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Introduction

Setting the Stage

In the film *Umberto D.* (Rizzoli et al. [1952] 2003), the title character, an elderly, retired civil servant, climbs onto a nearly empty tram. He is carrying a small suitcase and leads a small dog on a leash.

Conductor: *No no, col cane non si può!*

Umberto D: *Prima delle otto si può ...*

Conductor: *Lo insegna a me? Se é cacciatore sí, se non é cacciatore no.*

Umberto D: *Io posso dire che vado a caccia. Perché non potrei avere il fucile nella valigia?*

Conductor: *Va bene ... dove scende?*

Conductor: No, no, you can't travel with the dog!

Umberto D: But before eight one can.

Conductor: You're teaching me? If you are a hunter yes, if you're not a hunter no!

Umberto D: I can say that I am going hunting. Why couldn't I have a gun in my suitcase?

Conductor: All right. Where do you get off?¹

Uncertain Authority

Around the world, the troubles of modernity seem to call for more knowledge, greater transparency, increased oversight by states, or increased inspection of states by active publics. It is often claimed that citizens should want to know more, perhaps in order to call governments and corporations to account, perhaps in order to make financial markets work better and avoid scandals and financial meltdowns. Global climate change, we are told, will be addressed by a transparent system of audit and accounting, which will make visible the stocks and flows of carbon from mines and forests into the atmosphere and oceans, hopefully

preventing the worst impacts of climate change. International conservation organizations increasingly try to make biodiversity knowable to their audiences using brightly colored maps, which make visible where biodiversity is located, who or what is causing it to be eroded, and what, hopefully, might be done to address this predicament. Beyond the environmental field, efforts to produce transparent knowledge proceed unabated, from the calls of Transparency International to heed indices of governmental and corporate corruption, to efforts to monitor commodity chains that produce blood diamonds, to efforts to make high school teachers in Los Angeles accountable to quantitative assessments of their students' progress. Knowledge and transparency are key concerns across multiple cultures and problem areas, one of those things that you can never have too much of, even as you worry about the possibility of authoritarian states peering at the details of your personal life, or of oppressive bureaucracies that loose papers, demand taxes, and make your life complicated.

This book is about the effort to produce a regime of transparent knowledge in the forests of Mexico, and it is about how transparent knowledge was produced not by official declarations or scientific projects of mapping, but from the texture of encounters between officials and their clients, the foresters and indigenous people who manage and own the pine forests of Mexico. I will describe how the science of forestry arrived in Mexico in the late nineteenth century and how it gradually came to inform the lifeworlds of foresters, forestry officials, and indigenous people, and, more widely, how the political cultures of federal forestry institutions and their audiences affect how people believe or disbelieve in official knowledge about forests and about the state. This is a story about how transparency and other forms of knowledge are made; I will argue that when we talk of transparency or official knowledge, we too often assume that these are produced by officials in government offices or by scientists in laboratories. As I will show, in the case of Mexican forestry science, the apparently small scale and particular contexts of indigenous politics, logging in forests, and meetings between officials and indigenous leaders turn out to affect what we take to be very large categories: the credibility of the Mexican state, the stability of official knowledge about forests, the possibility of logging forests for timber. In other places and times, I will suggest, traveling theories are remade in local political performances; other regimes of transparency must deal with the power of publics to remake knowledge, to withhold belief in official beneficence and authority.

I have a confession to make. This is a book about forestry bureaucracies in Mexico written by an Anglo-American anthropologist, but I bring to bear on these social worlds a rather different sensibility. Growing up partly in Italy and partly in Mexico, I learned to see bureaucracies not as authoritative institutions that their clients obeyed, but as something quite different, as the sometimes dangerous, sometimes farcical and blundering instruments of the state. Everyone knew that a bureaucracy could be placated by a sufficiently persuasive performance, everyone had numerous stories to tell about their own encounters with bureaucracy, and everyone had better stories to tell than I did. In Italy I learned that if you could only present yourself as a peasant farmer, you might be able to secure tax exemptions and benefits from the state; I learned that the best way to approach an official was to secure his help in filling in forms or perhaps in avoiding forms and regulations entirely. Far from being an aberration or imperfection in the law, finding a bureaucrat to help or collude with you was the best possible way of negotiating with the state.

Years later, already in graduate school and studying Mexican forestry bureaucracies, I came across the wonderful films of Vittorio De Sica, the Italian neorealist film director. I came to realize that my sensibility of bureaucracy as an oppressive and malign fiction was imbued with an appreciation of the kinds of performances, collusions, complicities, and evasions that appear in many of De Sica's films. In the brief vignette I quote above, an old, unemployed official accompanied by his dog negotiates with a tram conductor in order to collude in producing a representation of a hunter leaving home early one morning with his dog. Somewhere the paper ticket that accompanies this story will leave a paper trail, and national statistics will refer to the number of hunters who use public transport. Documents here become potentially dangerous fictions, officials can be partially domesticated accomplices, and the state is far from being all knowing. This book recounts my travels within and encounters with the Mexican forestry bureaucracy and with indigenous forestry bureaucracies in the state of Oaxaca, but my point of departure was affected by the humorous or terrifying stories with which I grew up. Throughout this book, I describe bureaucracy as performance, as a public fiction, which can only be sustained by a skillful collaboration between apparently authoritative officials and their audiences, in a kind of public intimacy. I will argue that understanding forestry bureaucracies in this way radically transforms our understandings of modern states, of science, and of power. It is not that bureaucratic simplification and abstraction are the opposite of intimacy and collusion but rather that

bureaucratic knowledge is always underpinned by collusion and intimacy, not just in Mexico but in other states and institutions. Official knowledge always silences other forms of knowledge, but this is not just a vice of bureaucrats: The literature on the sociology of knowledge teaches us that making shared public knowledge always involves silencing or suppressing alternative forms of knowledge. What is particular about bureaucratic knowledge-making is that it seeks simultaneously to perform official knowledge and knowledge of what kind of thing the state is. Officials silence opposition by claiming to speak for the state as thing and by claiming to translate generalized knowledge to local contexts, seeking to imprison their audiences in a slot of local knowledge.

Much anthropological study of conservation and development has assumed that these are powerful discursive forces that transform societies and environments around the world, through such projects as dams, road building, industrial agriculture, or the creation and policing of new parks. This is clearly a part of the story, but in this book I will argue that such accounts make conservation and development too powerful and fail to pay attention to the paradoxical authority and vulnerability, to the uncertain authority of conservation and development institutions and of modernist bureaucracies more widely.² Environmental anthropologists have given too much assent to the omnipotence and apparent omnipresence of conservation/development, perhaps framed as neoliberal conservation or neoliberal development, where it appears still more pervasive, more omnipotent, and still harder to oppose, both analytically and practically.³ Often anthropologists frame their opposition to global forces as being a kind of speaking from the local, arguing always that local contexts are profoundly important and that globalizing projects are always reworked and transformed in local contexts. Valuable though this is, it imprisons the social sciences in a “local slot” that all too easily accepts the power of global generalizations and the institutions and actors who claim to speak for them. One way out of this conundrum is to pay close attention to the lives of the powerful, to look at how conservation officials, developers, or bureaucrats constantly juggle between local context and sweeping generalization, between the locality of their audiences and the global knowledge, general regulation or national policy they claim to speak for. This is what I call “uncertain authority”: Officials may speak authoritatively, but they are haunted by a sense of vulnerability, as translating between the general and the local makes them vulnerable, worried about their lack of local knowledge. This book then is about Mexican forestry bureaucrats who juggle the tension between sweeping

knowledge claims and mundane local concealments, between ambitious regulations and routine rule breaking. The power of these officials is different than we had thought bureaucratic power to be; it is a curious, halting, and vulnerable power, always made in performance, always subject to being undermined. This is an ethnographically observable, local, institutional power, which draws on the coercive and material power of a state that never reaches as far as it claims or would like to. State power rests on officials' ability to enact a distinction between the local and the global or the national, between a regulation and its specific local case, between the political and the technical. An attention to the detailed where, when, and how of bureaucratic lives and practices shows a more halting, less seamless, and more collaborative form of power, a power that seeks the assent of its audiences even as its performers doubt it. Seeing state power in this way calls upon us to rethink where, when, and how it might be fruitful to engage in remaking the state.

Following this insight, this book moves back and forth between the offices of the forest service in Mexico City and the regional capital in the state of Oaxaca, and the forests and the indigenous communities who largely control them. In chapter 2, I trace how the science of forestry first came to Mexico, how it was inscribed into national forestry laws and policies over the last hundred years, and I pay particular attention to the eminently material institutions and offices where particular officials were entrusted with the task of bringing forestry into forests. Forest policies and official forms of knowledge did not encounter a blank slate, and the new science of forestry encountered a landscape that had been partially transformed by histories of state-making and by past political economies. The details of colonial rule through indigenous municipalities and the struggles of indigenous people who engaged in warfare, trade, and state-making set the stage for the encounter between state science and popular understandings of forests, between forestry bureaucracies and indigenous municipalities. In chapter 3, I describe some of this stage setting, recounting how the landscapes and forests of the Sierra Juárez of Oaxaca were folded into economies of cochineal growing and mining in the eighteenth and nineteenth centuries, literally defining who would own forests in the twentieth century. The detailed histories of particular towns and forests turn out to matter a great deal for the credibility of forestry institutions in the present. I therefore focus particularly on the indigenous community of Ixtlán de Juárez, a small Zapotec town about a two-hour drive from the City of Oaxaca. Ixtlán was militarily powerful in the nineteenth century and came to be a leading forest community in

the twentieth century. The details of ecology, landscape, and political history affect how indigenous forest communities like Ixtlán came to control areas of forest and how they brought to bear their ownership of forests in their encounters with the forest service and logging companies in the present. It is this experience of political action and of living and working with imperceptibly mobile forests and fields that indigenous people brought to their encounter with the new forest service in the 1930s.

In the wake of the Mexican Revolution (1911–1920), the expanding Mexican state brought the science of forestry and bureaucratic practices of paperwork to the City of Oaxaca and, haltingly, into the forests of the Sierra Juárez. Chapters 4 and 5 trace these moments of encounter, first when a relatively feeble forest service tried to directly control loggers through complex regulations and, from the 1950s onward, by subcontracting state authority to large parastatal companies that logged the pine forests of the Sierra Juárez and employed local people as forest workers and technicians. Working as employees of the logging companies taught indigenous people the theories and working practices of industrial forestry and gradually produced a popular movement that secured the cancellation of logging concessions in the mid-1980s. This marked a significant advance in the power of indigenous communities that owned forests, and it brings us to the present moment, when apparently authoritative state forestry institutions must deal with the mundane realities of limited resources, complex regulations, and intransigent local communities.

Paying attention to the daily work of officials allows us to see the curiously halting and hesitant power of officials and the power of their audiences. In chapter 6, I move from moments of encounter between officials and their indigenous audiences to the offices of the forest service in Mexico City, and then in chapter 7, I return to the lifeworlds of forestry officials and foresters in the City of Oaxaca. Crucially, I show that state power does not rely on knowledge alone but also on ignorance, and I argue that official knowledge and various forms of ignorance are coproduced in encounters between officials and their audiences. Local contexts and apparently local details turn out to matter a great deal for the content of official knowledge and for the legitimacy of government institutions. The power of forests and forest workers is further explored in chapter 8, where I describe how indigenous people in the community of Ixtlán are able to form alliances with government officials and with official knowledge, not because the state imposes legibility on them, but because a relatively powerful community is able to call community elites and government officials to account. Working in the forest becomes a political

and an epistemic resource for loggers, technicians, and foresters—a way of reaching out and forming alliances with government officials, conservationists, and anthropologists. Finally, in a brief conclusion, I pose a set of questions rather than answers. I ask what it would mean for scholars of technology, bureaucracy, or the environment if we rethink knowledge as being always linked to ignorance and if we pay attention to the power of publics to affect official knowledge. If we see ignorance, collusion, and forms of nonknowledge as always having been embedded in making knowledge, how can we write about such ignorance and silences? What would this mean for our understandings of knowledge projects in the world, from economic projects of neoliberal reform, to projects to produce carbon markets or prevent the loss of biodiversity?

Indigenous Bureaucracy in Oaxaca

In August 2000, I sat on a bench outside the office of the mayor of the indigenous community of Ixtlán de Juárez, in the mountains of the Sierra Juárez of Oaxaca, in Southern Mexico. While I waited, a stream of people came and went; old men wearing plastic laminated straw hats and sandals, young men in baseball caps and sneakers, occasionally an older woman wearing the traditional black and white shawl (*rebozo*), in striking contrast to the mayor's elaborately dressed, made up, high-heeled secretary. I had come on a twofold mission: to ask permission to do research in the community of Ixtlán, and to ask the mayor why this small town of 2,000 people had become so successful in managing and protecting its extensive forests. I was not the first or last visitor on this mission; the indigenous communities of Mexico have become widely known for their sustainable forest management and have been promoted as a laboratory for community natural resource management for policymakers around the world (Bray et al. 2003; Bray, Merino-Pérez, and Barry 2005).⁴ Like myself, researchers came to investigate how indigenous communities such as Ixtlán had managed to master the techniques of industrial forestry and to prevent the illegal logging that is so prevalent across Mexico and Latin America.

These two words, *indigenous* and *community*, have tremendous weight, a charisma that seems to be the opposite of impersonal state forestry bureaucracies. Around the world, state forestry bureaucracies are seen to be tainted by failure, because of corruption and lack of resources or because of conflicts between state and local people over the control of forests. I, like other researchers, wondered whether there was

some special alchemy in these indigenous communities, some formula that might provide an antidote to the disenchantment and failure of state forestry. The word *indigenous* seems indeed to summon images of communal harmony and of living in balance with nature.⁵ At first glance, an indigenous community appears to be the polar opposite of logging trucks, forest management plans, of form filling and of state forestry bureaucracies. In a similar way, the term “community” seems to be an opposite to markets, to the unceasing struggle for personal gain of modern capitalist society or to the depredations wrought by profit-seeking logging companies. How then had the community members of Ixtlán managed to square the circle, to balance modernity with indigenousness, capitalism with community? As I came to learn, in modern Mexico to be indigenous and to be a community member, has specific cultural and legal meanings that are policed by state bureaucracies and contested by popular movements and politicians. To be indigenous, then, is also to be modern and to be familiar with markets, capitalism, and individualism. Far from being a remote and distant, “natural” place, the forests and fields of Ixtlán had been affected by centuries of contact with the outside world, and its inhabitants were politically astute and skilled at negotiating with outsiders such as myself. Community and state institutions and forms of knowledge had in many ways been coproduced, and it was impossible to make sense of the forest community of Ixtlán without also studying the Mexican state. History literally mattered here: past events affected the structures of present-day forests; histories of struggles between communities and the state affected the content of official knowledge and the credibility of the Mexican state.

When I eventually entered the mayor’s office, he was more than happy to talk to me. A friendly and cheerful man in his mid-40s, Graciano Torres⁶ recounted to me how decades of destructive logging by the FAPATUX paper company⁷ had taught community members to value their forests. He told me that community members had gradually taken control of every aspect of industrial forestry, from driving logging trucks and operating cranes, to managing a town saw mill, to marking, cutting, and replanting trees in the community forests. He described to me the process by which community members gradually learned to care for their forests:

Before, exactly because we weren’t culturally prepared, we thought that the paper company owned the forests, and we thought that when we cut trees and deliberately knocked down unmarked trees we were hurting the paper company, not ourselves . . . something which wasn’t true, because we were harming our own

forest. But once forest management was passed to the people then we respected the [rules] even more, because people were oriented, the cutting areas were fixed. We have to respect the [cutting areas] and ask permission to cut trees, and we cut only marked trees. (interview notes, August 9, 2000)

Graciano's narrative of the incorporation of industrial forestry into local knowledge and practice contradicted images of indigenous communities as remote, traditional, and untouched, but in many ways it left unanswered as many questions as it answered. His account, of a transformation from a time when he and his fellow community members had not been "culturally prepared," strikingly agreed with the accounts of government foresters. Further, Graciano used the terms of scientific forestry in praising present-day community forestry, community loggers' respect for prescribed cutting areas, and for cutting only the trees marked by forestry technicians. How had this community assent to state forms of knowledge been produced?

The paper company to which Graciano referred, FAPATUX, was a parastatal logging company, a strange *mélange* of state bureaucracy and private company. Far from being opposed to the logging company, many of the older community members had been employed by it, and the community of Ixtlán had been one of the most reliable supporters of both the logging company and the Mexican state. The present-day status of Ixtlán as a model forest community had been produced not by distance from the state, but by the intimate and confused encounter between state and community. But what were the terms of this encounter? Did the state impose knowledge and practices on rural people? Or did people in Ixtlán and the Sierra Juárez appropriate and modify official knowledge in the interests of their own autonomy?

As I interviewed community elders, I began to realize that there had been a dramatic shift in people's understandings of their forests over the last generation. One such shift was a transformation in the way people understood fire. For elders, fire was a tool of agricultural management and could be controlled; for younger people, fire was uncontrollable and destructive, and a willingness to fight forest fires was one of the proud markers of community members' identities as protectors of the forest. How had this transformation come about? What combination of state or community coercion, official propaganda, and changing livelihood practices could have produced such a dramatic transformation in understandings of fire and of forests? What changing senses of self accompanied or contributed to this change? What was the role of state institutions in forming the proud identity of the people of Ixtlán as protectors of the

forest? How had official knowledge and popular understandings of forests come to agree on the concepts and practices of industrial forestry so that present-day community members agree with government foresters that fighting forest fires is all-important? Community members had become adept not only in the state ideology of industrial forestry but in state practices; the forestry technicians employed by the community diligently filled in forms, detailing the locations, volumes, and species of timber cut. Did this mean that they were pinned down by an oppressive official gaze, which used state-defined knowledge to control rural society? Was the proud autonomy of the community no more than an illusion?

As soon as we see that the state was involved in the production of forest management in the remotest forests of the Sierra Juárez, it becomes necessary to question the very nature of state power and official knowledge. What *was* the state? Who were its representatives? What did they do, and how did local people respond to state interventions into their daily lives? How and when did official knowledge come to penetrate the consciousness of rural people? What were the terms of this engagement, and how much freedom did rural people have to modify or reject official knowledge of forests? Like other states around the world, the Mexican state is not a united structure; rather, it is a shifting group of loosely connected institutions that are unstable and often in conflict with one another. The state is not only a set of social structures, such as those optimistically represented by organizational charts; it is also the meanings attached to state power. This means that state-making requires continuous performance, a work that is always contested and never done.⁸ What is the relationship between official performances and representations and popular understandings of forests? How do maps, organizational charts or officials' speeches become incorporated into or rejected from daily life in the Sierra Juárez? What is the relationship between official representations, routine bureaucratic practices, and people's identities and political engagements?

This book tries to answer some of these questions through an investigation of how Mexican political culture has affected socially accepted knowledge about what forests are and what the state is. I will argue that forestry officials have continuously tried to perform the state as the kind of thing that is beneficent, knowledgeable, and unified, and that these performances define the contours of the political, of what can and cannot be said. I will suggest that the arrow of influence is not one way and that the texture of local contexts of state-making powerfully affects what officials come to know through their daily paperwork practices. I will

argue that officials and their audiences share understandings of the state as a dangerous illusion, and that public framings of official performances of knowledge also affect official efforts to perform the state as unified, knowing, and beneficent. I will describe the long-term coproduction of community and state power, combining an investigation of national forestry institutions and offices in Mexico City and Oaxaca, a detailed analysis of practices of state-making in the forests of the state of Oaxaca, and an ethnography of the Zapotec indigenous community of Ixtlán de Juárez, currently one of the leading forest communities in Mexico. I will describe how industrial forestry has come to be part of community identity, as manifested in fire fighting, forest management, and road building, and in local conceptions of nature and culture. This was not the imposition of an authoritative forestry bureaucracy on a more or less passive society. On the contrary, I will show that rather than being the product of ideological domination or direct coercion, the transformation in indigenous people's understandings of forests was the product of community political power and autonomy. Powerful forest communities have been able to form alliances with forestry officials to coproduce socially accepted knowledge about forests. Far from being powerful and authoritative, forestry bureaucrats in Mexico have experienced frequent institutional reorganizations and are haunted by a sense of doubt, of not knowing.

State-Making and the Production of Knowledge and Ignorance

A generation of research on the state has shown that far from being unitary and monolithic, the institutions that are supposed to implement technical knowledge and development⁹ are fragmented, hierarchical, and unstable. Similarly, over the last twenty years, research in the anthropology and sociology of knowledge has revealed that scientific and technical expertise is an often fragile achievement, produced by building networks of alliances between scientific data, material objects, and researchers in different laboratories. In the case of Mexican forestry, pine seedlings in forests in Finland and France are linked to FAO forestry experts, government officials in Mexico City, forestry regulations and management plans, local-level forest police, and logging practices in the Sierra Juárez.¹⁰ What is striking about the network of connections that supports the science of forest ecology is not how powerful and stable it is, but how *unstable* and fragile it is. At any place in the network, it appears easy to conceal, avoid, obfuscate, or hide. As the stakes of concealment

rise, it appears more and more likely that deliberate concealment or mistranslation may fatally weaken the network. How then can government officials, environmental activists, and loggers in the Sierra Juárez come to share a similar understanding of what forests are and how to manage them? If the stakes in mistranslation or concealment are high, it seems likely that state-sponsored environmental discourses will be evaded and will have little success in transforming popular identities and practices.

States around the world have based their power in part on claims to knowledge, making the stakes of knowledge very high and making official ignorance correspondingly valuable. For every official attempt to control rural people through a tree-cutting regulation or a map, there is a corresponding incentive for rural people to avoid, conceal, or escape, whether through the classic weapons of the weak (Scott 1985) or through more directly forbidden behavior, such as illegal logging or agricultural burning. In many cases, these evasions of official discourse take place within the very state apparatus that is supposed to enforce it. In the case of Mexican forestry, as I will show, officials bypass or selectively enforce forestry regulations that they believe to be impractical, controversial, or misconceived. In this book, I will argue that the hierarchical power structures of the Mexican forest service and the menace of state power have caused profound official ignorance, not only of people's motives and intentions, but of their most basic daily practices. Paradoxically, official knowledge is produced not by the menacing power of the official gaze, as manifested in the census and the cadastral map, but by the more or less willing assent of rural people in the forms of knowledge and politics. It is not the case that evasion, collusion, or foot-dragging is the opposite of state power. On the contrary, performances of authoritative simplifications are underpinned by collusion, silence, and evasion. Where power relations between state and rural people are not too uneven, where there is sufficient autonomy, such as when forest communities are well organized and can assert themselves against inadequate regulations and official interference, then official and popular knowledge may be shared, forming an epistemic community of shared knowledge and action.¹¹ Knowledge then is underpinned by an alliance, by a shared understanding of the world. Such understandings can take the form of "boundary objects," shared forms of knowledge that allow autonomy and differences between allies or collaborators (Star and Griesemer 1989). In Mexico, one such boundary object is the understanding of what forests

are and how they should be managed, which is shared by the forest service¹² and some rural communities. On the contrary, if people feel themselves too much disadvantaged by official regulations and conceptual definitions, they are likely to pay regulations only lip service and ignore them in their daily lives. An example of this is the widespread practice of agricultural and pastoral burning, which is ubiquitous in Mexico, although officially forbidden.

Scientific and technical expertise are often thought of as the willing servants of the state, assisting the advance of state power through building dams and irrigation systems, promoting pesticides or modern medicine, displacing local knowledge with frequently disastrous results (Scott 1998; Mitchell 2002). In this account, modern science and the modern state advance like a steamroller, crushing or coopting local opposition beneath the juggernaut of progress, defining out of existence the expertise of rural and indigenous people who are characterized as “backward” or “ignorant.” In a similar vein, critics of development have pointed to a development apparatus that creates underdeveloped subjects for development; these subjects are then crushed or displaced by the advance of an apolitical and purportedly neutral development machine (Ferguson 1994; Escobar 1991; Goldman 2001). These accounts are helpful insofar as they make official knowledge a central concern and reveal it to be a richly cultural practice, denying its claims to generality, impartiality, and distance from the “local contexts” in which anthropologists and others live and work. However, this can only be a beginning: Ethnographers of official knowledge have too easily accepted modernist bureaucracies on their own terms, as more or less unitary institutions that gather knowledge, classify it, render it technical, and then act on nature and society in the name of that knowledge. This critical anthropology of development has inverted official rhetoric of knowledge by commenting with horror on official ignorance of politics (Ferguson 1994; Arce and Long 1993; Hobart 1993; Van Ufford 1993) or local ethnographic details (Li 2006:3). Such criticisms too easily accept modernist bureaucracies’ rhetoric of general or abstract knowledge, even as they criticize them for failing to live up to their proclaimed projects. A more radical critique would focus in detail on the daily practices of bureaucrats who perform abstract and general knowledge *against* the audiences who they seek to make local, to look at how making knowledge and ignorance are partially intentional practices, and to take seriously science studies’ scholars’ insight that making knowledge *always* requires the silencing, ignoring,

or suppressing of alternative kinds of knowledge (I will discuss this in more detail below).

Analyses of official knowledge as a power-laden discourse fundamentally misconceive the relationship between power and knowledge because they pay no attention to materiality, practice, and resistance and too easily assume that official discourses are uniformly internalized by government officials. Official discourses, in these accounts, are like an invisible fluid that permeates all officials and often their audiences. This pays too little attention to the internal fissures and tensions *within* the state and to the material daily practices of bureaucrats who shuffle papers, annotate reports, and sign permissions. An official discourse may mean very different things to the minister of environment who pronounces an oration, to the field-level forester in Oaxaca who pretends to enforce a forestry regulation while actually ignoring it, and to rural people in the Sierra Juárez of Oaxaca who repeat official language to visiting functionaries. Overemphasizing the power of official discourse pays too little attention to the daily practice of politics within and outside state institutions, to the informal networks of patronage by which officials, politicians, and ordinary people seek to appropriate or modify the power of the state. This work of politics and career building is not just a failure of modernity or a result of corruption. Rather, this is the way that people in state institutions in Mexico (and in many other countries) make sense of the tension between official knowledge and their daily work lives; these evasions make sense on their own terms and are widespread in all modernist bureaucracies.¹³ This leads me to argue that understandings of knowledge as a uniform discourse are less useful than a formulation of knowledge as practice and performance. Over the last hundred years, Mexican forestry officials have struggled to perform the state as a certain kind of thing: as a unified, beneficent, and knowing institution that can know what happens in distant forests and reaches uniformly into the furthest reaches of the forest. Focusing in this way on knowledge as performance draws attention to the power of the audience to believe or not to believe, to the distance between the performers' on- and offstage assertions, to the skill required to produce an effective performance, and to the political costs of failure.

A rather different approach to official knowledge is taken by James Scott, who draws attention to the aesthetic beliefs and desires of officials within modern states who seek to remake society and nature in ways that make sense to them (Scott 1998). Scott shows how authoritarian states have sought to impose simplified and officially legible landscapes

on prostrate civil societies, describing the catastrophic failures of forced villagization in Tanzania and collectivization in Soviet Russia (Scott 1998:4–5, 193–260). For Scott, officials have interests and aesthetics of their own (Scott 1998:18); they constantly straddle legibility and illegibility as only the kinds of simplifications administrators wish to know are recorded (Scott 1998:11), whereas official practices are often sustained by a “dark twin” of illegal or informal practices in which officials may collude (Scott 1998:331). Suggestive as this is, Scott largely takes for granted the ability of states to imbue officials with the desire to impose projects of legibility and visibility, while we do not see how they go about concealing evidence of failure from their superiors or themselves (although this is strongly suggested by their willful persistence in failed policies). Scott’s own earlier work on resistance and “weapons of the weak” (Scott 1985, 1990) sits awkwardly with the unity of official projects of legibility in “Seeing Like a State”. I suggest that resistance and foot-dragging are not necessarily the opposite of official projects of legibility, but rather that they are the ground upon which performances of the state and of official knowledge take place. As recent ethnographies show us, officials may ignore government ideologies and projects (Li 1999); they may carry out rituals of assent even as they undermine regulations by their daily actions, or they may collude with the subjects of rule from sympathy, for personal benefit, or from political necessity (Herzfeld 2005:375). Paying close attention to these mundane practices of collusion and evasion radically transforms our understanding of the location and texture of official knowledge-making and even of the project of legibility itself. Rather than an official knowledge that arises from the imposition of legibility on officials, society, and nature, as Scott describes, I will show how official knowledge is the relatively fragile product of negotiations between officials and their audiences in meeting halls and offices. The detailed descriptions of encounters in Mexican offices and forests allow me to make a more general claim that officials in other places and at other times may decide to ignore projects of legibility. Transparent knowledge is a dream of modern state institutions, and officials in other places and contexts may deal with their political weakness by seeking to entangle powerful allies in official knowledge claims and by concealing their own activities from their superiors.

Seeing and Being Seen: State Formation and Identity

But what is the relationship between these routine practices of bureaucratic power and the diffusion of state ideologies into society?

Foucaultian conceptions of power/knowledge, as a set of rules about the production and circulation of official knowledge (Foucault 1991), do not do justice to the internal conflicts *within* the state. How is knowledge translated from one level to another, and what transformations, concealments, and betrayals does it undergo? In chapters 6 and 7, I pay particular attention to the culture of concealment and accommodation within the forest service and to the ways that government officials and their clients subvert or ignore forestry regulations. This leads me to conclude that the enduring consistency of official environmental discourses is the product not of stable and enduring bureaucracies but of the weakness and instability of state institutions. High-level forestry officials retain control of the symbolic capital of regulations and official environmental discourse even as they wrestle with their material inability to enforce these regulations and their doubts as to whether their subordinates are obeying their commands.

A better guide to the inculcation of new identities lies in paying close attention to the density and texture of encounters between officials and their clients and in comparing these with the daily practices where these clients in turn engage in daily life. How often do forestry officials meet with rural people? Can they really enforce regulations or do they merely pronounce them and then proceed to ignore them, as in the case of regulations forbidding agricultural fire use? In contrast, what are the daily practices of rural people? Do people make a living in ways that are officially forbidden but necessary to daily life? Agropastoral fires are necessary to agricultural practices over much of Mexico and take place within a sphere that is deliberately concealed from the attention of the state. It is not likely that fire users have internalized state understandings of fire through their encounters with officials; indeed, their encounter with forests is as important as is their encounter with the state. The environmental identities of people in Ixtlán are produced not only by mainly state-produced environmental theories but also by the logging practices in which they engage and through their encounter with the stubborn resistance of the natural world—the trees, forest fires, and logging roads with which community loggers must engage. In this context, nature is an actor that in turn affects the identities of human actors. This is suggestive of the power of practices of bureaucratic paperwork, which encounter material or conceptual resistances and may offer similar possibilities for distancing bureaucrats' identities from official projects of knowledge or control.

Documents, Material Visions, and the Cloud of Lies

I have long been haunted by an image of how documents that purport to reveal end up confusing and concealing (see figure 1.1). This picture, a 1940 lithograph by the eminent Mexican artist Jose Chávez Morado, is an image of concealed danger, transformation, loneliness, and isolation. The figure in the foreground is a worker in overalls (perhaps he is an industrial worker?); a storm of newspapers wraps his head and has concealed an abyss into which he is about to step. Elsewhere across a bare and empty plain, other figures wander alone, struggling blindly with their own storms of newspapers. All are isolated from each other, none can communicate, and all are endangered. The large Frankenstein-like hands that reach blindly forward suggest another kind of danger, in a presentiment of monstrous transformation. Another kind of metamorphosis is artfully alluded to: Newspapers that might transform human beings into documents are a visual echo of classic paintings and sculptures of Daphne turning into a tree when pursued by Apollo.¹⁴

Morado was warning against what he saw as the lies in official newspapers and against state efforts to delude labor unions in the 1940s. However, during the course of this book, I will suggest that this image of dangerous public illusions has a continuing contemporary significance, and that it illustrates an enduring cultural framing of public knowledge that officials and their audiences bring to bear in performances of public knowledge and of the state. This imaginary of documents that conceal hidden danger vividly illustrates not only how publics view the state but how officials themselves view the documents which they handle.¹⁵ Forestry officials in Mexico must act as if they believed the content of the documents that are their daily companions, but they are haunted by the sense that these documents are lies that may conceal a hidden pitfall that will cost them their jobs. Official efforts to make Mexican forests transparent and legible have always relied on documentary practices, and vision and supervision have always relied on material papers.

By focusing on the materiality of documents and forms, and on officials' complex calculations of how to deal with such regulations, I show how precisely those documents and forms that seek to produce transparency produce their opposites, concealment, and official ignorance. Official practices of transparency and visual supervision can become the storm of papers, in which neither officials nor their audience believe. In addition to its specifically Mexican associations, I suggest that *Cloud of Lies* can also be used to rethink the ways that vision is often used in



Figure 1.1

The Cloud of Lies: *Nube de Mentiras*, lithograph by Jose Chavez Morado, Mexico City, 1940. *Source:* Reproduction courtesy of the Philadelphia Museum of Art, gift of R. Sturgis and Marion B. Ingersol, 1943.

political theory. This image suggests that we can think of vision, seeing, and knowledge-making as profoundly material practices. Seeing vision as material in this way radically undermines the metaphor of vision as unmediated, direct perception, so familiar from discussions of politics and the state. The documents that blind and confuse, which conceal the abyss, are made of papers that are physical, tactile, and real. When I look at this picture, I think of my own past efforts to capture papers blown by the wind, newspapers that crumpled and escaped my grasp, and essay drafts that I had to chase across a parking lot or an office.

Material Visions, Official Knowledge, and Ignorance

Since its inception in early modern Germany (Scott 1998; Rajan 2006; Nelson 2005), Italy (Appuhn 2000), and in the British, French, and Dutch colonial empires (Grove 1995), forestry and conservation have been quintessentially state activities, and states have sought to assert their authority over forests through rhetorics of legibility and transparent knowledge. Controlling nature for economic, strategic, and environmental reasons has been part of the constitution of modern states, and performing the control and legibility of nature has been one way in which rulers have tried to establish the stability and reasonableness of rule. Forests, often conceived of as being one of the wildest aspects of nature, are typically remote from the rulers and officials who seek to control them, and forest-dwelling people have often been seen as problematic, ethnically other, and dangerous. More recent efforts to control and regulate nature, from biodiversity mapping to designing carbon markets that might prevent climate change, can learn something from the history of forestry and of Mexican forests. More generally, the history of forestry can offer lessons for those who are interested in the ways that producing public knowledge can legitimize institutions, from efforts to reform financial markets to efforts to reform states in the name of neoliberal economics.

Official knowledge of forests and of people has often been assimilated to the metaphor of vision and to associated practices of supervision and control. In much of political theory, vision and associated terms (“legibility,” “transparency”) are used somewhat unreflectively as metaphors for unmediated direct perception, for a direct knowledge of what is going on, a kind of knowledge that does not require the observer to interact with the people or places being observed. James Scott, for example, uses “seeing” in the title of his wonderful book, *Seeing Like a State*, along with his evocative coinage of “legibility,” in order to describe the efforts

of modernist bureaucracies to make landscapes legible to visual inspection, taxation, and control. Another use of vision as a metaphor for power comes from Michel Foucault's famous discussion of panopticism (Foucault 1979), where the subjects of rule internalize the possibility of visual inspection even when it is no longer occurring. Here, too, visualization and inspection are metaphors for a kind of unmediated direct knowledge and control. This kind of power is perhaps the dream of the powerful: to know others without being known to them, perhaps through what Haraway calls the god trick of a disembodied knowledge that has the quality of a view from nowhere (Haraway 1991), perhaps through Haroun al Rashid's mythical desire to walk incognito through the streets of Baghdad. All too often, political theorists seem to confuse this desire and the associated rhetorical claim of transparent knowledge, with its effective reality, official knowledge of a legible and transparent society. Vision as direct knowledge is a troubled metaphor because it erases the materiality of seeing: This erasure in turn makes it possible to imagine seeing without being seen. One way to restore the materiality and interactivity of seeing and knowing is to question seeing, to make visible the material objects (documents, forms) and social relations that make seeing possible, or to use metaphors of vision as touching, as when we are blinded by documents that purport to reveal.

It is all the more significant and troubling that vision is so unambiguously associated with knowledge, perception, and control within political theory because in other fields, seeing is seen as profoundly complex and problematic. Within science and technology studies, many scholars have pointed out that audiences have to be taught how to see (Daston and Galison 1992; Dumit 2003) through performances of public reason, expert authority, and the use of material images (Jasanoff 1998; Shapin and Schaffer 1985:22–77). In recent work, Haraway talks of visual prostheses, and of “optic-haptic” vision, seeing as touching by “fingery eyes” (Haraway 2008:250). The history of western optics, with its emphasis on ray theories, where the independent observer's eye captures rays of light emitted by the object that is being seen, are more confusing than helpful here. Karen Barad calls for a diffractive and intra-active kind of seeing, which draws on wave theories of light and a sophisticated discussion of quantum mechanics and complementarity (Barad 2007). These rethinkings of vision compel a rethinking of political metaphors of visibility as power. Officials who seek to make landscapes inspectable and legible must engage their human and nonhuman interlocutors: Unmediated vision is a political fiction or a description of the kind of

knowing that emerges from hard political and epistemic work. Such kinds of socially accepted knowledge require forms of assent from their audiences. Such assent can take the form of collaboration, collusion, dissimulation, or doubt.

The case of repeatedly foiled efforts to produce transparency in Mexican forests is relevant not only to Mexico, but to our understandings of the relationship between bureaucratic authority, institutional power, and knowledge, and to the power of publics in the making of knowledge. Efforts to produce transparent knowledge of nature or, more widely, knowledge of “the way things are,” are currently widespread across a variety of fields. In biodiversity conservation circles, multiple efforts seek to use satellite images and remote sensing to drive ecoregional planning (Brosius 2006). Similarly, numerous scientists and policymakers around the world are engaged in an effort to make forests legible and visualizable to world carbon markets (Bumpus and Liverman 2008). Should such a project of seeing succeed, buyers of carbon credits in London or New York would buy and believe in carbon futures in order to pay distant farmers for the carbon sequestered in their trees and soils, secure in the belief that this carbon capture was visually guaranteed through quasi real-time satellite surveillance. Recent events in global financial markets demonstrate that here, too, transparency as a metaphor for unmediated knowledge of reality is a key term. Financial meltdown is blamed on the “lack of transparency” in new financial products, where buyers did not know the risks that they were buying, and unreliable intermediaries pocketed huge fortunes. Many critics of recent financial scandals have suggested that the best means of preventing further economic disasters is through regulations that will make markets transparent and will allow publics (often framed as investors) to know that bank balance sheets do not conceal hidden toxic assets. Here, too, knowledge of reality is framed as transparent vision, and here, too, a complex web of financial operations, calculations, and regulations will, it is hoped, produce credible knowledge of reality, which will come to be seen as having a kind of visual certainty. In all such projects of visualization, intermediate material instruments, documents, and people disappear: The moment of knowing and perceiving effaces the scaffolding that made vision possible.

My goal here is not to purge politics of the metaphor of vision and transparency but to describe more clearly how vision describes the kind of knowing that happens after much political and epistemic work, when the material and political supports of knowing disappear from the con-

sciousness of the knower. For example, before I studied forestry, I saw forests as a more or less undifferentiated green wall; the differences between trees were visible and yet hard to remember, hard to discern. After (some) training in systematics and taxonomy, from reading books and walking around with a teacher, I began to see forests differently. At first I had to stop and check every tree, painstakingly looking at leaf characteristics, bark, or flowers, but eventually I could look at a tree from a distance, somehow putting together bark, leaves, color, and a host of other details so as to see the tree as a red maple, an olive tree, or a redwood. At this moment, all the hard work of reading, walking, and talking disappeared; seeing then could happen when material practices and histories became effaced in a moment of recognition. Such practices of seeing are skilled and never definitive, the world does not necessarily sort into easily distinguished species, as in New England forests where oak species interbreed, producing a “hybrid swarm” that undermines the value of the species concept. When we all agree that knowledge is good and real, it comes to seem transparent, but this transparency always relies on such practices as walking and looking, on practices of paper work or audit, on performance, and representation. Official efforts to describe official knowledge as vision are rhetorical claims, efforts to assert unmediated knowledge, but they are more a desire than a reality.

Making Things Technical, Making Things Political

For scholars of development, making things political or technical is a key moment in the assertion of rule, but this making of the technical is too often assumed to be successful in hermetically closing off the political from the technical (Ferguson 1994; Mitchell 2002). This is at odds with much of the literature on science and technology: For science and technology studies (STS) scholars, the boundary between the political and the technical is continually contested and remade (Gieryn 1995). In Shapin and Schaffer’s *Leviathan and the Airpump* (Shapin and Schaffer 1985), the technical must be performed and witnessed and is always defined *against* the political. The authors describe Robert Boyle’s role in defining scientific expertise through practices of performance and witnessing, where scientific knowledge was defined as knowledge produced before qualified witnesses. Stephen Hilgartner follows this dramaturgical metaphor and argues that expert and scientific advice are always a kind of public drama (Hilgartner 2000), staged by scientists and officials in an effort to command the assent of the audience. What Hilgartner and

other science studies scholars make clear (e.g., Wynne 2005:85) is that performances of expert knowledge are *always* public even or perhaps especially when they proclaim themselves most distant from politics and witnessing audiences. Such performances of expertise do the political work of defining a narrow audience of expert witnesses and of defining what subjects are open to political discussion. These dramatic performances of expertise seek to define the role of nonexpert publics as passive witnesses, who nevertheless must still assent to expertise, performance, and public reason.

Public performances of scientific knowledge define the contours of the political by making and remaking the boundary between science and politics. For science and technology studies scholars then, defining the technical always involves defining the political, and the technical and the political are always coproduced (Jasanoff 2004, 2004; Latour 1993). Each redefinition of the technical redefines expertise, the role of audiences, and forms of witnessing; it also redefines how and where political debates about justice can take place.

This conversation can be brought to bear on the critiques of technocratic knowledge-making within anthropology. James Ferguson (Ferguson 1994) and his interlocutors (e.g., Escobar 1995) have argued that development experts seek to define development as an apolitical intervention. For them, the scandal of knowledge is that political decisions are made in distant smoke-filled rooms or government planners' offices, where supposedly impartial technocratic knowledge improperly conceals something entirely different. In such accounts, the public has been effectively excluded from making knowledge, and technocratic expertise has effectively done its work so that corrupt elites or indifferent officials reap economic rewards, succeed in entrenching state domination, or disregard pressing political claims and movements. These accounts of anti-politics miss the public nature of anti-political performances that seek to define who participates in knowledge-making and on what terms. Development experts and government officials' performances of technocratic or planning knowledge seek to coax the public to become a more or less passive witness to distant and already completed performances of expert knowledge. Even the most apparently anti-political of knowledge claims seek to make claims on the public, and such performances are unstable and potentially fragile. Anti-political knowledge is not a seamless discourse nor even a unified project of producing legibility, but rather a potentially fragile performance that seeks to make both the technical and the political. Recent work by Tania Li, which shows the fragility of performances

of knowledge by development experts in Indonesia, is a powerful pointer (Li 2006). This suggests collusion and complicity between experts and their publics and draws attention not to the hegemony of official knowledge, but to the reversals, confusions, and moments of upsetting, when officials scratch their heads and change their stories. Here, audiences become powerful actors who can accede or refuse assent to these dramas.

What then is the role of audiences? What resources do the audiences for public knowledge-making have for resisting, affecting, or reinterpreting knowledge performances? This turns our gaze to political culture, to enduring public framings of the state, of expertise, performance, and of what expertise should look like. Sheila Jasanoff calls these cultures of public knowledge-making *civic epistemologies*, drawing attention to the ways that publics are always involved in the coproduction of politics and knowledge (Jasanoff 2005). The term “civic” might be problematic for anthropologists, suggesting a normative concept of the proper forms of citizenship, and perhaps of a problematic separation of state from civil society. However, I suggest that we can take from this not a normative claim that civic engagement is proper, but rather a prediction that engagements between states and other actors in fact take place in a variety of places and in ways that do not necessarily appear very civic. As we shall see, Mexican publics are skeptical and unwilling to openly voice their criticisms of official knowledge-making, but this does not mean that they believe official pronouncements. Civic engagement in this case takes the form of public deference and a large measure of disbelief in official performances of knowledge. Mexican officials and their audiences see the state as dangerous and official knowledge as a mask, an illusion that conceals possible personal dangers. This framing of official knowledge as performance and illusion affects not only how scientists seek to perform knowledge before publics, but efforts by politicians who seek to perform the state as knowledgeable, beneficent, and unified.

In taking seriously the state as *thing* and in comparing officials’ public performances of official knowledge to the knowledge-making practices of natural scientists, I go in a different direction from much recent anthropology of science. In such works as *When Species Meet* (Haraway 2008), *Alien Ocean* (Helmreich 2008), or *Dolly Mixtures* (Franklin 2007), there is little or no mention of the state. The authors are more concerned with how new kinds of science change what it means to be human and with the power of speculative futures to create new forms of capitalism. I take seriously these scholars’ concerns with materiality and knowledge-making, but I turn my gaze on the materiality and

performance of the state as an object of knowledge, as a *thing*, an empirically traceable set of institutions, documentary practices, and bureaucratic lifeworlds. A theme that runs constantly through this book is my effort to keep track of what the state was at each moment, how many forestry officials, how many technicians, where they lived, and how much practical power they had. Here, theory informs method: We cannot take the power of the state for granted, and we have to weigh it carefully at various moments, from the fragile moment when forestry science arrived in Mexico City to the present moment when forestry bureaucracies are widely spread across the Mexican landscape.

Writing Resistance Into History: Nature, Culture, and Human Agency

As a study in environmental state building, this book traces the construction of nature/culture boundaries by the Mexican state over the last hundred years and shows how particular constructions of nature have been deployed to bolster the legitimacy of the state. Collective representations of nature have been continually remade in response not only to state projects, but to local practices of meeting and working with other living and nonliving things. Pine trees, roads, documents, and chainsaws are all stubbornly resistant material things and active participants in human projects. Loggers, farmers, foresters, and road builders come to know themselves in encounters with corn plants, marking hammers, documents, and wet roads. People bring these kinds of knowledge of self and the world to their encounters with the state. This means that officials' efforts to perform the state as a stable, knowing, and powerful agent encounter an active, knowing, and often skeptical audience. This audience brings to bear its own cognitive and epistemic resources in accepting, undermining, remaking, or evading official projects of making knowledge. Officials seek to entangle their publics, to produce assent to official knowledge claims and allegiance to official projects, drawing on enduring framings of how knowledge is supposed to be produced. Representations of official beneficence, or of environmental degradation, are not necessarily accepted by the subjects of state control, as in the Sierra Juárez of Oaxaca, where indigenous communities have imposed their own counterhegemonic history of environmental change on the forest service.

Unifying nature and human agency within a single frame of analysis poses problems of knowledge and method. How can we integrate the different forms of knowledge of the natural and social sciences without

prejudging the primacy of one over the other and without a naïve positivism that asserts true or correct knowledge about the natural world? In contrast, most social science accounts of society implicitly neglect nature as an actor, either ignoring it or depicting it as a social construction (Mitchell 2002:19–53; Latour 1993). This problem is of central interest to any environmental anthropology or environmental history, to any study of science and society. In a real sense, a study of social and environmental change without an active and intransigent nature is a drama stripped of its principal actors. How can we make sense of the lives of people who struggle to make their livings from forests and fields if we do not pay attention to the material/ideological conditions of that struggle, if we end up saying that what really matters is their relationship with the state, with each other, but not with their fields and trees? Theories of knowledge as performance and practice, rather than as a representation of the world, provide a working method, if not a complete solution. Such theories also help us think of the remaking of humanness and highlight how making natures produces new subjectivities, refusing to make state-imposed identities the most important or only story to tell.¹⁶ In a real sense, human agency with regard to the environment can only be described by giving nature a corresponding agency of its own—a kind of unruly obstinacy, which sometimes frustrates human projects and interpretations. The unruly obstinacy and liveliness of nature is a resource for people who go about making knowledge of who they are, what the world is, and what the state is.

In this book, I have addressed this dilemma by drawing on an eclectic variety of methods from the natural and social sciences in the hopes of destabilizing the power of any particular method (e.g., Rocheleau 1995) and of revealing the limits of each form of knowledge. I have made a pragmatic use of different forms of knowledge while attempting to remain aware of the limitations, theoretical assumptions, and *resistances* that each method encounters. Using multiple forms of knowledge highlights their associated theories and methods and destabilizes the dominance of any particular discipline. I do not use these multiple methods with the aim of a kind of triangulation that will produce a composite representation that will be closer to the “real” world. Rather, the multiplicity of methods and theories reveals the limits of knowing and the multiple resistances that knowing encounters. I have long been troubled by a tendency in the social sciences to seek to explain too much: ethnographically thin writing in which human actors emerge in order to explicate a theoretical point, only to disappear once again. This is very

contrary to the ways in which many natural scientists locate what is not explained. In my former disciplinary training as a physicist and then in forest ecology, I learned to display graphs and charts, in which neat lines were not undermined by the presence of data points far from the line. Natural scientists, within limits, are comfortable with the presence of unexplained variation on graphs of results. On the contrary, results that fit a predicted line too well would be greeted with suspicion and doubt. For me resistance to knowledge is a sign of practical knowledge itself, of the liveliness of the world, of the unpredictability of people, pine trees, and fires. This attention to resistance is a thread that runs through the book, from the histories of shifting pine forests and fields, to the resistances that officials encounter when they try to perform authoritative official knowledge in the face of public skepticism.

By paying detailed attention to the constraints of ecology and climate (especially in chapters 3, 4, and 5) and by carrying out a small fire ecology study, which I describe in detail in chapter 3, I have paid close attention to the resistances that the natural world offers to both my own analysis and to the projects of foresters and farmers in the Sierra Juárez. This emphasis on practice and *resistance* to interpretation is an important clue to a kind of writing that gives agency to the subjects of ethnography and to the natural world.

In my early 20s, while traveling in Peru as a young and feckless backpacker, I experienced a small earthquake while staying on the top floor of a small hotel. My friends and I felt the building move, contrary to our experience of nature, a strange, unsettling, and yet exhilarating sensation. Perhaps because we didn't know how to sense this experience as danger (fortunately no one was hurt), we fell off our beds laughing. The world was alive—it was unexpected and unforeseeable. In my training as a natural scientist and later as a social scientist, I have tried to follow this insight—that the world is lively. It is this impulse that seems to me to drive the curiosity of natural and social scientists alike. In addition to providing the material for explication and analysis, I suggest that looking for ethnographic surprise can reveal the excess of human beings and of nature. Too much writing about science, nature, and people makes implicit claims to an impossible degree of knowledge and erases precisely what is interesting about people and things, their lively and agentic quality. Discourses and political economic structures may limit human agency most powerfully when we let them discipline our writing, eliminating confusing and lively people. It is the stubborn resistance, autonomy, and unpredictability of real human subjects that makes an

ethnography or a history convincing and that makes life interesting. In a sense, while ethnographers can explain, as when we describe what people said to us and the kinds of reasons that they gave for what they did, we must avoid *explaining away*, where the ethnography contains only what fits our theories and where the people described are shadowy puppets who emerge on stage to illustrate a theoretical point, only to be skillfully removed once their work is done. I suggest that surprise and excess are the markers of an ethnographic practice that takes seriously the agency of people and nature. In this book, I have tried to write such excess into the text. There is more going on in Mexican forests than I can explain: I have tried to write some of that more into this book.

Methods

My journeys through the Mexican forest service were initially made easier by my own ambiguous status as both a forester and an anthropologist, and I conducted in-depth interviews with forestry officials in Mexico City and Oaxaca as a complement to participant observation and interviews in forest communities in the Sierra Juárez (see appendix 1 for a list of interviews). Although most of my work was carried out in 1998, 2000–2001, and 2003, return trips in the summers of 2008 and 2009 allowed me to trace the significant continuities between the forest service as it was when I first encountered it and how it looks now, after political reforms, budgetary crises, and new fashions in administration and conservation practice. A number of senior Mexican forestry officials had completed PhDs at the Yale School of Forestry, where I was studying, and it was they who I initially approached. Often I was cast in the role of a junior colleague, a guest who would accept their hospitality and listen to their narratives about life in Mexico, about life as a forester, about life as a functionary. This was a new experience for me: At graduate school, I was expected to be enthusiastic and attentive, indicating my interest by producing ideas for my professors. In my initial meetings with the senior foresters, in forest service offices in Mexico City, and at the University of Chapingo, I learned to play the new part of a deferential and relatively silent junior. In some ways this was ideal; they were happy to talk to me as long as I was prepared to listen and I could take copious notes. These former Yale forestry students were by then working as senior officials and in universities, forming part of the technocratic and administrative elite. They were kind enough to take time out of their work to talk to me, and they provided me with a network of

personal introductions that rapidly led me from offices in Mexico City to SEMARNAP offices in Oaxaca.

From Mexico City, I moved onward to Oaxaca, attending regular meetings of regional forest councils, where forestry officials encountered members of indigenous forest communities. I tried to talk also to forestry officials and foresters, visiting their offices and asking them what kind of work they did and how they did it. Finally, I spent six months of intensive fieldwork in the community of Ixtlán de Juárez, accompanying logging technicians into the field, talking to loggers and community elders. Such multisited ethnographies impose their own challenges: Perhaps the continual doubt that I should have been elsewhere, that I was not in any one place long enough to understand what was going on, is analogous to the rootless cosmopolitan's fantasy about local belonging and the attractions of being in one place.