunk.” Another respondent stated that many of her neighbors had hired a local man to tap into the electric line for them and that she had thought this was legal, but that when the government came around to replace the electric poles, it removed all of the lines that the local man had created and only left the ones with meters that the power company had put in place; as a result, she concluded the local man had been acting illegally. In her mind, something that seemed legal, due to its commonplace nature, transformed into something that seemed illegal because of the consistency with which her neighbors had lost both their electricity connections and their investments in setting them up.

This respondent’s experience notwithstanding, the Indian and Nepali states, at least in the region in which I conducted my research, largely tend toward inconsistency, particularly with respect to enforcement of park regulations. When I spoke with high-level park staff in both Kathmandu and Chitwan, they explained that enforcement of wood-taking restrictions was not a priority, save for prevention of tree-felling by smugglers. Chitwan National Park’s Annual Reports seem to reflect this fact. While the reports detail enforcement of anti-poaching laws, there is almost no mention of enforcement of regulations that prohibit wood collection in the park. And conversations with frontline bureaucrats seem to confirm that this is a fairly accurate depiction of enforcement within the park, almost everyone I spoke with said that they had handed out fines for wood collection, but not on a regular basis. Across the border in Valmiki, I was told by high-level park staff that they do engage in enforcement of wood-taking restrictions, but when I visited the office of Bihar’s Chief Wildlife Warden in Patna, I was told that enforcement of wood-taking prohibitions was impractical and that no major effort to do so in Valmiki had been made. When I spoke to frontline bureaucrats, forest guards in this case, they

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<sup>56</sup> In this case, it’s not clear that having one’s house too close to a road is illegal per se—at least outside of Kathmandu, where road-widening has often involved the state taking back land on which illegal encroachments have been built—but, it is true that the state, in this case the Nepali state, retains a quasi-*eminent domain* right which it exercises regularly when widening and paving roads. My respondent took the fact that she had to move her house (which was located in the *terai*, not in Kathmandu), tear it down and reconstruct it elsewhere, as punishment for her own illegal action, not as the state exercising a right to remove even a legally constructed house.

said that while they did occasionally enforce wood-taking regulations, they did not do so regularly.

Respondents' experiences, however, suggest that while deterrence-based enforcement is not common, it is also not absent. For example, one respondent living about 100 yards from a park boundary-post in Chitwan described her experience as follows: "I go into the park sometimes. Many times I walk by the post and the guard is asleep or talking to another guard. I have not gotten into trouble, but my neighbor was bothered at the same post." When pressed on what she thought her neighbor might have been doing that got her into trouble she responded: "Who knows? She is just like me." In other words, to her, the system seemed unpredictable and her conclusion was that anything her neighbor, who is "just like [her]," may have been doing, could get her in trouble too. She was unable to resolve these contradictory experiences into a single principle that would keep her clear of legal problems. Another respondent, this one on the Indian side of the border, explained to me that he regularly collects wood in the forest but has only once gotten into trouble, in this case for taking a tree that had fallen during a storm out of the park. The forest guard threatened a fine, but, as my respondent put it, "he was a local man" and was swayed by the fact that the tree had fallen on its own and was not cut down. My respondent did not end up paying a fine, but the legal understanding he took from this encounter is both interesting and inaccurate: "It is okay to take small wood, but not big wood." In fact, neither is allowed, but it would be difficult for my respondent to be able to determine that based upon his experience.

If one generalizes from these experiences, and the many others I collected via open-ended interviews, it should hardly be surprising that many of my respondents' legal understandings were inaccurate. Indeed, only 38.5% of my respondent displayed accurate knowledge of wood-taking prohibitions. Individuals living in this region struggle to gain accurate information about the law. They generally do not have the resources to contact a lawyer and, even if they did, the lawyers in this region are poorly educated and few-and-far-between. Moreover, the states in this border region rarely communicate with citizens regarding legal norms and behave too inconsistently with respect to those norms for accurate understandings to develop.

#### *b. Accurate Legal Knowledge and Compliance*

The understandings of the law that target populations hold are important because they relate to another significant relationship: the one between accurate legal knowledge and compliance. I test the proposition that those who hold accurate legal understandings are more likely to be in compliance than those who do not by first aggregating my data at different levels of geographical analysis: 1) the entire study region; 2) individual countries; and 3) replication villages in Nepal.<sup>57</sup> Within each of these geographical areas I then subset my data into two groups: those who hold an accurate understanding of prohibitions on wood-taking from nearby national parks and those who do not.

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<sup>57</sup> These villages were, as mentioned in Chapter 1, randomly selected from the broader Nepal sample for the leadership experiment.

When I subset by accurate legal knowledge in this manner, I find significant differences in compliance at all levels of geographical aggregation. When I look at the entire study region, I find that those who hold accurate legal understandings, regardless of where they are located,

**Table I. Compliance Rates amongst those who hold Accurate vs. Inaccurate Legal Knowledge at different levels of geographical aggregation.**

Variable of Interest	Accurate	Inaccurate	p-value	SE
Entire Study Region	0.702	0.391	0.000	0.016
Nepal	0.709	0.566	0.000	0.019
India	0.550	0.280	0.011	0.016
Replication Villages	0.634	0.439	0.019	0.042

report behavior consistent with compliance 70.2% of the time. Meanwhile, those of their counterparts who hold inaccurate legal understandings comply 39.1% of the time. A t-test run on these two groups reveals a significant difference ( $p < 0.000$ ). And, importantly, this trend holds on both sides of the border when I look at individual countries. In Nepal, the numbers are 70.9% and 56.6%, while in India, they are 55.0% and 28.0%.; in replication villages in Nepal, the numbers are 63.4% and 43.9%. Each of these differences is significant as well (Nepal,  $p < 0.000$ ; India,  $p = 0.011$ ; replication villages,  $p = 0.019$ ).

## VI. Conclusion

When education levels are low and in the absence of communication from the state regarding legal norms, individuals typically turn to lawyers for accurate legal knowledge. But lawyers are poorly trained and scarce in the region around Chitwan and Valmiki. As a result, individuals in this region typically learn about the law by observing the state. When the state regularly and visibly punishes a particular behavior, individuals conclude that this behavior is illegal. When behavior goes unpunished, they conclude the opposite. Principal-agent problems between the state and its bureaucratic agents have led to inconsistent state action with respect to wood collection prohibitions near both Chitwan and Valmiki. This inconsistency means that individuals struggle to discern what the law is and, in particular, whether wood collection in these two national parks is illegal.

My findings, which include a widespread lack of legal knowledge amongst my survey respondents, suggest that inconsistent state action is associated with inaccurate legal knowledge. I also find, as I will discuss in Chapter 3, that implementation strategies that are consistent with regulatory pragmatism and design around principal-agent problems, can achieve accurate legal knowledge in spite of inconsistent state action. This is important because accurate legal knowledge is associated with significantly higher compliance rates, regardless of geographical unit of aggregation.

My findings with respect to the relationship between accurate legal understandings and compliance also broadly indicate that many of those who are not in compliance are not intentionally flouting the law. In fact, many likely believe that they are in compliance and this implies that if those with *inaccurate* legal understandings were provided with accurate



information, quite a few of them would be motivated to alter their behavior in the direction of compliance. Finally, the fact that compliance is only 70.2% amongst those who possess accurate information about the law suggests that legal knowledge alone will not result in high levels of compliance. In Chapter 4, I will explain the relatively low compliance rates amongst those who do possess accurate legal knowledge by taking a close look at another piece of the puzzle: poverty-driven non-compliance.

### **Chapter 3: Accurate Legal Knowledge in the Absence of Consistent State Action**

Accurate information about the law, even when education levels and communication of legal norms are both low, need not be scarce. States using regulatory pragmatism to guide their legal design and implementation strategies can foster accurate legal knowledge by using at least two different approaches: delegated enforcement and information dissemination through local leaders. Delegated enforcement mimics consistent state action and allows target populations to gain knowledge that they wouldn't have been able to achieve in an environment dominated by inconsistency. Individuals exposed to delegated enforcement by way of Community Forest access often hold more accurate legal understandings than their similarly situated counterparts without such access. Local leaders also play an important role in fostering accurate legal knowledge because they make information about the law seem trustworthy and credible. Those who have received accurate information about the law via a local leader are more likely to update their legal understandings to reflect that information.

#### **I. Literature**

Legal knowledge remains under-theorized in the rule of law and socio-legal compliance literatures. As a result, hypotheses regarding sources of legal knowledge must be drawn, for the most part, from other bodies of scholarly work.

Individuals can, of course, learn about the law themselves, so long as they have the requisite skills: primarily education. But in most locations, this last statement should read "legal education," as determining what the law is has quite a bit to do with knowing where to look for it and how to read statutes and, in common law jurisdictions, case-law. Possession of these skills is not common amongst average citizens. As a result, and as mentioned previously, lawyers are thought to be the primary, though indirect, source of legal knowledge. Muir (1973), writing about prayer in public schools, finds lawyers to be one of the agents responsible for distributing information about the law and key proponents of the attitude changes that some laws are designed to bring about. However, if lawyers are not present at the local level, or are either too costly or poorly educated, then they cannot serve as sources of accurate legal knowledge. This is the case in rural South Asia, as well as in many other places in which the state is weak.

There are, however, individuals who are situated in such a way that they might, at least partially, fill the role of lawyers in terms of distribution of legal information: local leaders. In rural South Asia, local leaders often act as information distribution agents and frequently achieve their positions, whether formal or informal, because of their perceived connections to the state. These are individuals who know the right person to talk to within the government or the right place to go when, for instance, an individual needs to procure a voter ID card. They are trusted and the information they provide is considered credible. Wilson and Rhodes (1997) use a formal model to demonstrate that leaders play an important role in distributing information and coordinating followers. Along these same lines, Dixit (2003) and Banerjee et al (2010) show that, when the state is weak, trusted contacts can facilitate information sharing; indeed, when they do so they can further rich informal institutions that are capable of providing law, order, and other services. Varshney (2003) and Bhavnani et al (2009) also recognize the power of local leaders in information distribution and demonstrate that these individuals need *not* act as agents

of the state. It follows that local leaders, if they can be persuaded to act on the state's behalf, may be able to at least partially fill the information distribution demand that remains unmet in the absence of an active, affordable and well-educated legal professionals at the local level.

But what happens if neither lawyers nor local leaders take part in legal knowledge distribution at the local level? Individuals will, as argued in Chapter 3, still infer what the law is from their observation of how the state behaves. If the state behaves inconsistently, these observational inferences are likely to be inaccurate, at least on average. However, if a system existed at the local level to either make the state's behavior more consistent or to provide contrast and put the state's inconsistency into perspective, such a system might assist individuals as they strive to accurately update their legal understandings. Even a weak state can, for instance, delegate regulatory responsibility to individuals or groups at the local level. So long as those individuals or groups have an incentive to get involved and to comply with the law, such a state might achieve better results, in terms of consistent state action, than if it had acted on its own.

The psychology literature is helpful in terms of understanding how such an arrangement might foster accurate legal knowledge. Constructivist learning theory, which is based upon concepts first introduced by Dewey (1938), Vygotsky (1962) and Piaget (1967), suggests that individuals, when learning or trying to learn, construct knowledge out of their experiences by continually making and re-making their sense of truth and reality. As individuals have new experiences, they update their knowledge accordingly. Piaget focused, at least initially on children and argued that as children learn they use the processes of accommodation and assimilation to construct and then re-construct their world view and understanding of how particular aspects of the world work. Learning about the law in the absence of guidance from others, whether from lawyers or local leaders, may well follow a similar pattern. As individuals go about their daily business, my qualitative evidence indicates that they do focus on the state's behavior and their own when trying to determine what is legal and what is not. As they have new experiences, they update their understandings to reflect newly acquired information. In this way, consistent state action helps individuals to gain accurate information and inconsistent state action does the opposite. If a weak state were—consistent with regulatory pragmatism—to delegate regulatory responsibility to an individual or group that could behave more consistently than it could, it follows that this increased consistency should help individuals to construct more accurate legal understandings.

## **II. Delegated Enforcement**

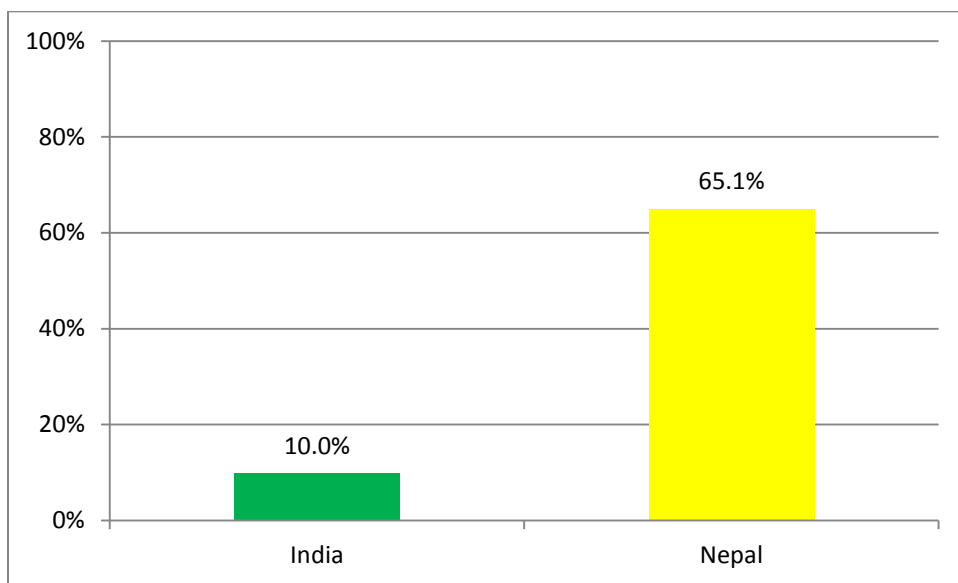
Even if a state suffers from principal-agent problems and behaves inconsistently, individuals can resolve inconsistencies and come to an accurate understanding of the conduct required or prohibited by law if the state delegates enforcement. When the state delegates enforcement to interested parties, these parties can create or mimic consistent state action in places in which the state itself struggles to do so. Consistency from delegates, particularly when set against large-scale inconsistency from the state, provides information to those seeking it regarding the conduct allowed or prohibited by law.

While consistency is not a hallmark of state action in the border region near Chitwan and Valmiki, the Nepali state has delegated regulatory responsibility for sustainably managing a

portion of government-owned forest land just outside of Chitwan to local “User Groups.” These local groups have petitioned the government to take over a portion of government land and are required to maintain certain forest cover standards, amongst other regulations, but once granted a Community Forest, they are free to remove a number of forest products, including wood, from the area.

Anecdotal and observational evidence suggests that the Nepali state and its delegates do behave consistently with respect to Community Forests in this area. Most “User Groups” consistently allow locals to collect wood in their Community Forests, sometimes for a small fee, but certainly without punishment. The government, for its part, has consistently abstained from interference in Community Forest governance. The absence of adverse government action in Community Forests sets up a situation in which it should appear to those living near Community Forests as if the state and its delegates are allowing (rather than punishing) a permitted behavior. This is particularly true when this consistent state action is set in contrast to the infrequent-but-unpredictable enforcement the state carries out in nearby Chitwan National Park. This contrast, according to constructivist learning theory, should help individuals to come to more accurate legal understandings as they seek to accommodate the contrasting information they have assimilated. The consistency of the Nepali state’s non-interference<sup>58</sup> in Community Forests, combined with the fact that Community Forest management is fairly consistent in allowing

**Figure II. Percentage of Respondents Possessing Accurate Legal Knowledge by Country (Exposure to Delegated Enforcement)**



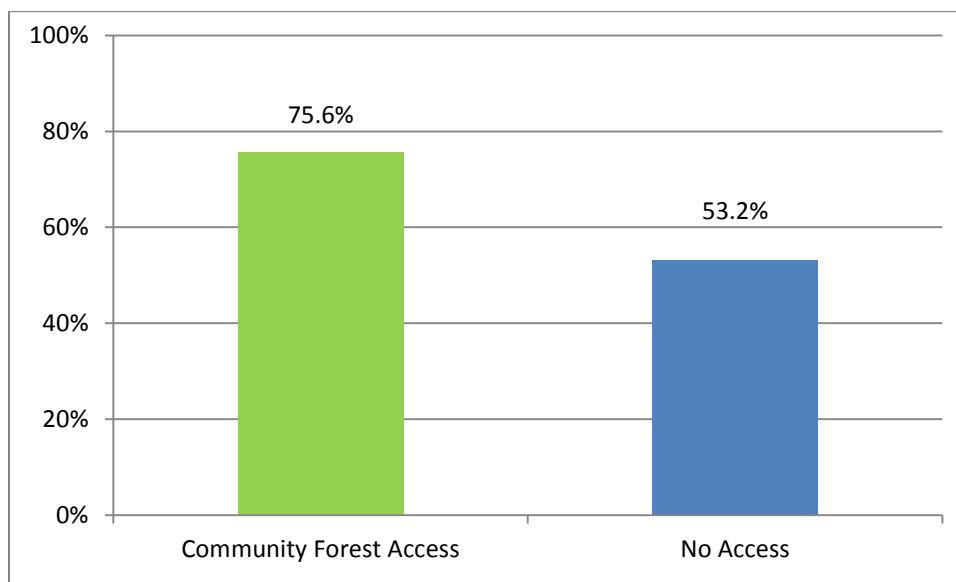
access for wood collection or purchase, should foster the accurate legal understandings that wood collection is *legal* in Community Forests. Moreover, consistency with respect to this seemingly orthogonal law should also help foster the accurate understanding that wood collection is *not*

<sup>58</sup> By non-interference I mean that state actors, despite the fact that they have little right to interfere in Community Forests unless User Groups are determined to be mismanaging them, are actually staying out of Community Forests and not using their position of power to harass those collecting wood there.

legal in Chitwan National Park, since individuals who have access to both are able to observe some enforcement in Chitwan and no enforcement in nearby Community Forests.

Indeed, my data suggest that the consistency of delegated enforcement in Community Forest areas, when contrasted with occasional enforcement in Chitwan National Park, has allowed many of those with access to areas of delegated self-regulation to develop the accurate legal understanding that taking wood from Community Forests is legal, while taking wood from the national park is not. Of those who reported having access to a Community Forest, and, thus, exposure to delegated enforcement, 75% hold an accurate understanding of the wood-taking prohibitions in place in Chitwan National Park; the same number amongst those who do not have

**Figure III. Percentage of Respondents Possessing Accurate Legal Knowledge by Community Forest Access (Exposure to Delegated Enforcement).**



access to a Community Forest, and, thus, no exposure to delegated enforcement, is 53%. When I subset by access to a Community Forest, which acts as a proxy for exposure to delegated enforcement, a t-test on accuracy of legal understandings indicates that there is a significant difference between these groups ( $p = 0.000$ ;  $SE = 0.019$ ). The same is true when I subset geographically, with Nepal being a proxy for exposure to delegated enforcement ( $p = 0.000$ ;  $SE = 0.014$ ).

Moreover, when I check for demographic differences between the latter two groups, those who have been exposed to delegated enforcement through Community Forest access and those who have not, I find few significant differences across all eight of my demographic indicators, suggesting that delegated enforcement (by way of Community Forest access) itself is related to

**Table II. Significance of Exposure to Delegated Enforcement for Different Population Subsets (T-tests).**

<u>Variable of Interest</u>	<u>p-value</u>
Land Ownership	0.050
Business Ownership	0.148
Involvement in Eco-Tourism	0.478
Government Employment	0.431
Literacy	0.253
Education	0.000
Age	0.392
Income	0.002

accurate legal understandings and is more than just a proxy for other variables. (See Table III above.) There are no significant differences between my two subsets on business ownership, involvement in eco-tourism,<sup>59</sup> government employment, literacy, or age.

There are, however, significant differences on land ownership, education, and income. In particular, those who do own land, are more educated and have higher incomes are less likely to report that they have access to a Community Forest than those who do not own land, are less educated and have less income. And if one thinks about the on-the-ground realities of why one might want to gain Community Forest access, this makes sense. Land ownership, education and income are highly correlated with one another and those who own land and have higher income levels are less likely to need to collect wood in either Chitwan National Park or a Community Forest in the first place. Each of these variables is, to some degree, a proxy for the others, as well as for a general lack of a need to gain access to a Community Forest, as verified by the fact that the rate at which the use of gas is reported amongst these subsets is high relative to the rest of my sample. In addition, many individuals within the land-owning subset report collecting firewood on their own property. Put differently, these variables collectively seem to capture a subset of the general population for whom compliance is relatively inexpensive or easy, a topic which I will return to in later chapters.

But perhaps more importantly, these variables capture subsets of the population that do not necessarily have more accurate information about the law than others. In fact, accuracy of legal understandings amongst those with higher income levels or more education are lower than the sample average, while amongst those who own land they are almost exactly as accurate as those in the broader sample. This means that while land ownership, more education and higher levels of income may make an individual less likely to report access to a Community Forest, these same variables do not automatically make that individual more likely to possess an accurate legal understanding. When taken together these data suggest that exposure to delegated

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<sup>59</sup> Given that involvement in ecotourism is, by some standards, borderline significant, some further research on this particular variable would be useful. This is particularly true as there is more ecotourism on the Nepal side of the border than on the Indian side in this particular region and, in theory, involvement in ecotourism might lead to more accurate understandings of the law. I plan to this myself, but due to the low levels of involvement in eco-tourism amongst my respondents (less than 5%), I have not done so here and instead will collect and use this data in preparation for transforming this dissertation into a book manuscript.

enforcement, by way Community Forest access, is an important correlate of accurate legal understandings, but they do not explain how.

As alluded to above, there are theoretical reasons, grounded in the psychology literature, why this might be the case. Those exposed to delegated enforcement, via Community Forest access, have been able to observe, first hand, the contrast between the state's consistent non-interference in Community Forests, Community Forest management's relatively consistent provision of penalty-free wood collection, and the state's inconsistent enforcement of wood-taking prohibitions in Chitwan National Park. According to constructivist learning theory, first introduced by Piaget, observation of this contrast sets up a situation of cognitive conflict or tension which individuals deal with by resolving observed discrepancies into a new understanding of the world. While those without Community Forest access are forced to resolve discrepancies between the observed or reported enforcement behavior of individual bureaucrats over time, a situation which could just as easily resolve into inaccurate understandings as accurate ones, those who have Community Forest access are presented with a slightly different opportunity. Indeed, those who have been able to observe or have had access to information regarding enforcement in Community Forest areas have had more, and more directly contrasting, information to work with when forming their legal understandings. These individuals have had information regarding inconsistent enforcement in Chitwan National Park *and* information regarding consistent access to penalty-free wood collection in Community Forest areas.

This latter slate of contrasting information is easier to resolve into an accurate legal understanding of wood-taking restrictions than the former. As one respondent put it, "There is no trouble collecting wood [in the nearby Community Forest], but in the park there can be trouble, so I go to the Community Forest." The fact that those who have been exposed to delegated enforcement, via Community Forest access, also hold more accurate legal understandings suggests that the contrast between delegated enforcement in Community Forest areas and inconsistent state action in the national park is helping individuals with access to both to construct the accurate legal understandings that I find disproportionately present on the Nepal side of the border. In other words, in a sea of mixed signals and the attendant misinformation, the Nepali state's pragmatic delegation of enforcement in Community Forests, when set in contrast to its occasional enforcement inside Chitwan National Park, provides important information to those with Community Forest access that seems to help many of them to modify or re-construct their legal understandings to be more accurate over time.

### **III. Local Leaders**

In rural areas people often struggle to read about the law themselves and well-trained, affordable lawyers are almost non-existent. Thus, those who nevertheless want to learn about the law, even if only to keep out of trouble, are forced to do so by way of non-traditional sources. Many source this information by observing the state and its behavior, as described extensively above, or by seeking out trustworthy sources of legal knowledge.

The state and its actions are important sources of information regarding the law. Generally speaking, I find, as described more fully in Chapter 2, that those who take a particular action and are punished believe that behavior to be illegal, while those who take a particular action and are not punished believe the opposite. In my open-ended interviews, I asked

respondents how they determine whether something is illegal. The overwhelming sentiment amongst my respondents was that something that incurs a negative government reaction is illegal. Many of my respondents focused on punishment as a source of information and elaborated with examples. One described the fact that she had ridden her scooter out to the main road and a policeman had stopped her; he told her she had to wear a helmet and made her pay a fine. As a result, this respondent believed that not wearing a helmet on a scooter was illegal.<sup>60</sup> Another respondent described the fact that the government had forced her to move her house during a road-widening campaign; she concluded that it was illegal to have your house too near to the road.<sup>61</sup> Interestingly, when I asked respondents how they can tell if something is legal, I received far fewer elaborations and many were unsure how to tell if something is legal other than to do it and see if punishment follows; if it does not, then that action is allowed. Some suggested that one can ask family and neighbors if something is legal. But few came up with a definitive answer, save for one older man who sagely observed that “everything is legal unless the government makes it illegal.” In other words, for him, legal is the default and one doesn’t need to find out if something is legal, one just needs to find out if it is illegal.

Along the same lines, those who know someone who took a particular action and was punished tend to believe that the punished behavior is illegal, while those who know someone who took the same action and was not punished believe the same behavior to be legal. If lacking personal experience with respect to the legality or illegality of a particular action, respondents seem to look first to the experiences of others. As one respondent put it, “Sometimes your friend gets in trouble for something and he tells you about it. My friend had too much alcohol when he tried to get on the bus. The driver would not let him on and said he would call the police. My friend had to stay the night at the bus stand. Now I know that you can’t get on the bus if you are drunk.” Another respondent stated that many of her neighbors had hired a local man to tap into the electric line for them and that she had thought this was legal, but that when the government came around to replace the electric poles, it removed all of the lines that the local man had created and only left the ones with meters that the power company had put in place; as a result, she concluded the local man had been acting illegally. In her mind, something that seemed legal, due to its commonplace nature, transformed into something that seemed illegal because of the consistency with which her neighbors had lost both their electricity connections (and their investment in setting them up). The state’s inconsistency, then, can prevent even careful observers of the state from developing accurate legal understandings.

It is perhaps for this reason that individuals seem to privilege information that comes from a trustworthy (and often non-print) source. My experimental findings indicate that local leaders, who often act as a conduit for communication from the state and/or local bureaucrats, are an important vector for legal knowledge. I visited three randomly selected villages: a control village, in which I merely visited, spoke with people and stated that I was in the area to do research, a “flier village,” in which I distributed a leaflet that contained accurate information

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<sup>60</sup> In this particular case she is right.

<sup>61</sup> In this case, it’s not clear that having one’s house too close to a road is illegal per se, but it is true that the state, in this case the Nepali state, retains a quasi-*eminent domain* right which it exercises regularly when widening and paving roads. My respondent took the fact that she had to move her house, tear it down and reconstruct it elsewhere, as punishment for her own illegal action, not as the state exercising a right to remove even a legally constructed house.



about wood collection prohibitions to 40 randomly selected individuals, and a “leader village,” in which I accompanied a local leader while he conveyed the same information written in the leaflet through an interactive session with 43 individuals present. I found no significant differences in

**Table III: Percentage of Respondents with Accurate Legal Knowledge by “Source of Knowledge” Treatment**

Variable	Pre-Treatment	Post-Treatment	p-value	SE
Control	0.625	0.681	0.286	0.049
Flier	0.642	0.667	0.392	0.045
Leader	0.588	0.787	0.017	0.047

terms of the pre- and post-treatment accuracy of legal understanding in either the control or “flier village[s]” However, in the “leader village,” there was a significant difference ( $p = 0.017$ ). Before my intervention, about 58.8% of my semi-random sample of villagers knew that collecting wood in Chitwan National Park is illegal. After my intervention, this number stood at 78.7%, suggesting that local leaders can be effective conduits for accurate legal knowledge. Local leaders are widely believed to be an accurate source of information about the state. Thus, what they say matters—it is a trustworthy—and villagers will update their understandings of the law accordingly, with many seemingly privileging this information over both first-hand observation and information received from second-hand sources.

While more research on legal knowledge acquisition is certainly required before we can understand exactly how this process occurs amongst a largely uneducated population faced with an often inconsistent state, my data suggest that delegated enforcement and information dissemination through local leaders are two means by which a weak state can use regulatory pragmatism to foster accurate legal knowledge.

#### IV. Conclusion

Consistent state action is not the only way to foster accurate legal knowledge. My findings indicate that local leaders can act as a conduit for this information and that they can distribute information about the law to target populations more effectively than printed media, particularly when literacy and education levels are low. Delegated enforcement can also fill this role. The data also suggest that the more widespread accuracy of legal knowledge present on the Nepal side of the border is driven at least in part by exposure to delegated enforcement (via Community Forest access) and that this variable has significant explanatory power in terms of cross-border variation in compliance. Those who have the ability to observe consistent state action in Community Forests and gain accurate legal understandings from doing so are better situated to make a conscious choice to comply the law. Those on the Indian side of the border who do not have this opportunity are at a significant disadvantage. When taken together these findings show that states that cannot manage consistent action are not without options in terms of attempting to foster both accurate legal knowledge and compliance. Such states can allow regulatory pragmatism to guide their legal design and implementation strategies—for instance, by choosing delegated enforcement or information dissemination through local leaders rather than deterrence—and realize legal knowledge and compliance improvements.

## **Chapter 4: Poverty and the Limits of Legal Knowledge**

In the developing world, where many exist at the margins, regulations that impose a cost on poor target populations should, *a priori*, be problematical. Many individuals who possess accurate legal knowledge and feel motivated to comply are likely not able to do so because compliance would undermine their basic survival. But does this mean that widespread poverty and regulatory compliance cannot co-exist, particularly when the regulations in question require behavior that differs from that dictated by social norms? This chapter addresses that question and finds that regulatory pragmatism can guide states towards policies that lower the cost of compliance for a significant proportion of the population and that such efforts can make widespread regulatory compliance achievable, even when widespread poverty and state weakness are significant constraints.

Chitwan National Park, Valmiki National Park and Tiger Reserve, and the area surrounding them represent an ideal scenario in which to explore the degree to which widespread poverty can undermine the power of accurate legal knowledge to foster compliance. As mentioned previously, these parks are ostensibly managed for the same purposes: to protect endangered big-game species and, because these species require certain habitat for their survival, to protect the environment in which they reside. As a result, collecting timber is prohibited by law in both parks. This is so in spite of the fact that individuals living in this area have been collecting wood—from what is now park area—for centuries, if not millennia, and refraining from doing so means that they have great difficulty keeping warm and cooking. In other words, conservation law creates a situation in which the poverty of the population in this area comes into direct conflict with compliance.

In places where the state is stronger and better resourced, such a conflict is often overcome by the state's use of force or persuasion (by instilling a felt sense of duty to comply) to secure compliance. But the states on either side of the border near Chitwan and Valmiki have little to offer in terms of traditional, deterrence-based enforcement capacity (i.e. policing), particularly in this context: thousands of square kilometers of jungle augmented with only minimal infrastructure. Nor does state capacity seem strong enough to achieve compliance by way of duty. In such a scenario, the standard deterrence model of compliance suggests that we should expect similar rates of compliance with wood-taking restrictions on both sides of the border—which is to say, similarly low. This is particularly true because, as previously mentioned, the human populations that live near these parks are nearly identical, both culturally and demographically, and have been permitted to pass at will, unimpeded by legal restrictions, across the India-Nepal border for as long as this border has existed.

In this chapter, I once again use the open India-Nepal border to examine variation in compliance with wood-taking restrictions. This time, however, I focus on the relationship between poverty and non-compliance. I find that both the Indian and Nepali states have managed to motivate their respective target populations to comply, at least in a generalized way, but that variation in the degree to which individuals report these motivations does not explain cross-border variation in compliance. Variation in the cost of compliance, however, does. Even if accurate legal knowledge is in place, poverty can limit the effectiveness of the standard deterrence model factors—fear and duty—when the cost of compliance is so high that individuals believe their material existence is threatened. Even if individuals know that wood

collection is prohibited in the nearby national park, fear and duty only work to alter their behavior when high compliance costs have been lowered to such a degree that individuals are no longer choosing between complying with applicable regulations and feeding themselves or keeping themselves warm. My Nepali and Indian survey respondents do not report significantly different levels of fear or duty, nor do they report a need for firewood at significantly different rates—in fact, the reported need for firewood is lower on the Indian side of the border, where compliance is worse. However, many of my respondents in Nepal were exposed to a pragmatic regulatory strategy while my Indian respondents were not. My respondents in Nepal have access to a cost-of-compliance-lowering resource that is not available near Valmiki: Community Forests.

In Nepal, there are numerous Community Forests located just outside of Chitwan National Park that are contiguous with park land. As explained in Chapter 3, these Community Forests, once government-owned and managed forest land, were handed over to local management after groups of individuals who reside in the region successfully petitioned the Department of Forests with sustainable management plans. Wood collection is permitted in Community Forests, so long as it conforms to an approved sustainable management plan, which typically mandates stable forest cover. As a result, Community Forests represent an excellent source of firewood for those living near Chitwan National Park and in many (though not all) cases, locals can meet their firewood needs, both cheaply and easily, within them. Amongst those of my respondents who reported having access to a Community Forest, the majority also reported collecting wood there instead of within Chitwan National Park.<sup>62</sup> In contrast, in India, though the government does engage in Joint Forest Management in other areas, no such policy is in place in the area around Valmiki. Thus, many locals who cannot afford to cook or heat with gas have no meaningful option, other than Valmiki, for the fuel necessary to cook and keep warm during the winter. As a result, many are forced into non-compliance despite being otherwise motivated to protect the forests, obey the law and avoid legal penalties.

This confirms that policies that are consistent with regulatory pragmatism, by lowering the prohibitively high cost of compliance faced by the poor, can achieve widespread compliance. Nepal's Community Forestry Act does just that. It works around a known barrier to compliance and explains, at least in part, the unexpected success the Nepali state has had in securing the compliance of local populations with conservation regulations.

These findings suggest that developing world conditions are problematical for regulatory compliance not only because the state in such areas is often weak, but also because weak states must contend with poor target populations for whom compliance is often prohibitively costly. My findings also show that in some cases, particularly when the state uses regulatory pragmatism to guide its choices, there are inexpensive policies that states can adopt to lower the cost of compliance for the poor and foster compliant behavior. In addition to correcting the widely held misconception that compliance in areas of state weakness will only come with either increased state capacity or development (i.e. wealth and education), such a finding has powerful implications for those involved in legal and regulatory design. In addition, my findings should

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<sup>62</sup> Bamberg & Schmidt (1999) report similar behavior when observing reactions to new transport options. Students in a University town in Germany responded positively to policy interventions aimed at reducing car use when these interventions either lowered the cost of public transport use or made public transport more convenient.

be relevant in any context in which the cost of compliance is particularly high for large swaths of a population, for instance in poor, ghettoized neighborhoods of major cities throughout the world. As so long as those designing regulations are sensitive to the motivations and the *needs* of the populations they seek to regulate, my findings suggest that compliance may be possible, even against the odds.

## I. Literature

The socio-legal compliance literature includes a whole host of variables that correlate with compliance. However, the evidence for many of these factors comes largely from places where the state is strong and poverty is limited—places where traditional legal enforcement, even if largely not used in practice, retains its deterrent value.<sup>63</sup> In light of this fact, what should we expect to find in the developing world where poverty is widespread and where, for many types of regulations, effective and predictable enforcement is simply not a realistic option?

Limited research has examined compliance in developing world contexts. Gezelius & Hauck (2011), in their examination of compliance with fishery regulations in Norway, Canada and South Africa, explain that the source of a motivation to comply with the law can vary from context to context and, as a result, a state's strategy for ensuring compliance must change accordingly. Boittin (2013), in her study of sex workers in China, reveals that many individuals who break law's prohibiting prostitution often do so out of necessity, but, interestingly, that poverty-driven non-compliance does not imply rejection of the legal system in other contexts. James Scott (1987) and Mauricio Villegas (2012) find that attitudes towards the law and the state are often different in the developing world and that responses to same reflect this fact. Meanwhile, Kagan, Thornton & Gunningham (2012, 2005 & 2003) tell us that enforcement, even if only used against a small percentage of the regulated, is important for getting the rest of the regulated to comply. This assertion suggests that state capacity need not be terribly great in order for deterrence-based enforcement to work. But it also, I believe, assumes that deterrence works similarly for all individuals and regulated entities. This is an untenable assumption in contexts in which many of the individuals in the population targeted by a particular regulation regularly confront their own mortality and desperately need the very resource they are prohibited from taking from a nearby source. What happens when enforcement is nearly non-existent and target populations have little to lose and quite a bit to gain from non-compliance? Are there ways to overcome the poverty problem?

A number of papers suggest that compliance is possible in the context of widespread poverty and state weakness. (Barr 2000; Contreras-Hermosilla 1997, 2000, 2007; and Goncalves et al 2012). But this literature provides limited empirical evidence for the claims it makes and instead relies largely on "best practices" evidence derived from years of policy-promotion work. To get a better handle on whether weak states can generate compliance in spite of widespread poverty, I conducted research in a region in which the states involved have relatively weak

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<sup>63</sup> Interestingly, the lack of developing world evidence may stem from a bias in academia itself. When preparing to conduct this research, I spoke with legal academics who stated quite plainly that law schools are not interested in hiring individuals who study compliance in the context of the developing world. The same is largely true of Political Science and Sociology Departments. If this doesn't point to a hole in the literature, I'm not sure what does.

deterrence-based enforcement capacity<sup>64</sup> and in which the *a priori* likelihood that members of the target population will feel a strong duty to obey state-propounded regulations is low. In other words, I conducted research where legal norms' chances, vis-à-vis social norms', are quite unfavorable—a “hard case.”

## II. Hypotheses and Variables

Even if accurate legal knowledge is widespread and individuals are generally motivated by either fear or duty to comply, poverty can lead to large-scale non-compliance if the cost of compliance threatens the material existence of many of those targeted by a particular regulation. I, therefore, hypothesize that poverty can lead to non-compliance, even when fear and duty are in place. I also hypothesize that legal institutions can still function when poverty is high, but that, in order for them to do so, state or non-state actors must employ regulatory pragmatism to overcome the obstacle presented by poverty-driven non-compliance.

### *a. Dependent Variable*

The major dependent variable I investigate is compliance, as detailed extensively above in Chapter 1. Compliance occurs when an individual acts or refrains from acting in such a way that his or her behavior is consistent with that required by law. Compliance of this variety, which I consider to be “objective compliance,” is distinct from “subjective compliance,” in which an individual believes that he or she is complying with the law but, because of his or her inaccurate legal understanding, is acting in a manner that is not actually in “objective compliance” with the law.<sup>65</sup> In the case at hand, this involves refraining from taking wood out of both Chitwan National Park and Valmiki National Park and Tiger Reserve.

### *b. Independent Variables*

To determine whether implementation strategies consistent with regulatory pragmatism can help states foster compliance, I examine, as noted above, a region that is characterized by the same rules, the same culture and, seemingly, the same basic incentives to comply with or break the law. In Chapter 3, I argued that one way the state can secure compliance is by fostering accurate legal knowledge. Here I examine a second way in which a state, guided by regulatory pragmatism, can secure compliance: by ameliorating poverty-driven non-compliance. In this case, I examine the degree to which the state has done so by measuring the cost of compliance for members of the target population. In particular, I estimate the proportion of individuals for whom compliance with formal legal rules and institutions remains incompatible with basic survival.

### *i. Poverty Driven Non-Compliance*

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<sup>64</sup> Up until recently this border region has been plagued, both in India and Nepal, by Maoist insurgency. During this period the state almost ceased to exist at the local level. In the intervening time, the Nepali and Indian states have re-entered this region, but only minimally and signs of the state remain few and far between.

<sup>65</sup> My definition and measurement of compliance for purposes of this paper includes individuals who appear to do what the law requires but whose reasons for doing so may have little or nothing to do with a felt obligation to comply.

An individual might comply with a particular law or regulation because compliant action either aligns with or doesn't undercut that individual's pursuit of her/her self-interest (Pearce & Tombs 1990; Pearce & Tombs 1997; Pearce & Tombs 1998; Parker 2002; Molnar et al 2004). For instance, at least in theory, an individual who has ample material resources is less likely to break a law that prohibits stealing than an individual who has few resources and is desperate for, say, food. This means that while "in its majestic equality, the law forbids rich and poor alike to sleep under bridges, beg in the streets and steal loaves of bread,"<sup>66</sup> all individuals are not similarly situated to comply.

Throughout much of the developed world, poverty-driven non-compliance is relatively low and, therefore, manageable. Some states manipulate the incentives that individuals face so that individual pursuit of self-interest and compliant behavior are not mutually exclusive.<sup>67</sup> In so doing, states act to align the self-interest of a larger swath of the population with compliant behavior. In the developing world, poverty is widespread, poverty-driven non-compliance can be endemic and the states often lack the capacity or the resources to create a system of incentives which align the self-interest of much of the populace with compliant behavior. Along the India-Nepal border, where most live at or below the poverty line and where many struggle to feed and clothe themselves, it is difficult to imagine compliance with regulations that run contrary to the needs of the majority of a population targeted by a given regulation. This is particularly true because the states on either side of the border are limited in the degree to which they can engage in deterrence-based enforcement. Yet, some compliance with wood-gathering restrictions is happening. This suggests that not all individuals find compliance to be against their respective self-interests.

I hypothesize, therefore, that many of those individuals who *can* afford to comply will do so. More specifically, amongst the relatively small segments of the population for whom the cost of compliance is low relative to their incomes, I expect compliance, so long as (a) this cost is lower than the perceived cost of non-compliance and/or (b) so long as they believe that it is their duty to comply. Indeed, those who are relatively well off in the area surrounding Chitwan and Valmiki cook with gas and, thus, do not need firewood; as described above, it is the poor who do need firewood on a regular basis and must weigh this need against their motivation to comply. As a result, my expectations regarding their behavior are quite different. These latter individuals face a very high cost of compliance and, even if the cost of *non*-compliance were very high, many of them would rather risk enforcement-related penalties than face the alternatives. Furthermore, even if these individuals believe they have a duty to comply, it is likely not powerful enough to overcome their poverty-driven non-compliance.

Finally, I hypothesize that amongst those individuals who have the option to both comply and attend to their basic needs, those motivated by either fear or duty will comply in significantly higher numbers than those of their low-income counterparts who have no viable option other than non-compliance.

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<sup>66</sup> France, Anatole (1894). *Le Lys Rouge*, Ch. 7. "*La majestueuse égalité des lois, qui interdit au riche comme au pauvre de coucher sous les ponts, de mendier dans les rues et de voler du pain.*"

<sup>67</sup> The financial capacity of regulated entities to comply with existing or proposed laws has been shown to affect the design of regulatory programs in the United States (Kagan *et al* 2008; Huber 2011).

To test these hypotheses, I first compare the self-reported compliance behavior<sup>68</sup> of those for whom the cost of compliance is relatively high to those for whom the cost of compliance is relatively low, using income as a means to determine relative cost of compliance. Second, using the method described below, I then check to make sure that these two income groups do not report different levels of both fear and duty. Finally, I examine factors other than income that lower the cost of compliance and the compliant behavior of those for whom those factors are present, to determine whether they reduce poverty-driven non-compliance.

*ii. Exposure to Regulatory Pragmatism: Community Forest Access*

The high cost of compliance with wood taking prohibitions represents a major barrier to compliance; at the same time, regulatory pragmatism suggests that a state that lowers this cost will be rewarded with higher rates of compliance. Thus, I focus on a strategy used by the Nepali state to lower the cost of compliance with national park laws: community forestry. Nepal's 1993 Forest Act, which followed at least 15 years of high-level and grass-roots efforts to decentralize forest management, brought the Community Forestry Program into existence. This landmark program allows citizens to come forward as a "User Group" and petition to take over management of government-owned forest land. A "User Group" must present a plan for sustainable management of the forest area in question and demonstrate its ability to meet the goals outlined in this plan. Once the government has signed off on a "User Group's" petition, the group itself is responsible for compliance with government regulations in its Community Forest, but it is also overseen by government agents who can de-notify a Community Forest if a pattern of non-compliance is present.

The most important feature of community forestry in Nepal, particularly for the purposes of this chapter, is the fact that, while "User Groups" are responsible for sustainable management, which does not preclude the harvesting of fallen wood. Indeed, sustainable wood collection is allowed within Nepal's community forests, so long as forest cover is maintained and the ecosystem is not made unsuitable for particular wildlife species. For those living near Community Forests in Nepal, this means that they are a source of fuelwood that carries little to no risk of legal penalty. As there are many Community Forests just outside of and often contiguous with Chitwan National Park, many individuals who have access to a Community Forest can legally use it for fuelwood rather than illegally removing wood from the national park. Put differently, Community Forest access, a strategy that is consistent with regulatory pragmatism, lowers the cost of compliance for those who have secured it and, thus, has the power to reduce poverty-driven non-compliance.

### **III. Methodology**

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<sup>68</sup> I measure compliance via *anonymous* self-reporting. This may, at first glance, seem problematical, but I found respondents to be quite forthcoming about behaviors that were illegal. The sheer number of respondents who self-reported non-compliance is a testament to this fact.

I utilize both survey data and interviews with relevant actors to explain variation in compliance. I collected<sup>69</sup> survey data from over 1300 respondents, sampling villages within walking distance of each park (10km) and collecting semi-random convenience samples<sup>70</sup> within each village. Each respondent was asked, in person, a series of questions that started with demographic information and proceeded to questions designed to help measure my variables of interest. A complete list of these questions and an explanation of how I coded responses is located in the Appendix.

In addition to the above-described large-N survey, I also personally conducted 35 follow-up interviews using snowball samples in three different locations and one focus group of 43 women,<sup>71</sup> to better understand my survey data. I used semi-structured interviews during both of these latter data collection endeavors.

#### **IV. Findings**

The data indicate that 78% of my more than 1300 respondents live on less than a dollar per day. Moreover, 85% of these respondents in Nepal and 66% of these respondents in India indicate that they use firewood on a regular basis to either cook food or heat their homes. These data suggest that there is both a great need for firewood and, given the percentage of the population living below the poverty line, few cost-effective alternatives (i.e. gas) to this important resource. Below I present relevant sub-sets of my sample and then use t-tests to test my hypotheses, a type of analysis made possible by this study's design.

I begin to test my hypothesis—that regulatory pragmatism can guide weak states to strategies reduce poverty-driven non-compliance—by sub-setting my data by income-level and location. When I run t-tests on these subsets, I find a significant inter-class difference between rates of compliance: for Nepal,  $p = 0.001$ , and for India,  $p = 0.002$ .<sup>72</sup> Importantly, rates of compliance for both income groups are lower on the Indian side of the border, a fact I will return to later.<sup>73</sup>

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<sup>69</sup> To do so, as described above, I trained and managed two teams of approximately 10 interviewers, one on each side of the border. Each individual spoke the dominant language in the area, Bhojpuri/Tharu, in addition to Nepali or Hindi (depending upon the context). Since surveys were conducted simultaneously on both sides of the border, I also hired a local manager to handle day-to-day problems on the Indian side of the border.

<sup>70</sup> In each village, survey teams started from a common point (a cross-roads, a well, etc.) and fanned out in multiple directions, stopping at every seventh house to conduct an interview. Interviewers were instructed to interview men and women in roughly equal proportions and to consciously seek to interview individuals of varying ages.

<sup>71</sup> I held this focus group in Jagatpur VDC, Nepal—a village which is adjacent to both the Chitwan National Park and to a Community Forest, in addition to being two kilometers from park headquarters.

<sup>72</sup> I run these t-tests on data for all respondents who report a need for wood. Because those who report a need for wood are significantly more likely to be poor than those who do not, this analysis likely underestimates the compliance gap between those living above and below the poverty line.

<sup>73</sup> The fact that rates of reported compliance are not zero on the Indian side of the border for those living below the poverty line raises a question about whether my respondents are really being driven to non-compliance by their poverty and lack of access to other fuel. An examination of the fuels my respondents on both sides of the border report using, suggests that those living on the Indian side of the border appear to have greater access to a wood/gas alternative for both cooking and heating: sugar cane leaves. Almost none of my respondents on the Nepal side of the border report using sugar cane leaves as fuel and this is hardly surprising given that there is little to no sugar grown in this region of Nepal. However, just across the border in India, approximately 38% of my respondents report using sugar cane leaves to meet at least some of their fuel needs. This is also not surprising as sugar is grown

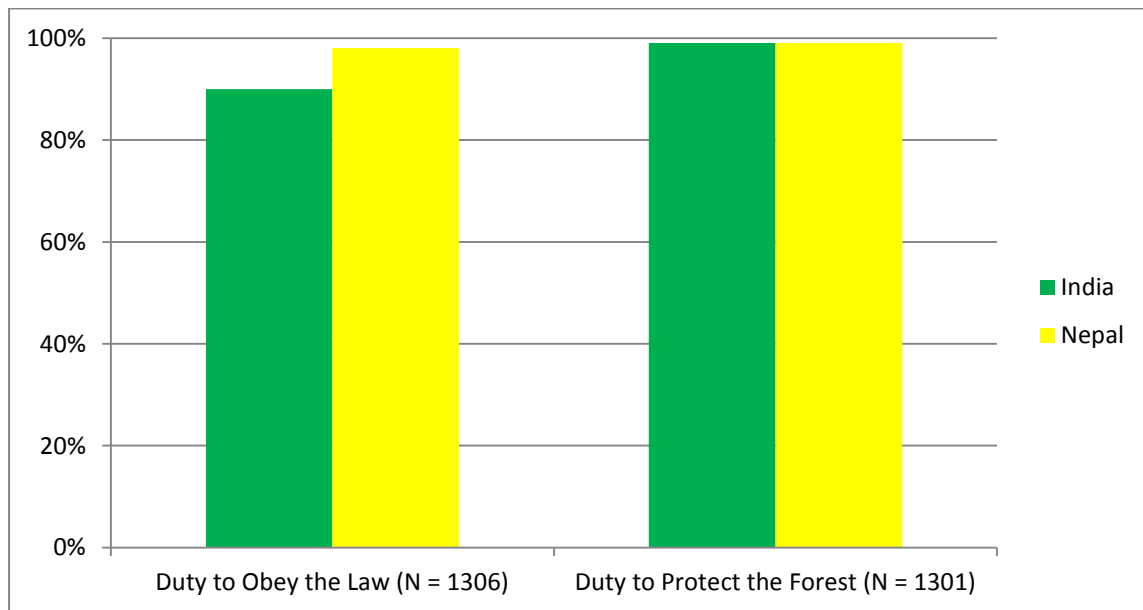


**Table IV. Compliance Rates by Location and Income-Level**

Location	Above Poverty Line	Below Poverty Line	P-value
Nepal	0.75	0.63	0.001
India	0.42	0.25	0.002

Next I check to make sure that differing levels of fear are not driving these numbers. Here I find that 95% in Nepal and 88% in India believe they will be caught and punished if they remove firewood from the national park.<sup>74</sup> These numbers are similar when I subset by income level, indicating that those above and below the poverty line are not differentially motivated by fear (Nepal:  $p = 0.222$ ; India:  $p = 0.163$ ). These basic findings with respect to fear are buttressed by the fact that individuals do not perceive the penalties for non-compliance differently on either side of the border. Amongst my respondents, the average “harshness of the penalty” response was 2.36 in Nepal and 2.37 in India, with 2 being “Reasonable” and 3 “Not Very Harsh.” Then taken together, these data suggest that fear is not driving cross-border variation in compliance. I also check to make sure that differing levels of duty are not behind the income-level wise disparity in compliance rates. Reporting rates for relevant duties—“duty to obey the law and “duty to protect the forest”—are available in Figure IV. When I subset by income-level, I find

**Figure IV. Percentage of Respondents Reporting a Duty by Country**



on a commercial scale in Paschim Champaran, Bihar and sugar cane leaves are often discarded and available for locals with proximity to sugar production operations to use as fuel.

<sup>74</sup> These numbers are surprisingly high, given the low level at which the states on either side of the border engage in enforcement. I plan to explain this phenomenon in a separate paper, but I will mention here that I believe the generally capricious enforcement of regulations and laws in both India and Nepal, coupled with frontline bureaucrats’ abilities to extract bribes for non-enforcement from citizens who can ill afford to pay them, leads to a general fear of the state that individuals take with them to almost any regulatory context regardless of the level of enforcement in the particular set of circumstances in which they find themselves.

no significant difference in the rate at which my respondents who live above the poverty line and below the poverty line report either of the above duties. With respect to the duty to protect the forest, in Nepal,  $p = 0.241$  and in India,  $p = 0.831$ . With respect to the duty to obey the law, in Nepal,  $p = 0.605$ , and in India,  $p = 0.337$ .

Finally, I test whether factors which lower the cost of compliance—access to a Community Forest, in particular—have an effect on compliance rates. Community Forests—which lower the cost compliance for those who have access to them—are only available on the Nepal side of the border. This low-cost compliance option allows individuals who live near a Community Forest and are allowed to remove wood from it, to choose compliance more freely than individuals whose only source of wood is the national park. Individuals who have Community Forest access are able to meet their own firewood needs and comply with Chitwan National Park’s wood-taking prohibitions. When examining those who *have* Community Forest access, who make up 56% of my respondents in Nepal, I find no significant difference when I look across income-levels:  $p = .406$ . But I do find a significant difference across income levels

**Table V. Compliance Rates by Community Forest Access and Income-Level**

<u>Location</u>	<u>Above Poverty Line</u>	<u>Below Poverty Line</u>	<u>P-value</u>
Community Forest Access	0.80	0.79	0.406
No Access	0.71	0.39	0.000

when I look at those who do *not* have access to a community forest:  $p = 0.000$ . This finding supports my hypothesis—that those who can afford to comply generally do so and that strategies consistent with regulatory pragmatism, like community forestry, can reduce poverty-driven non-compliance. This finding also indicates that cross-border differences in compliance are at least partially explained by the fact that the extremely high cost of compliance for the poor has been lowered to some degree in Nepal through relatively widespread access to Community Forests, while in India the cost of compliance for the poor remains unmitigated.

## V. Implications

I have shown that those living above the poverty line are more likely to comply with regulations that impose a high cost of compliance than their counterparts living below the poverty line. I have also shown that income-level variation in compliance is not being driven by differing reported rates of fear or duty in the populations targeted by regulations that prohibit wood-taking from nearby national parks. Finally, I have presented evidence that, when a low-cost compliance option is available, there is no income-wise variation in compliance. All of this suggests that even in developing world conditions, characterized by state weakness and endemic poverty, conditions which many have assumed to be incompatible with rule of law, regulatory compliance can be achieved under the right parameters. These findings have three important implications for both the socio-legal compliance literature and for those who try to use law to change social practice in similar environments throughout the world, be they in inner-city Detroit, the coastal waters of Somalia, or along the India-Nepal border.

First, even weak states with meager resources can bring about both fear of legal sanctions and a sense of duty to comply. But fear and duty are sometimes not enough to bring about compliance. This is particularly true when prohibited behavior is necessary to the material existence of a large percentage of the population targeted by a particular regulation, thus driving the cost of compliance to extraordinary heights for many of those regulated. I spoke with many people on both sides of the India-Nepal border who were quite motivated to comply with government regulations and quite eager to protect the parks they live near, but who also willingly admitted to “stealing” wood from those parks to cook and to heat their homes. The fact that many of them chose the word “steal” in this context is telling: they feel that even though they are otherwise upstanding citizens, they have been forced into a position in which the very resource on which they are dependent—one that was once theirs—is no longer available to them without risk. The non-compliance of these individuals does not result from an absence fear or sense of duty, as many have assumed. Instead, it results, at least in part, from a dearth of low-cost compliance alternatives. My findings show that many people will comply with the law if given a low-cost opportunity to do so.

The second important implication of my findings is that regulations and policies designed pragmatically, ones that take into account the various motivations and needs of those targeted by them, can be used to change social practices, even in places previously thought to be challenging rule of law environments. The ancestors of many living just outside Chitwan National Park used and managed the forest now inside park boundaries for centuries, depending upon it for basic building materials, food, medicines and firewood. Some of them even lived inside what are now park boundaries. Despite the limited capacity of government authorities to exercise control over such a large tract of heavily forested land, many of these individuals, motivated by either fear or duty or both, are willing to alter their customs and source these materials outside of the park—so long as they can source them *somewhere*. Nepal’s Community Forests have become this somewhere and meet the needs of those who have access to them. Compliance is particularly high amongst this subset of the general population, regardless of income-level. Across the border in India and in some locations in Nepal, similar conditions prevail, yet, with this resource pressure-valve missing, compliance with wood-taking regulations is low. When forced to choose between compliance and meeting basic needs, many choose the latter. When taken together, these results suggest that high levels of compliance are possible, even in areas of state weakness, but that the burden of turning possibility into reality lies with those crafting regulations. Regulations which pose an extremely high cost of compliance for populations that can ill afford such a cost will likely be met with non-compliance, whereas those that are pragmatic and lower this cost stand a much greater chance of success.

The third implication of my findings is that the regulations and policies that ultimately drive compliance may be different from and, at first glance, seem orthogonal to the initial regulation against which compliance is measured. In the case at hand, the original regulation is a prohibition on removing wood from a protected government forest, but the regulation that appears to be driving compliance actually allows for wood collection on government-owned forest land, just in a slightly different location—importantly, a location which the government does not consider crucial for survival of the big game species living in the nearby national park. If we only look at the original regulation and then at the means available to secure compliance, we might come away wondering how the state has fostered such high rates of compliance under

such adverse conditions. But the fact of the matter is that regulations and policies, like the people they regulate, do not exist in isolation. Instead, they form a complex system of incentives, threats and obligations that people navigate to the best of their ability while also trying to live their lives in the ways that they see fit. Those involved in regulatory and policy design should be mindful of the fact that regulations and policies which create opportunities for individuals to comply with other regulations while also allowing those individuals to continue living in the ways that they are accustomed to living may provide a viable route to compliance, not only in areas of state weakness, but in any context in which legal norms contrast with cultural norms.

## **VI. Conclusion**

Though many assume that weak states lack the capacity to generate fear or instill a sense of duty in target populations and that this is why we find rule of law to be weak in such areas, my data suggest otherwise. It does not take much to instill at least a generalized sense of both fear and duty in the population targeted by a particular regulation. Instead, the problem in such places may lie with regulatory design that is not pragmatic. My data suggest that when a regulation imposes a high cost of compliance on a poor target population, compliance will be low, but that if the same or related legislation can lower the cost of compliance for a substantial percentage of this same target population, compliance will be significantly higher. States guided by regulatory pragmatism can make these choices and secure compliance despite their limited ability to project force.

## **Chapter 5: Generalizability**

In the preceding chapters I presented data and argument that suggest that the cross-border variation in compliance observed just outside of Chitwan and Valmiki National Parks can be explained primarily by variation in the degree to which the states involved have used regulatory pragmatism when designing and implementing their laws. I also suggest that one of the most significant barriers to compliance when the state is weak is inaccurate legal knowledge. States which pragmatically design for legal knowledge dissemination can achieve higher rates of compliance. I then elucidate two paths to more accurate legal knowledge: 1) delegated enforcement, which can provide contrast between enforcement environments and allow individuals exposed to it to update their legal understandings more accurately than those who have not been exposed; and 2) local leaders, who can foster accurate legal knowledge if they are involved in information dissemination. I then examined a second barrier to compliance, poverty-driven non-compliance, which explains why some fail to comply despite widespread accurate legal knowledge and the presence of fear and/or duty. Use of regulatory pragmatism is predictive here as well. In Nepal, where poverty-driven non-compliance has been reduced by a state-developed program, compliance is significantly higher than in other nearby places where the cost of compliance remains high.

But, the conservation case that has been the focus of this dissertation thus far could be anomalous. I, therefore, introduce two additional cases in this chapter which are drawn from different layers of Indian and Nepali society: businesses and organizations. The first, as previously noted in the introductory chapter, involves compliance with teacher-student ratio regulations in private schools. The second, as also noted in the Introduction, involves compliance with child labor regulations in brick kilns. I use these cases not only to confirm many of my findings in the main conservation case, but also to explore variation amongst these cases. Analysis of this variation allows for a deeper understanding of compliance in areas of state weakness.

When I examine compliance behavior in private schools I find that, unlike the conservation case, compliance is better in India than in Nepal. Yet, accuracy of legal knowledge remains an important predictor of compliance. Poverty-driven non-compliance also remains predictive of compliance behavior, though not amongst the wealthiest or most-expensive private schools. It just so happens that in this case the state in which the first factor, legal knowledge, is higher and second factor, poverty-driven non-compliance, is lower, is India. When I examine compliance with child labor regulations in brick kilns, the picture gets more complicated. Managers and owners of brick kilns who possess more accurate legal knowledge are more likely to be in compliance and those kilns which are economically strapped are least likely to be in compliance, but there is no variation in compliance, or in either of these other variables, as one crosses the India-Nepal border.

In this chapter I build upon the concept of regulatory pragmatism, which I first explored in the Introduction and Chapter 2. Here I use it to explain how the Indian state has managed to foster more compliance in private schools in Raxaul Bazaar than the Nepali state has in Birgunj, while neither state has secured much compliance with child labor regulations in brick kilns in this same area. Delegated enforcement, a strategy consistent with regulatory pragmatism which

was effective near Chitwan and Valmiki, involves the outsourcing of some aspects of governance. Delegation is important for this regulatory context because principal-agent problems are significant and the state has proven helpless to solve them; delegation is, thus, a way to design around that problem.

In the conservation case, Nepal delegated enforcement in government-owned park land just outside of Chitwan National Park to citizens “User Groups” through its Community Forestry Program. “User Groups” are responsible for regulating themselves, with minimal government oversight. India, though it engages in “Joint Forest Management” elsewhere, does not have a similar program in place outside Valmiki. In the private schools case, the Indian government has delegated enforcement to parents via the 2009 Right to Education Act, which allows parents to take government funding with them from school to school, regardless of whether the school is government-run or private. Parents’ increased ability to remove students from poorly performing schools means that threats to private school administrators to remove students from schools with high teacher-student ratios are believable. Nepal has no analogous program. Finally, in the brick kilns case, neither India nor Nepal has delegated enforcement or, seemingly, employed any other strategy that is consistent with regulatory pragmatism. Thus, variation in the employment of regulatory pragmatism across all three cases is consistent with variation, or lack thereof, in cross-border compliance.

This fact confirms my earlier finding that regulatory pragmatism can be used by weak states to choose strategies, like delegated enforcement, that will foster both accurate legal knowledge and compliance. I explore both regulatory pragmatism and delegated enforcement, and their implications, further towards the end of this chapter. Before then, I explain my choice of cases, briefly discuss hypotheses, variables and methodology, and relate my findings.

## **I. Why Private Schools and Brick Kilns?**

In order to further test the efficacy of regulatory pragmatism and the power of accurate legal knowledge to foster compliance, I chose to examine two important, additional layers of Indian and Nepali society: businesses and organizations. However, the decision to examine the compliance of private schools and brick kilns is admittedly not an obvious one. In order to understand this decision, one must first consider that the border itself is arguably the most formidable constraint of this project. The border lends my analysis methodological traction and yet can also be problematical because of the nature of life and society in the border region. As mentioned previously, the people living in this area are quite poor. It follows that economic activity is somewhat limited, which severely narrows one's choices of types of businesses and organizations, and the attendant regulations, to examine. In addition, I wanted to examine regulations that affect large swaths of the population, not just small niches. Finally, I needed to examine compliance with regulations that required or prohibited behavior that was inconsistent with local cultural norms and that was easily observable. This left me with relatively few viable choices.

Private schools and brick kilns are, to some degree, the only businesses and organizations that are ubiquitous along this section of the India-Nepal border and subject to regulations which run counter to cultural norms. While neither private schools nor bricks kilns affect everyone's lives, they do affect many lives in this region. Private schools are considered to be almost

“necessary” for those parents who want their children to lead different lives from their own and even poor parents try to scrape together the funds necessary to enroll their children in one. Meanwhile, brick kilns are virtually the only source of non-agricultural employment for the largely uneducated, un-skilled labor force living in this region. Finally, government regulation of both of these entities involves regulations that, when violated, are easily observable. One can tell just by walking through a school if many or most of the classrooms exceed the legal maximum. Similarly, one can tell just by entering the premises of a brick kiln if the kiln employs child labor. Thus, in many ways, the choice of private schools and brick kilns was not a choice, it was the only way forward given the other constraints of the project.

## II. Hypotheses and Variables

I broadly hypothesize that widespread compliance is possible, even in areas of state weakness. However, in order for legal institutions to work in this context, state or non-state actors must overcome the obstacles presented by both inaccurate legal understandings and poverty-driven non-compliance. Regulatory pragmatism suggests that one way to do so, when the state is plagued by principal-agent problems and not well-positioned to handle this task itself, is to delegate enforcement to interested parties.

### a. *Dependent Variable*

The major dependent variable I investigate remains compliance. As it has been discussed more thoroughly in other chapters, I will merely remind of its definition here: compliance occurs when an individual acts or refrains from acting in such a way that his or her behavior is consistent with that required by law. This involves private schools maintaining teacher-student ratios that are at or below the legally mandated maximum, which in this case is 1:30 in India and 1:40 in Nepal. Brick kiln compliance involves refraining from hiring those who are below the age at which individuals are legally allowed to work in a hazardous industry, which in the case of both India and Nepal is 14.

In both the private schools and brick kilns cases, I measured compliance by observation in order to avoid respondent biases which might lead to inaccurate self-reporting of non-compliance. I did so in the schools by requesting a tour of the premises during my interviews and observing the classrooms. I then rated the compliance of each school on a scale of one to five, with one indicating that no classrooms were compliant and five indicating that all classrooms were compliant. In the brick kilns, observing compliance with child labor regulations was even easier. A brick kiln is open to the elements and the manager’s/owner’s office typically sits in a location where he/she can observe all workers. I was, therefore, generally able to observe compliance while conducting my interviews with managers/owners. But *accurately* observing compliance with child labor regulations is not as straightforward as observing compliance with teacher-student ratio regulations. As I could not speak to the workers themselves, I had to guess their ages and accurately guessing which workers are over 14 and which are under is not easy, particularly for children whose ages are close to the limit itself. Thus, I measure non-compliance in the brick kilns case by observing whether a kiln employs workers who appear to be under age 10, an age that is more easily discernible from a distance and which still provides a relatively accurate measure of which kilns are employing child labor. As with the private schools, I rated brick kiln compliance on a scale of one to five, with one

indicating that none of the workers appear to be under age 10 and five indicating that all of the workers appear to be under age 10.

*b. Independent Variables*

I examine, as noted above, a region that is characterized by the same rules, the same culture and, seemingly, the same basic incentives to comply with or break the law. Within that context I examine how accurate legal understandings, poverty and compliance vary when strategies consistent with regulatory pragmatism are present or absent. I discuss each at length below.

*i. Delegated Enforcement*

When the state is weak, it often suffers from principal-agent problems and struggles to carry out basic tasks. In such cases, the state is often *functionally*, even if not intentionally, inconsistent in the way that it enforces the law. This is true even if no corruption is involved. A state may well be corruption-free, but its agents may lack the resources or competency to enforce the law consistently. As a result, for reasons discussed at length in Chapter 2 and in the next section, the populations targeted by particular regulations tend to end up with inaccurate understandings of the very laws with which the state would like them to comply. If we consider that states need the capacity to, for instance, collect taxes in order to provide the resources necessary to bring about further state capacity, lack of same seems to be a trap from which few states will ever emerge, especially as there is little academic consensus on what state capacity is, never mind how to foster it. This leaves one wondering: if a state lacks resources and/or competency, does this mean that fostering state capacity is the only means by which to bring about regulatory compliance?

I have argued in this dissertation that increasing state capacity is not the only means by which a relatively weak state can bring about regulatory compliance. A state need not have tremendous capacity if it employs regulatory pragmatism and designs around principal-agent problems by, for instance, delegating enforcement to interested parties. If there are individuals, groups, and organizations at the local level that have the capacity to consistently carry out certain proscribed tasks, possibly under government oversight, and have reason to want to take over these tasks, a state can take advantage of this resource and get help in carrying out its prerogatives by outsourcing specific functions to citizens and/or civil society. In this way, a state that has only minimal capacity can behave like it has greater capacity and reap the associated benefits without incurring tremendous costs. So long as the parties to whom enforcement is delegated benefit when they realize compliant behavior, more accurate legal understandings and higher rates of compliance should result.

In the three cases I examine, there is considerable variation on the use of regulatory pragmatism more generally, and delegated enforcement in particular: two involve delegated enforcement, one by Nepal and the other by India, while in the third, neither state has delegated. In the conservation case, the Nepali state has delegated enforcement power over large swaths of government-owned forest land just outside of Chitwan National Park to over fifty different Community Forest “User Groups.” Each of these groups is responsible for ensuring compliance with applicable regulations in its Community Forest and, if a group fails in this, the state may



strip it of the land-grant and all of the benefits<sup>75</sup> that flow from it. Further, as I discuss in Chapter 3 and will discuss further below, there is reason to believe that the contrast between regulatory consistency in the Community Forest and a lack thereof in Chitwan National Park fosters more accurate legal understandings of *national park laws* amongst those who have access to a Community Forest. In the schools case, the Indian state has delegated enforcement of some education regulations to parents via the Right to Education Act (“RTE”). As discussed briefly above and further below, the RTE allows parents to remove their children from schools with high teacher-student ratios and to take their state funding with them to schools with lower ratios. This flexibility is a benefit to parents. In addition, it allows these parents to demand compliance with legally mandated teacher-student ratio maximums from school administrators and, in so doing, foster more accurate understandings of this particular education regulation. Finally, in the brick kilns case, neither the Nepali nor the Indian state has delegated child labor enforcement to interested parties.

With the above in mind, I expect that delegated enforcement allows states to create consistency of enforcement in the absence of tremendous state capacity and that we should see both more accurate legal understandings and higher levels of compliance in those places and cases in which the state has done so: we have already seen this in Nepal, in the conservation case. We will see this in India, in the schools case. In all other places and cases we should and do find relatively fewer accurate legal understandings and lower levels of compliance.

#### *ii. Accuracy of Legal Understandings*

The target populations in the conservation case exist in a low-information environment, in which they have little knowledge of the law and little means to find out about it. The target populations in the private schools and brick kilns cases are situated somewhat differently. All headmasters/principals and almost all brick kiln managers/owners I surveyed are educated/literate. This means that they are more capable of finding out about the law on the books if they want to. But, realistically, many do not take the time to do this kind of research, nor does education/literacy mean that one will be able to definitively determine whether a given action is legal or illegal. Instead, headmasters/principals and brick kiln managers/owners seem to often learn about the law just like their less-educated counterparts, through observation.

In both the private schools and brick kilns cases, as with the conservation case, inconsistent state behavior ensures that misunderstandings of legal requirements remain pervasive. When the state punishes or appears to punish a particular action some of the time, while failing to punish the same behavior at other times, these mixed signals propagate through the legal understandings of the relevant target population. Nearly all principals/headmasters, as well as those brick kiln managers/owners located near to the main highway, have seen inspections before (and other have heard about them), but I found that the interpretations of the law that flowed from these experiences were often at odds with one another. Those who were punished, or saw others punished, or heard about others being punished, received information that suggests that the punished behavior is illegal. Many of these same individuals then likely

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<sup>75</sup> Some User Groups use Community Forests as sources of medicinal plants, in addition to sources of firewood. Other User Groups have gone so far as to set up revenue generating businesses that rely on the preservation of the Community Forest. One such User Group offers elephant rides through the jungle to tourists.

received conflicting information at some later point in time and this causes them to question whether their original assumptions regarding prohibited behavior were correct; they then updated their legal understandings to reflect this new information. In this way, the Indian and Nepali states' inconsistent actions with respect to a variety of regulations mean that many individuals, at any given point in time, hold inaccurate legal understandings.

I, therefore hypothesize that, as in the conservation case, consistent enforcement respect of a particular law, either directly or via delegation, helps produce accurate legal understandings. The more regularly and visibly the state and/or its delegates punish schools that exceed the maximum teacher-student ratio allowed by law or brick kilns that employ child labor, the more target populations observe this to be the case and can, in turn, tell others what they have observed. Under these conditions, target populations will rarely be presented with conflicting information about the law and, as a result, will only occasionally have to resolve discrepancies into an updated legal understanding. Moreover, when they do resolve contradictions, they are more likely to end up with an accurate legal understanding.

But the state, as mentioned briefly above, does not behave consistently with respect to either teacher-student ratio regulations or child labor regulations in this particular area. I was never, despite spending many months in the region, able to locate the District Education Officer ("DEO") for either Purba Champaran (India) or Parsa (Nepal). The headmasters/principals I spoke with verified that the applicable DEOs were rarely present and many stated that, while enforcement of teacher-student ratio regulations was rare, they viewed it as potentially costly. The situation with respect to child labor regulation was even less consistent. I was also never able to find out who precisely at the local level was responsible for enforcing such restrictions, but several brick kiln owners/managers stated that enforcement of labor regulation has happened at kilns. It has typically been politically motivated and highly targeted. Enforcement followed scandal and scapegoats were made, but all other violators were left alone. This level of inconsistency, if the conservation case is any guide, should result in widespread misinformation about the law, particularly if it's not clear which aspect of child labor regulation was violated.

That is, unless consistency is achieved via delegation. While neither state has delegated enforcement of child labor law and, thus, we should not expect to find cross-border variation in same, India has, as briefly detailed above, delegated education regulation to parents via the 2009 RTE. This act, which is essentially a voucher system, allows parents to take a child's state funding with him or her, whether he or she attends a government school or a private school. As parents can supplement this funding with their own resources, this program effectively means that poor parents have additional choices when it comes to where to send their children to school. Before the RTE, many parents were stuck with only the cheapest schools, but now most can consider slightly more expensive schools. It also means that even poor parents should be more believable when they tell school administrators who are not complying with applicable regulations that they will take their children to another school unless they hire additional teachers.<sup>76</sup> In other words, the RTE allows parents to become enforcers and if they act as such,

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<sup>76</sup> Banerjee et al (2010) find that parents of children enrolled in government schools in Uttar Pradesh often did not know applicable regulations, nor that some of them were members of Village Education Committees, but I believe parents who are sending their children to private school are differently motivated. Those who send their children to government school have acquiesced to the default. In contrast, most who send their children to private school do so

they should be able, through delegation, to create the consistency needed to bring about accurate legal understandings—and compliance—despite the fact that the state has not succeeded in doing so directly. As Nepal has no analogous program, accurate legal understandings should be more widespread in India than in Nepal in the schools case. In contrast, in the brick kilns case, in which state action is inconsistent and neither state has delegated, accurate legal understandings should be similarly low in both India and Nepal.

### *iii. Poverty Driven Non-Compliance*

As discussed in greater detail in Chapter 4, an individual might comply with a particular law or regulation because compliant action either aligns with or doesn't undercut that individual's pursuit of his/her self-interest (Pearce & Tombs 1990; Pearce & Tombs 1997; Pearce & Tombs 1998; Parker 2002; Molnar et al 2004). An individual who has ample material resources is less likely to break a law that prohibits stealing than an individual who has few resources and is desperate for food. This means that all individuals are not similarly situated to comply with a law that imposes a particular cost. Those who are poor may be driven to non-compliance by their poverty itself. Throughout much of the developed world, poverty-driven non-compliance is relatively low and, therefore, manageable. But the high levels of enforcement necessary to reduce poverty-driven non-compliance are far more easily carried by states with substantial state capacity targeting a relatively small percentage of the population than by states with limited capacity targeting larger populations.

In the developing world, poverty is widespread and poverty-driven non-compliance can be endemic. Along the India-Nepal border, businesses and organizations often run on extremely low margins or at a loss. This has important implications for compliance behavior. For instance, hiring an additional teacher at a private school to bring that school into compliance with teacher-student ratio regulations may mean that that school either runs at a loss or has to cut other important programs, as many schools struggle to raise tuition for students whose parents can barely afford to pay even low school fees. Brick kilns face similar constraints. A brick kiln that is located far from a market on poor clay soil can only fetch so much for its bricks and incurs heavy costs to get those bricks to market. The manager of such a brick kiln is forced to choose between compliance, with accompanying losses and possible business closure, and hiring child labor to handle some tasks. This same manager is also seen as a pillar of the community and employer of last resort. If he/she closes his/her kilns, the local economic effects on a very poor population are tremendous and the reputation effects for the owner/manager are similarly bad. Thus, any government regulating in this arena faces very stiff headwinds in terms of securing compliance that is costly.

Assuming accurate legal knowledge is in place, I hypothesize that many businesses and organization that *can* afford to comply will do so. More specifically, amongst the relatively small number of businesses and organization for which the cost of compliance is low relative to

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because they know that government schools provide very little in the way of education and that teachers rarely show up to class. This level of investigations, particularly when combined with the fact that they make a decision pay for private school and then chose a school, demonstrates that they are already engaged in making active choices about their children's education. They are also spending their own money when making these choices. It stands to reason that some will find out about applicable regulations and use these to their advantage if they are unhappy with the performance of the school they have chosen.

their revenues, I expect compliance, so long as (a) this cost is lower than the perceived cost of non-compliance and/or (b) so long as they believe that it is their duty to comply. For those organizations and businesses that face a very high cost of compliance, my expectations are different. Even if the cost of *non*-compliance were very high, many of these businesses and organizations would rather risk enforcement-related penalties than face the alternatives. Furthermore, even if the individuals in charge of these business and organizations believe they have a duty to comply, it is likely not powerful enough to overcome their poverty-driven non-compliance. Thus, I hypothesize that, amongst those business and organizations that have the option to both comply and continue functioning, those motivated by either fear or duty will comply in significantly higher numbers than those of their low-income counterparts who have no viable option other than non-compliance.

To test these hypotheses, I first compare the observed compliance behavior<sup>77</sup> of those for whom the cost of compliance is relatively high to those for whom the cost of compliance is relatively low, using school fees and brick prices as a proxy for the relative cost of compliance. These are approximate measures of revenue, as labor prices do not vary much in this area. Then, using the method described below, I check to make sure that these two income groups do not report different levels of both fear and duty.

### III. Methodology

I utilize both survey data and interviews with relevant actors to explain variation in compliance. In the schools case, I collected survey data from the headmaster/principal of every<sup>78</sup> private primary school in Birgunj, Nepal and in Raxaul Bazaar, India, twin border cities located a short drive from both Chitwan and Valmiki. Each respondent was asked, in person, a series of questions that started with demographic information and proceeded to inquiries designed to help measure my variables of interest. A complete list of these questions and an explanation of how I coded responses is located in the Appendix. I did not ask respondents about their compliance with teacher-student ratio regulations. Instead, as described briefly above, I observed same while touring the premises.

In the brick kilns case, I collected survey data from the manager/owner of every<sup>79</sup> brick kiln located within 10 kilometers of the India-Nepal border that runs from Chitwan and Valmiki National Parks in the west to just past Birgunj and Raxaul Bazaar in the east. As no government

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<sup>77</sup> I measure compliance via anonymous self-reporting. This may, at first glance, seem problematical, but I found respondents to be quite forthcoming about behaviors that were illegal. The sheer number of respondents who self-reported non-compliance is a testament to this fact.

<sup>78</sup> I was unable to locate a small number of schools that were on government lists of private schools in the area. These schools are no longer at their listed address and, from what I could tell from asking individuals at or around those addresses, these schools have closed.

<sup>79</sup> Though I did visit and secure compliance data from every functioning brick kiln in this area, I was not able to interview every manager. In particular, the managers of four different kilns located quite close to Raxaul Bazaar refused to speak to me when they heard the topic of my study. Though none of these kilns appeared to employ child labor, these managers were concerned that their proximity to a large town and a main highway would mean that they would be first to be punished if for some reason my results were to find their way into government hands. Though I assured these individuals that I was collecting all data anonymously and that they had nothing to fear, as I was prohibited from handing over my data to the government by the Berkeley IRB, this was little consolation.

list of brick kilns exists for this area in either Nepal or India, I located these kilns using satellite imagery. Kilns are large operations that are quite distinctive and easily located via satellite. Though several of the kilns I found by way of this methodology had subsequently closed, I found no kilns in operation that were not on my satellite maps as I travelled around this area conducting interviews. As with the schools case, I asked each brick kiln owner/manager, in person, a series of questions that started with demographic information and proceeded to inquiries designed to help measure my variables of interest. A complete list of these questions and an explanation of how I coded responses is located in the Appendix. As with the schools case, I once again did not ask respondents about their compliance with child labor regulations and, instead, observed same while touring the premises.

#### **IV. Findings**

I begin to test my first hypothesis, that consistent enforcement, even if achieved through delegation, is associated with accurate legal understandings, by comparing the number of school administrators who have accurate legal understandings in India to those in Nepal. I also conduct a cross-border comparison of the number of brick kiln managers/owners who possess accurate understandings of the law. In the first case, my hypothesis predicts that accuracy should be more widespread in India than in Nepal. In the second case, my hypothesis predicts that, since state action remains inconsistent on both sides of the border and has not been augmented by delegated enforcement on either side, there should be no statistical difference between the numbers of managers who have accurate understandings on each side of the border. When I run t-tests on these subsets, I find a significant cross-border difference in the schools case,  $p = 0.044$ , but not in the brick kilns case,  $p = 0.364$ .

**Table VI. Accurate Legal Understandings by Regulatory Context and Location**

<u>Regulatory Context</u>	<u>India</u>	<u>Nepal</u>	<u>P-value</u>
Private Schools	0.83	0.59	0.044
Brick Kilns	0.35	0.27	0.364

Next I check to make sure that, consistent with my findings in the conservation case, accurate legal knowledge is in fact associated with higher levels of compliance in both the schools and brick kilns cases. On the whole, 69% of the schools in India and 47% in Nepal were in substantial compliance with teacher-student ratio regulations, which I consider to be having fewer than the maximum number of students allowed in all or most of their classrooms. When I subset by accurate legal knowledge, these numbers change to 77% in India and 60% in Nepal. While this change may not seem significant, when compared to the compliance rates amongst those with inaccurate legal knowledge, the differences are fairly pronounced, as show in Table VII below.

**Table VII. Private School Compliance Rates by Accuracy of Legal Knowledge and Location**

<u>Location</u>	<u>Accurate Legal Knowledge</u>	<u>Inaccurate Legal Knowledge</u>
India	0.77	0.33
Nepal	0.60	0.29

The data are similar in the brick kilns case. On the whole, 52% of brick kilns in India and 54% in Nepal were in compliance with child labor regulations, which I consider to be having no children observed to be working on the premises at the time of the survey. Though the difference between these country-wise rates of compliance is not significant, the differences when I subset by accuracy of legal knowledge are, once again, substantial,<sup>80</sup> as reported below in Table VIII.

**Table VIII. Brick Kiln Compliance Rates by Accuracy of Legal Knowledge and Location**

<u>Location</u>	<u>Accurate Legal Knowledge</u>	<u>Inaccurate Legal Knowledge</u>
India	0.75	0.40
Nepal	0.67	0.47

Finally, I explore my hypothesis regarding poverty-driven non-compliance—that those who can afford to comply and are motivated to do so will comply in higher numbers than those who are motivated to comply but cannot afford to meet legal requirements. When I look at private schools, those schools in Nepal with median or greater tuition (most schools' only source of funds) complied at higher rates than their lower-tuition counterparts. However, in India, the same was not true. Here I found that while overall compliance was higher in India, schools that charged the least tuition were *more* likely to be in compliance than their high-tuition

**Table IX. Private School Compliance Rates by Income and Location**

<u>Location</u>	<u>&gt; Median Earnings</u>	<u>=&lt; Median Earnings</u>
India	0.64	0.78
Nepal	0.55	0.38

counterparts, a fact which makes sense if you consider that it is parents at less expensive schools who are more likely to use the RTE to threaten administrators with a transfer away to a different, possibly more expensive school. Schools with high tuition rates tend to be the elite schools with better exam-passing rates and parents who are unhappy with these schools have little RTE-based recourse. There is no better school that they can transfer their students to, save for an even more expensive boarding school. As a result, we should not expect administrators at these schools to feel threatened by parents and we should only expect them to comply for other reasons. Interestingly, if I look at the most elite schools in Nepal, I find the same pattern: only 33% of the truly high tuition schools in Nepal are in compliance.

When I turn to the brick kilns I find, as reported in Table X below, that few of the kilns making below the median earnings in my sample were in compliance. By comparison, those

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<sup>80</sup> Due to the small number of data points in this set, neither of these comparisons is statistically significant.

making median earnings or greater were much more likely to comply. In Nepal, these kilns were in compliance 64% of the time. In India, higher-income kilns were in compliance 71% of the time.

**Table X. Brick Kiln Compliance Rates by Income and Location**

<u>Location</u>	<u>&gt; Median Earnings</u>	<u>=&lt; Median Earnings</u>
India	0.71	0.40
Nepal	0.64	0.40

I then check to make sure that differing levels of fear or duty are not behind wealth-based disparities in compliance rates. In private schools in India, 57% of headmasters/principals at high-tuition schools and 64% at low-tuition schools fear being caught and punished if they fail to maintain teacher-student ratios below the legal maximum. The same statistic for private schools in Nepal was 55% in high-income schools and 57% in low-income schools. Neither of these differences is significant (India,  $p = 0.340$ ; Nepal,  $p = 0.477$ ). In terms of duty, 100% of principals/headmasters at high-tuition schools in India felt a duty to comply with teacher-student ratio regulations; this number was 95% at low-tuition schools. Meanwhile, in Nepal, 88% of high-income and 75% of low-income headmasters/principals felt a duty to comply with ratio regulations. Neither the difference in India, nor the difference in Nepal is significant (India,  $p = 0.165$ ; Nepal,  $p = 0.247$ ).

The data for the brick kilns are similar. In India, 73% of owners/managers at high-income kilns feared being caught and punished if they hired child labor, whereas this statistic was 83% at low-income kilns. The difference between these rates is not significant ( $p = 0.318$ ). In Nepal, the statistics are not terribly different, 66% of high-income kiln managers/owners reported this fear, whereas 50% of low-income managers/owners reported the same. Here, again, the difference is not significant ( $p = 0.238$ ). In Indian brick kilns, 95% of respondents reported a duty to obey the law, while in Nepali brick kilns, 100% of respondents reported this duty. It should not be surprising then that the income-wise differences here are not significant (India,  $p = 0.167$ ; Nepal,  $p = 1.0$ ).

## V. Discussion & Implications

The data indicate that in places in which the state generally behaves inconsistently, delegated enforcement can foster accurate understandings of the law. In the private schools case, India delegated enforcement to parents via the RTE and accurate legal knowledge was more widespread amongst principals/headmasters in India than in Nepal. In the brick kilns case, neither state delegated to interested parties and knowledge of child labor regulations was similarly low on both sides of the border. The data also suggest that my findings from the conservation case hold up in these shadow cases as well. Accurate legal understandings are associated with higher rates of compliance in both the private schools and the brick kilns and there is evidence of poverty-driven non-compliance in both cases. All of this suggests that even in developing world conditions, characterized by weak states and endemic poverty, conditions which many have assumed to be incompatible with rule of law, regulatory compliance can be achieved if states allow regulatory pragmatism to guide their choices regarding legal design and implementation strategy. These findings have three important implications for both the socio-

legal compliance literature and for practitioners—be they bureaucrats, politicians or aid workers—trying to use law to change behavior throughout the world.

First, even weak states with meager resources can achieve higher levels of compliance, if only they can ensure that accurate legal knowledge is widespread. I argue that the main way in which states do this is by behaving consistently. Through the consistent action of state representatives, populations receive information regarding what is allowed and what is not allowed under law. This is particularly true when literacy and education levels are low. But achieving consistency is no small feat for weak and/or underfunded states. The literature would have us believe that increased state capacity alone will allow states to meet these ends. My findings suggest, however, that there is another way to achieve consistency, at least in some regulatory scenarios: states can delegate enforcement to interested parties. These parties, by definition, must have an incentive to get involved and to pursue the state's agenda, but so long as these parameters are in place, interested parties can do the work necessary to mimic consistent state action. When interested parties are present and enforcement has been delegated, understandings of regulatory requirements at the local level become more accurate. With more accurate legal understandings, compliance is also higher.

But delegation to interested parties is not always possible, particularly when interested parties cannot be found. If there aren't individuals, groups or organizations present in civil society whose interests align with the state's on a particular regulatory issue, delegated enforcement is not likely to work. For instance, while one might enlist citizens in a city to help with parking enforcement, since there are groups and individuals who stand to gain from turnover of cars in a particular location or from the removal of cars parked illegally across driveways, such individuals and groups are not always readily available. In the brick kilns case, it is hard to know who the interested parties might be. Brick kiln owners facing tight margins can benefit from lowering costs by hiring child labor. Parents in rural areas in India and Nepal, most of whom are quite poor, benefit from their children's labor in terms of realizing short-term monetary gains, even though they might benefit more in the long term from children who have attended school. Yet, many of the brick kiln owners with whom I spoke stated that poor parents will literally beg to have their children hired. Their material existence is that tenuous. And I suspect that any program that was able to align parents long-term interests with the state's anti-child labor prerogatives would be quite expensive, thus putting this type of program out of reach for most states trying to curb the use of child labor. It follows that delegated enforcement is not a panacea for inducing regulatory compliance in weak and/or underfunded states. Instead it should be seen as one possible way to do so if the regulatory scenario permits. Regulatory pragmatism can guide states to other options.

It's also true that delegation of criminal law enforcement to civil society is problematical. While the state can engage with communities and get their assistance in criminal enforcement, via programs like neighborhood watch or the amber alert system in the U.S., enlisting individuals and/or groups within society who have not been professionalized to actually wield the state's monopoly over force is fraught with problems. Members of one group within civil society might use this power to treat other groups, groups which they do not like for one reason or another, poorly. Along the India-Nepal border, one can easily imagine high caste groups wielding this power against lower caste groups, or vice versa. Now, of course, the same could happen with



delegation of civil regulatory power, but in the case of the latter the consequences are often less dire and more avoidable with government oversight. In addition, there is the problem that criminal law enforcement typically involves *criminals* and dealing with individuals or groups engaged in criminal activity requires sophistication and, often, weaponry. It is difficult to imagine how the state might delegate this type of authority to civil society in a way that was less costly or problematical than hiring additional police.

The other important implication of my findings is that states that employ regulatory pragmatism to carefully design regulations and policies to take into account the various motivations and needs of those targeted by them, can use law to change social practices, even in places previously thought to be challenging rule of law environments. Accurate legal knowledge, even when combined with fear and duty, is sometimes still not enough to bring about compliance, however. This is particularly true when prohibited behavior is necessary to the material existence of the population or type of entity targeted by a particular regulation, thus driving the cost of compliance to extraordinary heights for many of those regulated. I spoke with numerous principals/headmasters on both sides of the India-Nepal border who were quite motivated to comply with government regulations and eager to reduce their teacher-student ratios below the legal maximum, but who could not do so due to financial constraints. My respondents explained that there was demand for private school education, even from the poor, but that the ability of these parents to pay was extremely limited. Several principals/headmasters explained that they feel a responsibility to provide private education at a low cost and that private schooling with too many students in a classroom was better for students than education in government schools in which the teachers fail to even show up at work. The non-compliance of these individuals does not result from an absence of fear or sense of duty, as many have assumed. Instead, it results from a dearth of low-cost compliance alternatives. My findings from the conservation case show that many people will comply with the law if given a low-cost opportunity to do so.

While there is no directly analogous program in place in either of the private schools or brick kilns cases, one aspect of the RTE has the ability to lower the cost of compliance and, therefore, bears further discussion. The RTE makes the same public education funds that the state would spend on a child's education in a government school available to that student if his/her parents choose to enroll him/her in a private school. What this means is that parents effectively have more to spend on private school education. For example, those parents who might only have been able to contribute Rs. 1500 to their daughter's education for the year would, with government RTE subsidy, have at least an additional Rs. 4700 to spend in Bihar. This means that they could send their daughter to a school which costs more and may provide better education. It also, as I have argued, means that they can threaten administrators of their daughter's current school and demand that the school hire additional teachers. This school, for its part, is now in a better position to afford to raise prices to pay for additional teachers as all parents can spend at least Rs. 4700 per year on private school education. This may well be part of the reason that compliance rates amongst low-tuition schools in Raxaul Bazaar were higher than those found in high-tuition schools. Not only could parents of children in low-tuition schools demand more teachers and have their threats to transfer student seem credible, the very program that facilitated those demands made it possible for schools to charge more in order to meet legal/parental expectations. In contrast, administrators at high-tuition schools were largely

unmotivated to hire additional teachers. As one administrator explained, “hiring more teachers is expensive and we already have one of the highest pass-rates in the area. Parents are only concerned with teachers if the pass-rate is low.” And to some degree this rationale makes sense—in that the goal of the legal mandate is to achieve better learning outcomes—even if it involves non-compliance.

In private schools in Nepal, principals/headmasters have not experienced the same cost-of-compliance lowering effects. The same is true of brick kiln owners/managers on both sides of the border. Yet, one can imagine programs that might lower the cost of compliance for cash-strapped private schools and brick kilns. In the schools, the Nepali state could attempt to mimic India’s RTE or it could provide a loan to low-tuition schools in order to allow them to hire enough staff to comply with legal mandates. If, on inspection, they are found in compliance, the state could forgive all or part of that loan. Just having additional staff might, in the end, result in higher quality education and that might help attract parents of students who can afford to pay more, thus creating a virtuous cycle. In the brick kilns, the state might allow brick kilns to draw workers from the Mahatma Gandhi National Rural Employment Guarantee Act, which promises workers at least 100 paid days of labor every year. These workers typically work on state projects, but if reducing child labor is considered a state project, using state funds to employ adults in place of children might be an effective use of state funds. Many of the owners/managers I spoke to stated that they vastly preferred hiring adult workers because they are more productive, but that even the low, unskilled-labor wages in Bihar and Nepal’s *Terai* are sometimes beyond their reach given the overhead at their particular kilns. While these statements indicate that a drop in wages would help reduce child labor, such a drop to already low wages would not be beneficial for the rural poor, nor for the politicians who represent them; thus, use of MGNREGA workers at kilns might achieve both ends.

## **VI. Conclusion**

The assumptions implicit in the standard deterrence model of compliance remain appropriate in areas of state weakness across varied regulatory contexts. Low compliance in such areas appears to be driven by inaccurate legal knowledge and widespread poverty. Though the compliance and rule of law literatures largely assume that these latter factors will only be ameliorated by either development or state capacity, two variables which are often correlated, I have presented evidence that neither of these is necessary to achieve high levels of compliance in places where state capacity and incomes are low. Since low compliance in weak states often results from inaccurate legal knowledge and the high cost of compliance associated with poverty, regulatory pragmatism can guide states to implementation strategies that solve these problems. Inaccurate legal knowledge can be ameliorated if a state behaves consistently (a tall order for many weak and/or underfunded states) or, if it cannot, if it: 1) delegates regulatory responsibility to interested parties who are capable of consistent action; or 2) utilizes local leaders to convey accurate legal knowledge to target populations. And these are, almost certainly, not the only ways to foster accurate legal knowledge. Once knowledge is in place, fear and duty work in the ways that we understand them to, save for amongst those whose compliance costs are high and, seemingly, for those businesses that are quite profitable. Here I have shown, particularly in Chapter 4, but also with evidence in this chapter from the private schools case, that thoughtful regulatory design can sometimes be used to lower the cost of compliance for a substantial

percentage of a target population. When states are able to do so, compliance will likely be significantly higher.

## **Chapter 6: Conclusion**

This project started, oddly enough, while investigating another possible project related to the politics of Madhesis, people of supposedly Indian origin living in the South of Nepal. It was pure happenstance that I walked by the auxiliary park headquarters of Chitwan National Park and saw a map that depicted Chitwan National Park on one side and Valmiki National Park on the other. All of my subsequent efforts, however, have been quite intentional and, in the preceding chapters, I have attempted to leave no stone unturned in trying to understand why those living on the Nepal side of the India-Nepal border comply with Chitwan National Park's wood-taking prohibitions in greater numbers than those living in India comply with Valmiki National Park and Tiger Reserve's nearly identical regulations. These efforts involved explaining the seemingly inexplicable: in a region that is dominated by the same ethnic group and language, in which people are largely poor and uneducated, in which people have a strong need for firewood, and in which the state has little power to stop them from taking it from nearby conservations areas despite wood taking being prohibited, why some people refrain from doing so. The literature suggests that with all of these factors held relatively constant, via natural experiment, we should not see cross-border variation in compliance.

Methodologically, I start from the premise of a least-favorable case design: in weakly institutionalized regulatory environments, particularly when the behavior required by a legal institution is different from that required by local customary norms and self-interest, we should not expect to see compliance. Then, with the open India-Nepal border as a backdrop, I use both qualitative and quantitative evidence to demonstrate that one thing varies at the border and makes the inexplicable seem more plausible: the use of regulatory pragmatism.

In the conservation case, the Nepali state adopted a strategy, Community Forestry, that was consistent with regulatory pragmatism and fostered compliance in two different ways: 1) by fostering accurate legal knowledge via delegated enforcement; and 2) by ameliorating poverty-driven non-compliance by lowering the cost of compliance for the poor. In the schools case, the Indian state adopted a strategy, via the 2009 RTE, that was consistent with regulatory pragmatism and fostered compliance by delegating enforcement to parents. Finally, in the brick kilns case, neither India nor Nepal utilized regulatory pragmatism to guide its legal design and implementation strategy for child labor regulations, and compliance was poor on both sides of the border. But regulatory pragmatism is just an approach and, as a result, I spent much of the dissertation exploring two key intervening variables that are pervasive in areas of state weakness, intimately connected to compliance and, therefore, essential to any effort to bring about compliance.

The first of these is legal knowledge. Understandings of wood-taking prohibitions are more accurate in Nepal than they are in India. And, importantly, accurate knowledge of a specific regulation is a strong predictor of compliance with same, at least in this context. I find this to be true on both sides of the border, with a disproportionate number of those possessing accurate legal knowledge being located in Nepal. What's more, my measurements of standard explanations for compliance, particularly fear and duty, do not seem to vary with accurate legal knowledge. In other words, fearing legal sanctions or feeling a sense of duty to obey the law does not seem to be driving individuals to acquire more accurate legal knowledge. I argue that, before these standard deterrence model factors can come into play, consistent state action drives

accurate legal knowledge, allowing target populations, particularly when education levels are low,<sup>81</sup> to observe those behaviors that the state punishes and those that it does not and to come to relatively correct understandings of the law. If the state cannot behave consistently, it is not without options. It can delegate regulation to groups capable of consistency or engage with local leaders and secure their assistance in disseminating accurate information about the law.

Neither the Nepali state nor the Indian state is behaving consistently in and around Chitwan or Valmiki. Indeed, those in charge of enforcing wood-collecting prohibitions seem to do so one day and not the next. But, in Nepal, a collection of state delegates are behaving consistently: those running Community Forests just outside of Chitwan regularly allow sanction-free access to their forests for wood collection. When locals are able to collect wood in Community Forests without penalty, they are able to observe that, in contrast, there are sometimes penalties in the park. They can then update their legal understandings more accurately by inferring that wood collection in Community Forests must be legal, while wood collection in the park is *illegal*. But this is probably not the only method by which target populations in Nepal acquire more accurate legal understandings. I also present evidence that local leaders, like the lawyers in Muir (1973), have the power to transmit accurate legal knowledge and that, relative to printed transmission, this method seems to be both credible and durable.

The second intervening variable which helps to explain variation in compliance with wood-taking prohibitions across the India-Nepal border is poverty-driven non-compliance. Even if most individuals hold accurate understandings of the law, they are not all equally situated to comply with it. Individuals who have disposable income, who can afford to buy wood or cook with gas, need not risk non-compliance. Meanwhile, those who rely on wood for cooking and heating their homes and have few assets to expend on alternative sources of fuel, are forced into a position in which they are aware of the law, are motivated by either fear or duty to comply with it, and yet cannot reasonably do so in light of their basic material needs. On both sides of the border, I find that those who live below the poverty line comply in significantly fewer numbers than their only slightly wealthier counterparts. And, yet, they report similar levels of fear and duty. I also find that, in Nepal, the poor have an alternative source of fuelwood, whereas, in India, they do not. Indeed, the same Community Forests which help foster accurate legal understandings in Nepal, also provide those living near to them with an affordable compliance option. In other words, those who live near Community Forests—which are typically located right outside of park boundaries—can make a meaningful choice between compliance and non-compliance, one that is not driven by a need for resources necessary to basic survival. Across the border, in India, Joint Forest Management has not been used outside of Valmiki, and individuals face a much more difficult choice. As a result, it is not surprising that many of these individuals, even though they report a sense of fear or duty to comply, still enter Valmiki on a regular basis to collect fuelwood.

Having explained some of the cross-border variation in compliance with wood-taking prohibitions in the region just outside of Chitwan and Valmiki National Parks, I turned, in order to determine whether my findings were generalizable, to two additional cases drawn from different layers of Indian and Nepal society: businesses and organizations. More specifically, I

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<sup>81</sup> Illiteracy means that “implicit general deterrence,” as described by Thornton et al (2005), does not exist.

examined the compliance of: 1) private school administrators/principals with regulations requiring particular, smaller-than-customary teacher-student ratios in the classroom; and 2) the compliance of brick kiln owners/managers with child labor regulations. I chose these latter cases as much for their similarity with my main conservation case as for the opportunity to observe the effects of varied state behavior they offer. Education and brick manufacturing are major economic activities present on both sides of the border and regulations governing these types of activities are commonly used by governments to try to change behaviors that are perceived, at least by those writing and supporting these laws, to be against the public interest. Moreover, the behavior required by law in each of these cases stands in contrast to customary social practice and to what appears to be the self-interest of regulated entities. The efforts made by the governments on either side of the border, however, vary distinctly in the schools case and not at all in the brick kilns case. This allowed me to further test the proposition that while consistent state action *is* necessary for accurate legal understandings to develop and accurate legal knowledge facilitates compliance, both can be achieved through delegation. These shadow cases also allowed me to confirm that implementation strategies consistent with regulatory pragmatism are associated with higher compliance rates across multiple regulatory contexts.

In the twin border cities of Raxaul Bazaar, India and Birgunj, Nepal, I conducted a census of school administrators at all private schools in the metropolitan area. As part of this exercise, I collected data on school demographics and administrators' legal knowledge and perceptions of the state; I was able to observe compliance with teacher-student ratio regulations as I toured each school. Here I find that, unlike in the main conservation case, compliance is more common in India than in Nepal. Yet, accuracy of legal knowledge remains an important predictor of compliance. Poverty-driven non-compliance also remains predictive of compliance behavior, though not for those private schools with the most resources. These elite schools were, in fact, less likely than their resource-poor counterparts to be found in compliance with teacher-student ratio regulations. In other words, my findings mirror the conservation case, it's just that this time the state in which legal knowledge is more accurate and poverty-driven non-compliance is less prevalent is India; it is also India that adopted an implementation strategy consistent with regulatory pragmatism: India delegated enforcement to parents via the 2009 RTE.

When I examine compliance with child labor regulations in brick kilns, I get consistent results. In this case I surveyed the managers and owners of all brick kilns lying within 10 kilometers of the border between Chitiwan and Valmiki to the west and Raxaul Bazaar and Birgunj in the east. I find that those of my respondents who possess more accurate legal knowledge are more likely to be in compliance and those whose kilns are economically strapped are least likely to be in compliance, but I find no significant cross-border variation in compliance. Put differently, compliance on each side of the border is similarly low, which is to be expected given that neither state has employed regulatory pragmatism while designing or implementing its child labor regulations.

In the end, the variation I examine across all three cases helps to confirm one of the more interesting findings of this dissertation: that states that behave pragmatically when designing and implementation regulations, enjoy higher rates of compliance than those that are legally doctrinaire. I was able to observe this across multiple cases and with multiple implementation strategies.

Perhaps the most important strategy I looked at was delegated enforcement. When state capacity is weak, but the social fabric at the local level is strong, states can delegate enforcement to interested parties,<sup>82</sup> those who have an incentive to get involved and act according to law, and achieve significantly higher rates of compliance. In the conservation case, the Nepali government adopted a policy that fosters accurate legal knowledge and compliance by delegating enforcement to the User Groups that manage Community Forests. User Group members had reason to get involved because they are able to secure access to an important resource and are continually incentivized to comply with law and encourage others to do so by the threat that the state could re-assert its right to the land on which the Community Forest is located. In the schools case, it is the Indian government that adopted a law that facilitates accurate legal knowledge via delegation. The 2009 RTE in India allows individuals (parents) to take an active role in enforcing teacher-student ratio regulations by removing or threatening to remove their students from schools with high ratios and send them to better schools with lower ratios. Meanwhile, in the brick kilns case, neither government has taken significant action to enforce child labor regulations, through delegation or otherwise. It is, therefore, not surprising to find a lack of cross-border variation in both consistency of enforcement and rates of compliance.

Two other pragmatic strategies seem to be effective in terms of fostering compliance, at least in the conservation case. I conducted a field experiment in which I explored whether local leaders might effectively transmit information about the law to target populations. My results suggest that this strategy, if implemented by the state, would be more effective than written communication. My conservation case survey data also indicate that Community Forests, which lower the cost of compliance for the poor, can effectively ameliorate poverty-driven non-compliance. Data collected for the schools and brick kilns cases suggest that implementation strategies designed to lower the cost of compliance for target populations in these regulatory contexts would also be effective in terms of raising compliance rates.

Exploring these shadow cases allowed me to confirm my findings regarding accurate legal understandings from the conservation case, while also shedding further light on three mechanisms—delegated enforcement, information transmission through local leaders and amelioration of poverty-driven non-compliance—by which enforcement can be regularized and targets of regulation—be they individuals, businesses or organization—encouraged to shift from customary norms to legal norms. When looked at together, my findings indicate that weak states *can* generate compliant behavior so long as they let regulatory pragmatism guide their actions: *smart* states can be almost as effective as strong states. These findings not only add to the standard deterrence model of compliance by exploring the circumstances under which compliance can be brought about when the state is weak, they go a long way towards providing information to governments and non-state actors in developing and/or weak states about strategies they can adopt to foster compliance, even if the states in question cannot muster the capacity necessary to do so by force.

How far can regulatory pragmatism be extended? One way to address this issue is to ask: what regulatory arenas might benefit from regulatory pragmatism? There are many, but, for the

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<sup>82</sup> In some ways this delegation principle is analogous to the “private right of action” that is often made available in the United States. Farhang (2006).

moment let's consider problems with power regulation (and here I mean electricity, not something more abstract), which are germane to the South Asian experience. Today, nearly all South Asian countries struggle to produce enough electricity to meet demand. In India, the problem is less about overall demand and more about delivering adequate power in the locations in which demand is greatest. Across the border in Nepal both overall demand and the location of that demand are problematical. Complicating matters is the fact that, in both India and Nepal, many individuals illegally tap transmission lines, making the grid less reliable and making the costs of running the system more expensive for the states involved. The states, in both India and Nepal, have proved incapable of enforcing regulations which require only permitted and metered electrical connections. Without this consistent enforcement, I have found, at least anecdotally, that individuals see that their neighbors get electricity by hiring a local line-tapper, and hence do the same themselves. What's more, even if they know that getting an electrical connection requires a permit from the state and a meter, many would still be driven by poverty towards non-compliance. How might the state use regulatory pragmatism to increase accuracy of legal knowledge and reduce poverty-driven non-compliance in this particular scenario?

While there are almost certainly a variety of ways to do so, my findings seem to point to local leaders and/or delegated enforcement and cost-reduction through the use of renewable-energy base dmicro-grids. Running new lines to far-flung villages where state agencies will likely struggle to collect revenue from electricity delivery is problematical on a number of different levels. The opportunities for fostering accurate legal knowledge are low and the likelihood that power will be stolen is high. Further, this scenario yields many opportunities for principal-agent problems to develop, during both the line extension and public goods delivery processes, and politicization of power delivery (Min & Golden 2014) once lines and connections have been installed. In contrast, micro-grids, whether fueled by solar or micro-hydro or any other locally abundant power supply, but particularly when adopted by local leaders, have the potential to foster accurate legal knowledge, lower the cost of compliance and circumvent some of the principal-agent problems involved in power delivery across South Asia.

Micro-grids are, like they sound, small electricity grids. One can be set up to run a single village or collection of villages. They require less in the way of infrastructure than traditional grids, though their start-up costs are high. Importantly, micro-grid installation in South Asia would necessarily decentralize power over electricity supply in much the same way that Community Forests decentralize control over forest resources. I can imagine a system in which the state agrees to set up a micro-grid in response to an interested party petition and that the state could generate interest in micro-grids by communicating with locals leaders. As with the Community Forests, these interested parties would have to show how they would sustainably manage this resource: answering questions in advance about who, what, when, and where. After a successful petition, the state would deliver the micro-grid hardware, perhaps on a cost-sharing basis, relying on locals to set and collect fees for using the system and delivering those fees to the state.<sup>83</sup> By placing control in the hands of locals, and particularly local leaders, the state would gain the advantage of tapping local power networks for some of its responsibilities, instead of attempting to get its own employees to do this work. By cutting out the middle men—

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<sup>83</sup> This proposal assumes a baseline level of affluence that is not present in the poorest and most remote parts of South Asia. In such places, any cost outlay at all would likely be beyond most families' means. If the state wished to still proceed with micro-grid installation in such places, it would have to shoulder most of the cost itself.



and the often attendant corruption—in this process, revenue would likely be higher than under a traditional system and costs to consumers would likely be lower, thus reducing poverty-driven non-compliance.

Would interested parties still try to take advantage of their position of power vis-à-vis power delivery? Possibly, and those who are currently experimenting with micro-grids in India suggest that elite capture and inter-group conflict over the power supply can be problems, but there are two related reasons to believe local control would still be superior to state-level control. First, the number of bureaucratic layers that locals would have to deal with would be minimized and made proximal to their location, thus minimizing transaction and travel costs. Second, many locals have ways of exerting control back over those in their community that they lack over members of the bureaucracy. In other words, if those in charge of a hypothetical micro-grid deny power to a particular individual, that individual can exert whatever local influence he or she may have in order to gain access. Is this a perfect system or a perfect solution? No. Local hierarchies would likely feature prominently in the politics of access to micro-grid power. But it's important to remember that hierarchies and abilities to pay dominate the current system, they are just different in character.

It's also important to keep in mind the information that flows from a locally managed system. Local leaders have the power to distribute accurate information about the law and about micro-grid power. In Nepal's Community Forests local control, via delegated enforcement, plays an important role in facilitating accuracy of legal knowledge. As it currently stands, many do not know that tapping an electric line without the state's permission is illegal. Individuals see many others doing it and often infer that it is legal. This is particularly true in those rural areas in which grid power is available. If a micro-grid were installed, local leaders or other interested parties would be able to distribute accurate information about it and entice people to connect to it with the promise of lower overall costs and the promise of a legal connection that is more reliable than a grid connection. As individuals start signing up to this locally controlled public good, others will see them doing so and learn from their experiences. This is particularly true in light of the fact that local leaders and interested parties are, by definition, locals and they are better situated to both spread accurate information and enforce against those who illegally tap the micro-grid. This positive feedback loop currently does not exist in most places with respect to the formal process involved in acquiring an electrical connection. Pervasive principal-agent problems mean that those who attempt to secure a grid connection legally often come back poorer for their efforts and without having achieved their goal. Others who hear about these failed efforts may infer that getting power in this way is either illegal or unfeasible. In other words, micro-grids have the potential to create a smaller and more local feedback loop, a mechanism that furthers both accurate legal understandings and compliance.

Further, my findings, while definitively based upon circumstances in South Asia, are not regionally specific and their implications need not be either. For instance, I expect that consistent state action would lead to more accurate legal knowledge regarding problematical building code regulations where I live in San Francisco. The code that the city has adopted for all new construction and modification of existing structures is very stringent, but not widely known or understood. The city, for its part, only sometimes enforces the code against those engaged in non-permitted construction. It should not be surprising then, based upon my

findings, that knowledge of the building code and what constitutes a building code violation is quite low. There are lots of rumors and things people say and assume are violations, but my experience has been that little of it is true. What's more, even when individuals do go through the permitting process, some inspectors will go after every little detail, while others will eye-ball a project and sign off without spending more than a minute looking for possible violations. If the city were to enforce more regularly and more consistently, something that it is capable of doing, if its enforcement of parking violations is any guide, my findings suggest that violations would go down.

But they would not disappear altogether. My findings suggest that if compliance is expensive and people are forced to choose between compliance and their basic, material existence, even those who have accurate knowledge will often end up engaging in non-compliant behavior. Now, in a city in which the median house sells for over one million dollars, it's hard to envision there being what I call "poverty-driven non-compliance" in terms of building code violations. But reality is more complicated. The median house does sell for quite a lot in San Francisco, but the city is also home to myriad long-time, older residents who have owned their homes for fifty years or more, who can't imagine living anywhere else in terms of both community and the practicality of getting around without a car, and who live on very limited budgets. When these individuals have a problem with their plumbing, they call a plumber and the plumber tells them that he can do the job for \$4,000. Shocked by the cost of modern home maintenance and knowing that their social security checks won't cover this type of expense, many older residents will then ask the plumber if there is any way to cut costs. Many plumbers then tell their customers that they can do the job without a permit for, say, \$2700. Why such a big difference? The permit itself probably costs \$300 to \$400. But the real discount is available because the plumber may be able to cut a few corners and, more importantly, won't have to deal with the hassle of inspections, which often require a plumber to be on site, waiting for the city inspector, for hours at a time. Given these options, the homeowner, who is cash-strapped and doesn't believe that selling his/her home and moving elsewhere is a possibility given his/her constraints, will probably end up engaging in poverty-driven non-compliance.

So, how could San Francisco reduce building code violations, which are currently rampant? My research suggests that, as detailed briefly above, more consistent enforcement would probably lead to more accurate knowledge and fewer violations, but that poverty-driven non-compliance may still present itself in a wealthy city, in the so-called first world. This latter hurdle can be removed, however, if the city is willing to put in some effort and invest some resources in doing so. One can easily imagine a program which allows residents who live below a certain income-level to pay reduced permit fees. One could also imagine the city using technology to be more accurate in its estimates of building inspector arrivals. This would allow contractors to waste less time waiting for inspectors. Contractors, who could then spend this time on other construction work and would not have to charge residents as much for the permitting portion of a construction project. Would a permitted plumbing project for a low-income resident like the one I mentioned above cost \$2700 (the price of an un-permitted repair) under this scenario? Almost certainly not. But it might cost \$3000. And when the difference between legality and illegality is reduced to such a great degree, my research suggests that those who have accurate legal knowledge will often be motivated by either fear or duty to choose compliance.

Fostering compliance in places where the state is weak and/or underfunded is no easy task. Thus far academics and practitioners have largely struggled and failed under such circumstances. But this doesn't mean that compliance in the places we would least expect to find it is impossible. This dissertation argues for a more nuanced look at the underpinnings of rule of law and rule-following. It argues that we should question the assumption that knowledge of the law is widely known and understood and suggests some ways that more accurate legal knowledge can be brought about. More specifically, it suggests that local leaders can sometimes fill the role of lawyers in distributing accurate information about the law; it also suggests that decentralization of some regulatory responsibilities to interested parties can prove fruitful in terms of locally held legal knowledge. Even if accurate legal knowledge is widespread, this dissertation argues that poverty can still undermine compliance. Poor populations are particularly sensitive to the cost of compliance and, when a population is largely poor, individual-level sensitivities can, when acted upon, lower compliance rates. They can also have spillover effects, fostering inaccurate legal knowledge and leading those who know what the law is to reconsider complying with regulations that so few others follow. Finally, this dissertation suggests that law, long the province of absolutes, might benefit from an infusion of regulatory pragmatism. Even weak states can achieve compliance when they focus on the goal of a particular regulation, recognize the problems associated with achieving compliance and then design around those problems. When taken together, I hope that these findings both deepen our academic understanding of the intimate connection between state and society and suggest practical ways in which this connection can be reimagined to better deliver rule of law.

## **Appendix 1**

### ***Conservation Case***

“Do you or your family members work in eco-tourism?”

1. Yes
2. No
7. Don't Know or Won't Say

“Which of the following categories best describes your family's income last year?”

1. Less than 32,000 NPR/20,000 INR (Only enough for food and shelter.)
2. 32,000-1 lakh NPR/20,000-60,000INR
3. 1-5 lakhs NPR/60,000-3 lakhs INR
4. More than 5 lakhs NPR/More than 3 lakhs INR
5. Other\_\_\_\_\_”
7. Don't Know or Won't Say

“Do you use wood to cook, for heat in your house or any other purpose?”

1. Yes
2. No
3. Sometimes
7. Don't Know or Won't Say

Nepal Version: “Where do you go to collect wood?”

1. National Park
2. Community Forest
3. Buffer Zone
4. Other
7. Don't Know or Won't Say

India Version: “Where do you go to collect wood?”

1. National Park
2. Government Forest Area
3. Privately Owned Land
4. Other
7. Don't Know or Won't Say

“I’m going to read five sentences to you. If the action described in a sentence is required in the National Park, please answer yes. If the action described in a sentence is not required in the National Park, please answer no.

1. People must stay on roadways at all times.
2. A person must do puja if he or she kills any of the animals.
3. People can collect fallen wood.
4. People must not cut down live trees.
5. Once per year the people can pay a fee to cut grass in the forest.”
  
7. Don’t Know or Won’t Say

“If someone went into the National Park and collected fallen wood, do you think that person would be caught by the authorities?”

1. Yes
2. No
7. Don’t Know or Won’t Say

“How would you describe the punishment for collecting fallen wood from the National Park?”

1. Harsh
2. Reasonable
3. Not Very Harsh
7. Don’t Know or Won’t Say

“In your opinion, do people have a duty to protect the forest?”

1. Yes
2. No
7. Don’t Know or Won’t Say

“In your opinion, do people have a duty to obey the law?”

1. Always
2. Often
3. Sometimes
4. Never
7. Don’t Know or Won’t Say

“Can you access a community forest?”

1. Yes
2. No
7. Don’t Know or Won’t Say

“Have you or your family members benefitted from living near the National Park?”

1. Yes
2. No
3. Both
7. Don't Know or Won't Say

“How have you or your family benefited from living near the National Park?”

- 
7. Don't Know or Won't Say

“How has living near the National Park harmed you or your family?”

- 
7. Don't Know or Won't Say

“Have you lost crops, livestock or family members to wildlife?”

1. Yes
2. No
7. Don't Know or Won't Say

“Have you received government compensation for these losses?”

1. Yes
2. No
7. Don't Know or Won't Say

“Has the government installed solar street lights in this area?”

1. Yes
2. No
7. Don't Know or Won't Say

“Have you received a new chulah (“stove”) from the government?”

1. Yes
2. No
7. Don't Know or Won't Say

“Have you received treatment at the government medical camps?”

1. Yes

2. No
7. Don't Know or Won't Say

“Have any of your livestock received treatment at the government veterinary medical camps?”

1. Yes
2. No
7. Don't Know or Won't Say

### *Accurate Legal Knowledge*

In order to assess the accuracy of respondents understanding of relevant laws, I read respondents the following series of five possible legal requirements, in either Hindi or Nepali: 1) people must stay on roadways at all times; 2) a person must do *puja* (pray) if he or she kills any of the animals; 3) people can collect fallen wood; 4) people must not cut down live trees; and 5) once per year the people can pay a fee to cut grass in the forest. I then asked them to state that, “yes,” a described behavior is allowed or, “no,” that a described behavior is not allowed.<sup>84</sup> I use responses to the third item above to assess the accuracy of legal understandings of the specific regulation covered by my research, with a “no” response being accurate in this case. Responses to the remaining questions assess the accuracy of broader legal understandings. Doing so allows me to determine whether accuracy of legal understandings is specific to areas of concern and/or interest or whether those who have accurate understandings of one park regulation have accurate understandings of other, sometimes unrelated, park regulations. Accurate responses to these other questions (1, 2, 4 & 5) are as follows: people need not stay on roadways at all times, they are not required by law to perform a puja ceremony if they harm any of the wildlife in the park and they are not allowed to cut down live trees; in addition, in Nepal, but not in India, individuals are legally allowed to cut grass in the park during a once-a-year legal holiday.

### *Income-Level/Poverty*

“Which of the following categories best describes your family’s income last year?”

6. Less than 32,000 NPR/20,000 INR<sup>1</sup> (Only enough for food and shelter.)
7. 32,000-1 lakh NPR/20,000-60,000INR
8. 1-5 lakhs NPR/60,000-3 lakhs INR
9. More than 5 lakhs NPR/More than 3 lakhs INR
10. Other\_\_\_\_\_”

There was also a code for respondents who refused to answer or did not know their income. Then, for data analysis purposes, I used the first category, which roughly corresponds to one dollar per day, to mark those living below the poverty line. I used responses two, three and four to mark those living above the poverty line. Finally, I manually categorized responses in category five into categories one thru four.

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<sup>84</sup> You can find the specific wording of this and all other survey questions in the appendix.

### *Firewood Need*

“Do you use wood to cook, for heat in your house or any other purpose?” Interviewers then placed respondents’ answers into one of four categories: 1) “Yes”; 2) “No”; 3) “Sometimes”; and 4) “Don’t Know or Won’t Say.”

### *Compliance*

In order to assess compliance, I asked those respondents who gave a “Yes” or “Sometimes” answer to the “firewood need” question the following question, in either Hindi or Nepali: “Where do you go to collect wood?” Interviewers in Nepal then placed respondents’ answers into one or more of the following five categories: 1) “National Park”; 2) “Community Forest”; 3) “Buffer Zone”; 4) “Other”; and 7) “Don’t Know or Won’t Say.” Meanwhile interviewers in India placed respondents’ answers into one or more of the following five categories: 1) “National Park”; 2) “Government Forest Area”; 3) Privately Owned Land; 4) “Other”; and 7) “Don’t Know or Won’t Say.” I developed each of these location-specific lists during preliminary field work, as well as during the pilot for this survey; they roughly correspond to the answers I received on either side of the border during the early phases of the project. The fact that the only substantial “Other” response that I received was “Purchase” indicates that these categorizations are accurate. Also, while concerns about the self-reported nature of this data are not unfounded, my experience has been that respondents on both sides of the border are quite forthcoming about where they collect wood, regardless of the legality of doing so in those locations. The fact that so many of my respondents on both sides of the border admit to collecting wood in the national parks suggests that self-reported compliance data is not as problematical, at least in this case, as one might expect.

### *Fear*

Moving on to possible confounding variables, I assess whether respondents are fearful about the punishment associated with non-compliance by asking them the following question: “If someone went into the National Park and collected fallen wood, do you think that person would be punished by the authorities?” Interviewers then categorized responses into: 1) “Yes”; 2) “No”; and 3) “Don’t Know or Won’t Say.” I followed this question with another designed to assess respondents’ perceptions of the punishment associated with non-compliance: “How would you describe the punishment for collecting fallen wood from the National Park?” Interviewers offered respondents the following options: 1) “Harsh”; 2) “Reasonable”; 3) “Not Very Harsh”; and 4) “Don’t Know or Won’t Say.”

### *Duty*

In order to assess whether respondents believed they had a duty to comply, I asked two separate questions. First: “In your opinion, do people have a duty to protect the forest?” Interviewers then placed respondents’ answers into the following categories: 1) “Yes”; 2) “No”; and 3) “Don’t Know or Won’t Say.” I also asked: “In your opinion, do people have a duty to obey the law?” Interviewers asked respondents to pick one of the following categories: 1) “Always”; 2) “Often”; 3) “Sometimes”; 4) “Never”; and 5) “Don’t Know or Won’t Say.” For



purposes of data analysis I separate response one and two from responses three and four, with the former indicating a duty to obey the law.

### *Community Forest Access*

In order to assess Community Forest access I asked respondents in Nepal: “Can you access a community forest?” Interviewers then placed responses into one of the following three categories: 1) “Yes”; 2) “No”; and 3) “Don’t Know or Won’t Say.” I did consider trying to measure this variable by calculating the distance to the nearest Community Forest from each village, but I eventually decided that this seemingly more objective measure is more problematical than the subjective measure I used due to variation in access to transportation. For those who must travel on foot, which is the majority of the population, Community Forest access is quite proscribed. However, for those who have a bicycle or a motorcycle, a more distant Community Forest is still accessible to them. Thus, asking respondents whether they have access gets closer than the distance calculation to measuring whether or not they can use Community Forest wood to cook or heat their homes.

### *Schools Case*

Do you or your family own land?

1. Yes
2. No
7. Don’t Know or Won’t Say

Do you or your family own a business?

1. Yes
2. No
7. Don’t Know or Won’t Say

Do you or your family work for the government?

1. Yes
2. No
7. Don’t Know or Won’t Say

Can you read and/or write?

1. Yes
2. No
7. Don’t Know or Won’t Say

In terms of your age, which one of the following categories is appropriate?

1. 18-24
2. 25-34
3. 35-44
4. 45-54
5. 55+
6. Other\_\_\_\_\_
7. Don't Know or Won't Say

In terms of education, have you?

1. Not attended school.
2. Attended School Occasionally
3. Completed High School
4. Attended University
5. Completed University
6. Attended or Completed Graduate School
9. Other\_\_\_\_\_
7. Don't Know or Won't Say

How many teachers are on staff at this school?

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What is the total enrollment (of students) at this school?

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Which of the following categories best describes this school's revenue last year?

1. Less than 32,000 Rupees
2. 32,000-1 Lakh Rupees
3. 1-5 Lakh Rupees
4. More than 5 Lakhs Rupees
5. Other\_\_\_\_\_
7. Don't Know or Won't Say

What fees do students pay to gain admission to this school?

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Once admitted to this school, what fees do students pay to attend this school on a yearly basis?

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What percentage of your students are Indian and what percentage are Nepali?

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In your experience, what student-teacher ratio do schools in this area maintain?

1. <1:25
2. 1:25 to 1:34
3. 1:35 to 1:44
4. 1:45 to 1:54
5. 1:55 to 1:64
6. >1:64
7. Don't Know or Won't Say

I'm going to read a series of statements to you, some of which are required by law and some of which aren't. Please answer yes after you hear a statement that is required by law and no after a statement that is not required by law.

1. Schools must provide one teacher for every 40 students.  
Yes/No
2. Schools must ensure that all students have clean clothing to wear to school.  
Yes/No
3. Schools must provide one teacher for every 30 students.  
Yes/No
4. Schools must provide every student with a functioning pen or pencil.  
Yes/No
5. Schools must provide separate toilets for boys and girls.  
Yes/No
7. Decline to respond/no response.

In your opinion, does having a student-teacher ratio that is greater than 1:30 (1:40 in Nepal) create problems for either students or teachers?

1. Yes
2. No
7. Don't Know or Won't Say

In your opinion, do schools have a duty to maintain a low student-teacher ratio?

1. Yes
2. No
7. Don't Know or Won't Say

If a school has a higher student-teacher ratio than 1:30 (1:40 in Nepal), do you think that school will be caught by the authorities?

1. Yes
2. No
7. Don't Know or Won't Say

If a school has a higher student-teacher ratio than 1:30 (1:40 in Nepal) and is caught by the authorities, do you think that school will be punished by the authorities?

1. Yes
2. No
7. Don't Know or Won't Say

How would you describe the punishment for schools which have a higher student-teacher ratio than 1:30 (or 1:40 in Nepal)?

1. Harsh
2. Reasonable
3. Not Very Harsh
7. Don't Know or Won't Say

Is it in a school's best financial interests to have a low student-teacher ratio?

1. Yes
2. No
7. Don't Know or Won't Say

Have government regulations regarding student-teacher ratios caused financial harm to schools?

1. Yes

2. No
7. Don't Know or Won't Say

Do parents of students demand low student-teacher ratios?

1. Yes
2. No
7. Don't Know or Won't Say

Do parents remove their children from schools with high student-teacher ratios and place them in schools with lower ratios?

1. Never
2. Sometimes
3. Often
4. Always
7. Don't Know or Won't Say

Has the enrollment in this school increased or decreased since the government started the points-based scoring system for private schools?

1. Increased
2. Stayed the same
3. Decreased
7. Decline to respond/no response.

Has this school ever been recognized on Rastriya Shiksha Diwas (India only)?

1. Yes
2. No
7. Don't Know or Won't Say

In your opinion, do private schools have a duty to obey the law?

1. Yes
2. No
7. Don't Know or Won't Say

After observing as many classrooms as possible in this school, choose a statement that best fits with your observations:

1. None of the classrooms contained less than 30/40 students.
2. Some of the classrooms contained less than 30/40 students.
3. About half of the classrooms contained less than 30/40 students.
4. Most of the classrooms contained less than 30/40 students.
5. All of the classrooms contained less than 30/40 students.

### *Accurate Legal Knowledge*

In order to assess the accuracy of respondents understanding of relevant laws, I read respondents the following series of five possible legal requirements, in either Hindi or Nepali: 1) schools must provide one teacher for every 40 students; 2) schools must ensure that all students have clean clothing to wear to school; 3) schools must provide one teacher for every 30 students; 4) schools must provide every student with a functioning pen or pencil; and 5) schools must provide separate toilets for boys and girls. I then asked them to state that, “yes,” a described behavior is allowed or, “no,” that a described behavior is not allowed. I use responses to the first and third item above to assess the accuracy of legal understandings of the specific regulation covered by my research, with a “yes” response to the first being accurate in Nepal and a “yes” to the third being accurate in India.

### *Income-Level/Poverty*

In order to assess the resources available at a given school, I asked respondents: once admitted to this school, what fees do students pay to attend this school on a yearly basis? For data analysis purposes, I divided my data into those schools who charged above median tuition and those that charged below.

### *Compliance*

In order to assess compliance, I observed the proportion of classrooms at each school which were in compliance with the relevant teacher-student ratio regulation, which varied slightly by country. I then picked one of the following statements: 1) none of the classrooms contained less than 30/40 students; 2) some of the classrooms contained less than 30/40 students; 3) about half of the classrooms contained less than 30/40 students; 4) most of the classrooms contained less than 30/40 students; 5) all of the classrooms contained less than 30/40 students. I considered a rating of 4 or 5 to be compliant behavior for purposes of analysis.

### *Fear*

I assess whether respondents are fearful about the punishment associated with non-compliance by asking them the following question: if a school has a higher student-teacher ratio than 1:30, do you think that school will be caught by the authorities? Responses of “Yes,” “No,” and “Don’t Know or Won’t Say” were possible. I considered a response of “Yes” to indicate fear. I followed this question with another designed to assess respondents’ perceptions of the punishment associated with non-compliance: how would you describe the punishment for schools which have a higher student-teacher ratio than 1:30 (or 1:40 in Nepal)? Responses of “Harsh,” “Reasonable,” “Not Very Harsh,” “Don’t Know or Won’t Say” were possible. I used

responses to this question to assess whether the penalty was sufficient to motivate a change in behavior if accurate legal knowledge was already in place. Because I found very little variation in responses to these two questions, I probed the efficacy of parental enforcement via the RTE with the following question: do parents of students demand low student-teacher ratios? Potential responses were “Yes,” “No,” and “Don’t Know or Won’t Say.” I considered a response of “Yes” to indicate fear of delegated enforcement. I then asked another fear-related question: do parents remove their children from schools with high student-teacher ratios and place them in schools with lower ratios? Potential responses were “Never,” “Sometimes,” “Often,” “Always,” and “Don’t Know or Won’t Say.” I coded responses of “Often” and “Always” as fear of delegated enforcement.

### *Duty*

In order to assess whether respondents believed they had a duty to comply, I asked two separate questions. First: in your opinion, do schools have a duty to maintain a low teacher-student ratio (below 30 in India or 40 in Nepal)? 1) “Yes”; 2) “No”; and 3) “Don’t Know or Won’t Say.” A response of “Yes” indicates a duty to comply with the specific law in question. I also asked: in your opinion, do people have a duty to obey the law? 1) “Always”; 2) “Often”; 3) “Sometimes”; 4) “Never”; and 5) “Don’t Know or Won’t Say.” For purposes of data analysis I separate response one and two from responses three and four, with the former indicating a duty to obey the law more generally.

### *Brick Kilns Case*

Do you or your family own land?

1. Yes
2. No
7. Don’t Know or Won’t Say

Do you or your family own a business?

1. Yes
2. No
7. Don’t Know or Won’t Say

Do you or your family work for the government?

1. Yes
2. No
7. Don’t Know or Won’t Say

Can you read and/or write?

1. Yes

2. No
7. Don't Know or Won't Say

In terms of your age, which one of the following categories is appropriate?

1. 18-24
2. 25-34
3. 35-44
4. 45-54
5. 55+
6. Other \_\_\_\_\_
7. Don't Know or Won't Say

In terms of education, have you?

1. Not attended school.
2. Attended School Occasionally
3. Completed High School
4. Attended University
5. Completed University
6. Attended or Completed Graduate School
9. Other \_\_\_\_\_
7. Don't Know or Won't Say

Approximately how many people work at this brick kiln?

---

What is the average price at which bricks from this kiln are sold?

---

Approximately how many bricks are made at this brick kiln per week?

---

Which of the following categories best describes this brick kiln's revenue last year?

1. Less than 1 Lakh Rupees/60,000 INR
2. 1-5 Lakh Rupees/60,000-3 Lakh INR
3. 5-10 Lakh Rupees/3-6 Lakh INR
4. More than 10 Lakhs Rupees/6 Lakh INR



5. Other \_\_\_\_\_
7. Don't Know or Won't Say

What villages do your workers come from?

---

How far away are the villages that your workers come from?

1. Less than 5 km away
2. Between 5 km and 10 km away
3. Between 10 km and 20 km away
4. Between 20 km and 50 km away
5. More than 50 km away
7. Don't Know or Won't Say

What percentage of the workers at this brick kiln is Indian and what percentage is Nepali?

---

What is the average worker's take-home wages at this brick kiln?

---

Is this brick kiln registered with the government?

1. Yes
2. No
7. Don't Know or Won't Say

Has this brick kiln ever been given a green flag by the government?

1. Yes
2. No
7. Don't Know or Won't Say

In your opinion, do brick kiln bosses have a duty to hire their workers family members if they have a need for additional workers?

1. Yes
2. No
7. Don't Know or Won't Say

I'm going to read a series of statements to you, some of which are required by law and some of which aren't. Please answer yes after you hear a statement that is required by law and no after a statement that is not required by law.

1. Employers must provide workers with food and shelter in addition to pay.  
Yes/No
2. Employers must ensure that workers have clean clothing to wear.  
Yes/No
3. Employers must not hire workers under age 18.  
Yes/No
4. Employers must pay workers at least monthly, but can pay them more frequently.  
Yes/No
5. Employers must give preference to hiring the family members of current workers.  
Yes/No
7. Don't Know or Won't Say

In your experience, do brick kilns in this area hire people who are under 14 years-old?

1. Always
2. Often
3. Sometimes
4. Rarely
5. Never
7. Don't Know or Won't Say

In your opinion, is a person who works before turning 14 years-old helped or harmed by working?

1. Only helped
2. Both helped and harmed.
3. Only harmed
7. Don't Know or Won't Say

In your opinion, does employing people who are under 14 years-old create problems for society?

1. Yes
2. No
7. Don't Know or Won't Say

In your opinion, do brick kilns have a duty to hire only adults (people who are over 14 years-old)?

1. Yes

2. No
7. Don't Know or Won't Say

If a brick kiln employs workers who are under 14 years-old, do you think that brick kiln will be caught by the authorities?

1. Yes
2. No
7. Don't Know or Won't Say

If a brick kiln employs workers who are under 14 years-old and is caught by the authorities, do you think that the bosses will be punished by the authorities?

1. Yes
2. No
7. Don't Know or Won't Say

How would you describe the punishment for bosses who hire workers who are under 14 years-old?

1. Harsh
2. Reasonable
3. Not Very Harsh
7. Don't Know or Won't Say

If a brick kiln employs workers who are under 14 years-old and is caught by the authorities, do you think that the owners will be punished by the authorities?

1. Yes
2. No
7. Don't Know or Won't Say

How would you describe the punishment for owners who employ workers who are under 14 years-old?

1. Harsh
2. Reasonable
3. Not Very Harsh
7. Don't Know or Won't Say

Is it in a brick kiln's best financial interests to hire workers who are under 14 years-old?

1. Yes
2. No
7. Don't Know or Won't Say

Have government regulations prohibiting workers who are under 14 years-old caused financial harm to brick kilns?

1. Yes
2. No
7. Don't Know or Won't Say

In your opinion, should people who are under 14 years-old have a right to work for pay?

1. Yes
2. No
7. Don't Know or Won't Say

Why is it important for people who are under 14 years-old to have a right to work for pay?

---

In your opinion, should businesses have a right to hire workers who are under 14 years-old?

1. Yes
2. No
7. Don't Know or Won't Say

Why is it important for businesses to have a right to hire workers who are under 14 years-old?

---

Do parents demand that brick kilns hire their under-14 year-old children?

1. Yes
2. No
7. Don't Know or Won't Say

Have NGOs tried to raise awareness about the problems associated with "child labor" in this area?

1. Never
2. Sometimes
3. Often
4. Always
7. Don't Know or Won't Say

Has the number of under-14 workers at brick kilns in this area increased or decreased over the last three years?

1. Increased
2. Stayed the same
3. Decreased
7. Don't Know or Won't Say

In your opinion, do bosses at brick kilns have a duty to obey the law?

1. Yes
2. No
7. Don't Know or Won't Say

In your opinion, do owners at brick kilns have a duty to obey the law?

1. Yes
2. No
7. Don't Know or Won't Say

After observing as many workers as possible at this brick kiln, choose a statement that best fits with your observations:

1. None of the workers appear to be under age 10.
2. Some of the workers appear to be under age 10.
3. About half of the workers appear to be under age 10.
4. Most of the workers appear to be under age 10.
5. All of the workers appear to be under age 10.

### *Accurate Legal Knowledge*

In order to assess the accuracy of respondents understanding of relevant laws, I read respondents the following series of five possible legal requirements, in either Hindi or Nepali: 1) employers must provide workers with food and shelter in addition to pay; 2) employers must ensure that workers have clean clothing to wear; 3) employers must not hire workers under age 18; 4) employers must pay workers at least monthly, but can pay them more frequently; 5) employers must give preference to hiring the family members of current workers. After each statement I asked them to answer that, "Yes," a described behavior is allowed or, "No," that a described behavior is not allowed. I used responses to the third item above to assess the accuracy of legal understandings of the specific regulation covered by my research, with a "No" response representing accurate legal knowledge, since it is legal for employers to hire children over the age of 14.

### *Income-Level/Poverty*

In order to assess the resources available at a given kiln, I asked respondents: Which of the following categories best describes this brick kiln's revenue last year? 1) Less than 1 Lakh Rupees/60,000 INR; 2) 1-5 Lakh Rupees/60,000-3 Lakh INR; 3) 5-10 Lakh Rupees/3-6 Lakh

INR; 4) more than 10 Lakhs Rupees/6 Lakh INR; 5) Other \_\_\_\_\_; 7) Don't Know or Won't Say. For data analysis purposes, I used responses to this question and to questions about the average brick price a kiln was able to fetch at market to determine resources/wealth and profitability.

### *Compliance*

In order to assess compliance, I observed the number of individuals working at a given kiln who appeared to be ten years-old or younger. I then picked one of the following statements: 1) None of the workers appear to be under age 10; 2) Some of the workers appear to be under age 10; 3) About half of the workers appear to be under age 10; 4) Most of the workers appear to be under age 10; 5) All of the workers appear to be under age 10. I considered a rating of 1 to be compliant behavior for purposes of analysis.

### *Fear*

I assess whether respondents are fearful about the punishment associated with non-compliance by asking them the following question: If a brick kiln employs workers who are under 14 years-old, do you think that brick kiln will be caught by the authorities? Responses of "Yes," "No," and "Don't Know or Won't Say" were possible. I considered a response of "Yes" to indicate fear. I followed this question with another designed to assess respondents' perceptions of the punishment associated with non-compliance: how would you describe the punishment for bosses/owners who hire workers who are under 14 years-old? Responses of "Harsh," "Reasonable," "Not Very Harsh," "Don't Know or Won't Say" were possible. I used responses to this question to assess whether the penalty was sufficient to motivate a change in behavior if accurate legal knowledge was already in place.

### *Duty*

In order to assess whether respondents believed they had a duty to comply, I asked two separate questions. First: in your opinion, do brick kilns have a duty to hire only adults (people who are over 14 years-old)? 1) "Yes"; 2) "No"; and 3) "Don't Know or Won't Say." A response of "Yes" indicates a duty to comply with the specific law in question. I also asked: in your opinion, do brick kiln bosses/owners have a duty to obey the law? 1) "Always"; 2) "Often"; 3) "Sometimes"; 4) "Never"; and 5) "Don't Know or Won't Say." For purposes of data analysis I separate response one and two from responses three and four, with the former indicating a duty to obey the law more generally.

## **Appendix 2**

Balance Table for Natural Experiment Sample:

<u>Variable</u>	<u>India</u>	<u>Nepal</u>	<u>p-value</u>	<u>SE</u>
Age	3.201	3.295	0.097	0.036
Income (Low-High)	1.297	1.326	0.171	0.015
Education	1.800	1.908	0.059	0.034
Gender (M-F)	0.500	0.475	0.187	0.014
Land Ownership	0.611	0.811	0.000	0.012
Literacy	0.488	0.710	0.000	0.014

Note: While the sample is imbalanced on Land Ownership and Literacy, t-tests suggest no relationship between any of these variables and compliance with wood taking prohibitions in either India or Nepal. The Land Ownership imbalance is well-documented and related to imperfect land-redistribution in India; it is almost certainly not an artifact of the sample. Literacy rates may appear higher in Nepal within this sample for two reasons. First, this is self-reported literacy data. Second, it contains both a higher percentage of women in India and a lower proportion of women in Nepal than are found in the broader population and women are both less likely to be literate and, in my experience, to say they are literate; conversely, men are generally more likely to report literacy, even when this is not fully accurate.

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