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Resisting Eradication: The Cultures of Global Health and Local Health Systems in the Polio Eradication Initiative in Pakistan

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B.A., Pomona College, 2000
M.P.H., Emory University, 2005
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An Abstract of
A dissertation submitted to the Faculty of the Graduate School of Emory University in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Department of Anthropology

2008

Abstract

The Polio Eradication Initiative is the largest public health project in history. It is currently experiencing difficulties; the global polio case count has been holding steady since 2003. This dissertation is a multi-sited ethnography of this major global health project. It focuses on Pakistan, one of the last four countries in the world with endemic polio, and draws on fieldwork in Atlanta, Geneva, Islamabad, and two districts in Pakistan where eradication activities are being carried out. This dissertation explores (1) the historical and cultural underpinnings of eradication as a public health strategy; (2) the culture of optimism that characterizes global health institutions; and (3) the reach, limits, and complex negotiation of the power of United Nations and bilateral agencies over the Pakistani health system, as well as the techniques of resistance that government workers from the district to the capital use against UN demands.

The need to frame projects in a way that impresses donors and a faith in the power of technological solutions to health problems contribute to a culture of optimism in the World Health Organization. The problems experienced by the Polio Eradication Initiative grow out of this culture of optimism, which fosters the unrealistic expectation that polio eradication will be a priority in every district in every nation of the world simultaneously. The ideals of "participation" and "collaboration" that drive current global health policy are a part of this culture and hide the exercise of power by UN agencies behind the rhetoric of "partnership." Officials at places like the World Health Organization in Geneva have no direct control over the implementation of immunization activities, and are unable to make polio *the* priority in a nation beset with other, more politically pressing problems. Polio vaccination campaigns are carried out in Pakistan by highly political district health offices and very poorly paid workers. Government workers use a variety of strategies that resist the mandates of the Polio Eradication Initiative, including foot-dragging, false compliance, and the use of networks of patron-clientism. This dissertation presents suggestions for future eradication programs to circumvent some of the problems the Polio Eradication Initiative faces.

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Acknowledgements

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This work would not have been possible without the cooperation of the Government of Pakistan. I am grateful for their permission to participate in polio eradication activities both in Islamabad and in three districts in Pakistan. In each of these districts, I was assisted by many people, but the exceptional support of the vaccinators Muhammad Kamran, Faisal Nadeem, and Sajjad Haider in arranging interviews deserves special mention.

Beyond Pakistan, officials at the World Health Organization in Geneva and the Centers for Disease Control and Prevention in Atlanta got me past their security checkpoints and answered my pointed questions with candor and thoughtfulness. Many anthropologists had assured me that these officials, who had nothing to gain by my knowing their business, would never grant interviews. Contrary to this dim anthropological view of the secretive development official, nearly everyone I spoke to responded to my intrusive and sometimes obtuse questioning with honesty and humor. For this I am grateful.

If the analysis I present here is critical of the Polio Eradication Initiative—and in many ways it is—it is because the openness and honesty I encountered deserves an open, honest response. The critiques I present here are given in the spirit of a colleague who believes in what these global health workers at all levels are aiming to accomplish, and who hopes that her thoughts on the subject may make their work a bit more productive in the future. I have taken advantage of my position as someone entirely outside the system to say things that people who must work within the system may not have the freedom to. In doing so, my aim is not to create problems for those were so honest and open with me, but to assist them in their work by bringing some problems to light and suggesting possible ways forward. I deeply hope that proves to be the case.

In Pakistan, I benefited enormously from the support of an incredibly supportive extended family. Abdul Rehman, Khatoon Bibi, and Shamshad took care of my son better than I could have, cooked my meals, washed (and ironed) my clothes, walked with me to the bazaar at night when I decided I needed ice cream, and made sure I was entirely free to work in a way I am certain I never will be again. And they made it clear they did it out of love. I remember with great warmth the time we spent together. Thank you, Ami, Abu, and Shama.

Nizakat and Farzhana, too, along with their children Hadia, Wishal, and Ali, overwhelmed me with support and love. Their apartment was in truth not large enough for the five of them, yet they embraced my frequent and lengthy stays. In the company of the beautiful, deeply moral, and wickedly funny Fari I was always entirely at home. Fari,

you've helped me more than you know, and if I could transport you to a house with a yard, next door to me always, I would.

My research assistant Tanveer Khan was an invaluable help. His influence extends throughout this dissertation. He, his wife and my friend Rosina, and their three children welcomed me into their lives. So did Rabina Bibi, Samina Bibi, and Shabina Mumtaz.

It was not only in Pakistan that I was on the receiving end of extraordinary hospitality. In Geneva, Jamie Guth, Paul Bilgen, and Brendan Bilgen opened their lovely home to Kaif and I, and Paul spent many hours helping us discover Geneva. I fondly remember my time there in what was certainly heaven, a few of the best weeks of my life.

Part of what made my time in Geneva so lovely was undoubtedly that I spent it with my mother, Sally Closser, who traveled around the world on short notice to watch my son so that I could get my work done. The physical and moral support that she and my father, Bruce Closser, provided allowed me to dance in the streets of Paris with my son and finish this dissertation on time. Mom and Dad, thank you.

At Emory, a number of people helped me in my thinking and writing. I am very fortunate to have had a supportive committee and a truly exceptional advisor. My advisor, Peter Brown, constantly showed me ways I could improve my work while giving me the space to write what I wanted to. My committee, Joyce Flueckiger, Bruce Knauft, and Ron Barrett, were excellent sources of constructive criticism and moral support. Prior to my research, Emory's Center for Health, Culture, and Society and Institute for Comparative and International Studies provided me with opportunities for making my thinking deeply interdisciplinary.

Tricia Fogarty and Elizabeth Milewicz read and made detailed comments on nearly the entire dissertation, fixing problems both small and seemingly intractable. Seeing their faces pop up on Skype was often the highlight of my week. Thurka Sangaramoorthy also gave helpful feedback.

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My son Kaif was an incredible travel companion. He approached every new experience, food, language, and method of transport with enthusiasm. As a toddler, he should have had every right to insist on routine, but in the face of endless travel and change he was flexible, open, and a complete joy. Kaif, I owe you. And given that in the course of this research you sat on my lap on sixteen long international flights, I'm glad you like airplanes so much.

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Chapter One

Introduction

> *There are more hot cases*[1] *from the areas we predicted. . . It's so frustrating! We know it is going to happen and can do nothing to stop it!* World Health Organization (WHO) official, Islamabad
>
> *That is the reason of the frustration of the staff: we know the problem, we know the solution, but we cannot. . .* WHO official, Islamabad

The Polio Eradication Initiative, a 20-year, six-billion-dollar project that has employed over two million people, is history's largest coordinated mobilization in the cause of public health. In 2001 alone, the Polio Eradication Initiative vaccinated about 575 million children against polio in 94 countries, most of them multiple times, and most by teams going door-to-door (World Health Organization 2002). Polio eradication may also prove to be one of public health's most spectacular failures.

The program is in trouble. After twenty years of work, the goal of eradicating polio has not been met. The program has made dramatic progress, reducing the number of new polio cases from hundreds of thousands per year in 1988 to around 800 in 2003. However, in the last few years the project has been unable to make significant headway in reducing the case count to zero; in fact, the number of new polo cases seen each year has increased.[2] In 2007, there were around 1,300 cases of polio in the world. Polio transmission stubbornly persists in four countries: Nigeria, India, Pakistan, and Afghanistan. Having missed the two target dates set for eradication—2000, and then 2005—the possibility of the eradication of polio may be slipping away.

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[1] In polio eradication, "hot case" refers to a case of paralysis in a child that is suspected to be due to polio, but not yet confirmed as polio through laboratory tests.

[2] More information on the history and progress of the Polio Eradication Initiative is in Chapter 2.

This dissertation is an ethnography of the Polio Eradication Initiative as it played out in Pakistan in 2006-2007. It examines power relations and the politics of decision-making in this major global health project, and describes the cultures of health systems from Geneva to a district in Pakistan's Punjab. The central question this dissertation asks is: Why does the effort to eradicate polio seem to be failing in Pakistan? I thought I might already know the answer to this question when I began my research. I thought that polio eradication officials would know little about local cultures, and I thought they would use local cultural beliefs as a scapegoat for failures of implementation. But as it happened, my preconceived ideas were wrong.

Knowledge of Local Culture

It is a truism in medical anthropology that health projects often fail because they are based on insufficient knowledge of the cultures of the people they aim to assist. A common theme throughout the medical anthropological literature is the necessity of understanding local culture and beliefs in order to successfully implement health projects and effect behavior change (e.g. Hahn 1999; Paul 1955). Judith Justice's *Policies, Plans, and People* (1986) is justifiably a classic in the anthropology of global health, and is the book that in large part inspired my own work. A central thesis of this work—one that holds true in many health projects I have observed in South Asia—is that the effectiveness of many health projects is limited by their failure to take local realities into account (Justice 1986).

But the difficulties faced by the Polio Eradication Initiative cannot be blamed on a lack of local knowledge. I was consistently impressed and humbled by how well Polio

Eradication Initiative officials in Islamabad, and even Geneva, understood the complexities both of local communities' attitudes towards polio immunization and the knotty dynamics of vaccination campaign implementation in district health systems in a variety of contexts across Pakistan. I had ingratiated myself into the project with the promise of providing anthropological information that would expand planners' understanding of the people whose children they aimed to vaccinate, but I soon found I could tell them nothing that they did not already know.

Part of this is because of the structure of polio eradication activities. Polio vaccination took place in mass campaigns, carried out over the course of about a week and occurring about eight times a year. During the campaigns, the World Health Organization offices in Islamabad emptied out entirely, save a single employee charged with collecting the data arriving via phone, email, and fax from various districts. World Health Organization and UNICEF employees[3] fanned out across Pakistan, directly monitoring campaign activities in every district where cases of polio were still occurring.

Because there was a highly developed and sensitive surveillance system that allowed planners to know exactly where polio cases were still occurring and thus, where vaccination coverage was less than perfect, they could focus their attention on places where quality was sub-par. Because vaccination was not an ongoing activity but only took place on specified days a limited number of times per year, in campaigns in poor-performing districts there was always someone present from Islamabad, and often from Geneva, to monitor activities. This prevented the phenomenon (well-documented in the ethnographic literature) of short visits by high-level officials to easily accessible "model

[3] A description of the roles that the World Health Organization and UNICEF played in the Polio Eradication Initiative can be found in schematic form in Appendix A and in more detail in Chapter 2.

sites" where everything functions perfectly during the official's visit, leaving serious problems unobserved (Justice 1986; Mosse 2005). Over the course of nearly ten years of polio campaigns in Pakistan, re-visiting the same problematic districts, officials based in Islamabad knew very well many areas of the country and the reasons for low vaccination coverage in those areas.

In part, too, the level of knowledge of local realities by high-level officials was due to their extraordinary sophistication and dedication. For example, one high-level Pakistani WHO official could cite anthropological literature on many areas of the country, but more importantly, he was humble, self-effacing, conversant in a number of languages, and prone to asking lots of the right questions. He, and others in Islamabad, had a wealth of local knowledge; the difficulties that the Polio Eradication Initiative faces cannot be blamed on ignorance on the part of policymakers and planners. People at all levels of the World Health Organization were open to and interested in an anthropologist providing cultural information which would benefit their project. But, in fact, many of their own employees were more experienced de facto anthropologists than I, with my scant two years' experience in the country.[4]

Blaming Culture

Anthropologists have also criticized global health practitioners for using the culture of local populations, when they pay attention to it at all, as a scapegoat for failed projects. What Paul Farmer calls the "conflation of structural violence and cultural

[4] The World Health Organization valued employees who were aware of local realities. At all levels of the organization, there was an emphasis on understanding the particularities of specific situations–the "motto" in Pakistan for 2007 was "local solutions to local problems." Perhaps five decades of anthropological harping on this point has had an impact.

difference" (Farmer 2005, p. 191) can deflect culpability for disease from those in power and place it instead on the poor. In *Stories in the Time of Cholera,* Charles Briggs and Clara Mantini-Briggs describe this process in a cholera outbreak in Venezuela. There, public health practitioners blamed the epidemic not on inadequate infrastructure or poor institutional response but on the putative cultural characteristics of the groups who were dying in shocking numbers. The necessary corrective steps were never taken, and subsequently cholera again attacked the same populations. Briggs and Mantini-Briggs write, "assertions regarding cultural difference—the idea that poor people and individuals representing marginalized communities think and act differently and cannot embrace modern hygiene and medicine—increasingly shape institutional practices that permit or even multiply unnecessary and unconscionable deaths from disease" (Briggs and Mantini-Briggs 2003, p. xvii).

When I began my research, I thought I would find polio eradication officials blaming the failures of eradication in Pakistan on local culture. In interviews I conducted in Islamabad during a pilot study in 2005, I heard the "status of women" in Pakistan, as well as "corruption" in health systems, blamed for the difficulties the project was facing. But in spending a year immersed in polio eradication, I found that culture-blaming was not a widespread practice. In retrospect, I suspect the people I spoke to early in my research searched for cultural factors to describe to me: as an anthropologist, they probably assumed that those were what I would find interesting.

Cultural characteristics *were* often invoked as a reason for the difficulties in reaching certain populations. Take, for example, the following exchange between a supervisor and a vaccinator in a district in the Punjab:

> Vaccinator: There were two refusals in my area.
> Supervisor: Why did they refuse?
> Vaccinator: They're Pathan, sir.[5]

Here, the simple fact that the people described were Pathan—a minority group in the Punjab—was offered as sufficient explanation for their refusing vaccination.[6]

But this example is unusual. Overall, I was struck by the fact that whenever someone tried to blame failures of the campaign on the culture of the people in a given area, someone else almost always argued against them. For example, when a foreign high-level official complained that, while in Iran and Egypt, "people rush down to have their child vaccinated," in Pakistan, "they go and hide the child from you," several people immediately argued against the implied ignorance and apathy of the Pakistani populace. They asserted that in Iran and Egypt, places characterized by decades of "world-class basic immunization," awareness of the benefits of vaccines would naturally be different.

Similarly, in a discussion in Islamabad about a remote district in the North-Western Frontier Province (NWFP) that had recently experienced a polio outbreak, a senior official argued decisively against the cultural hypotheses being floated around. Two years ago, the area was a "model district," he argued. The culture hadn't changed—the management had.

Most people at the highest levels of the Polio Eradication Initiative were dismissive of cultural barriers being insurmountable, placing the responsibility for reaching all populations squarely on the shoulders of polio eradication staff. A high-ranking WHO official in Islamabad told me he was skeptical of claims that polio could

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[5] All indented text are direct quotes, though in some cases, they are my own translations. In this particular case, for example, the exchange took place in a mixture of Urdu and English.

[6] Minority groups across Pakistan and India were consistently less well vaccinated than the general population. My own research on coverage in nomadic populations in Pakistan, reproduced in Appendix B, indicates that this is in many cases due to prejudice on the part of the lower-middle-class, mainstream-culture vaccinators.

not be eradicated because of cultural factors. "It depends on our strategies, how we are approaching the people—there should be some ways to reach these people," he said. Another WHO employee in Islamabad said in a public presentation that putative cultural barriers in various areas of Pakistan were nothing more than an "excuse." Yet another reflected, "there is something *we* are not doing right in these populations." He caricatured the typical Polio Eradication Initiative supervisor getting out of a Land Cruiser wearing pants and sunglasses and talking into a cell phone, and the alienation that caused. Olen Kew of the CDC, speaking about India, said of the difficulties of reaching minority groups,

> It's true that the Muslim communities, particularly in Uttar Pradesh, have a higher incidence of polio than the surrounding Hindu communities. But it's not fair to point to any particular religious group as resistant to immunization because when those communities are approached appropriately, usually they welcome immunization. (Thigpen 2004)

The blame for difficulties such as people refusing vaccination, then, was on Polio Eradication Initiative employees for their failure to engage minorities "appropriately," not on the culture of marginalized communities.[7]

"Management Issues"

Polio eradication leadership in Islamabad, for the most part, did not think that the difficulties the project faced stemmed primarily from the cultures of people living in areas with ongoing poliovirus transmission. They placed blame not on the cultures of those receiving vaccination, but on the practices of district-level health leadership and other district-level government workers. They talked again and again about something

[7] District-level health staff were supposed to carry out a variety of tasks for "social mobilization," including visiting teachers, religious and community leaders on a regular basis to secure their support for immunization activities. Overall, refusals were a concern but not a major barrier to the elimination of polio from Pakistan; by the WHO's best estimates, they never amounted for more than 1% of the overall population.

that they called "management issues." In districts with good "management," many opined, polio was gone; in those without it, children continued to be paralyzed. If this assessment served to deflect responsibility from upper-level officials onto those with less power—and it probably did to some extent—it was nonetheless in large part accurate. However, I think planners would be served well by a concept more specific than "management issues." I argue in this dissertation that *resistance* on the part of district-level employees to the mandates of the Polio Eradication Initiative are a major reason that polio persists in Pakistan.

As in the quotes that begin this chapter, upper-level officials argued that the failures of the program were *not* due to a lack of understanding on their part about what was happening. On the contrary: they knew what the problems were, they knew what the solutions were, but implementation of the solutions was stymied by "management issues." By this, they meant the actions (or, more often, inaction) of district-level government officials.

In time, I became convinced that this assessment was largely correct. As I mentioned above, polio eradication leadership in Islamabad, and even in Geneva, had an enviably precise and nuanced conception of what was happening on the ground. They did, indeed, know what most of the problems were, and they were extremely good at predicting where polio cases would occur. But they were unable to translate this knowledge into a complete cessation of polio transmission. Many of these people were luminously intelligent and well-informed, and all of them were extraordinarily hardworking. If *these* people couldn't eliminate polio from Pakistan, I found myself thinking, nobody could.

Power Inside the Project

This dissertation explores the factors that made eliminating polio from Pakistan so incredibly difficult. At the center of the analysis are the complex interactions of donor, UN, and state power. Some anthropological explorations of development speak of "development discourse" or the "development apparatus" as if it is a coherent entity. But my work in the Polio Eradication Initiative suggests otherwise: not only is "development" not a unified whole, this single development *project* is threatened by power struggles and contradictory agendas.

People who worked at all levels of the polio eradication hierarchy were acutely aware of these problems. What is written here will not surprise them. My contribution is twofold. First, I give an analytic framework for what appeared to many in the project to be a diffuse set of intractable problems. The tools and the language that anthropology provides for dealing with issues of social organization and power relations are necessary for a clear exposition of what is happening inside the Polio Eradication Initiative. My aim here is to give health planners a language and a structure for understanding the internal dynamics of global health projects. My aim is to assist them in moving away from vague, imprecise terms like "corruption" and "management issues" toward conceptualizations of power and resistance that may concretely assist in better planning.

Second, I discuss publicly, and in writing, a set of issues previously limited to closed meetings and office gossip. The public documentation of the Polio Eradication Initiative—which is copious—does not address the internal power relations central to understanding its trajectory. Rather, as I will discuss in Chapter 6, in polio eradication's

public façade, problems appear minimal or nonexistent. This dissertation moves past the Polio Eradication Initiative's buffed exterior to describe its messy internal workings.

I do so not out of prurient interest, and certainly not out of a desire to betray the trust of people who joked, a little uneasily, that I was "conducting surveillance of us." I do so because internal power relationships are central to understanding why success was so elusive in polio eradication in Pakistan. If polio eradication fails, the analysis here will present a better understanding of the factors that stymied the best efforts of so many dedicated people. If it manages to succeed, the much more challenging eradication projects—of measles and malaria—that seem certain to follow on its heels will need to heed the lessons of polio eradication's difficulties if they are to have any chance of success.

Anthropology and Global Health

Anthropologists working in global health can largely be placed into two general theoretical frameworks: anthropologists *in* global health and anthropologists *of* global health. I draw on both traditions in this dissertation. Anthropologists *in* global health often work for development agencies and often fulfill the role of "culture broker," providing information on recipient populations to development planners in the hopes of making their interventions more effective (e.g. Brown 1983; Foster 1952; Hahn 1999; Paul 1955). I did some work on vaccination coverage rates in nomadic populations moving through the Punjab for the Polio Eradication Initiative that fits securely into this tradition; it is reproduced in Appendix B.

The anthropology *of* global health is anthropological study of the organizations that design, fund, and administer global health projects. The classic in this genre is Judith Justice's book, mentioned above (Justice 1986). There has recently been an explosion of work in the anthropology of development agencies, and work on global health agencies—whose paradigms, structure, and sources of funding remain rather separate from those of development agencies more generally—is a growing field. But until now, the literature on the internal workings of global health agencies has consisted of a handful of excellent articles (Nichter 1996; Pfeiffer 2004; Smith 2003). All three of these articles examine how local social relationships within health development projects affect the trajectories of these projects. The articles illuminate different aspects of global health projects—Nichter, for example, focuses on village-level Primary Health Care staff, while Pfeiffer's analysis of the impact of the proliferation of NGOs in Mozambique takes a national perspective. Each of these articles is a gem. However, given their short length, they are not able to describe in a comprehensive manner the complex interactions between different levels of a global health project, from donor to beneficiary.

The relationship between the two sorts of anthropologists described above—anthropologists *in* and *of* development—has often been strained. Anthropologists who work *in* development projects have been subject to some fairly severe criticism from colleagues in the academy who claim that they are handmaidens of development projects, reinforcing global structures of power. Arturo Escobar, the most vocal critic in this vein, charged that anthropologists working for development projects "choose to remain blind to the historically constituted character of development as a cultural system" (Escobar 1991, p. 676). Escobar's condemnation of development anthropologists was tied to his

conception of the nature of development as a whole. Elsewhere, Escobar argued that the discourse of development was totalizing and that, like Orientalist discourse, it "constituted a system for organizing the production of truth about the Third World... [which] made possible the exercise of power in novel ways" (Escobar 1992, p. 413; Escobar 1995).

Escobar's critique is overstated, and unfairly targets anthropologists who work for development agencies. Like the colonial framework of a century ago, the "development" framework is ubiquitous, and anthropologists cannot escape it (Edelman and Haugerud 2005). Little and Painter are justified in their statement that "the fact that Escobar focuses his critical skills on those anthropologists who are involved with development projects, and not on the discipline that created them, strikes us as gross obfuscation" (Little and Painter 1995, p. 605). James Ferguson speculates that it is in fact the "uncomfortable intimacy" of anthropologists in development agencies with the field of anthropology as a whole that leads theoretical anthropologists to distance themselves so vehemently from their colleagues outside academia (Ferguson 2005, p. 141). Casting the debate in terms of "theoretical" vs. "applied" anthropologists ignores both the contributions of theoretical anthropologists to systems of power and domination, and the possibility that applied work could make meaningful changes to those systems.

But Escobar has a point. Anthropology *in* global health, which tends to focus exclusively on the culture of recipient populations, can serve to blame the failures of health development projects on the poor or their "culture" rather than on global inequalities that structure their risk for disease and prevent them from accessing quality care. In doing so, it can reinforce the very disparities that lead to such shocking rates of

disease in the world's poor (Briggs and Mantini-Briggs 2003; Farmer 1999; Nguyen and Peschard 2003; Singer, et al. 1992). A productive way forward is to address how the cultures of development bureaucracies may be responsible for the difficulties encountered by many development projects (Foster 1976; Foster 1987).

The anthropology *of* global health is thus important. This dissertation argues that the understudied internal workings of global health bureaucracies are key to understanding the failures of many global health projects. Global health philanthropy is currently in vogue: Bill Gates and Warren Buffett have thrown their fortunes behind it, and T-shirts funding AIDS treatment in Africa are available at the Gap. But there are complicated social processes that take place between, say, the purchase of an article of clothing in Michigan, and the provision of antiretrovirals in Mozambique. If the promise of all this money is to be realized, the nature of these local social processes—and the ways in which they can stymie projects created with the best of intentions—must be understood. Anthropologists are ideally trained to carry out such analyses.

As an eradication program, the Polio Eradication Initiative is in some ways a special case. In important other ways—as a pioneering global health partnership, now the model for global health giving; as an internationally funded and administered project that works through government health systems; as a so-called "vertical" program (meaning it focuses exclusively on one disease)—it is similar to many of the largest projects currently underway in global health.[8] Understanding its pitfalls can, I believe, help us to plan better for the opportunities and challenges ahead.

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[8] The Global Alliance for Vaccines and Immunizations (GAVI), the Global Fund to Fight AIDS, Tuberculosis, and Malaria, the Stop TB Partnership, and the Measles Initiative are notable examples of large projects similar in these respects to the Polio Eradication Initiative. The projects are of course not exactly alike—the Global Fund, for example, uses a much wider array of implementing organizations in

In addition, this work makes contributions to the anthropology of development agencies more generally. There are a number of excellent ethnographies of development projects (Elyachar 2005; Ferguson 1994; Hirschman 1967; Li 2007; Mosse 2005; Tendler 1975). These ethnographies have different foci, and none address directly, through rich ethnographic description, the power relationships between bilateral donors, UN organizations, and the national and district governments of poor countries. The work I was able to do is unique in its focus on global power relations *within* a development project. Such an analysis yields several important theoretical contributions. It allows a more nuanced conceptualization of "development," challenging the unstated assumption in some anthropological writing that "development" possesses a unified hegemonic discourse. In addition, the multi-sited methodology and global focus of my project allow me to move past general discussion of global "flows" to a specific ethnographic exploration of how global networks work (or don't work). This research is useful in understanding the success or failure of a given health development project, but is also more broadly relevant, speaking to issues of sovereignty and power in the postcolonial era.

In doing so, it intersects with political anthropology. Aradhana Sharma and Akhil Gupta have formulated some of the questions driving current research in this field as "What would the state look like in a transnational frame where nation-states are not the only legitimate actors?... How does the transnational context impinge upon and redefine the ability of states to govern what is happening within their territorial borders?" (Sharma and Gupta 2006, pp. 8,24). There are many different answers to these questions,

---

recipient countries than the Polio Eradication Initiative does—but my discussion of the challenges that the Polio Eradication Initiative faces likely applies to some extent to these other large projects.

depending on the nation in question as well as the dimension of the "state" being considered. A number of recent articles have approached this problem using case studies of NGO and government development projects (Ferguson and Gupta 2002; Gupta and Sharma 2006; Sharma 2006). This dissertation addresses these issues in a specific case. It illustrates how transnational power relations—such as those between a UN agency like the World Health Organization and a government like Pakistan—work in practice.

Success and Failure

It is currently in vogue in the anthropology of development to eschew analysis of whether and how development projects meet, or fail to meet, their stated goals. Several prominent anthropologists have explicitly focused on the "side effects" or "tactics" of development projects rather than their success or failure (Ferguson 1994; Li 2007, p. 231). Such scholarship has brought to light interesting and important effects of development projects and their rhetoric. Development projects often serve to entrench existing structures of power. But the widespread nature of the current trend of neglecting to look seriously at success and failure is, to me, troubling.

The success of development projects in their stated goals is generally something to be desired. Poor people want to have more money, better food, and less disease—major goals of many development projects. If they fail, as they often do, it is important to understand the reasons for their failure.[9] Here, the literature of critical medical

[9] I am aware that what, exactly, constitutes success and failure is often a deceptively simple question. David Mosse argues that in some projects, attribution of "success" or "failure" depends less on what actually happens on the ground than on whether planners are able to cast the achievements of a project in terms of their donors' dominant paradigms (Mosse 2005). In the culture of optimism which I will argue characterizes global health, projects which are failures by their original criteria may be recast as successes (Brown 1998). Also, projects which succeed in their stated goals may have few wider impacts (the eradication of polio, for example, would not significantly change the overall burden of disease in Pakistan).

anthropology, though almost never cited by the major writers in the anthropology of development, is very useful. Critical medical anthropology emphasizes macro-social factors such as politics, economics, and the world-system (Baer, et al. 1986), while not discounting the value of biomedical intervention. The work of Paul Farmer exemplifies this approach. He writes, "Critical perspectives on emerging infections must ask how large-scale social forces come to have their effects on unequally positioned individuals in increasingly interconnected populations." At the same time, he is a passionate advocate of medical interventions of all kinds in poor areas. "Nothing is wrong with high-tech medicine," he argues, "except that there isn't enough of it to go around" (Farmer 1999, pp. 5, 14). Although there are a few critical medical anthropologists who argue that the categories of biomedicine and public health should be abandoned altogether (described in Inhorn and Brown 1990), this is not a dominant view in the discipline. The viewpoint of critical medical anthropologist Vicente Navarro is more typical: "To see medicine as control," he writes, "is to fail to see the dialectical nature of medicine in which there is also a useful needed function" (quoted in Singer 1998, p. 228).

What is important, then, is to keep global structures of inequality in view while not discounting the possibility that development interventions like vaccination campaigns can have real, positive effects even within those structures. Awareness of structural inequality and hope that development projects will succeed in their stated goals do not have to be mutually exclusive. Insofar as anthropologists who have the freedom to work independently of the "development machine" can provide constructive criticism aimed at increasing the effectiveness of interventions, we have a responsibility to do so. And if a

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These nuances must be grappled with—but discussing them should assist with, rather than detract from, the goal of analyzing whether and how development projects are making concrete improvements in the lives of the poor they aim to assist.

development project is making things worse for its putative beneficiaries, anthropologists have a serious responsibility not just to criticize but to search for the way forward.

Poverty, Inequality, and the Challenge of Eradication

As I will describe in more detail in the next chapter, eradication—permanently stopping transmission of a disease across the globe—is a very difficult enterprise. It is so difficult in large part because so much of the world lives in conditions of poverty that fan disease transmission. If the entire world had the same access to quality housing, basic sanitation, and routine immunization as citizens of the United States, polio would probably disappear on its own. But when so many people live in crowded and insect-permeable housing, without adequate systems for disposing of human waste or ensuring clean water, diseases like polio, measles, and malaria rage on.

The fact that poverty promotes transmission of a number of diseases means that public health planners often must rely more heavily on biomedical interventions in poor countries than in wealthy ones, where many diseases common in poor countries are simply not public health issues. And these interventions may be less effective in poor areas: as I discuss in Chapter Two, in the case of polio, three times as many doses of vaccine may be necessary to protect a child in India from polio as to confer immunity to a child in the United States (Grassly, et al. 2006).

Close to 1 billion people on the planet live on less than $1 a day (United Nations 2007). This poverty is not isolated from the wealth of the rich. Global poverty is tied to the global economy, both its historical legacies and present configuration (Ferguson

2006; Wolf 1982). These global inequalities shape who is at risk for contracting disease as well as who gets effective treatment when they get sick (Farmer 1992; Farmer 1999).

A central argument of this dissertation is that the same structures of inequality that keep disease transmission going in poor areas of the world *also* make the effective creation and management of delivery systems that would aid in controlling these diseases difficult. Power differentials between countries, including who is rich and who is poor, determine which global public health initiatives are taken on, how they are structured, and how they are viewed both by the populations on the receiving end and the ground-level workers implementing them. These dynamics, I will argue, are essential to understanding the trajectory of the Polio Eradication Initiative.

The Pakistani Context

Pakistan is a large and diverse country with a population of around 170 million (and, more to the point for polio eradication planners, about 30 million children under 5). It is bordered by Iran, Afghanistan, China, and India. Of these four countries, two—Afghanistan and India—harbor ongoing polio transmission. While Pakistan's sealed border with India keeps polio transmission from being shared between those two countries, the virus moves freely across Pakistan's porous border with Afghanistan.[10]

Pakistan is a nation of stunning contrasts. In Pakistan's Northern Areas, home to some of the world's tallest peaks including K2, the climate is cold enough to support some of the world's largest glaciers, but in most of the country summer temperatures well over 40° C (104° F) provide ideal habitat for the heat-loving poliovirus. Pakistan is home

[10] The Polio Eradication Initiative does a genetic sequence of the poliovirus obtained from every child with polio, which enables analysis of the patterns of transmission of the virus.

both to extremely remote, nomadic desert populations and to megacities like Karachi, with an estimated population of 12 million. The country's population is about 97% Muslim, but otherwise diverse, with a wide variety of ethnic groups and languages. (Urdu, the national language, is almost no one's native tongue.)

The diversity—and, at times, disunity—of Pakistan's population is a product of the country's somewhat arbitrary creation when the British left India in 1947. The nation was originally conceptualized as a homeland for India's Muslims, and its boundaries were drawn to include most of India's Muslim-majority areas, in the process splitting more culturally and linguistically coherent areas like the Punjab in two. When these borders were created, the horrific and unforeseen communal violence of Partition forced those who suddenly found themselves on the "wrong" side (Hindus in Pakistan, Muslims in India) from their homes and across these new boundaries.[11] One Muslim-majority area, Kashmir, was assigned to India, and the ongoing dispute between Pakistan and India over who the area rightfully belongs to has several times erupted into war.

Faced with the ongoing threat of conflict with India, several times larger than Pakistan in both area and population, the Pakistani government has placed a heavy emphasis on defense, while sectors like education and health remain under-funded. In 2005, expenditure on health by the Pakistani government was just 1.5% of total government spending, one of the lowest percentages in the world (World Health Organization 2008b). These low public expenditures on health, coupled with high rates of poverty—the government estimates that over 30% of the population does not have

[11] Eight to ten million people fled in both directions across these newly-drawn lines in the Punjab and Bengal, and between half a million and a million people were killed (Menon and Bhasin 1998, p. 35). Bangladesh, formerly "East Pakistan," became an independent nation after a civil war in 1971.

enough money for adequate food[12] (Government of Pakistan 2005)—help to explain Pakistan's unimpressive health indicators. Nearly one in ten children die before they reach the age of 5; major killers include preventable, easily treatable diseases like respiratory infections and diarrhea (World Health Organization 2006e).

When I did my fieldwork in Pakistan for this project in 2006-2007, the country was in turmoil. General Pervez Musharraf, who had seized control of the country in a coup in 1999 (Pakistan's history is one of alternation between elected and Army leaders), found himself encountering threats to his legitimacy from several very different quarters. In early 2007, Musharraf attempted to remove the country's Chief Justice, Justice Iftikhar Muhammad Chaudhry, from his position, ostensibly because Chaudhry was corrupt (but actually, public opinion in my lower-middle-class neighborhood had it, because Chaudhry was in league with Musharraf's opposition and was sympathetic to constitutional challenges to the legitimacy of Musharraf's rule). Chaudhry refused to leave his post, and hundreds, perhaps thousands, of lawyers across the country staged street protests in his support. Rallies grew in size, violence, and incoherence, and fighting broke out on the streets of Karachi. Around thirty people were killed, and the city was placed under curfew. (The polio vaccination campaigns planned in the city were postponed by several weeks.)

Almost simultaneously, Musharraf's government was engaged in a highly visible armed conflict with a very different type of opposition. In early July of 2007, government forces surrounded the Lal Masjid (Red Mosque), a large complex including a mosque and

[12] The government estimated that as of 2000-2001, 32 percent of the population was surviving on less than Rs 748 (about $13) per person per *month*, the poverty threshold "derived by valuing the minimum required caloric intake of 2350 calories per capita with a minimum expenditure required for non-food needs" (Government of Pakistan 2005, p. 7). It should be noted that the economic situation in Pakistan as a whole has improved since this estimate was made in 2000.

live-in madrassah on a tree-lined street in one of the wealthiest sectors of Islamabad. The leaders of the mosque and madrassah were militant Islamists, and over the past months the residents of the complex had become increasingly violent, kidnapping Chinese women that they claimed were prostitutes, setting fire to the inventories of several nearby video and book stores, and attacking a government office building. The standoff between government forces and the militants inside the complex went on for the better part of a week, in which time hundreds of students left the complex and—to the lurid fascination of all of us watching on television—one of the mosque's leaders was captured while he attempted to escape wearing a woman's burqa. Ultimately, government troops bombed and stormed the complex, killing many of the people left inside.[13]

These very real challenges to Musharraf's position from very different quarters—the elite liberal intelligentsia represented by the lawyers (Dalrymple 2007) and the militant Islamists represented by the residents of the Lal Masjid—took place in the context of a country characterized by increasing disquiet, where suicide bombings killed civilians on a near-weekly basis. '*Hālat kharāb hai*,' people said,[14] shaking their heads, and scaling back their evening walks and trips to the crowded bazaars. It seemed to nearly everyone I spoke to that Musharraf's days were numbered; many feared the

[13] I attended a lower-middle-class wedding within earshot of the bombs exploding at Lal Masjid during the "operation," and conversation at the wedding centered on this topic. While there was widespread condemnation of the actions of the militants—most people felt that their using the children of the madrassah as a human shield was reprehensible, and that their lack of respect for private property was a serious problem—the actions of the government were also widely criticized. Why had the government allowed the militants to get so strong, and then gone in with military force, instead of using more subtle tactics, like disconnecting the electricity and water in the mosque, from the beginning? The deaths of the children inside the mosque (nobody trusted the government's assurances that only a few children remained inside) were certainly the government's responsibility as well. Probably, people speculated, Musharraf was under pressure from the United States to look tough on terror.

[14] Throughout this dissertation, Urdu transliterations follow Platts' *Dictionary of Urdu, Classical Hindi, and English* (Platts 2004). In cases where I have changed the transliteration slightly from Platts for ease of reading, Platts' version is provided in a footnote.

country was slipping towards civil war. Musharraf had a great many things to worry about. It is safe to assert that the eradication of polio was not his top priority.

Methodology and Position

The inherently global nature of a study of polio eradication necessitated an anthropological method somewhat different from that of classical ethnography, in which the researcher spends at least a year engaged in participant observation with a single community. Rather than produce a detailed ethnography of a single place, I aimed to develop a nuanced understanding of an entity, the Global Polio Eradication Initiative, that transcends a given locale. I was interested in the links between the local and the global, which required ethnographic research in a number of places, including communities on the receiving end of house-to-house immunization and surveillance, the local bureaucracies carrying out surveillance and immunization campaigns, and the offices of polio eradication officials in Islamabad, Geneva, and Atlanta. Such "multi-sited ethnography" has gained currency in anthropology as a way of describing issues tied up in the "world system" (Marcus 1995). In the course of my research, I "followed the project," analyzing the progression of Global Polio Eradication Initiative policy from Geneva to a city in the Punjab (Markowitz 2001).

In performing multi-sited research, my goal was not to perform a comprehensive ethnography at each site. Rather, my aim was to gain a full understanding of the Global Polio Eradication Initiative, a complex project that exists across many locales. Multi-sited methodology, which necessitates limited time at each site, does not necessarily lead to "thin" ethnography (meaning descriptions of events that lack a nuanced understanding of

the context in which they take place). On the contrary, and as I had expected in designing this project, it was only through an understanding of what is happening in Atlanta, Geneva, and in Pakistani cities that a rich, "thick" ethnography of events in Islamabad could be constructed.

I spent one year doing fieldwork, over ten months of which was in Pakistan. My central site was the Pakistani National Institutes of Health in Islamabad, home to the World Health Organization (WHO)'s Islamabad office and the government officials responsible for childhood immunization in the country. Both WHO and government employees were accustomed to foreign researchers visiting Pakistan to work on polio eradication for anywhere from a few weeks to a few years, and I was quickly assimilated into the role of "foreign consultant." I was given a desk in the "National Surveillance Cell," invited to participate in planning meetings, and given free access to the Polio Eradication Initiative surveillance data and files, which included most of the reports and emails that had passed through Islamabad over the past five years. I spent a total of 4-5 months in Islamabad, conducting participant observation in meetings and daily office life. The environment in the office was collegial; I often ate lunch with the other people in the office, participated in office conversation and e-mail forwards, and assisted in the preparation of documents and presentations (where my being a native English speaker was useful). I attended the two weekly official meetings for polio eradication, as well as more formal events such as the Technical Advisory Group meeting, a two-day convening of epidemiologists, donors, and advisors from all over the world. Most of the meetings in Islamabad were in English; however, most office conversation was in Urdu, and my

knowledge of Urdu was very helpful in understanding the dynamics of daily work in Islamabad.

In Islamabad, I conducted fifteen formal, semi-structured interviews, lasting between thirty minutes and an hour, with WHO, UNICEF, Rotary, and Pakistani government officials, as well as representatives of major bilateral donors to polio eradication such as USAID, CIDA (Canada), JICA (Japan), and DFID (the UK). These interviews, some of which I audio recorded, provided a useful complement to my observations in government offices. They also provided an interesting glimpse into the culture of bilateral aid agencies in Islamabad, one characterized by unmarked offices and metal detectors.

To better understand the process of policy implementation, I participated in four "campaigns" aiming to immunize each child under 5 in Pakistan with oral polio vaccine. These campaigns, the backbone of the polio eradication strategy in Pakistan, are conducted approximately every two months and involve door-to-door vaccine delivery at every house in the country. I participated in four campaigns carried out in three different Pakistani districts. These districts ranged in size from around 1,000 to around 5,000 square kilometers and had populations between 600,000 and 3.3 million, according to the 1998 census.[15] My involvement in each campaign covered planning to evaluation stages and lasted about three weeks. Initially, I had expected to be a low-key observer of the campaigns. However, in every district I was rapidly pushed into the role of foreign monitor, a position with a great deal of power. I was whisked around in Land Cruisers,

[15] Numbers of children under 5 reported immunized to the Polio Eradication Initiative were as high as 20% of these overall population numbers in some districts. Pakistan does have a very young population overall, and there is probably some inflation of the numbers of children immunized by district health staff, but the census figures quoted here are likely underestimates of the actual population.

charged with presenting polio eradication "key messages" over tea to very powerful and highly-placed government functionaries, and expected to present recommendations to the Executive District Officer of Health. Government employees addressed me with a wide range of honorifics ranging from "madam" to "doctor sahib." Seasoned government officials became visibly nervous in my presence. The question of why a relatively inexperienced foreign student was given so much status is an important one, and will be addressed in further detail in the body of the dissertation. Other aspects of my participation in campaigns will also be discussed in Chapter 3, which is devoted to a detailed description of a campaign in a district I call by the pseudonym Kaifabad.

Kaifabad, a rapidly expanding megacity in the fertile plains of the Punjab, was the site of my most detailed investigation of the dynamics of project implementation. In total, I spent 3-4 months performing research in Kaifabad. In addition to participant observation in two campaigns in Kaifabad, I spoke with a variety of people involved in some way in polio eradication activities. I conducted and audio recorded individual semi-structured interviews with over 20 "Lady Health Workers" in Kaifabad, ranging in length between five and forty minutes, and two focus groups of Lady Health Workers with a total of about 40 participants, each of which lasted about an hour. While the Lady Health Workers saw me as a representative of the Polio Eradication Initiative from Islamabad, most welcomed the opportunity to speak about their work with a woman who they viewed as having the power to advocate on their behalf. These interviews, as well as much of my participant observation in Kaifabad, were carried out in Urdu.

In Kaifabad, I also conducted structured interviews with 78 mothers of children under 5, about half from nomadic communities, and about half from lower-middle-class

neighborhoods. These interviews were designed to produce information, amenable to statistical analysis, on vaccination coverage in the children in these communities. I also spoke to the mothers about their experiences with and attitudes toward the polio eradication effort. The interviews themselves, while fairly time-consuming to set up, in many cases lasted as little as five minutes; in rare cases, they could take half an hour. In general, I found that mothers did not have a great deal to say about the Polio Eradication Initiative; while it was part of everyone's life, it was not a major part of anyone's, and most mothers simply accepted polio vaccination without giving the matter much thought. Even my closest and most voluble friends did not have much to say on the topic.

At the time of my research, I was married to a Pakistani. In Islamabad, Kaifabad, and other areas of Pakistan, I stayed with his extended family, participating fully in local life in lower-middle-class neighborhoods. My family and friends knew that my research was on polio eradication, so this was often a topic of conversation. My brother-in-law Tanveer served as my research assistant, accompanying me in nearly all of my work and providing me with friendship, respectability (women in Pakistan usually prefer not to travel alone), and an intelligent sounding board. He also transcribed recordings of Urdu-language interviews (transcribing interviews conducted in English was my responsibility). Tanveer's impish sense of humor and enthusiasm for his job enriched my research.

To better understand the culture and perspectives of the international "experts" who procure funding and create policy for the Polio Eradication Initiative, I conducted interviews, participant observation, and archival research at the WHO headquarters in Geneva and the headquarters of the U.S. Centers for Disease Control and Prevention

(CDC) in Atlanta. In Geneva, I was welcomed by officials who I had previously met in Islamabad, and who enabled me to make excellent use of a brief three weeks. My research in Atlanta, conducted sporadically over the course of a year, was facilitated by contacts at Emory University.

Several attentive readers pointed out to me that in the descriptions that follow, I seem more critical of those lower down in the polio eradication hierarchy than I am of those at higher levels. This is regrettable, but I can identify at least two reasons why it may be the case. The first is positional. In the course of participant observation, I was nearly always placed in a position of power. I am thus more acutely and personally aware of the pressures and limitations faced by people at higher levels of the Polio Eradication Initiative than those at lower levels, which may color my perceptions. The second reason that this manuscript might be biased towards those in power is a problem of anthropological ethics. While the identity of a given vaccinator or other low-level worker I am describing can easily be disguised, given the vast numbers of such workers, camouflaging the identities of people at higher levels of the project is not so easy. While I use pseudonyms throughout this dissertation, the fact remains that people inside the Polio Eradication Initiative will likely be able to identify many people I describe. While the events I write about are not secrets, I am wary of criticizing people in print–especially those officials whose graciousness made my work possible, and who might feel personally hurt by my judgments. Overall, my aim is not to be critical of the actions of individuals, but to be critical in the sense of Merrill Singer's definition of critical medical anthropology, making a

> theoretical and practical effort to understand and respond to issues and problems of health, illness, and treatment in terms of the *interaction* between the macrolevel of political economy, the national level of political and class structure, the institutional level of the health care system, the

> community level of popular and folk beliefs and actions, the microlevel of illness experience, behavior, and meaning, human physiology, and environmental factors. (Singer 1998, p. 225)

My aim in this dissertation is to show how the actions of people at *all* levels of the Polio Eradication Initiative are connected to these larger systems.

Further description of my methods and position, and their implications, will arise throughout the dissertation whenever these issues become relevant. What I wish to emphasize here is that although my research took me to wildly divergent places (traveling straight from Kaifabad to Geneva and back gave me a case of economic and cultural whiplash), they were in fact deeply connected. Decisions made in Geneva affected the ability of Lady Health Workers in Kaifabad to provide for their families; local politics, like those described in Kaifabad in Chapter 3, frustrated the ambitions of virologists in Atlanta. It was a privilege to have the opportunity to see the Global Polio Eradication Initiative in action in these diverse locations, and I strongly believe multi-sited research was the best way to understand the scope and contradictions of this immense and important project.

Caveats and Limitations

There are four remaining countries with endemic polio. This dissertation is about only one of them. The discussion and conclusions of this dissertation apply to Pakistan; I did not visit India, Afghanistan, or Nigeria, and in the case of Nigeria, at least, it appears that the challenges facing would-be polio eradicators are somewhat different.[16] Some of my conclusions, such as the effects of the culture of optimism I discuss in Chapter 6, will

[16] In northern Nigeria, there has been fairly widespread popular opposition to polio vaccination (Jegede 2007; Pallansch and Sandhu 2006; Renne 2006); this is not the case in Pakistan, where refusals appear to make up less than 1% of the population.

apply in all of these countries; others, like the nature of the patron-clientism in Pakistani districts that I discuss in Chapter 3, may or may not be transferable. It is likely that the resistance on the part of government health staff that I describe in Pakistan is a factor in other polio-endemic countries as well, but further research would be needed to confirm this hypothesis.

Pakistan is a large country. I did not visit all, or even most, of it in the course of this research. In fact, due to a number of factors, including security concerns, family issues, the exigencies of travel with a 1-year-old, and my disinclination to do extended research in areas where I did not speak the local language, the majority of my research was carried out in areas where polio transmission had already been interrupted. Given the fact that this dissertation addresses the question of why poliovirus circulation *continues* in some areas of the country, this is a limitation. However, I do not believe it is an insurmountable one. First, I had long conversations with many people who had spent a lot of time working on polio eradication in a variety of districts in Pakistan, and the problems they experienced did not differ greatly in nature from the ones I was familiar with. Second, I did spend time, and worked on a campaign, in one of the country's worst-performing districts, tenuously protected from ongoing poliovirus transmission only by low population density and a cold climate. In short, I certainly cannot claim to have detailed knowledge of the dynamics of polio immunization in every part of this culturally, linguistically, and geographically diverse country. I can and do, however, claim to have observed and experienced the way campaigns work in Pakistan, the ways that government employees may manipulate the system, the relationships between UN and government employees, and the power dynamics between the Pakistani government

and UN agencies—factors which I will argue form the central explanations for the failure, thus far, of the elimination of polio from Pakistan.

Outline of the Dissertation

In this dissertation, I take the reader through the levels of the Polio Eradication Initiative, from vaccinators going door-to-door in rural Pakistan to planners preparing PowerPoints for donors in Geneva. In each place, I explore the culture, politics, and power relations that shape what people do. Ethnographic vignettes between the chapters illustrate how people at a variety of levels—from high-level officials in Geneva to mothers of young children—relate to the Polio Eradication Initiative. Polio is a tough disease to eradicate, but in theory, stopping transmission across the globe is feasible. The social relations I describe in this dissertation will explain why, thus far, it has remained just outside the realm of the possible.

Chapter 2 is an introduction to eradication as a concept, and to the history and structure of the Polio Eradication Initiative. It also introduces the Polio Eradication Initiative's culture of optimism, which I will argue throughout this dissertation both sustains and hobbles the project.

Chapter 3 is an ethnographic description of my participation in an immunization campaign in a Punjabi district. Through a narrative describing specific events, it brings up a number of issues that will be explored more theoretically later: the role of the foreign consultant, patron-client relations in district health systems, and the techniques of resistance that district health staff use against supervision by UN agencies. Chapter 4, conceptualized as a companion chapter to Chapter 3, explores these issues in theoretical

terms. I explore the ways that district-level health staff resist the mandates of the Polio Eradication Initiative, including falsification and lying, the use of patron-client relationships, and corruption. Staff resist for a variety of reasons, including dissatisfaction over low pay and their belief that polio eradication will never be achieved. In an attempt to cut through this resistance, UN employees use what I call everyday techniques of power, including propaganda, surveillance, and the construction of a parallel bureaucracy. Ultimately, however, these strategies of exerting power are insufficient to counter the effects of health staff's strategies of resistance, resulting in ongoing polio transmission in much of Pakistan.

Chapter 5 focuses on power relationships in the Pakistani capital, Islamabad. It explores the tension between the ideal that polio eradication is a Pakistani government project, and the reality that it is conceived, funded, and implemented by wealthy countries and UN agencies, with somewhat reluctant Pakistani government involvement. It explores the way that government employees at the *national* level resist UN mandates, and the techniques of power that the UN agencies use in attempts to get the Pakistani government to do what they want. While wealthy countries and UN agencies had sufficient power to get Pakistan to adopt the ambitious program of polio eradication, they are unable to make it the first priority in a country swamped with other problems.

Chapter 6 focuses on Geneva, dominated by the culture of global health, which vaunts collaboration and partnership as the key to solving the world's major public health problems. As a comparison case to the current quagmire in polio eradication, I describe the methods used in the successful Smallpox Eradication Program, and argue that collaboration and partnership may be insufficient means to carry out extremely ambitious

goals like eradication. I argue that the culture of optimism in Geneva, driven in part by a desire to keep donors giving, masks power relations and prevents honest and public discussion both about the problems facing the Polio Eradication Initiative, and what would be necessary to achieve eradication. Chapter 7 presents my conclusions. I introduce the concept of "political feasibility" as an important determinant of the possibility of eradicating a given disease. I also suggest concrete steps to plan for problems like the ones polio eradication is facing before they arise. Assisting in such planning is a crucial way that anthropologists can contribute to global health.

The current era of vastly increased funding for the health of the world's poor is one of great potential. But to harness the power of all that money, we need delivery systems that work. This dissertation cannot provide a recipe for success. But it gives some suggestions for making things better.

Bus Number 11

Fatima is a Lady Health Worker in Kaifabad. Because she lives in an area of Pakistan where no new polio case has been seen for several years, she works on three to five door-to-door polio campaigns a year. In areas with ongoing transmission, Lady Health Workers work on six to eight polio campaigns a year; in the winter, there may be a campaign every single month. For each campaign, Fatima must take about five days away from her normal work and family life. Fatima, along with another worker, goes door-to-door in Kaifabad with oral polio vaccine, asking if children under five are present, and vaccinating them if they are. At each house, she marks on the door with chalk when she visited, how many children under five live in the house, and how many she has vaccinated. The areas she is to cover have been carefully mapped out to ensure complete coverage of the city. When Fatima comes to houses where the young children are absent, perhaps at their grandmother's house or in the bazaar, she must record their names, ages, and address and return to the house, often multiple times, until she finds them and vaccinates them. She does all of this, she notes, on "Bus Number 11," her own two legs. As Fatima goes door-to-door, other teams of workers vaccinate children at "transit points" like bus stations and busy markets.

For Fatima's work as a Lady Health Worker, she is supposed to help her neighbors with a wide variety of health issues, from information on birth control to provision of oral rehydration in cases of diarrhea to assistance with tuberculosis treatment. Her salary for this work is Rs. 1,900 (around $30 a month). On the weeks when polio campaigns are going on, however, she focuses solely on polio. She receives an additional supplement of Rs. 600 (about $10) for five days of work on polio.

Fatima is plump and talkative, with a sparkle in her eye. On campaign days, she gets up early in the morning—at dawn for morning prayers—and then cooks breakfast for her husband and three children. She irons her two older children's school uniforms, makes sure their books are in their backpacks, and delivers her young daughter to the neighbor who will watch her while she works.

Depending on the area where she is working, Fatima may or may not have a proper lunch—if she knows people there, she may have lunch at a friend's house, but in areas where she is less familiar, she may not eat much. When Fatima gets home, she picks up her young daughter, goes over the day's homework with her older children, and cooks dinner for the entire family. She does the dishes. If the electricity is working in the evening, she irons her and her husband's clothing to wear the next day. She gets to bed late. She describes a day of work to me:

> I start at 8 in the morning, and may not be done until 4 or 5 in the evening. We have to finish polio. We also have to mark the houses, give the day's report to our supervisor. . . when we're tired from the day's work we have to go back to the hospital to hand in our report. Then we have to go [to the hospital] early in the morning the next day to get vaccine, and then back to start working [vaccinating children]. After the day of work we go back again to hand in our reports. . . It's really quite far. . . It's all walking, walking. It's true that we do get lots of exercise—but that whole week I feel sick [*bukhār nahī utarta*]. Then, of course, we have to go back over those same areas to find the children who weren't there the first time. It's so tiring—I'm sure you know. And then everyone [the Lady Health Workers] has to find someone to watch their children. . . And the pay! You know about the pay.

Chapter Two

Polio Eradication in Policy

> *We will no longer have to live in a two-tiered world. And I think that may be the single most important legacy of polio eradication, the end of acceptance of what shouldn't be acceptable.* Olen Kew, CDC (Thigpen 2004)

> *From a humanitarian perspective, eradication provides the ultimate in health equity and social justice, bringing identical and universal benefits to every person globally.* (Aylward, et al. 2000, p. 286)

> *The only way to protect every child from polio is to eradicate this crippling and potentially fatal disease completely.* Bill Boyd, President, Rotary International (Boyd 2007)

> *The eradication of a disease is the ultimate contribution for sustainable health development.* Margaret Chan, Director-General, WHO (Chan 2007b)

Eradication, the permanent obliteration of a disease, is a powerful ideal. Its supporters are impassioned and eloquent. It also has a number of clear advantages as a public health strategy. Because the goal is unambiguous and progress towards that goal—the case count—is measurable, monitoring performance and ensuring accountability is relatively simple. If an eradication program succeeds, the disease in question ceases to be a human problem, and in theory at least, the money and energy thus saved can be used to address other health problems. Not least, as the "ultimate" in public health, it attracts supporters more mundane control programs do not. But achieving eradication is extraordinarily difficult.

This chapter is an introduction to the history and structure of the Polio Eradication Initiative. After a historical discussion of eradication as a strategy in public health, I will

describe the history of polio eradication specifically, and outline its current organizational structure. This background information will allow a fuller understanding of the extent of the striking culture of optimism that characterizes the Polio Eradication Initiative. The nature of this culture of optimism will be introduced in this chapter. Because it is central to the way the Polio Eradication Initiative operates, optimism will be a recurring theme in this dissertation.

Eradication as a Strategy

Eradication is a very difficult endeavor, different from the usual public health goal of disease control. Control programs, the routine strategy in public health, aim to reduce incidence of disease to an "acceptable level." In contrast, eradication is the "permanent reduction to zero of the *worldwide* incidence of infection caused by a specific agent as a result of deliberate efforts; intervention measures are no longer needed" (Dowdle 1999, emphasis added). When discussing eradication, health planners often also mention "elimination," a slightly different benchmark. Elimination refers to the *regional* incidence of an infectious disease being reduced to zero; in the case of elimination, importation of infection from other regions of the world is possible, and so control measures must be continued.[17] Polio has been eliminated from the Western Hemisphere, but not yet eradicated from the globe.

Eradication programs are of necessity global in scope and "vertical" in design, meaning that they focus solely on a single disease. Supporters of eradication and other vertical programs have long been at odds with others in global public health who

[17] The definition of the term "eradication" is the subject of some debate (Miller, et al. 2006; World Health Organization 1998b). The definition I use here was established at the Dahlem Workshop.

advocate the delivery of "Primary Health Care," the provision of comprehensive health services, ideally with the active participation of the communities being served. Proponents of Primary Health Care often argue that eradication programs, and other vertical programs, do little to address the most pressing health issues of the poor. The debate is of long standing, and continues today. In 1969, John Bryant criticized vertical programs concentrating in specific diseases because "the most serious health needs cannot be met by teams with spray guns and vaccinating syringes" (quoted inCueto 2004, p. 1864). Recently, Laurie Garrett argued in *Foreign Affairs* that because the current increase in funding for global health is "directed mostly at specific high-profile diseases—rather than at public health in general—there is a grave danger that the current age of generosity could not only fall short of expectations but actually make things worse on the ground. . . efforts should focus less on particular diseases than on broad measures that affect populations' general well-being" (Garrett 2007).

Vertical programs do have some major strengths: they usually have clear goals, fairly straightforward methodologies, and measurable indicators of progress. Proponents of eradication and other vertical programs would never argue against the simultaneous provision of Primary Health Care. But in a world with somewhat limited funding and—more to the point—limited staff for health interventions in poor countries, emphasis on an eradication program in a given area may come at the expense of activities aimed at improving the general health of that population. These tradeoffs may well be worth it if the eradication program succeeds—but attempts at eradication are by nature risky.

Eradication Programs in the Twentieth Century

The trajectory of the Polio Eradication Initiative is determined by its design as an eradication program; it carries with it the promise, and the risk, of this approach to public health. Eradication carries a high risk of failure and a high degree of difficulty. In the twentieth century, seven human diseases—hookworm, yellow fever, yaws, malaria, smallpox, polio, and guinea worm—were targeted with large-scale campaigns for eradication. Only one project succeeded.

The Rockefeller Foundation's Sanitary Commission launched a hookworm "eradication" program in the American South in 1909.[18] Hookworm is transmitted through fecal contamination of soil; people commonly contract the parasite when they walk barefoot on contaminated ground. The project included education for doctors, teachers, and the general public, as well as revival-style meetings where people were evaluated for infection and treated, if needed, *en masse.* While the project reduced the burden of disease of hookworm, it did not eliminate it entirely. The treatment regimen could be dangerous and was difficult to follow, and the Sanitary Commission, while it educated Southerners on the importance of privies, did not become extensively involved in privy construction itself.[19] In fact, the goal of "eradication" was likely intended only to get people excited about the project, and was never actually a goal among Sanitary Commission leadership (Ettling 1981). The Sanitary Commission, which worked through state boards of health, also encountered some resistance from government health leaders. The evaluator Charles V. Chapin wrote in 1915:

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[18] As the project was not yet global, the goal would be described as "elimination" in today's terms.
[19] Many people in the South at that time did not have privies (Ettling 1981).

> There are many who feel it is dangerous to have outside agencies initiate and direct the activities of state and municipal officials. . . there is probably not a health officer who is not in constant fear that some group of over-enthusiastic, and perhaps ill-advised, reformers may not, by outside pressure, bring about a one-sided diversion of the funds of his department, perhaps to lines of work of problematical value. (quoted in Ettling 1981, p. 196)

Partly because such domestic resistance, John Ettling argues, "made the prospect of overseas work among submissive colonials increasingly more attractive," the Rockefeller Foundation phased out its hookworm project in the American South in 1914 and, through the newly founded International Health Division[20], set its sights abroad (Ettling 1981, p. 196). By 1920, global hookworm eradication had become a bona fide goal of the organization (Farley 2004). But while hookworm campaigns were carried out in 52 countries and 29 islands(Birn and Solorzano 1999), eradication did not happen. While the burden of disease caused by hookworm was reduced in some areas, the Rockefeller International Health Division was unwilling to spend much of its own money on improving sanitation, preferring to focus on treatment. A number of governments, both national and colonial, resisted the International Health Division's expectation that they spend large amounts of their own money on hookworm control (Birn and Solorzano 1999; Farley 2004). Further, hookworm eradication is epidemiologically extremely difficult: a recent working group on eradicable disease described hookworm as "refractory to elimination in most areas" (Figueroa 1999). By 1930, the International Health Division had abandoned hookworm eradication as a goal, though as John Farley notes, "failure was never admitted as a reason for closing down" (Farley 2004).

The Rockefeller Foundation also attempted to eradicate yellow fever beginning in 1915. International Health Division planners thought that yellow fever transmission could

[20] The International Health Division's name changed several times; it was also called the International Health Commission and the International Health Board. Here, I use "International Health Division" to refer to all of these entities to avoid confusion.

only be sustained by the high population densities and ecologies of coastal cities. They also thought that mosquitos were the disease's only vector. Therefore, they believed that elimination of *Ae. aegypti* in a handful of key cities would eradicate yellow fever (Farley 2004; Gubler 2004; Lowy 1997). Their strategy of mosquito control appeared to be extremely effective: in early 1928, nearly a year passed without a single reported case of yellow fever in the Americas. But in 1928 and 1929, outbreaks were reported both in Rio de Janeiro and in small towns in Colombia and Venezuela (Soper 1963). Further investigation revealed that the pattern of transmission of yellow fever was much different than had previously been believed. *Ae. aegypti* was not yellow fever's only vector, and humans were not its only host: rather, there was ongoing circulation of "forest yellow fever" in other species of mosquitos and in primates. While the International Health Division continued anti-mosquito activities, this discovery in 1932 put an end to hopes of eradicating yellow fever (Lowy 1997). The optimism that had led International Health Division officials to confidently predict the end of yellow fever by the mid-1920s had proved unfounded, and Fred Soper, who worked on the project, says that the ensuing period in the early 1930s "was probably this century's low point in acceptance of the eradication concept in the prevention of communicable diseases" (Soper 1965, p. 857).

Enthusiasm for international eradication programs was reborn after World War II. The postwar era was characterized by optimism about international development generally; in 1949, Harry Truman announced America's intent to use "our store of technical knowledge in order to help [the people of underdeveloped nations] realize their aspirations for a better life" (quoted in Cooper and Packard 2005, p. 129). The model, Truman's words make clear, was technical: wealthy countries could provide technical

fixes for the problems of poor countries. In the mid-50s, the promise of two of these fixes, the use of injectable penicillin against yaws and the promise of DDT to eliminate the mosquitos that carried malaria, was such that the World Health Organization mounted eradication campaigns against both yaws and malaria (Henderson 1998). In the United States in those years, many felt that the major infectious diseases would soon become a thing of the past (Colgrove 2006).

The largest and most expensive eradication effort prior to polio was the World Health Organization's malaria eradication program, launched in 1955. Two new technical fixes—DDT to kill malaria's insect vectors, and chloroquine to treat the disease—made many confident that malaria would soon be a thing of the past. Rockefeller Foundation malariologist Paul Russell wrote in *Man's Mastery of Malaria* in 1955:

> While keeping in mind the realities one can nevertheless be confident that malaria is well on its way toward oblivion. Already as a malariologist, I feel promonitory twinges of lonesomeness, and in my own organization I am now a sort of 'last survivor.' So perhaps it is fitting that I should take this backward glance at the fascinating pages of malria history. (Russell 1955, p. viii)

Health planners knew that malaria's insect vectors would ultimately become resistant to DDT, and decided on a time-limited push to eradicate malaria from the globe forever. The plan for the eradication program was widespread and intensive spraying with DDT, followed by treatment with chloroquine and targeted DDT spraying when only a few cases of malaria remained (Needham and Canning 2003). Originally, the program was to take eight years and cost a little over 500 million dollars (Brown 1997). Ultimately, the project lasted more than ten years and cost about 1.4 billion dollars, a third of the WHO's operating budget during that time (Centers for Disease Control and Prevention 1993; Seytre and Shaffer 2005). But eradication proved elusive. The WHO abandoned the project in 1969.

A number of factors led to the failure of malaria eradication. The project never reached the necessary scale in sub-Saharan Africa, where killing large numbers of mosquitos with DDT failed to have much of an effect on malaria incidence (Needham and Canning 2003). The project placed little emphasis on research—many, like Paul Russell in the quote above, considered malariology to be a science that was no longer needed—and therefore did not have sufficient information on the complexities of mosquito ecology (Brown 1997). Over time, mosquitos developed resistance to DDT. In addition, the project was designed and carried out with little regard for the preferences or participation of local populations (Packard 1997). Many people disliked DDT's side effects and resisted having their houses sprayed (Needham and Canning 2003). Thus, the promise of the technical fix did not materialize.

At about the same time as the malaria eradication campaigns, the World Health Organization also instituted a much smaller eradication program, against yaws. Yaws, a non-venereal relative of syphilis which primarily affects children, was attacked with mass campaigns of injectable penicillin (Hackett and Guthe 1956; Walker and Hay 2001). The yaws campaigns, while they did not succeed in eradicating the disease before they were largely discontinued in 1969, had dramatic effects, reducing the prevalence of yaws by 95% (Asiedu, et al. 2008). Amid growing disfavor for vertical programs, including the failure of the malaria eradication program, yaws control was largely integrated into fledgling Primary Health Care programs in the 1970s. By then, eradication of yaws was no longer a global priority. Accompanying the focus on Primary Health Care was a shift in perspective away from technical quick fixes like penicillin injections towards more general "development" goals like improved hygiene; in several areas, yaws incidence had

decreased markedly despite the absence of coordinated campaigns. In addition, yaws-like infections were identified in primates, which led many to question whether eradication of the disease was possible (Kristin Harper, letter to author, July 15, 2008).

The single successful global eradication campaign was that for smallpox. Adopted by the World Health Assembly in 1959 under Soviet pressure,[21] the smallpox campaign initially received little international support, receiving about the tenth of the funding malaria eradication received over the next five years. In the mid-60s, however, the project caught the attention of Lyndon Johnson, not least as a way to improve US-Soviet relations. Funding and support for the program increased, allowing it to become truly global in scope. Through a combination of flexible leadership, a culture of experimentation and innovation, and—at times—coercive tactics, smallpox was eradicated in 1978 (Greenough 1995; Hopkins 1983; Needham and Canning 2003; Tucker 2001). A number of factors contributed to the success of the Smallpox Eradication Program. The smallpox vaccine was a very effective tool. The leadership of the Smallpox Eradication Program was flexible enough to switch strategies in the middle of the campaign when it became clear that mass vaccination was not the most effective method (Hopkins 1989). Also, in the post-colonial context, the use of coercion was possible when smallpox eradication officials felt it was needed. Chapter 6 discusses these issues in more depth.

Currently, two major eradication programs are underway. By far the largest is the Polio Eradication Initiative. There is widespread agreement that polio will be a

[21] The 1958 World Health Assembly, where the Soviets argued in favor of smallpox eradication, was the first that the USSR had attended in about a decade. Although enthusiasm for yet another eradication program was not forthcoming, the proposal to eradicate smallpox was unanimously approved by WHO's member countries for diplomatic reasons (Tucker 2001).

technically more difficult disease to eradicate than smallpox, both because the vast majority of infections are "silent" and asymptomatic and because immunity to polio requires a large number of doses of vaccine—seven or more in currently endemic countries—separated by at least a month. There is also a project, led by the Carter Center, to eradicate guinea worm. The parasite is still endemic in nine African countries (Barry 2007). This is a significant reduction from twenty countries worldwide in 1986, but the ongoing war in Sudan, which harbors the majority of the world's cases, continues to thwart the possibility of eradication (Hopkins, et al. 2002).

The Feasibility Concept

Planners of eradication projects often speak of the capacity of these projects to succeed in terms of two factors: "technical feasibility" and "operational feasibility." Technical feasibility refers to biological factors of the pathogen and available vaccines or other control measures. Operational feasibility refers to the capacity to deliver the necessary interventions at the necessary scale to the populations where they are needed. The concept of operational feasibility is often used in a rather abstract sense, as if planners were living in a world free of politics and competing agendas. In general, it means, "If everyone followed directions and did exactly what they were supposed to, when they were supposed to do it, would this disease be eradicated?"

The success of disease elimination in one part of the world is often used as proof that eradication is both operationally and technically feasible. For example, the fact that polio was eliminated from Brazil is often cited as proof of the operational feasibility of eradicating polio worldwide. Political, economic, and other differences between Brazil

and other countries are thus sidelined. Similarly, when malaria's mosquito vector *A. gambiae* was eliminated from Brazil in 1940, it was cited as proof that malaria eradication was technically feasible, though in fact the ecologies of the malaria parasite and its vector, including the impact of DDT spraying on transmission, varied widely in different parts of the world (Coggeshall 1944; Macdonald 1965; Needham and Canning 2003; Peter Brown, personal communcation, 2008).

When failed eradication programs are remembered, the "technical" reasons for their failure, such as anopheles mosquito resistance to DDT, are often emphasized. This approach contributes to optimism about eradication, as it can be claimed that the problems a given eradication program faced were due to the specific biological and epidemiological features of the targeted disease. Thus, it appears that diseases currently targeted for eradication, with different biologies and modes of transmission, will not face similar difficulties.

Randall Packard has argued that political, economic, and cultural factors, including those affecting the global health institutions implementing eradication projects, while rarely mentioned in the public health literature, also contributed in important ways to the failure of malaria eradication. The malaria eradication program was launched in a climate of postwar optimism. The planners of malaria eradication had faith in technology and its potential, and believed that when problems arose, technical solutions to them would be found (Brown 1997; Packard 1997). However, their faith in technology and consequent lack of attention to social factors proved costly: Packard argues that a "constellation of technical, organizational, and financial obstacles hampered efforts at malaria eradication" (Packard 1997, p. 280; Packard and Brown 1997).

In the case of polio eradication, there is widespread agreement that the factors impeding eradication are organizational, not technical. As Dr. Margaret Chan, Director-General of the World Health Organization, told a meeting of donors and government representatives in Geneva, "there are no significant scientific or technical barriers to polio eradication. The problems we face are largely operational and financial" (Chan 2007a). The rhetoric of "technical feasibility" is echoed in numerous official Polio Eradication Initiative documents (e.g. World Health Organization 2001b; World Health Organization 2002; World Health Organization 2003; World Health Organization 2005b; World Health Organization 2007b). Interestingly, in concert with admissions that "operational" issues are the ones hobbling polio eradication, planners continue to insist on the "operational feasibility" of polio eradication—meaning that it is *theoretically* possible.

Perhaps because of this, despite widespread agreement that organizational barriers are paramount, the Polio Eradication Initiative has conducted little research on organizational factors, and does not discuss organizational issues in depth in its strategic plans. This is largely due to the training of people running the Initiative at the global level—virologists, epidemiologists, and doctors who see themselves as *technical* experts. A description of the nature of the organizational problems in the Polio Eradication Initiative, as well as exploration of the importance of formal discussion and planning regarding organizational and political factors and the provision of some tools for doing so, are central goals of this dissertation. Here, the important concept to note is that "feasibile" in eradication policy means *possible*; it does not necessarily mean *probable*.

Costs and Benefits

In concert with ideological arguments about eradication as the "ultimate" in public health and rhetoric of "feasibility", cost-benefit analysis is used as an argument for implementing eradication programs in preference to other types of public health programs (e.g.Barrett 2004). Ideally, after a successful eradication program, control measures which would otherwise continue indefinitely can be stopped.[22] Thus the savings to be gained post-eradication go on, at least in theory, in perpetuity. The savings that the United States alone realized as a result of the success of smallpox eradication are considerable—it recoups its $30 million investment every 26 days in saved vaccination costs--and often cited in favor of the strategy of eradication (Centers for Disease Control and Prevention 1993). Polio has become a priority disease precisely because it is, at least in theory, eradicable. A World Health Organization document explained that polio had been chosen as the theme of World Health Day 1995 because "polio is one of only a handful of diseases that can not only be prevented but eradicated as well" (World Health Organization 1995a, p. 6).

A series of cost-benefit analyses have been used to argue for polio eradication as a strategy throughout the course of the Polio Eradication Initiative (Bart, et al. 1996; Khan and Ehreth 2003; McFarland 1995; Sangrujee, et al. 2004; World Health Organization 1992). Ted Turner asserted in 2000 that "investing in polio eradication now is just good business" (World Health Organization 2000). While polio eradication has already cost more than six times original estimates, it continues to be an attractive option in cost-benefit analyses (Thompson and Tebbens 2007).

[22] In the case of polio, vaccination will need to be continued even after eradication because of ongoing circulation of vaccine viruses which could become virulent; however, it is hoped that at some point polio vaccination could cease entirely (World Health Organization 2006a).

What such analyses never take into account is the possibility that a given eradication program will fail. This is a crucial omission, both because eradication programs are extraordinarily expensive and because if eradication is not achieved, the results are not permanent. The costs of stopping disease transmission in the world's hardest-to-reach populations are significant. In the case of failure, disease will likely return to these difficult areas, and hard-won gains will be lost. Thus even experts committed to the ideal of eradication speak of the "potentially enormous cost of failure" (Dowdle 1999). Eradication is a high-risk, high-gain strategy.

Because of the enormous investment required and the specter of the loss of that investment should they fail, eradication programs, once started, are difficult to stop. Polio eradication planners, in a sort of scare tactic, often speak of polio's resurgence should eradication be abandoned as a strategy. The Global Polio Eradication Initiative's 2006 Annual Report warns, "The alternative is unacceptable: hundreds of thousands of children would again be paralyzed by this disease over the coming years, and billions of dollars would be spent on outbreak response activities, rehabilitation/treatment costs, and associated loss of economic productivity" (World Health Organization 2007a). Beyond financial issues, polio eradication leaders warn of other fallout should the project fail. Bruce Aylward, the head of the program at WHO, said, "We have an opportunity to have an incredibly motivated health force with a great success stuck under its belt move out in search of other great challenges. Imagine the death to that motivation if we are not successful" (Thigpen 2004).

The problem is that continued funding does not ensure success of the program. Continued expenditure and effort on attempts to achieve eradication could be pouring

good money (and work) after bad. Technical feasibility notwithstanding, the achievement of polio eradication is far from certain. Thus, a belief in polio eradication as a strategy is just that—a *belief*. This element of faith explains why religious language proves particularly apt in describing attitudes toward eradication. For example, one woman who had previously worked on polio eradication referred to its leaders as "true believers" and to herself as an "agnostic".[23] Similarly, donors are exhorted by WHO representatives to "have faith". The tension between eradication believers and unbelievers (or, more precisely, believers in *other* strategies) in global health shapes the policy and rhetoric of eradication programs.

A Brief History of Polio Eradication

While eradication as a strategy was "rehabilitated" by the success of smallpox eradication in 1978 (Aylward, et al. 2000, p. 1516; Horstmann 1984), that year also marked the landmark conference in Alma-Ata promoting the concept of Primary Health Care. Primary Health Care had its own cadre of true believers, not least among them Halfdan Mahler, then Director-General of WHO. Mahler reportedly said that, the success of smallpox notwithstanding, "never again would such a vertical program be promoted by the World Health Organization" (de Quadros 1997, p. 183). In the mid-1980s, the status of eradication as a strategy was in question. Even D.A. Henderson, instrumental in smallpox eradication, argued that "immunization services… are best delivered along with other services needed by children during their first year of life and by pregnant women—the persons who constitute the priority groups for primary health care services in the

[23] Similarly, workers in the Smallpox Eradication Program had, in the words of one observer, "messianic impulses" (Greenough 1995, p. 644). In the interests of making potential biases clear, I note that I am agnostic in respect to eradication.

developing world" (Henderson 1984, p. S477). Polio eradication, in contrast, necessitates enormous mass vaccination campaigns[24] focused solely on polio.[25]

Nor was there a consensus on the technical feasibility of polio eradication. While many, notably Albert Sabin, the developer of oral polio vaccine (OPV), argued that mass vaccination could lead to eradication (Sabin 1984), others pointed out that eradication could prove to be extremely difficult in the tropics. As early as 1984, it was known that more than three doses of OPV were necessary for immunity in many tropical areas (three is sufficient in the US and Europe); but exactly how many doses would be needed, and what percentage of the population would have to be vaccinated, were unclear (c.f.Chin 1984; Jordan 1984; Robbins 1984).

In 1980, Brazil, where health authorities were concerned about continuing polio epidemics despite efforts to improve routine immunization, implemented a program of two yearly mass campaigns with OPV. In Brazil, as in much of the world, many supporters of PHC were initially opposed to such efforts, which they feared would detract attention from the need to build stronger health systems. However, these campaigns drastically lowered the polio case count in Brazil[26] (Risi 1997). Brazil was not the first to carry out such campaigns[27], but the success of Brazil's program was instrumental in illustrating the feasibility of such a project in a large, poor country.

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[24] Because only 3 or 4 doses of oral polio vaccine are administered during routine immunizations, and many children in areas with poor sanitation and high temperatures require as many as 10 doses of vaccine before they are immune to polio (Grassly, et al. 2007), even routine immunization coverage of 100% might not halt transmission of the disease entirely in places like Northern India. In some areas of Pakistan.

[25] While Vitamin A supplementation and, in limited areas, other basic health interventions have been integrated with polio campaigns, they are not the focus of the campaigns and certainly do not constitute comprehensive health care.

[26] Unlike current polio campaigns in much of the world, which deliver OPV door-to-door, in Brazil parents had to bring their children to a fixed site to receive polio vaccine.

[27] Cuba and Czechoslovakia, as well as wealthy countries such as the United States, England, Japan, and sections of the Soviet Union, had achieved elimination of polio using mass campaigns.

In 1981, the Pan American Health Organization (PAHO) and the Fogarty International Center of the U.S. National Institutes of Health held a conference on polio and concluded that elimination of the disease in the Western Hemisphere was technically feasible. In 1984, Ciro de Quadros, the committed and by all accounts charismatic man who would become the leader of the polio elimination effort in the Americas, met with James Grant, then executive director of UNICEF. UNICEF, with its focus on children, was already committed to routine childhood immunization; deQuadros convinced Grant that polio could be a "banner disease" for immunizations in general (de Quadros 1997, p. 185).[28] Albert Sabin approached Rotary International, who became committed to the project of polio eradication. William Sergeant, chairman of Rotary's PolioPlus program for many years, explained:

> Until 1978, Rotary clubs acted individually in their communities. Then we decided to do something that would involve all members worldwide, something important that clubs couldn't do alone. The eradication of a disease corresponded to our will to do something together, and gradually we reached the conclusion that the disease should be polio. Our choice had a great deal to do with the fact that polio affects little people, the most innocent members of society. We still had Rotary leaders who remembered the terribly crippling effects of polio in the U.S. (Seytre and Shaffer 2005, pp. 104-105)

Rotary's involvement was key to securing both funding and political commitment for the nascent project. With Rotary's support, USAID also joined the effort. This collaboration between PAHO, UNICEF, Rotary, and USAID was the first major international partnership of UN, bilateral, and private agencies in the health sector, and a major change from the more insular way in which these agencies had traditionally worked.

The partners in the elimination effort in the Americas soon set their sights on a more ambitious goal: the global eradication of polio. A number of advocates, including Ciro de Quadros and the smallpox veteran Bill Foege, argued that "global eradication

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[28] Unlike WHO, UNICEF was enthusiastic about vertical programs (Muraskin 1998).

could be achieved as early as 1995" (Hinman, et al. 1987, p. 835). At a conference in Taillores, France, in March 1988, Halfdan Mahler, the Director-General of WHO, was convinced that the eradication of polio could strengthen routine immunization provision in particular and health services in general,[29] and agreed to support the strategy of polio eradication (Aylward, et al. 2003; de Quadros 1997).

At the World Health Assembly in May of 1998, Mahler urged member states to agree to support the goal of polio eradication:

> Of course I could add [to smallpox eradication] many more success stories that have been initiated by your WHO. Who would have thought this among you the cynics and the skeptics? When you the World Health Assembly said we should be immunizing all the world's children by 1990 against the major killers of childhood diseases, I do not think anybody believed we should get anywhere. . . Indeed, I would like to challenge you. On the basis of these results, what about having the guts to suggest that we should eradicate poliomyelitis[30] from spaceship Earth by the year 2000? I think we should, I think it is do-able and therefore there is not any excuse for not trying, and trying very hard, to do it. (Mahler 1988)

The 166 members of the World Health Assembly unanimously voted to undertake the eradication of polio as an "appropriate gift, along with the eradication of smallpox, from the twentieth to the twenty-first century" (World Health Assembly 1988). The objective was to achieve polio eradication by the year 2000.

The choice to take on eradication was indeed gutsy, as even Brazil, the country whose experience was most often cited as proof that polio eradication could be achieved, did not see its last case of polio until 1989, a year later. At the time of the World Health Assembly resolution, no long term strategy for the eradication was formulated (Miller, et al. 2006). The structure of the Global Polio Eradication Initiative was based on that developed by Ciro de Quadros for the Americas. In the Americas, De Quadros had instituted a system which included: (1) mass campaigns of oral polio vaccine held twice a

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[29] Whether or not this has actually been the case—whether polio eradication has strengthened or detracted from routine immunization coverage worldwide--is a hotly contested issue.

[30] Poliomyelitis is the full name for polio.

year at fixed points to which parents brought children under 5, (2) door-to-door "mop-up" campaigns in areas of persistent transmission, (3) labs to determine whether cases of paralysis were in fact due to polio, and (4) "technical advisory groups" of international experts to advise national governments on policy. This basic structure would continue in the global campaign throughout most of the 1990s. The strategy of polio eradication, then and now, was to achieve as high a coverage as possible in children under 5 with mass campaigns of oral polio vaccine (OPV),[31] while ideally maintaining high routine immunization coverage. The same partners in the elimination campaign in the Americas—UNICEF, Rotary, CDC, and the WHO (PAHO in the Americas)—were the "spearheading partners" of the global project. UNICEF formally committed to global polio eradication at the World Summit for Children in 1991.

Despite its unanimous adoption by the World Health Assembly and the support of a broad range of partners, global polio eradication got off to a slow start. Many in WHO were still skeptical of eradication as a strategy and of polio eradication in particular (Needham and Canning 2003). Other global priorities, including the emerging HIV/AIDS pandemic, took precedence over polio, international promotion of the eradication agenda was limited, and funding and research were not ramped up to the necessary levels (Aylward and Heymann 2005; World Health Organization 1990). As of 1993, the most highly polio-endemic countries in South Asia and sub-Saharan Africa were neither conducting mass campaigns nor surveillance for polio (Ward and Hull 1995). Pakistan,

[31] Although for limited periods of time in certain areas, other strategies have been attempted (for example, India experimented with immunizing children under 3), immunizing children under 5 has nearly always been the strategy used. OPV is preferred to injectable polio vaccine for mass campaigns because it is cheaper and can be administered by workers with minimal training.

India, and Bangladesh accounted for around 75% of worldwide polio cases in early 1994 (Davey 1997); none of them had yet implemented a single mass campaign.[32]

However, the Americas saw their last case of endemic polio in Peru in 1991, and in 1993, China began the most large-scale activities thus far, immunizing 83 million children in a single round and apparently achieving elimination by 1995[33] (Davey 1997). These events helped provide the impetus for a scaling up of polio eradication in the mid to late 1990s, a process which has only intensified since. In 1996, Nelson Mandela launched the Kick Polio Out of Africa campaign, and 28 African countries began immunization activities over the next three years. Also in 1996, the United States' contributions to polio eradication quadrupled after congressional testimony by Rotarians on the importance of polio eradication; in 1997, the United States donated $72 million to polio eradication (World Health Organization 1997). Global expenditures increased rapidly, from well under 100 million dollars in 1995 to about 200 million dollars in 1997. The scale of activities reached impressive levels fairly quickly: in 1995, 300 million children, nearly half the world's under-5 population, were immunized against polio; in 1996, the number reached 420 million; and in 2000, 600 million children received OPV. However, both in interviews with me and others (e.g. Seytre and Shaffer 2005, p. 117), polio planners concede that given the late start to eradication activities in the highest-transmission countries, the goal of eradication in 2000 was probably never realistic. In fact, all endemic countries did not begin mass campaigns until 1988, and house-to-house campaigns and adequate surveillance were not present in all parts of the world until 2000 itself (World Health Organization 2001a). In Pakistan, "intensification" of activities,

[32] Pakistan carried out its first campaign in 1994, but India did not begin eradication activities until 1996.
[33] I say "apparently" here because surveillance in China was somewhat weak at that time.

which involved the transition from fixed-point campaigns to house-to-house campaigns in which each home in the nation is visited, was not implemented until 1999.

In 2000, with transmission ongoing in around 20 countries, the end date for the Polio Eradication Initiative was pushed back to 2005, the 100th anniversary of Rotary. Ted Turner, Kofi Annan and Mia Farrow were present at the unveiling of a giant clock at the United Nations' New York Visitor's Center which counted down the seconds until 2005. As house-to-house campaigns and improved surveillance were implemented in endemic countries, the yearly budget increased again, to around 400 million dollars. Progress continued until 2003, when just 784 cases of polio were reported in 6 endemic countries (down from an estimated hundreds of thousands of cases per year in the late 1980s). In 2004, the budget increased again, to nearly 700 million dollars a year, with the aim of eliminating the last few cases. (A chart showing yearly expenditure, and the global case count, is in Appendix C.) The number of campaigns was increased to as many as eight a year in endemic areas. In Pakistan, a single nationwide campaign employs 200,000 workers to vaccinate around 30 million children; in India, 2.3 million workers vaccinate nearly 170 million children under 5 in a national campaign.

But despite frequent repetition of carefully planned campaigns on a large scale, polio transmission continues in Pakistan, India, Afghanistan, and Nigeria. The 2005 deadline was missed; each year WHO officials claim that this will be the last. The increasing case count is in part due to suspension of vaccination in parts of Nigeria in 2003 because of concerns that mass administration of OPV was part of a Western plot to harm Nigerians. By the time polio vaccination was resumed in all of Nigeria in 2004, the northern states of the country were heavily infected and the virus had spread to 14

previously polio-free countries (World Health Organization 2005a). However, poliovirus circulation has also stubbornly persisted in Afghanistan, Pakistan, and India, countries where immunization activities were never suspended.

Because of the huge amount of money necessary to carry out polio eradication in these late stages of the program, and donors' growing skepticism that polio eradication will occur, funding crises are ongoing. Even at funding levels of 700 million dollars a year, the global scale of polio eradication means that availability of funds sometimes limits the scale of eradication activities in Pakistan to the highest-risk areas of the country only.

The Culture of Optimism

Polio eradication's true believers have not given up the fight. In February 2007, WHO held a conference in Geneva to rally donors and endemic-country governments. Admitting that "these last 4 countries have been 'stuck' at 500-1500 cases/year, in the same geographic areas," WHO and its partner agencies described to donors "new approaches in each of the 4 endemic areas" (World Health Organization, et al. 2007). In Pakistan and Afghanistan, they touted "new cross-border strategies" as a new approach that would end transmission. In addition to being objectively false—Pakistan and Afghanistan have had "cross-border strategies" since 1998—this "new solution" to Pakistan's problems overlooks significant centers of ongoing transmission *not* on the border with Afghanistan. But such an extremely optimistic take on the future of polio eradication has been a hallmark of the program since its inception.

There are at least two major reasons for the persistence of polio in the four remaining endemic countries. One is epidemiological: India and Pakistan, with poor sanitation, high population density, and warm climates, are ideal for transmission of poliovirus. In addition, the number of doses of OPV needed to confer immunity in these populations is very high. In the United States, nearly all children are immune to poliovirus after 3 doses of OPV (McBean, et al. 1988). In some areas of India, in contrast, the efficacy of oral polio vaccine against one type of poliovirus is just 9% per dose (Grassly, et al. 2006).[34] This means that ten or more doses of oral polio vaccine, spaced a month apart, are necessary for population immunity in these areas. The challenge, of course, is that new babies are constantly being born who must be immunized. Babies receive protection from polio from maternal antibodies for about the first six months of life. Clearly, however, delivering ten doses of vaccine, spaced one month apart, within the span of six months is not achievable. New vaccines have recently been developed that confer immunity in fewer doses, but they have not proved to be a magic bullet in India or Pakistan.[35] The difficulty of delivering so many doses of vaccine to every child in the country is why planners in Geneva described the situation in a few states in India as "fragile" and "dangerous."

In Pakistan, polio eradication is epidemiologically a bit easier than in these areas of India. In fact, in the area of highest population density in Pakistan, the northern

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[34] The reasons for the lower efficacy of oral polio vaccine in places like India are likely due to the fact that the same factors that make poliovirus highly prevalent in these areas—a warm climate, high population density, and poor sanitation—are also favorable conditions for a range of enteroviruses which compete with vaccine virus in a child's gut. They may keep the vaccine virus from infecting the child (and triggering the immune response that would make the child immune to paralytic wild polio). In addition, diarrhea in children, common in these areas, may flush the vaccine virus out of the child's system before it has a chance to infect the child. Finally, high levels of maternal antibodies against polio in young infants may affect vaccine efficacy (Grassly, et al. 2006; Hull, et al. 1994).

[35] As will be discussed in more detail later in this dissertation, they have their own drawbacks. Specifically, they confer immunity to only one of the two types of currently circulating poliovirus.

Punjab, polio has been eliminated. However, Pakistan still presents an epidemiological challenge. In 2006, surveillance data shows that in 93% of districts in Pakistan, the median number of OPV doses that children under 5 had received was more than 7; it was more than 3 in 99% of districts.[36] Put simply, if immunity to polio in Pakistan required, as in the United States, only three doses of vaccine, poliovirus would have already been eliminated in Pakistan.

That said, the fact that polio has been eliminated from the most epidemiologically difficult areas of Pakistan illustrates that the problems the Polio Eradication Initiative faces are not purely epidemiological. They are also organizational and political. A detailed exploration of these issues is the work of other chapters in this dissertation. Here it will suffice to say that in Pakistan, a country being pulled apart at the seams by power struggles between parties as diverse as the army, political parties, lawyers' associations, the United States, and the Taliban, polio eradication is not and will not in the near future become a political priority.

Neither of these issues—difficult disease ecology in tropical countries with high population density nor the problem of political indifference—was unforeseeable in early planning for polio eradication. Both were discussed well before 1988 by many concerned parties. The fact that oral polio vaccine in India did not produce levels of immunity comparable to that in industrialized countries was observed in the 1970s and discussed in conferences prior to 1988 on the feasibility of eradication (John 1984). As discussed above, researchers knew in the mid-80s that polio eradication would be epidemiologically difficult in the tropics, although precisely how many doses of OPV would be needed to

[36] Surveillance data for Pakistan, here and elsewhere in this dissertation, was obtained directly from the National Surveillance Cell in Islamabad.

confer population immunity in, for example, India was not clearly established. Similarly, the fact that not every country in the world has embraced polio eradication as a top priority simultaneously should hardly come as a surprise to seasoned global health planers. In short, the problems that polio eradication is currently facing were predictable.

However, from 1988 forward, the threats these issues posed to the future of eradication were consistently minimized, even ignored. Instead, there was a consistently optimistic stream of rhetoric and planning which proceeded as if these difficulties did not exist. To be fair, no one knew just how serious they would become, but the rhetoric of polio eradication in the mid-90s seems willfully naïve in retrospect. For example, in 1993, planners believed that if all endemic countries conducted two mass campaigns from fixed points per year by 1995, supplemented with house-to-house "mop-up" activities twice per year in stubborn areas by 1997, polio would be eradicated by the year 2000 (Ward, et al. 1993). Worldwide, countries were not sufficiently enthused about polio eradication to adopt it on this schedule, but even if they had, current experience shows that this schedule of immunizations would have been woefully inadequate to interrupt transmission in places like India and Pakistan.

Just how optimistic planners have been over the course of polio eradication can be seen clearly in projections of the cost, scale, and duration of the project. The end date for the project, in Pakistan and globally, has always been the topic of very optimistic speculation and planning:

> 1987: "Global eradication could be achieved as early as 1995"(Hinman, et al. 1987)
>
> 1994: It was assumed polio eradication could be achieved in Pakistan in "two to three years" (CDC official, Atlanta)
>
> 1995: "Can polio be eradicated on target by the year 2000? Yes, it can." (World Health Organization 1995b)

> 1998: **"**It is evident that wild[37] poliovirus transmission worldwide can be interrupted by the end of the year 2000 or shortly thereafter, and that global eradication can be certified by the target date of 2005, provided the resources needed for both efforts are rapidly made available." (World Health Organization 1998a)
>
> 2001: "The TAG reaffirms that it is epidemiologically feasible to eradicate wild poliovirus from Pakistan by the end of 2002. The next six months are the most critical period in the effort to eradicate polio from Pakistan." (Pakistan Technical Advisory Group, Cairo)
>
> 2004: "God willing, with our collective support, we will add another chapter of glory to the history of public health and mankind by eradicating poliomyelitis this year." Muhammad Nasir Khan, Minister of Health, Pakistan (Khan 2004)
>
> 2005: "The consultation has concluded that Pakistan can stop WPV [wild poliovirus] transmission in 2005." (World Health Organization 2005c)
>
> 2006: "I am still very hopeful that an aggressive approach will stop transmission in Pakistan in 2006." (WHO official, Geneva)
>
> 2007: "The remaining period of 2007 presents an exceptional and unprecedented opportunity to interrupt wild poliovirus transmission in the last remaining transmission zones of Afghanistan and Pakistan." (Afghanistan/Pakistan Technical Advisory Group, Islamabad)

Repeated disappointments have not quelled organizational optimism. When asked about prospects for the future, a World Health Organization official told me, "A few small different things happening and we could have finished two years ago." He said that circulation of poliovirus was "tenuous" and added, "I think this is going to be a very good year for us."

Tied to optimism about the end date for polio eradication is optimism about the amount of funding necessary to see the program to completion. In 1988, it was estimated that total program costs for polio eradication would be just $150 million from 1988 to the year 2000 (World Health Organization 1988). By 1995, that estimate had risen to $800 million (Ward and Hull 1995). By 1996, with the intensification of activities, the figure was raised to $2.5 billion (World Health Organization 1996). As of late 2007, about $5 billion has already been spent on polio eradication, and if history is any indication, future expenditures will exceed the approximately $1 billion currently budgeted.

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[37] "Wild" is the term used to describe naturally circulating poliovirus, as opposed to the form of poliovirus used in the oral polio vaccine.

Nor will polio eradication be over with the last case. Circulating vaccine virus from oral polio vaccine has the potential to become virulent and cause outbreaks of paralytic polio.[38] The first such outbreak was in Hispaniola in 2000, and caused 21 cases of paralysis; subsequent outbreaks occurred on an island off Java in 2005, causing 46 cases, and in Nigeria in 2007 (Kew, et al. 2002; Pallansch and Sandhu 2006; Roberts 2007). Some immunocompromised individuals continue to excrete vaccine virus for many years after being vaccinated, and viruses in such individuals have been documented to develop virulence (Bellmunt, et al. 1999). Thus, the last case of wild polio will likely be followed by additional cases or outbreaks of polio from vaccine-derived poliovirus.

The phenomenon of optimistic projections followed by difficult realities is not unique to the Polio Eradication Initiative. In 1967, Albert Hirschman described what he called the phenomenon of the "hiding hand" in development projects. Hirschman believed that potential problems were often underestimated in the planning stages of a development project, but that when such problems arose creative solutions were usually found—solutions that in many cases resulted in superior projects. If these problems had been forseen at the start of the project, Hirschman believes, most of these projects would never have been funded, but by and large they work, and work well. While hiding costs and exaggerating benefits can lead to "disaster", Hirshman argues, it can also lead to "opportunity" (Hirschman 1967, p. 30). Hirschman believes that the Hiding Hand phenomenon happens most often in projects, like the Polio Eradication Initiative, where

[38] Oral polio vaccine (OPV) is composed of weakened live poliovirus, which can be transmitted between individuals. In general, this is an advantage of OPV, as it means that people who never received the vaccine themselves can be "vaccinated" secondhand by contracting vaccine virus from vaccinated contacts. However, in the rare cases when the weakened vaccine virus evolves into a virulent form, its transmissibility becomes a liability. Injectable polio vaccine, the type currently used in the United States, uses a killed poliovirus, and thus does not carry this risk. However, the higher cost of injectable vaccine, and the fact that it must be administered by skilled workers, make it impractical for use in global mass campaigns.

planners are "caught" by the time problems show up, in the sense of having spent large amounts of "money, time and energy and having committed their prestige" (p. 20).

Hirschman's analysis is astute, and illustrates that the culture of optimism in polio eradication is not unique to polio eradication, but is shared by a wide range of development projects. But optimism in polio eradication, and perhaps in other development projects as well, is not just a phenomenon or a technique—it is a culture. By this I mean that it optimism in polio eradication is not just a calculated method (though it is that sometimes), but is a socially shared symbol system that provides a collective language and a collective identity.

I talked to a woman who had worked with the Polio Eradication Initiative in the mid-90s, and was involved in some projections which, in retrospect, are ridiculously optimistic. This puzzled me, as she is a very smart woman. She no longer works within polio eradication, and is currently not a great optimist about its prospects. I asked her about the projections she had made. She said that the optimism was at least in part because it was "work done within the bowels of WHO—I was sitting there… you get caught up in the group and you believe the things the epidemiologists say and the technical folks say." Optimism in polio eradication is a social phenomenon.

While nearly all planners for polio eradication could be accurately described as optimistic, which partner organization people works for affects their degree of optimism. The WHO is often described as a more optimistic place than the CDC. One person who had worked with both agencies told me that at CDC "there is optimism but there's also—a kind of—reality optimism," meaning that they were not as wildly optimistic as WHO. A CDC employee said that "WHO has always erred on the side of optimism" while

CDC tends to think "realism would be better" and "doesn't like BS." Optimism in polio eradication is cultural. As this dissertation will illustrate, it has concrete implications.

Meet the Optimists (and the Pakistani Government): The Structure of the Global Polio Eradication Initiative

The cultures of CDC and WHO, like all cultures, are based in social organization and economics. An outline of the structure of the Polio Eradication Initiative is key to understanding both its trajectory and its cultures.[39] Polio eradication policy and fundraising are run by the four "spearheading partners" of the Initiative: Rotary, WHO, CDC, and UNICEF. Rotary's primary work is in raising funds, both within its membership and through the leverage it is able to exert on governments. The United States government is the single largest donor to polio eradication, having given over $1 billion thus far, in no small part because of Rotary lobbying. WHO is perhaps the central agency, responsible for providing policy and manpower for implementation of eradication campaigns. WHO is also the agency most responsible for speaking to donors about polio eradication, a fact likely not unconnected to its highly optimistic outlook. CDC gives technical support, primarily in the areas of laboratory development and surveillance. UNICEF is responsible for vaccine logistics and for "social mobilization"—advertising and activities aiming to motivate people in countries with campaigns to ensure that children are immunized. While disagreements between the four spearheading agencies do occur, in general the "partnership," and the division of labor between the agencies, works fairly well. People at one agency may at times disagree with the way

[39] Appendix A contains organizational charts illustrating the structure of the Polio Eradication Initiative at various levels.

another agency carries out its mandates, but in general it is accepted that polio eradication is too large a project for any one agency to carry out on its own, and the involvement of the other partners is seen as necessary.

While CDC and Rotary do provide funds to polio eradication, the majority of funding is provided by other donors, who are not involved in day-to-day administration of polio eradication but who ultimately determine whether the program will continue. As people at WHO headquarters in Geneva spoke about spinning information positively "for the donors," this setup does contribute to the culture of optimism. Major donors to polio eradication include USAID, the governments of the UK and Japan, the Gates Foundation, and the World Bank. Donors have, over the past five years or so, consistently been on the receiving end of the Polio Eradication Initiative's optimistic projections, and they are acutely aware that polio eradication is more difficult than they were initially led to believe. Some, like JICA (the Japanese bilateral aid agency) in Pakistan, have quietly begun shifting funds to other projects. Others, like DFID (the UK's agency) in Pakistan, say that they "have not lost faith yet" but view the Polio Eradication Initiative's projections with an increasingly skeptical eye. Thus far, rising skepticism in donor agencies seems only to have led the WHO and its partners to increase the volume of their optimistic statements; this issue will be discussed in more detail in Chapter 6.

Officially, polio eradication is a "government program" in the country where it is being carried out, and "consultants" from WHO, the CDC, or UNICEF are there to provide "technical support." There are about 45 international employees of WHO and UNICEF in Pakistan. In addition, WHO alone employs over 120 drivers and an additional 200 Pakistani nationals to provide "support" to the government in various

areas. Pakistan has the highest concentration of national and international WHO employees working on polio eradication of any country in the world.

This being the case, however, several hundred employees are hardly sufficient to vaccinate 30 million children multiple times every year. The actual *implementation* of polio eradication campaigns is the responsibility of the government of the country, and the district, where campaigns are taking place. While government officials may trot out a few optimistic phrases for the benefit of donors and high-level WHO officials, in general, employees of the Pakistani government are realists about polio eradication's prospects.

The government health department is a large and highly political bureaucracy. At the national level, it is run by the Minister of Health, a political appointee who may or may not have expertise in the area of health and who is not involved in the project on a day-to-day basis (I saw the Minister of Health only once in months of working at the national offices). The Minister's subordinate, the head of the Expanded Programme of Immunziation, is a doctor who is, at least in theory, responsible for the national administration of polio eradication activities, as well as the administration of other routine immunizations for children. The lack of practical involvement of this man and his staff in polio eradication was a source of constant frustration to WHO employees, as will be discussed in detail in Chapter 5.

At the district level, all government health activities, including polio eradication, fall under the supervision of the Executive Director of Health (EDO) of a district. The EDO is somewhat accountable to the government health department at the provicinal level, and only weakly accountable to the national level. He can, however, be fired by the nazim, the elected official, of the district in which he works. Thus the EDO is of

necessity a part of the political machine at the district level, but has only weak responsibilities to the national health office and no responsibilities at all to WHO or UNICEF. As is discussed in Chapter 4, WHO employees widely see the active participation of EDOs in polio eradication as key to the project's success, but have difficulty effectively putting pressure on those who resist their authority.

The actual vaccination of children is carried out by people who are called "volunteers" in the official literature. They are, in Pakistan, not volunteers. While the appellation "volunteer" is used to justify paying them only $2 a day for the 5 days a campaign lasts, polio eradication's ground-level workers are, with a few exceptions, impoverished and disgruntled. Some of them are employees of the health department, answerable to the EDO for their salary not just for polio but for their other work as well. The EDO, if he wishes, can put considerable pressure on these workers to do good work. However, the scale of polio eradication necessitates the hiring of a large number of workers who are not regular health department employees. These "volunteers" are displeased about their pay and not really accountable to anyone, as the worst punishment that can be meted out to them is simply not to hire them again (which, at these pay levels, few see as a huge loss). Some of them do truly excellent work. Others do not.

The culture of optimism in polio eradication is not just optimism about the success and cost of polio eradication. It is also optimism about the methods used to carry it out. The spearheading partners, as well as the donors, are part of larger cultures of global health and development that heavily value concepts of "collaboration," "participation," and "ownership" by "host" governments. These concepts inform polio eradication policy in direct ways. As polio eradication is "a government project" in

countries where it is being implemented, WHO and UNICEF are, on paper, limited to an advisory role. In countries like China, whose government embraced the project of polio eradication and had the power and authority to carry it out, this approach works. In a place like Pakistan, where other extremely pressing issues prevent polio from becoming a political priority, and where the central government has only weak control over peripheral districts and territories, it has not worked very well. But the culture of optimism, and the supremacy of collaboration as an ideal at the global level, prevent these issues from being openly discussed in policy meetings. Rather, ever more optimistic, though objectively false, statements that "the Head of Government is now directly engaged in completing polio eradication" (World Health Organization, et al. 2007) characterize rhetoric at the international level.

At the ground level, WHO employees use a number of techniques to attempt to pressure government officials into action while upholding the ideal of "collaboration" and "support." The next chapter is a description of a situation where these fictions broke down. It illustrates the reach and limits of UN power, and the limited but nonetheless significant ability of district governments to resist international mandates.

The Moving Target

Nasrin lives in a small semi-permanent thatch compound on the edge of a settled neighborhood on the outskirts of Kaifabad. I am at her house because her family is semi-nomadic, raising goats for a living, and what polio eradication planners call "mobile populations" appear to be spreading poliovirus across Pakistan and Afghanistan. I want to ask her about the immunization status of her children and her experiences with the polio immunization campaigns. The dirt floors in her thatch hut and in the adjacent courtyard, fenced off with thatch, have been vigorously swept clean; the broom-marks still show in the dirt. I sit inside Nasrin's hut on a foam pad covered with a blanket, with a roll pillow for my back. A small boy brings me a tall glass mug of very sweet tea. Nasrin and her mother-in-law, who sit and talk to me, are wearing the very full skirts that people in the Punjab associate with Afghanis. Nasrin is wearing a heavily embroidered, hand-worked shirt and a gauze shawl covered in sequins. She breastfeeds her 6-month-old as we talk, then swaddles him securely in a few pieces of cloth and a strap and places him in a white metal cradle, her only piece of furniture. She has a radio, and her family has managed to rig electricity into the hut, but there is no television.

Nasrin's mother-in-law, who is sparkling and animated, has bells braided into her hair. Despite her very limited Urdu, she rapidly and smilingly arranges a marriage between my 1-year-old son and her 2-year-old granddaughter. Nasrin's mother-in-law was born in Afghanistan, but has been in Pakistan for 25 years. She spent most of her life in Waziristan, on the Pakistani side of the border, and has been in Kaifabad for four years. Nasrin, who speaks passable Urdu though she has never been to school, estimates her husband sells an average of between two and four goats a month, for around Rs. 2,000 (about $35) apiece.

We talk about the health of Nasrin's young son and Nasrin's 11-month-old nephew, who is a small, weak child. The women have taken him repeatedly to a nearby private clinic, which they like because the doctor there speaks their native language. This doctor (who may or may not be a doctor; unlicensed practitioners flourish in Pakistan) has given the boy a number of shots and tonics, but the boy remains "weak." I ask if any of the children in the extended family have been immunized. No, Nasrin says. Why not? I ask. Was Nasrin, or someone else in the family, opposed to vaccination? No, she says. 'I don't know where they give immunizations.'

Nasrin and others in her husband's extended family allow their children to be immunized for polio whenever the vaccinators come to their house—which is not every campaign. Sometimes, they say, they see the women going door-to-door at the nearby houses, but their marginal compound is not visited.

'How much are those women paid?' asks Nasrin of the vaccinators.

I tell her: 100 rupees (about $1.70) a day.

'That's all?' Nasrin comments. 'Oh, well then obviously they're only going to work as hard as they feel like [*apnī marẓī-se kām kartehein*].'

Chapter Three

Polio Eradication in Practice

I was the arbiter of the meaning of the faint brown mark on the three-year-old's fingernail. The doorway of her house, a nearly windowless brick-and-cement building sharing three of four walls with other homes, was dark, so I asked her to come out into the bright, dusty, narrow dirt street. There, in the sunlight, I squatted down to look at her finger. Four people leaned over me to get a look: the Lady Health Worker responsible for doing door-to-door polio immunization in this area, her "Area In Charge" or immediate supervisor, the "zonal supervisor" a level above the Area In Charge, and my research assistant, Tanveer. The girl's mother, father and uncle watched from the doorway. The Area In Charge was scolding the mother.

'Why are you lying to us?' he cried. 'We vaccinated this child!'[40]

'They didn't come,' the father said to me. 'I know, because my ad agency was working on publicity for you—the dates were the 24th through the 26th, right? And there was supposed to be Vitamin A? Nobody came to our house.'

The zonal supervisor grasped the child's hand and held it up to my face. 'Look at this mark. Obviously her finger has been marked.'

I inspected the tiny, faded mark on the girl's finger. It could have been anything: a speck of nail polish, a dot of henna, or a remnant of the permanent-marker stripe that

[40] Most of the conversation quoted in this chapter took place in Urdu, or in a local dialect of Punjabi. The translations into English are my own. Throughout the dissertation, I use double quotes for direct quotes recorded at the time of speech, and single quotes for conversations reconstructed immediately after they took place. Block quotes are direct quotes.

polio workers are supposed to draw on a child's finger when they give the child polio vaccine. It was impossible to tell.

I stood up. I said that I had to mark the child as missed, since the parents said the child had not been immunized, workers had not marked the date of their visit to the house on the door with chalk as they were supposed to, and there was no clear mark on the child's finger.

The father stepped into the street and picked up his child. The Area In Charge, trying a different tack, told me he had personally visited the house multiple times but that the mother was sleeping or lazy and didn't bring her children to the door.

'Tell your wife to come to the door when people come!' he told the father. 'I was here three times and she just sleeps and sleeps!'

The father was admirably polite under this onslaught. I told the supervisors we needed to vaccinate these children, and they reluctantly pulled out the vaccine and the record sheets. The uncle brought out the girl's two young siblings and an infant cousin, all of whom were unvaccinated. A supervisor squeezed drops of vaccine into the children's mouths, and I marked their fingers with the permanent marker. Tanveer wrote the date, the number of children immunized, and my initials on the door with chalk.

The fact that four children were missed in one area meant that I would write up a report naming this a "red area," which would reflect poorly on this Lady Health Worker, these supervisors, and this district as a whole. As we left, the supervisors tried to convince me that since they visited the house repeatedly (now both were claiming to have come to the house), and since these were "sleeping people," the missed children shouldn't count against them. I thought it was odd that all this activity supposedly took

place around the house with no chalk marking, as workers are supposed to mark the door of a house with chalk on each visit. I said only that I could not falsify data.

'I am a poor man,' the Area In Charge said. 'If four children are reported missed in my area, I will lose my job. I have a family to support. Please, just mark down one or two children, not four.'

I squirmed. I suspected he was being overdramatic, but I couldn't be sure. He was certainly poor; I knew his salary was about $100 a month. The rest of his area had good work. I said again that I could not falsify data. I said I would tell the Executive Director of Health (EDO) of the district that overall his work was good, that my choice of this house to survey could just have been bad luck for him, and that this mistake certainly didn't warrant firing him.

Both supervisors were angry. 'Whatever you say, madam,' one grumbled.

Driving home, Tanveer said to me, 'Svea, if you were Pakistani, you would overlook these children for that man's sake.'

'Do you think he'll really be fired?' I asked Tanveer.

'I don't know,' he said.

The Foreign Consultant

This chapter describes my participation, in the spring of 2007, in a polio immunization campaign in a district I call Kaifabad, a city in the Punjab with a population of over 4 million. Campaigns took place over a period of about two weeks, of which about eight days were filled with frenzied activity. The actual vaccination of 30 million children in Pakistan was carried out everywhere in the country over a period of

only three days, with two additional days for "catch-up," vaccinating children not at home when the team first visited. Finally, "monitoring," or spot-checking of areas to assess vaccination coverage, occurred over three days after the campaign was completed.

The campaign described in this chapter was the fourth I was involved in. Six months previously, I had participated in my first campaign, in another district. Then, I had assumed my participant observation would be low-key, that I would follow low-level workers around, talk to some parents, and hopefully get some interviews with higher-level district health staff. However, upon arriving in the district I was immediately thrust into the role of foreign consultant, one with a great deal of supervisory responsibility, despite the fact that at that point I had been involved in polio eradication for only two months. I rode in UN Land Rovers, had tea with hospital directors and high-level government officials, was expected to report on the quality of work being done, and was addressed with a wide range of honorifics. The experience was surreal, but I learned an extraordinary amount, and I decided that rather than try to struggle against the position in which I found myself, I would take this opportunity for participant observation.

I was expected to act as a foreign consultant in all the districts I visited for several reasons. Most importantly, every other foreigner in polio eradication (and there were a lot of them in Pakistan—over 40 assigned to the country full time plus others who came and went) was in this role. These included WHO foreign consultants, based in Pakistan, whose salary and per diems amounted to $10,000 a month; "volunteers" from other countries sent by the CDC who did not receive a salary but had generous per diems; and international observers from Geneva. Foreigners arriving in districts to work on campaigns were a common phenomenon, and all of them were placed in the "foreign

consultant" role. It is natural, then, that as a foreigner with ties to the WHO in Islamabad, I was immediately expected to fill this role in every district I visited. I always attempted to be clear about my status as a student and a researcher, but in truth my practice of openly sharing my observations with people at all levels of the polio eradication hierarchy made me a de facto evaluator of the districts that I visited.

As I hope this chapter will show, this positioning yielded rich understandings of the nature of polio eradication campaigns in Pakistan. It also carried opportunities to advocate for the lowest-level, poorest-paid workers. However, it brought with it ethical dilemmas. I lost sleep over situations like the one described above, where it seemed that my actions might cause people to lose their jobs. On the other hand, I did not think that falsifying data was appropriate behavior on my part, especially given that this would mean lying to those people in Islamabad whose extraordinary openness and honesty made my work possible. Moreover, as the events described in this chapter unfolded, the ethical and practical prudence of my inclination to be as honest and open as possible at all times was reinforced.

This chapter is a narrative case study of two weeks spent working on a single polio eradication campaign. My aim is to provide the reader with a rich understanding of how polio campaigns in Pakistan work. In future chapters, I will draw on the information presented here in discussions of such issues as the uses of foreign consultants, the ways in which UN power is exerted and resisted, and the culture and hierarchy of the Pakistani government health system. In particular, I will focus on resistance by government employees as essential to understanding the difficulties the Polio Eradication Initiative faces in Pakistan.

Preparing for the Campaign

Dr. Ibrahim[41], the WHO foreign consultant assigned to the district of Kaifabad, and I had agreed to meet at his office, which the government provided for him in the district health administration building, a few days before the door-to-door polio campaign began. While I had worked in Kaifabad before, this was my first time working with Dr. Ibrahim; WHO consultants were routinely switched from district to district. I arrived before he did, and sat on a paint-splattered wooden bench in the hallway outside his padlocked metal door to wait. The floors in the hallway were grimy, though the paint on the walls was fresh enough not to have peeled, the way paint seemed to do everywhere in Kaifabad. When Dr. Ibrahim arrived, he greeted me warmly, unlocked the door, and invited me into the office, which was furnished with a large desk and some cane chairs that had seen better days. He asked me to sit and got out his laptop.

The first order of business was to meet the Executive Director of Health, called the "EDO," for the district of Kaifabad, the man responsible for overseeing all health activities in the district. I had met the EDO before, the previous time I had worked in Kaifabad, but Dr. Ibrahim felt that protocol demanded a formal meeting describing my participation in this campaign. We went across the courtyard to the EDO's office. The office was large, with wood paneling; the EDO's imposing desk was covered in green felt and decorated with a "STOP TB" plaque. As we waited for the EDO to arrive, I asked Dr. Ibrahim about his career path. He was from Sudan, and had worked in Pakistan before. His family lived in Pakistan, near Kaifabad, because life in Pakistan was better than life

[41] Names and, in a few cases, identifying information of most of the people described in this chapter have been changed.

in Sudan. Dr. Ibrahim was happy to be stationed in Kaifabad, near his family, but he mentioned that most WHO employees did not covet the Kaifabad post because the city was so large and the district so political. At the time I wondered what he meant, exactly, by political.

When the EDO arrived, we were all served tea. We made small talk in English, as Dr. Ibrahim did not speak Urdu and the EDO's English was impeccable. Dr. Ibrahim mentioned that in one area, workers had not shown up for training; the EDO said he would fire the supervisor in that area. Dr. Ibrahim said that he and I were happy to be able to "support" the campaign in Kaifabad. One of the EDO's assistants, sitting to the side of the office, said that the district was grateful for our "help." The EDO looked at his watch, we all stood up, and Dr. Ibrahim and I were escorted out of the room.

Over the next two days, I attended a number of training sessions for workers responsible for administering polio vaccine. They were being trained by their "Area In Charge", or immediate supervisor; most of the trainings were at local health posts. Trainings, which all workers had to attend each round, covered how vaccine was to be administered, and how houses, children, and record sheets were to be labeled to verify vaccination. In my role as supervisor, I was supposed to verify that trainings were in fact taking place, that all workers were in attendance, and that the information being provided was complete and accurate. Dr. Ibrahim was doing similar work, as were ten government doctors, called "Campaign Support Persons", given additional pay by WHO to work on the polio campaign.[42]

The quality of trainings varied widely. At one, a few people drinking tea on a tiny couch in an even tinier living room claimed that just minutes before my arrival, twenty

[42] A diagram of the district's supervisory structure is provided in Appendix A.

people had been in that very room, but the training had concluded quickly and all had left. At another, the Area In Charge gave a clear, interactive presentation with all of his workers present and participating—including extra workers the Area In Charge paid out of his own meager wages just in case one of the regular workers got sick or had a family emergency.

One training I attended was at an Area In Charge's small two-room home, with a double bed and a small sofa in one room and a kitchen in the other. Present were about 10 or 12 men, all railway employees, and a couple of women. The women were Lady Health Workers, employees of the government's health department; the men were so-called "volunteers," the word for anyone recruited to work on polio eradication that was not a regular employee of the Ministry of Health. Neither these men, nor any "volunteers" I encountered in Pakistan, were true volunteers; they worked on polio eradication for the money (or because, like these railway workers, it was a requirement), though they were quick to note that at $2 a day, it was hardly worth it. The women were inside the kitchen when I arrived; they came out to greet me and the men were cleared off the small couch so we women could all sit there. All of the men crowded onto the bed. The Area In Charge gave the training in this small living room, writing on the back of an old polio poster and speaking over the whirring blare of a large stand fan. None of the employees were new; most of them had participated in many trainings, and many polio campaigns, over the years. One of the men asked, "How long will we have to keep doing this?" The Area In Charge responded, "As long as they keep sending money from abroad."

At all of the trainings, Lady Health Workers and other employees of the health department who were working on the campaign were usually present, while "volunteers"

were often absent. One CSP, a young doctor, discussed this issue with me. After a training we both attended in the operating room of a health post, where all nine Lady Health Workers were present but all five "volunteers," teachers at a nearby school, were absent, the CSP said: 'The EDO doesn't lean on the education department to get the teachers to attend trainings, or even to send volunteers at all—if one school refuses to send them the rest of the schools say 'then why are we sending them?' It's really hard for this zonal supervisor to find teams[43]—I don't know where he gets them from.'

As the government's health department did not have a large enough workforce to carry out the campaigns on its own—200,000 ground-level workers were needed across Pakistan—difficulties in obtaining "volunteers" from outside the health sector were ongoing. These were exacerbated by the fact that "volunteers" were, like the Lady Health Workers working on polio eradication, only paid about $2 a day, and usually not paid at all for attending training.[44] The Lady Health Workers, and other health department employees, could be coerced into participating in polio campaigns even at low pay rates under the threat of losing their regular jobs. No such threat existed for the "volunteers."

Kaifabad was a tightly-run district, and its Lady Health Workers reported for duty. In other districts, Lady Health Workers, too, skipped trainings. Tanveer's sister-in-law was a Lady Health Worker in another district. While she worked on polio, she never attended trainings, and this round was no exception. 'Why would I go to a training when

[43] "Teams" were the common appellation for workers doing vaccination, as they always worked in pairs.
[44] In some cases, trainees received 50 cents per person from UNICEF for attending trainings, but this was not always the case, and regardless, most people concluded that spending half of their day at training was not worth the 50 cents. The procurement of the money from UNICEF, which was supposed to be for "refreshments," was a constant source of frustration. At the heart of the problem was that UNICEF did not provide the money until after the campaign was over, and determining which Area In Charges had actually provided refreshments (and thus should be reimbursed themselves) and which had not (in which case the workers should be given the money) was nearly impossible. The $2 a day provided to workers during the campaigns was from WHO, and while there was widespread dissatisfaction with the size of the remuneration, I never heard of problems in its delivery to workers.

they don't even give me the 30 rupees [50 cents] they're supposed to, and it costs me over 100 rupees to get there and back?' she asked Tanveer.

The day before the campaign actually begins, WHO and UNICEF insist that it be "inaugurated" by key government officials, as part of "social mobilization" for the district. This time, Kaifabad's inauguration was at one of the district's hospitals, and would feature the district *nazim*, the highest elected official in Kaifabad. When Tanveer and I arrived at the hospital (a little late), we were ushered through hallways packed with people waiting for medical care into the pediatric ward, where the *nazim* gave drops to 3 or 4 children while a few cameramen took pictures. No one except those of us involved in the campaign and the people who happened to be in the hospital were present. Then we were escorted to the tiled office of the hospital director. There, about fifteen people, including high-level district health officials and various *chamcha*s[45] (literally, "spoons," political flunkies that make a career out of flattering people in power), were served tea, meat patties and biscuits. When the *nazim* got up to leave, we all stood and rushed after him in what Tanveer called the "Chamcha Parade." When the *nazim* got into his white Corolla and drove off, the inauguration was over.

The Campaign

Day 1

On the first day of the campaign, I was assigned to monitor work in Amirkhan, a rural area outside the city. Tanveer and I drove there on the Grand Trunk Road, the chaotic highway choked with heavily decorated trucks that crosses the northern Punjab from Lahore to Peshawar. Our first stop was along the highway, at a "transit point" set up

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to vaccinate children boarding buses and vans. There were two teams working, one on each side of the road. They were doing truly excellent work. Each team had three men working on it; they were all wearing yellow polio bibs. One man rounded up children from families headed toward the buses while the other two vaccinated them under the shade of an army-green tent. The team members procured chairs from somewhere for Tanveer and I and placed them under the tent; they tried to purchase sodas for us, but we resisted, saying truthfully that we had just drunk some in the car on the way over. Many of the children being vaccinated in this tent were traveling with their grandfathers, who told them to open their mouths to get the drops of vaccine and Vitamin A. One little girl, whose clothing identified her as Pathan, perhaps from Afghanistan, had bleeding sores all around her mouth. She was, of necessity, vaccinated and sent on; the team members at the transit posts had neither the time, the materials, nor the training to treat her.

The "zonal supervisor," a level above the Area In Charge, had been called on his cell phones when we got to Amirkhan and soon arrived to meet us. He got into the back seat of my tiny Toyota and Tanveer turned off the Grand Trunk Road onto nearly empty rural asphalt roads headed to nearby villages. It was harvest time for wheat, and people everywhere, men, women, children, and the old, were in the fields working. It was hot, and the neatly tied bundles of wheat, propped in circular formations, glinted in the bright sunlight. The fact that this particular campaign happened to fall during the harvest made things difficult for team members, whose families needed them for harvest work and who had to find children playing in the fields with their parents.

We stopped at a "Basic Health Unit", the village primary health center, like all the others painted a dark red. I checked to make sure that routine vaccination was going on as

usual inside. Then we attempted to find the nearest team going house-to-house. This proved a challenge. We walked around, and then drove around, for over an hour; we found where the team had been, and where they had not yet been, but we could find no sign of them. The driving was very slow going over the rutted earth road; once we had to stop because a cow had brought its rope tether across the road like a roadblock. The team might have stopped for lunch somewhere, and there was no way for us to know where. I was mildly annoyed by the wild goose chase, though I did my best not to show it; the Area In Charge, who was supposed to know where his teams were, was frantic and defensive.

Finally we gave up and looked for another team, who we found right away, two plump women chalking on houses right near the paved road. I looked at their tally sheet, where they had record the number of children vaccinated in various age groups; I counted their empty and full vials of vaccine. As all supervisors are taught to do, to screen for imprecise or falsified tallying, I did a quick calculation in my head to make sure the numbers of children reported vaccinated were consistent with the amount of vaccine used. I checked to make sure that they were recording children not at home when they visited a given home, and that these children added up to at least five percent of the total children immunized. I knocked on the doors of a few nearby homes to verify that the numbers the team had chalked on the door, detailing the number of children under 5 living in the house and the number they had been able to vaccinate that day, were correct. By this, my fourth time working on a polio campaign, I had gotten pretty good at assessing the quality of work a team was doing. This team's work was meticulous and thorough. I told them that it looked excellent, and the Lady Health Worker beamed.

‘It’s a joy to be checked,’ she said, ‘because then someone sees and appreciates my work.’

We checked many more teams that day, with different supervisors, and the work was uniformly excellent. In rural areas of Kaifabad like this one, there were enough Lady Health Workers that nearly every team could have one, and teams knew the families whose homes they were visiting.

In the evening, all of the supervisors met in the office of Amirkhan’s highest health official. We gathered on chairs around the official’s large glass-topped desk crowned with several pen holders. As usual in these meetings, of the fifteen or so people present, I was the only woman and the only foreigner. I also seemed to be the person with the most power. When sodas were served in their glass bottles, I was served first. When the official called Dr. Ibrahim on the phone to update him on the day’s work, and Dr. Ibrahim asked to speak to me, someone jumped up to carry the phone and cord around the room to me so that I would not have to move. (Dr. Ibrahim told me that the work he had seen that day, in the city of Kaifabad, was “very bad.”) When the meeting, which was fairly low-key as there did not seem to have been any major problems, seemed to be over, everyone waited for me to make a move before they got up from their chairs.

Day 2

I started the day at a Basic Health Unit in the outskirts of the city. I said hello to the doctor, a youngish woman who I had met during training. She wore heavy eyeliner, sprayed the top of her hair into a puff, and was getting an MPH distance learning from the London School of Hygeine. She had a “Best Doctor of 2003, Kaifabad” plaque on her desk.

The doctor called the Area In Charge for this area, a woman who is a "Lady Health Supervisor," a higher-up in the Lady Health Worker program. It took the Lady Health Supervisor some time to arrive; after she got there, she said she had to take a taxi to the Basic Health Unit to meet me. As a woman, she could not, in Pakistan, ride on the motorbikes provided to Area in Charges. The taxi fare was half her daily wage.

We visited four teams, hers and another Area In Charge's. Walking around this newly urbanizing area in the sun was hot; the Lady Health Supervisor apologized for the smell from the open gutters in places. Most of the work was good, although one team had done the work last night, when it was cooler, and chalked today's date on the doors.

We were called back to the Basic Health Unit at the arrival of Dr. Hyder, one of the "Campaign Support Persons", a government doctor hired by WHO for work on this campaign. I knew Dr. Hyder fairly well from previous work in the district. When he arrived, he, the doctor, the Lady Health Supervisor, and I sat and drank tea in the doctor's office. The doctor's hapless patients were left to wait in line in the dusty entranceway to the Basic Health Unit. As the conversation turned to health unit politics, the doctor directed the Lady Health Supervisor brusquely to leave the room, which she did.

Dr. Hyder then asked me to spend several hours doing checking with him. I resisted; I felt it was a waste of resources to have two supervisors traveling together. But Dr. Hyder played his trump card. 'You're here to support us,' he said. And so I followed him to several areas, and then did more work on my own with Tanveer later in the afternoon.

The evening meetings in Kaifabad were very different than in outlying Amirkhan. They were large meetings of over 50 people. Everyone from Area In Charge up was in

attendance, and were supposed to speak very briefly about any problems encountered during the day. The meeting room was large, with lots of aging brown-upholstered chairs, peeling white paint, and slowly revolving ceiling fans. While I often tried to avoid a position of prominence, always being the only woman, this time I ended up sitting in front with the EDO, Dr. Ibrahim, and other high-ranking officials. We sat next to the podium with the microphone, facing everyone else.

Before the meeting started, I talked to Dr. Ahmed, a Pakistani WHO employee assigned to Kaifabad, who was sitting next to me. We discussed how the campaign was going. I said things seemed to be fine, and mentioned the team that had done the work last night but that seemed to have done a good job. Dr. Ahmed shrugged and smiled wryly. "Sometimes we have to ignore such things," he said. This was a very different reaction from Dr. Ibrahim's, who had been quite upset about the situation when I had spoken to him on the phone that morning.

That was not all that Dr. Ibrahim had been upset about. He had expressed to me, and to others, that he was concerned that workers were not getting an early enough start. Dr. Ibrahim, as always extraordinarily hardworking, had gone to an outlying area of Kaifabad in the afternoon, and was still driving back to the district headquarters when the meeting began. The meeting opened with widespread dissatisfaction with Dr. Ibrahim.

One zonal supervisor stood up and stated that at one Basic Health Unit Dr. Ibrahim visited, seven out of twelve teams had collected their supplies and were out working by 8:30 in the morning. Apparently Dr. Ibrahim was dissatisfied by this, as *all* teams had not yet arrived. "How early are they supposed to leave?" the supervisor asked angrily. Dr. Ibrahim had also objected to an Area In Charge's keeping vaccine in the

freezer at his home. But, the zonal supervisor said, he had cleared out all the food, and there was no other freezer available nearby.

The EDO and Dr. Ahmad addressed these and similar complaints. The EDO did not deny their validity, but said that people need to "compromise" with Dr. Ibrahim. Dr. Ahmad suggested using a government freezer at a nearby railway station.

"The foreigners who come to check are out to get us," someone said.

"That's not true. Madam here," said the EDO, indicating me, "said the work in Amirkhan was excellent."

In the structure of district meetings in Kaifabad, the lowest-ranking people spoke first. I spoke third to last, before only Dr. Ibrahim (who came in the middle of the meeting) and the EDO. When it was Dr. Ahmad's turn to speak, he was asked to speak in English so that Dr. Ibrahim could understand—the comprehension of the probably 40 or so people present who did not speak English being, apparently, secondary.

The EDO interjected while Dr. Ahmed was speaking to severely scold a worker that Dr. Ahmed said was "harsh" with female workers. The EDO followed up by saying, in Urdu, that he would fire people who weren't doing their jobs. "We terminated three people," he said, "and I heard about it from my wife before she would even give me my breakfast." Apparently the wife of one of the people who had been fired had come to the EDO's wife in tears. The EDO said he was unmoved. "We need people who are going to work. If people need money, then they should work."

Dr. Ahmed then continued with his talk. He mentioned Dr. Ibrahim's concerns about a block of ice, for keeping vaccine cold, that was delivered before the Basic Health

Unit opened and placed over an open sewer. Dr. Ibrahim had been worried about possible contamination.

The Area In Charge in question stood up. “Sir, it was propped outside the door.”

The EDO cut him off harshly, in English. “What the hell you are doing, *yār*.”

When it was Dr. Ibrahim’s turn to speak, he stood up and went behind the podium. He gave a long introductory talk, ending with the conclusion of the day, “sad to say it was not a good outcome.” The problems he mentioned were largely the ones discussed before his arrival: he said that teams were not starting early enough and argued that vaccine should be in temperature-controlled storage rather than a house fridge where the electricity could go out “or there could be any other mishap.”

Dr. Ibrahim talked for a long time. When he was finished, the EDO said, “We have a shortage of human resource within the city—you must acknowledge. We are managing with volunteers… we are under the great pressure.”

“The second thing,” the EDO continued, “is that you visited one health institution at 7 AM,” when realistic times to monitor are 8:30 AM to 4 PM. “There should be some compromise. I appreciate your activity, but--”

“Okay,” Dr. Ibrahim smiled. “That’s true.”

A high-level government official then stood at the podium and addressed the assembled in Urdu. “Dr. Ibrahim didn’t say you couldn’t keep vaccine in your homes,” he said, “he just said you had to have a thermometer and ice packs in case the electricity goes out. This seems to be a communications problem—complaints have gotten blown out of proportion.”

This was certainly true, I thought, and probably due to the language barrier between Dr. Ibrahim and most Area In Charges.

The official concluded the meeting with an exhortation to work hard. “Each of you should think, if—God forbid--a polio case occurs in my area, then who will be responsible?”

Day 3

Tanveer and I started the day with Dr. Hyder, who had asked my assistance in dealing with the headmaster of a refusal school, a man we had both met before. During a campaign several months previously, the Area In Charge of that area had reported a school with a large number of under-5 children that was refusing to let vaccinators enter. So Dr. Hyder and I had gone to speak with the headmaster of the school.

The school was in an aging townhouse development on the outskirts of the city, a place perhaps not for the very rich, but at least for the upwardly mobile. The school’s courtyard was a large spotless expanse with expensive playground equipment and a view over the rows of cement townhomes. In the previous campaign, Dr. Hyder and I had gone to the headmaster’s office, and were told he was with some parents; could we wait a few minutes? We watched the clock as these few minutes stretched into half an hour, then forty-five minutes, then an hour, and nearly an hour and a half had passed and Dr. Hyder and I had started to get irate when we were finally ushered into the office of the headmaster. Our anger stemmed from the fact that campaign days were very busy and we had a lot of other work to do; but probably also from the fact that within the health department, during campaign days, we were the most important people everywhere we went; everyone *else* was forced to wait for *us*.

The headmaster, an ex-military man, was a silver-haired gentleman in a suit who had apologized, fairly insincerely, for keeping us waiting as he met with parent after parent. Dr. Hyder had told him who we were and why were there.

'This is a school for the rich,' the headmaster had explained to me. '*These* parents, unlike others in Pakistan, are so worried about the health of their children that they make sure they get all the routine immunizations, so there is no need at all to do polio campaigns in the school.' My response that in Pakistan, immunity against polio required far more than the three doses of vaccine given during routine immunizations had fallen on deaf ears.

The headmaster had started to get quite angry. We should not be focusing on rich schools, he argued—we were only visiting him to "fulfill a percentage"--as these children couldn't possibly get polio. He had argued that we should be focusing on the poor, with no education, TV or radio: "they are like cattle". Exasperated, Dr. Hyder and I had said that we would have *liked* to have been focusing on the poor, but the headmaster had forced us to spend the whole morning with *him*. The headmaster had finally agreed to let our teams vaccinate in the school 'only because you sent such a high powered team, but I am not convinced.' We had left feeling stressed out and not at all victorious.

So in this campaign, several months later, the school was again a refusal, and again Dr. Hyder asked me to speak to the headmaster, this time by myself—it was clear Dr. Hyder was reluctant to go. I had been dreading the encounter with the headmaster all night, so I told Tanveer I wanted to get it done with as soon as possible in the morning. Tanveer, who had waited in the car last time we had gone in, said he wanted to come with me and see the headmaster for himself. Sometimes I got annoyed by Tanveer's company

in such meetings; at times he seemed to relish using his association with me, and by long extension with the WHO, as an opportunity to gleefully throw his weight around. But perhaps in this regard he was not very different from me, and perhaps not very different from many of the WHO's actual employees. When put in a position of power for a cause one believes is just, it is easy to become self-righteous and perhaps a little too self-important.

Tanveer and I met the Area In Charge and the team members by the school, and we headed in. Trying a new technique, I told the secretary that I was very pressed for time. I can't wait, I said, because I have work in the field, but if the headmaster wants to give me a time I will show up at that time to meet with him. No, no, the secretary said, the headmaster is here and he will not make you wait. I sat down. After thirty seconds I told the secretary again, really, I'm not prepared to wait. The secretary discreetly called the headmaster inside his office, and then he told me to go ahead and vaccinate the children. This was wonderful news. It was a great relief not to have to argue with the headmaster, and the Area In Charge and the teams were happy too, and got to work immediately. We left in a congratulatory mood.

Driving along the road away from the school, I saw clothes drying on a temporary hut in a ravine near a wide dirty river. Tanveer drove over the bridge, parked, and we walked down past a bus stand, past an area where buffaloes were tethered in makeshift stables, to the small hut where a woman sat nursing one infant, the other small boy playing on the dirt floor. There were a lot of flies. She said that no, no team had come to vaccinate her children. I wasn't surprised, because you wouldn't know this house existed

from above, where the teams are working in established neighborhoods. We called the Area In Charge and tell him. He thanked us and said he would let the team know.

Previous research I had done on vaccination coverage in Kaifabad had shown that nomads, beggars, and other people living in temporary housing were much well less covered than the general population—coverage rates in those populations were around 70%, far below the target of 95%.[46] I had been assigned to Kaifabad this campaign with the hope that I would focus on these populations, and that that attention would lead to improved coverage.

So we moved on to another area where Dr. Hyder had told us there was a tent colony. The Area In Charge met us nearby, and led the way there on his motorcycle. By this time, it was late morning, and punishingly hot. Tanveer parked in front of a store by a large and busy street. We scrambled up a dirty hill beside the street and crossed the road on a railroad trestle, stepping from tie to tie; thankfully there was a metal floor of sorts a couple of feet beneath the tracks. The settlement of ragged tents, invisible from the road, was here. The team had visited the area, and gone to each tent, but asking around, we found four children that remained unvaccinated because they were out begging with their when the team came.

One of them was a four-month-old with diarrhea. Her grandmother held her on a *chār-pā'ī* (a wood-and-rope bed), partially shaded by a tent pieced together from pieces of dirty fabric. The city trash had been beaten back but it threatened to take over their home. Flies were everywhere. The parents asked me what to do about the child's diarrhea, and for once I knew what to say. We found a few other missed children a little

[46] This study is reproduced in Appendix B.

away from the main settlement, playing near a large and dirty river, under the shade of the railroad bridge.

In the evening, Tanveer and I saw another tent population from the road; they did not actually fall in Kaifabad, but in the neighboring district, which was less well managed. By now, the evening of the third day of the campaign, every house in Pakistan was supposed to have been visited once by the teams. Day 4 and 5 of the campaign are supposed to be devoted to re-visiting houses where children were not at home on the first pass.

But these tent colonies had not been visited. Tanveer and I vaccinated 20 or 25 children under 5, some in open tents in the sun, others in half-mud half-tent structures, and a few more in more permanent homes across a river. Most of the children had scabies. One child of about a year and a half, my own son's age, had been recently horribly badly burned by a fall into a clay oven and was lying in a metal cradle. Her legs were in bandages, but her injuries were so severe that her feet were facing the wrong direction. The mother asked me what she should do and I was useless. Ask a doctor, I said. Such moments are when I think I should have chosen to go to medical school.

We went inside a house to find two children. The house was one very large cement room; it was very dark inside and it took me a few moments to adjust to the light after the bright sun outside and see the two children, one sitting on the floor amidst masses of flies and one sleeping on a bed. The boy sitting on the floor had diarrhea, the mother told me, and I said it was okay to vaccinate him nonetheless. We woke up the baby girl on the bed to vaccinate her. Because there was so little light, I didn't realize right away that the child's diarrhea was all over the floor (they couldn't have afforded

diapers)—which explained the flies. I got diarrhea on the edges of my dupa ā, the large cotton shawl I wore over my head. When we left, I asked the neighbor's daughter for water, which she brought in a jug from a large clay pot, and I rinsed my shawl.

Everyone we came across in this area was extremely friendly and helpful. They urged us to stay for tea, to have some food. But we had to get back to Kaifabad for the evening meeting. One the way back into the city, securely jammed in traffic in the gathering dusk, Tanveer and I both called the houses we were staying in. Both his house and mine had gone unvisited by the teams, our children thus far uncovered.

Day 4

In the morning, my friend Shama and I took my son for a walk around the neighborhood where we were living to see how many houses had actually been missed. We walked up and down the narrow streets, just wide enough for a subcompact car to drive through, with open gutters and a fog of flies. There was no chalking anywhere, and we yelled out to some of our neighbors, who told us nobody had come for polio. The entire sector of about 100 houses was missed, including two schools. We came across a polio team, both women, a few streets over. I was carrying my son, and when I asked the team about the coverage of this area, they were impatient with me—clearly they thought I was some random woman who was upset that her child had not been covered. 'That's not our area,' they said. As I didn't have a copy of the maps for this area, showing which team was responsible for which streets, I didn't know whether or not that was true. When I explained who I was, impatient for them to respond to my internalized self-importance, they said they would give my phone number to their Area In Charge when he came by.

Shama asked me how much these women were paid. I told her: about $2 a day. 'Well,' Shama observed, 'obviously you're not going to get good work out of somebody for that much. I could sit at home sewing and earn twice that, and I wouldn't have to be out in the sun.'

The Area In Charge found me and Shama talking to a friend out in front of the tiny corner store, with its inventory of dusty biscuit packages and Pepsi. He apologized for the area not being covered, and blamed it on the team I met, who he said was new and not sure about which areas were their responsibility. This was different from the story the zonal supervisor had given me on the phone, which was that one of the team member's mothers had suddenly became deathly ill.

Shortly after this, I left with Tanveer to work elsewhere. In the evening, Shama told me there was a great commotion when the contingent of supervisors came to the door: all of them, the zonal supervisor, the Area In Charge, the team, asking Shama where I had gone and who I had told about this area, my son crying, the boy from upstairs yelling, then the supervisors telling Shama that the whole area is now covered, the schools are covered, tell madam not to worry.

I had gone to check some tent colonies that had been poorly covered in the last campaign. Tanveer got a phone call from the zonal supervisor as we were working. Within minutes, the Area In Charge, named Fahad, showed up with a team (two young men) on his motorcycle. Obviously, word got around about where I was. There were still a lot of missed children, but Fahad assured me he would cover them in the evening with his son.

Day 5

In the morning Tanveer and I went to Malakot. Driving in, we came across a large group of Bakarwals, nomadic goat herders with hundreds of goats and a long train of horses. The children with them, wrapped in colorful blankets and secured atop bell-bedecked horses, were vaccinated; the teams working at major road intersections had done that. We had a long discussion about whether three other young children ahead in the camp (hidden somewhere in the hills) had been covered; the men had their doubts but their mother said they had been vaccinated, and when in doubt mothers are always the ones to believe. The mother also, however, remarked that she couldn't believe that some people (us) had nothing better to do than to follow other people (them) around for no reason. As we stood talking to them, a busload of Japanese tourists pulled over to the side of the road to take pictures.

Next, we stopped at a settlement of beggars beside the railroad tracks. The Area In Charge that was with us had re-checked the entire settlement this morning, and we could not find a single missed child. The settlement was filthy, the people very polite. They thanked us for coming—"May Allah keep you happy".

Driving along the road, we saw some other tents in the distance. Tanveer turned off the paved road and drove over the hard clay towards them. The tents were in a large and beautiful grove of thin tall trees, shady in the hot day. In the first clean, large tent we approached, made of a large piece of gray canvas stretched more or less horizontally over somewhat dusty handmade blankets, we found six children under 5. They were all unvaccinated; they had come this morning from a neighboring district, and before that from Amirkhan. From this tent we could see another through the trees (5 uncovered children); and from that another (7 uncovered children); and from that another (6), and

from that some more (those ahead had all been covered, having come from Kaifabad). We vaccinated the children, and marked the tents with chalk. The work was pleasant, the area beautiful; the children played in a stream that ran through the grove. To find so many missed children in one place was worrisome. The zonal supervisor with us assured us repeatedly that he undoubtedly *would* have found and covered those children this morning; he also pointed out several times that since these children had just arrived this morning, no workers in *Malakot* had been negligent. He was right; but this was part of the reason why nomads so often slipped through the cracks, and why polio circulation may sometimes be sustained by nomadic populations.

We went back to Kaifabad for a meeting in the afternoon. Dr. Ibrahim headed the meeting; Dr. Ahmed, me, and all of the Campaign Support Persons, including Dr. Hyder, were there. The goal of the meeting was to decide who would be checking which areas during Post Campaign Monitoring.

During the meeting, Dr. Ibrahim said he was very dissatisfied with the campaign thus far. When I mentioned that I thought work in one area of Amirkhan was good, DIS said he found a huge population of nomads there with over 150 children that was completely uncovered. The Campaign Support Persons said to me quietly that the area was due to be covered that night; DIS had, they thought, made a huge deal out of nothing. When Dr. Ibrahim left the room, a few of them discussed what they felt was his over-reaction to minor issues. Dr. Ahmed attempted to do damage control.

'You have to understand,' Dr. Ahmed said, 'that if there's a case, people will blame him for it. So that's why he reacts the way he does to problems.'

One Campaign Support Person was late to the meeting because he was at the police station; one of the teams had, he said, been "beaten up", and their cell phone smashed, by a family angry at the repeated visiting of their house to recheck. Dr. Ibrahim asked the Campaign Support Person, "Were you really working or were you at home?"

The Campaign Support Person was annoyed. "I was at home sleeping," he shot back. "Of course I was working!" He shook his head and looked with exasperation at the other Campaign Support Persons.

Dr. Ibrahim asked how many Union Councils (an administrative division) could reasonably be checked by one person during Post Campaign Monitoring. In the previous round, we had all monitored four per day. I said that I thought that while one person could check four Union Councils per day in the city of Kaifabad, three was a more reasonable number in rural areas, where driving long distances was necessary. This sentiment was widely echoed by the Campaign Support Persons, and Dr. Ibrahim agreed that quality was more important than quantity. On the wings of this success, Dr. Hyder tried unsuccessfully to get Dr. Ibrahim to lower the workload further, and to give permission to take off a national holiday that fell during the monitoring days.

Dr. Ibrahim decided in the course of the meeting to bring in four additional monitors from neighboring provinces because, he said, he was concerned about campaign quality in so many areas. No opposition was voiced to this idea. I knew Dr. Ibrahim wanted monitors from *outside* the district because he did not trust that the Campaign Support Persons, who were government employees most of the time, were immune from pressure to falsify data. That they *did*, in fact, falsify data was almost unquestionable; I had seen results from the previous round, where several had claimed to have checked

over 600 children and not found a single one unvaccinated. As the odd child would always be missed even in the very best areas, such results were impossible. Dr. Ibrahim hoped that monitors from other districts could resist political pressure and deliver more accurate results.

For this reason, Dr. Ibrahim assigned the areas where he was most concerned about the quality of work to the monitors he trusted: himself, me, and Dr. Ahmed. The negotiation of who would check where was extraordinarily inefficient, and the meeting dragged on for three hours. Afterwards, there was a meeting of the rest of the staff, including Area In Charges, zonal supervisors, and the EDO. I opted not to attend; it was already 5:30, I knew I had three very long days ahead, and my young son got upset when I was not home on time in the evenings. However, if I'd known how interesting the meeting would prove to be, I would have gone.

Post Campaign Monitoring

Day 1

In the morning, Tanveer and I drove to the area of the city where our assigned Union Councils were located. We called the Area In Charge of the first Union Council, who was supposed to meet us and show us around the area. He was surprised that we had come that day, and protested that we weren't supposed to be there. Tanveer maneuvered our car into a tiny spot between an ice-cream machine and a school van, half on the grimy sidewalk littered with plastic bags, and half on the street clogged with cars, bicycles, motorcycle rickshaws, and school children. The stores on the street were opening, rolling

up their metal shutters, and Tanveer and I sat in the car and drank tea from a nearby vendor from chipped china cups.

When the Area In Charge arrived half an hour later, he said that teams were still working in two of the Union Councils I was supposed to check that day. He told me to check them some other day. I was annoyed that teams were still working, three days after they were supposed to have covered all of their areas. I said, truthfully, that I didn't have free time on other days to come back and check these two Union Councils, a good 4-5 hours of work. The AIC left for a moment, and returned with a phone call for me on his cell phone from a high-level government official. The official told me that on the order of the EDO, I was not allowed to check in this area of of Kaifabad today.

I was surprised by the nature of this request; I had never heard of monitors not being permitted to do their jobs. I called Dr. Ibrahim. He said that the moratorium on monitoring certain areas had been decided at last night's meeting, but by the time the meeting concluded it had been late, he had been upset, and he had forgotten to call and tell me. After our meeting in the afternoon, several Campaign Support Persons—and Dr. Ibrahim was sure Dr. Hyder was one of them--had told the EDO that Dr. Ibrahim was bringing in external monitors without the EDO's permission. They apparently framed this as Dr. Ibrahim sneaking around under the EDO's nose. Dr. Ibrahim said that yesterday he had been trying to contact the EDO all day regarding additional external monitors, but that the EDO was unavailable in a meeting, and then not answering his phone. Dr. Ibrahim said that Dr. Ahmed supported his version of events.

. At the evening meeting, apparently the EDO was upset, and other high-level officials were angry, categorically refusing to accept any external monitors. This was,

from my perspective, a surprising development. At a recent meeting in Islamabad with representatives from Geneva present, external monitors were stressed by both government and WHO officials as a very important aspect of good campaigns. The problem discussed at the meeting was the *procurement* of such monitors, certainly not the *acceptance* of them.

Dr. Ibrahim said that, at the meeting, he had outlined the reasons for requesting external monitors. He was concerned about the quality of the campaign: he had seen many substandard areas during his work over a few days, and he had seen only a small fraction of the total area of the district. As the existing monitors could only monitor about half of Kaifabad's Union Councils, he wanted to bring in external monitors to evaluate more areas. This would presumably turn up more areas that had been poorly covered, and thus could be re-covered. He capped this by saying he was very concerned that with the current campaign quality, there could be a polio case in the district, which would be disastrous for the EDO.

The EDO, who was trying to broker a compromise, said that two of the four external monitors would be allowed to work, but that he should be the one to choose the external monitors. This was not acceptable to Dr. Ibrahim, who said he would bring this issue to the attention of provincial officials.

Dr. Ibrahim had told both WHO and government officials at the provincial level about this, and he said that they were "very upset" and that they felt that such behavior was "unacceptable." They told Dr. Ibrahim that if the district administration was going to make such unreasonable requests, they had to put them in writing, so the province could address the issue. However, the EDO had evaded putting his decision in writing, saying

he would do it later. Dr. Ibrahim also wrote his own letter describing the situation, which I later read. It described the very bare facts without any breath of suggestion that there was a conflict.

At any rate, a fallout of the whole debacle was that the EDO said that, since it appeared there were so many problems in parts of the city, he would give workers in those areas an extra day to work on their vaccination before starting monitoring. Thus I had been asked to leave the area I had been assigned to.

Dr. Ibrahim then asked me if I knew anyone that could go with him as an interpreter—someone from outside the polio program. He just needed, he said, someone to tell him what answers parents were giving to his questions, otherwise even if children were unvaccinated, the Area In Charges present could cover it up. Dr. Ibrahim planned to pay the person something reasonable out of his own pocket (which given his extraordinarily high salary was not a hardship). I suggested someone, we set up a meeting, and we all set off.

Before we even got to the area we are supposed to check, we got a phone call from the Area In Charge, Fahad. I'd met him before, and I liked him.

'Are you really coming today?' he asked. 'We're not ready—most of the Area In Charges are not here.'

I told him he could just show me his area first. Later, I learned that all of the workers from this area had been dispatched to cover other areas of the city.

First, I checked a tent colony that had been poorly covered the other day, a large beggar's colony in a dusty clearing between homes under construction and next to a mountain of garbage. Fahad had, as he told me he would, done vaccinations in the

evening with his son, and I was not able to find an uncovered child. The problem came later, in a street of middle-class homes; we stopped at a house chalked "0," for no children, but I saw children upstairs and called up. A woman came to the balcony. She had three young children, all uncovered. We vaccinated them; evidently she was not there when the team came. Because there are three children, the area qualified as a "red area," and I would write up a report.

As we walked away from the area, Fahad said, 'Can you do something? Just make those children fewer than three, because I'm going to get into a lot of trouble with the EDO.'

'I can't,' I said.

'If you hadn't done checking today, and I'd had an extra day,' Fahad said, 'I would have covered those children.'

A little later, we come across a house, chalked "R" for refusal, inhabited by an undoubtedly strange man who said that his child had not been immunized, but then disappeared inside the house, not to return. As we were standing in front of the house, fruitlessly calling through the doorway, the man's ten-year-old daughter passed us on her way in. Tanveer asked her to bring her young sibling out to be immunized, and she did. Her father always acted like this, she said. And I marked another missed child in Fahad's area.

As we got back into the car, Fahad said, 'Please do something about all these missed children. I have three young children; we rent our flat; I can't afford to have my pay stopped for months, and it will be devastating for my family if I am fired. The EDO

said that this time, anyone with more than 2 missed children in monitoring could expect to lose their jobs.'

When Fahad leaves, the zonal supervisor started in. 'Fahad is a great worker; I'd hate to lose him.'

Day 2

In the morning, Tanveer and I set out for Sabazkot, having now received permission to go there. On the road there I got a phone call from Dr. Ibrahim. He asked where I had worked yesterday. I replied that I had worked where he had directed me to, in the other area of the city, not where I had originally been assigned. Dr. Ibrahim was satisfied with this response.

The previous day, the EDO had received 5 letters of complaint about me, stating that I was performing monitoring in parts of the city against the EDO's orders. The EDO referred these letters to another official, who that morning called in Dr. Ibrahim and Dr. Ahmed. After they called me, they told the official that while I had gone to the area where monitoring was banned, I had been called back and had done no work there. Both Dr. Ibrahim and Dr. Ahmed apologized for forgetting to call and tell me before I drove out there.

Dr. Ibrahim told me later that I shouldn't worry about this incident, as the official was "laughing" about it. Dr. Ibrahim said he tried to press the official to take action against the people who had written the letters with false information. However, Dr. Ibrahim said, the official didn't seem concerned, and just put the letters to the side.

When Tanveer and I arrived at the health offices in Sabazkot, there was no one there but the night guard and a peon (the lowest-level employee), both very friendly. We

tried to call one of the Area In Charges, Javaria, a Lady Health Supervisor, but her phone was off. The zonal supervisor was also unreachable. There were no plans showing who was to vaccinate which area and no vaccines in the health office. The peon insisted that he knew the area, and that we could get vaccines and plans at the hospital. So we took him with us. At the hospital, there were no vaccines and no plans. Finally, having procured vaccine and a cooler from another department, we chipped some ice off the side of a freezer and set off.

The peon was also a team member, and he insisted that we check his area. As I expected based on his insistence, I didn't find a missed child. But there was a problem with recording the data, because he didn't know what Union Council he worked in. Or where the other teams' areas were, or what Union Councils they worked in. As we had no written plans, doing further monitoring was proving difficult. But we moved down the mountain on the steep, zigzagging city streets and found chalking indicating another teams' area. We found a missed child there. Shortly after that, Javaria and the zonal supervisor appeared. They were incredulous that a missed child could exist in this area. They went and interrogated the mother themselves, and evidently she told them the same thing she told me. Javaria mumbled something to the effect that the mother must be confused about her dates.

I checked a few other areas in the villages below Sabazkot, all of which are basically fine; and then I move on to the huge vacation houses of the rich, below the town. We came across one family who didn't come to huge gate of their grand second home when we rang the doorbell. We could clearly see the father speaking on his cell phone on the balcony. After a long period of ignoring us, he finally responded to our

repeated questions, responding that they arrived from Kaifabad yesterday, and that his child had not been immunized. I asked him to bring the child down to be immunized, and he went inside, but nobody reappeared. Ringing the doorbell was fruitless.

As we stood outside hoping for someone to come out, the zonal supervisor aggressively tried to convince me that I should not record this child as missed, since it is from the city of Kaifabad and was not in Sabazkot during the campaign. My explanations that this is a national program and we need to get national coverage rates fell on deaf ears, and the zonal supervisor became louder and louder and more and more insistent.

Ultimately an older sibling of the child came out of the house and said that they had their child vaccinated by a private doctor during the last few days. I didn't believe this; it's a favorite excuse of the elite to prevent placing their children in what they see as our questionable and lower-class hands, a way to refuse without being seen as refusing. However, since my instructions were to determine coverage by parental history, I accepted the child as covered.

As soon as the zonal heard this, he started hounding me: 'Did you write it down? Write down that the child is covered!'

Pushed over the edge, I snapped back angrily: 'When the child was not immunized, you say it shouldn't count against you, and now that she's immunized, you tell me to write it down?'

The day passed more or less in this manner, though I found almost no missed children. Several times I requested to be taken to a given area only to find myself taken somewhere else. At one point, I accompanied a team member to a home.

‘Have the children in your house been immunized?’ the team member asked an old man lying on a wooden bed in the sun. The man was ancient, and he had difficulty responding. ‘God knows’, he replied wearily.

The team member reported to me crisply, ‘There are two children in the house, and they’ve been immunized.’

Obviously he thought I wouldn’t be able to understand the man. Again I was pushed to snap: ‘You got all that out of “God knows”?’

The team member showed no signs of embarrassment. ‘Well,’ he said, ‘I immunized them myself.’

‘If I had wanted to ask YOU,’ I shot back, churlish, ‘I wouldn’t have bothered climbing halfway down this mountain.’

But the work was, in fact, good; we found only one missed child in two Union Councils. In the late afternoon, we moved on to our third Union Council of the day, a cluster of villages below the town of Sabazkot. The houses were spaced far apart in mountainous terrain; checking took a long time. In the first area we checked, we found a missed child, the daughter of an army major.

Although they were supposed to, no one with us was carrying any vaccine; we had given our jerry-rigged vaccine carrier to the zonal supervisor, who was in another vehicle and had not yet appeared. We asked a team member to wait for the zonal supervisor and then vaccinate this child, while we went on ahead to do additional checking; it was getting late.

Tanveer, the Area In Charge, and I drove to the next village. Before we reached it, we had to stop the car as the paved road became too narrow even for my tiny

subcompact. We walked in the beautiful warm spring evening through a green mountain village blanketed with tiny white flowers. It was gorgeous. Everyone asked us to stop for tea. The Area In Charge knew everyone, how many children they had, their names. He was softspoken, and I liked him. We found no missed children, and headed back to meet the zonal supervisor.

We saw the zonal's car as we were driving back, and I got out while Tanveer went to the house of the missed child to make sure she had been covered. I asked the zonal supervisor if he had covered the child. Oh, yes, he said.

Tanveer came back. 'I just talked to the major,' he almost yelled. 'He's been waiting for the past hour and nobody has come! Don't lie to us!'

Being caught out did not affect the zonal supervisor's composure in the least. 'Well, we'll go and vaccinate her right now,' he said.

'No,' Tanveer said, 'we don't trust you anymore, so give us the vaccine and we'll do it ourselves.'

'Oh, well, actually, we don't have any vaccine,' the zonal supervisor replied. 'We left it up in Sabazkot. We'll do it tomorrow.'

This was unsatisfying. The zonal supervisor called the Lady Health Worker who lived in the area and told her to go vaccinate the child "right now", but I was not at all confident that *she* had any vaccine. However, it was much too late to go back to Sabazkot and get vaccine, and we had more areas to check before night fell. As we finished our work, in another beautiful mountain village in the gathering dark, the Area In Charge tried to convince me that since he visited the house of the missed child three times, (a

claim for which there was no corroborating evidence in the chalking), I should just go ahead and not mark down the child.

On the way back to Kaifabad in the dark, the peon we picked up in the morning (who was still with us) and the afternoon's Area In Charge insisted that we stop for tea and pakoras at the roadside stop in their village. Tanveer and I tried to resist—I was eager to get back to my son—but it was fruitless. Over the pakoras, the peon mentioned that Dr. Ibrahim had done checking in his area and had found him carrying around vaccine in a plastic bag. I had heard about this incident from Dr. Ibrahim, so I knew that he had indeed been very upset. The peon said he was worried about his job, and he hoped a good word from me on his behalf will help him. I replied that the issue was not so much with him as with the supervisor who never got him a vaccine carrier in the first place; and I told the peon that as Dr. Ibrahim was senior to me, my word was unlikely to carry much weight in this situation. But the peon was adamant that I put in a good word for him. He didn't seem to consider that after his active involvement in lying in the business about the unvaccinated child, I might not exactly be in a mood to.

When I finally got home, I felt a bit as if I had spent the day in a tank of sharks. As I remarked to Tanveer, the particularly frustrating thing was that the coverage in Sabazkot was actually very good (even if many of the children we saw were immunized only the day before, on the extra day given Sabazkot by the EDO). But I felt as if I had been manhandled for twelve hours, exhausted from being on the defensive all day.

Day 3

Tanveer and I headed back to the area of the city we had been supposed to check on the first day of monitoring. On our way there, we called the Area In Charge who had stopped us from checking the other day.

When he picked up the phone, he said, 'Oh, no, sorry, you can't do checking today. It's a national holiday.'

It was, in fact, a national holiday. However, the provincial office had placed a moratorium on holidays during polio campaigns. 'There are no holidays in the world of polio,' I said.

'But you were supposed to check the other area of the city and Sabazkot first,' the Area In Charge protested.

I told him I had.

'When?' he asked incredulously.

'Over the past two days,' I replied.

'Oh,' he said, apparently surprised. 'You were working the last two days?'

However, he came about half an hour later, with vaccine in his hand, nice to see after Sabazkot. We went to the first area I planned to check, a small tent colony. The children in the tents were covered, but we found several missed children in nearby homes. Simply vaccinating the children in peace was not a possibility.

'Who knows why the mother decided to come out NOW!' lamented the Lady Health Worker, a previously pleasant, petite woman who came out to meet us when we arrived. 'I went to their house multiple times! She never came out before.'

But the real storm came in the next area we checked, recently constructed poor brick houses placed almost randomly in a sea of dust baked by the hot sun. I checked a

few houses with the Area In Charge. Tanveer was not with us, because he was trying to find a shady place to park the car, a challenge in this area with no trees of any kind. At the third house I found a child who the mother insisted was not vaccinated. The child had spent some time at his grandmother's house, the mother said, but she was sure he was not vaccinated there. I checked the child's hand; there was no finger marking.

During this discussion the Area In Charge and the Lady Health Worker, a plump woman, insisted repeatedly that the child was covered at his grandmother's. The Area In Charge could not possibly know this.

'Why isn't the finger marked, then?' I asked.

'The markers ran out of ink.'

'Why didn't you get another marker?'

'We're not provided with any extra markers. And the markers *all* ran out of ink on the first day.'

I wasn't in a mood to believe that, and regardless I had to mark the child as missed, based on parental report. I felt battered by the onslaught of argument by the Area In Charge and the Lady Health Worker, and peeved that there was no finger marking anywhere in this area, as that would have resolved the matter.

We were standing in the dusty street in this pool of ill feeling when Tanveer walked up. 'Did you get the missed children in that house?' he asked.

Tanveer had been casually asking people about the vaccination status of people's children, just as a double-check, as he walked towards us. At one of the houses I had already checked, Tanveer found several children of guests whose mother said they had not been vaccinated. I had not seen the children when I had been at the door of the house,

and the mother I spoke to had not mentioned that she had any guests. I headed back to the house to speak to the mother again.

Now the Area In Charge was in full swing. He was literally screaming at Tanveer, 'Who is this man, a DRIVER, to go back over the houses that madam already checked? What are you trying to do? This is against the rules of checking!'

I tried to explain as patiently as possible (though it was wearing extremely thin) that I was supposed to get information on every child in every household. 'If I missed some by mistake,' I said, 'I am thankful to Tanveer for helping out.'

The Area In Charge and the Lady Health Worker continued the onslaught, the Area In Charge telling me that according to checking is *supposed* to be carried out, I was not allowed to go back into houses I have already checked. I was certainly not aware of any such rule.

'Just let me speak to the woman. Please,' I said. I pressed my fingers against my head. When I went inside the house to speak to her, she said that her child was given drops last week; she thought, she said, we were asking about *today*. Alternately, since the screaming match taking place in front of her house would definitely have been audible to her, she may have decided that it was better to say her children had been vaccinated than to get involved in *this* mess.

As we left the house, the Lady Health Worker, in hearing distance of several Pathan women who were in the road, started in on Pathans. 'They're so stupid,' she said. 'If they were vaccinated last week, they'll say no, we weren't vaccinated, because they want you to vaccinate them again. These Pathans, they don't understand anything.'

I found one final child missed in that Union Council, in fairly large house that was missed entirely by the team. The mother was knowledgeable. 'They were supposed to be here on the 24th, 25th, and 26th, right? We were waiting,' she said.

There was no chalking, so the fault of the team was pretty clear cut. For once, we vaccinated the child without a huge fight or any screaming. As we walked away, I stepped in mud up to my ankle, and the family allowed me to use their bathroom to get the gunk off my foot.

We moved on to another Union Council, leaving the Area In Charge that had been with us thus far to enjoy his holiday. The Area In Charge of the next Union Council was a softspoken man named Javed who lived in another district. He had never worked on a polio campaign before. When I asked why such a difficult Union Council, without a single Lady Health Worker, would be assigned to someone who didn't know the area, lived 50-60 kilometers away, and had never worked on polio, Javed sighed.

Javed worked in a health post in Amirkhan near the border with the district where he lived. He came into Kaifabad once to inquire about some back pay that was due him. There, planning for the polio rounds was going on. The Area In Charge assigned to this Union Council had "refused" to work, and so Javed was given a mandatory assignment to do duty here. He said he worked very hard on this polio campaign, not because he was interested in the work, but because he was terrified: he was told if missed children were found he would lose his job. Javed had worked for the health department for 24 years, and had just one year left before retirement. For him, assignment to this polio round was a giant and dangerous liability.

On Day 5 of the campaign, when huge parts of his Union Council were still uncovered, he had contacted someone higher up to get additional teams to help him to cover it. That was why we hadn't been allowed to do checking on Sunday. Javed said he was fed up with polio. He said, 'The zonal supervisor doesn't do anything. He doesn't actually do any checking. And he expects us to feed him lunch every day.'

Amazingly, I found only 2 missed children in the 4 clusters I took in this Union Council. Of course Javed asked me to hide them. He also tried to bargain with me about which areas I would check, arguing that he should be the one to choose them. This was unsuccessful. The area was truly a difficult one, spread out, with no good roads (my car got some good whacks which would later require fixing), and all of it baking in the treeless sunshine.

Later in the day we moved on to the other Union Councils we were supposed to check that day. We could not reach anyone by phone: no Area In Charges, no zonal supervisors. But the maps of the area were good, so Tanveer and I decided to work by ourselves. Rather than being difficult, it was a pleasure and a luxury. When we found missed children, we simply marked them down and vaccinated them. There was no screaming, no argument, no fervent appeals that people would lose their jobs.

In fact, at this point Tanveer and I took a perverse pleasure in every missed child we found. In retrospect, this attitude was perhaps unpardonable, but we had truly been driven over the edge. 'I think I smell missed children over here,' Tanveer would say, leading us gleefully down small dark alleyways. We joked that just to balance out all the falsified positive reports, we would create a falsified negative report of, say, 22% coverage in these Union Councils.

Day 4

In the morning, I went to the district health office to turn in my monitoring results to Dr. Ibrahim. Perhaps because of all the argument, I felt uneasy about reporting my monitoring results honestly. At the least, if people were fired based on my honest results, and others were not fired based on the falsified glowing reports of the Campaign Support Persons, it would be unfair. Further, in any sampling technique like the one we were using for monitoring, some people would have poor results based on chance. I brought up my worries with Dr. Ibrahim, and asked if he could bring these questions up with the EDO. Dr. Ibrahim did not seem as concerned as I was about people being fired. He opined that this round had a lot of problems, and that there would have to be some accountability.

As Tanveer and I were pulling out of the parking lot after our meeting with Dr. Ibrahim, we saw the Campaign Support Person for the part of the city where Fahad worked. He and I were on good terms. We spoke in English. He said hello and asked about the results of my checking in the city, specifically about Fahad's area.

'They were guest children in that house of Fahad's that you checked,' he said. 'So it's unfair to count them against Fahad. He is a great worker and he's going to lose his job.'

'No,' I replied, 'they weren't guest children. They lived there.' (Regardless of whether they were guests or not, I was supposed to mark them down.) 'However,' I said, 'I agree that it would be unfair to fire someone based on monitoring results alone, especially as some people had extra days and others did not'--

‘Yes, yes, it would be unfair,’ the Campaign Support Person interjected eagerly. ‘If he’d had extra time those children would surely have been covered.’

‘I voiced those worries to Dr. Ibrahim,’ I said, ‘when I gave him my results.’

‘You already turned in your results?’ the Campaign Support Person said, clearly worried and disappointed.

‘Yes,’ I said.

‘And you counted those children against Fahad?’

‘Yes.’

‘Madam,’ he said, ‘this is very bad. Because of this action of yours, Fahad is going to lose his job. If you had not taken this action, we would have kept one of our best workers.’

After the Campaign

The next day I got a call from Dr. Ibrahim. He was , he said, worried and frustrated after a long day of “bargaining” with the EDO. The EDO had agreed to 4 external monitors, but was still insisting that two of them be chosen by the district. As these two would surely report 100% coverage, there was little added value to having them.

There was also a firestorm of complaint about how Dr. Ibrahim and I had done post-campaign monitoring. There were allegations that Dr. Ibrahim had visited 40-50 houses in each area he checked, instead of the requisite seven. The fact that this would have been humanly impossible in the time available was, I supposed, beside the point. There was also a complaint that I had not always checked houses “in a row,” instead

taking houses from both sides of a given street—a very strange complaint as which side of the street one chose to check should make no difference at all.

Tanveer brightened visibly on hearing this last allegation. ‘I know where that’s coming from!’ he said. ‘Remember that Area In Charge who was yelling at me about being a driver? He was complaining about that to me.’

Then there were complaints about my status as a student: Where did she come from? Who gave her permission to work here? Why should we accept her monitoring results? What business does this Tanveer person have working with her? As this was my second time working in Kaifabad, I had neglected to procure the usual letter from the government’s head of immunization in Islamabad. Getting a signature from him always required days and multiple visits, and it hadn’t seemed worth the headache. Dr. Ibrahim said that he told the EDO that I was introduced prior to the campaign, that the EDO was encouraging, and that if the district had required additional documentation that would have been the time to request it.

I discussed this issue with the Islamabad office. They felt that getting a letter now would cause more trouble than it was worth. If the district didn’t want to accept my results, they pointed out, I could share my observations with them “informally.” They were surprised that the district was raising such a hue and cry about my results when I was reporting 96% coverage—a perfectly acceptable number. But, they said, this was not the first time such problems had arisen in Kaifabad. One person noted that a high-ranking official in Kaifabad was “one of the best in the Punjab,” but also “head of the mafia.”

Dr. Ibrahim’s driver, a WHO employee, was accused of bringing Dr. Ibrahim to the most difficult, uncovered areas on purpose—which was, in fact, what monitors were

instructed to do. There was also a complaint by some Campaign Support Persons that Dr. Ibrahim wouldn't "let" them check four Union Councils per day in rural areas. This was very surprising, as while doing only three Union Councils in rural areas had initially been my idea, it was enthusiastically endorsed by all Campaign Support Persons present—who had, in fact, tried to make additional cuts in their own workloads.

As Dr. Ibrahim observed, none of the complaints were substantive. It seemed to me that all of them had the same goal: to punish Dr. Ibrahim for being too proactive during the campaign and to prevent him from working in Kaifabad in the future. I felt bad for Dr. Ibrahim because, though he may have come on too strong, he worked very hard, and absolutely in good faith.

I'm not exactly sure how, but ultimately the four external monitors that Dr. Ibrahim originally wanted end up being assigned to the district after all. Combined with the other post-campaign monitoring results, the overall official coverage number for the district was 98% of all children under 5. This was because 8 or 9 of the Campaign Support Persons had reported coverages of 100% or 99.9%, practically impossible. Realistic reports came from Dr. Ibrahim, Dr. Ahmed, a couple of Campaign Support Persons, and some (thought not all) of the external monitors. Coverage of 98% is very good. However, the district leadership remained upset; they coveted their usual 99% coverage rate. The WHO official who received the numbers shrugged his shoulders. 'I don't care,' he said. 'Anything above 95 is fine as far as I am concerned.'

I mentioned to the official my feeling that this brouhaha may have been a way of getting back at Dr. Ibrahim for finding too many problems.

The official nodded. He said that for that reason, foreign consultants are purposely assigned to new districts every 5 months or so. He mentioned that people assigned to a new district were likely to proactively go after problems, but after some time in a given district, the foreign consultants often felt accountable for the work there, and began defending the quality of the work rather than finding problems.

Epilogue

About a month later, Tanveer told me he had seen Fahad. 'He was carrying a vaccine carrier in his area,' he said.

'So he wasn't fired?' I asked.

'Nope. Apparently not.'

Public Buses

Reema lives in a small village outside of Kaifabad. I visit her in the very early spring, when the mustard is in bloom; the fields around the cluster of cement buildings that make up her village are a brilliant yellow. Reema's supervisor leads me up the narrow, muddy alleyway to her house. After warmly welcoming her supervisor, who leaves after introducing us, Reema invites me into the formal part of the house, a dark room with cement walls and floors. We sit on a wooden couch with hand-embroidered covers on its foam cushions. Reema serves Mountain Dew in chipped glasses, and talks about her work on polio campaigns.

> When you consider that we go door to door, our pay is nothing. But thinking of God [*k͟hudā ko naẕar naẕar rakh-kar*] we say, we've left our house to work, we should do our duty well. . . The problem comes when we have to work in areas we don't know well. We know our own areas, so covering all the children there is easy. You know whether there are children in a certain house, right? When we go to other areas, that's when problems come up. People don't know you, you don't know whether there are children in the house or not, and then you are with another Lady Health Worker, both women. If there was a man with us, then we wouldn't be frightened.
>
> That's why all the Lady Health Workers say we don't make nearly enough money for as hard as we work. . . Even refreshments, we get sometimes, and sometimes not. And then our monthly pay, the 1900 rupees, it doesn't come every month, it doesn't come regularly, it doesn't come on time. . .
>
> We have to work all day long, for five or six days, and then there are still problems [*ṯher bhī yih pareshāni hojati hai]*. We do the best job we can [*ḳisī jaga̱h apnī ṯaraf-se nahi cho te*]. Then, when later the people come to check our work they make a fuss [*shor ḳartehein*] and say 'you didn't do good work, we found a missed child here.' This creates huge difficulties for us.
>
> Look, the next campaign is in the summer—that one will be tough. In that much heat, your sweat never dries. But what can I do—I have to work, I have to answer to my supervisor every evening, I have to give reports to *his* supervisor. . .
>
> To get to some of the places where I work during polio days, I have to change buses twice. I have to change a bus just to get to the Basic Health Unit where I go every evening to give my preport and every morning to pick up the day's vaccine. Look, those bus fares add up. Every day it costs me 20 or 30 rupees [50 cents]. . . Think, every day going to the Basic Health Unit to get vaccine takes time, it takes bus fare, and then you have to work the rest of the day.
>
> Do something about the pay—some of us are very poor. My husband had an accident and broke his leg, for 10 months he hasn't really worked.

Chapter Four

The District

Tanveer and I spoke several times about what drove us absolutely crazy during monitoring in Kaifabad—and in other districts we visited. 'The thing is,' we would say to each other, 'that if people working in Kaifabad spent *half* as much energy planning and executing a good campaign as they did evading the monitors, the vaccination coverage would be perfect.' We would shake our heads. 'It's so *stupid*,' we would say.

While our frustration was very real, our evaluation was unfair. Government employees working on polio eradication at the district level in Pakistan were many things (cunning, infuriating, take your pick) but they were not stupid. Making sense of their behavior is important, because ultimately the quality of work at the ground level determines whether polio eradication is possible.

Everyday Resistance

In his excellent book *Weapons of the Weak*, James C. Scott describes something he calls "everyday forms of peasant resistance":

> Most forms of this struggle stop well short of outright collective defiance. Here I have in mind the ordinary weapons of relatively powerless groups: foot dragging, dissimulation, desertion, false compliance, pilfering, feigned ignorance, slander, arson, sabotage, and so on. These Brechtian—or Schweikian—forms of class struggle have certain features in common. They require little or no coordination or planning; they make use of implicit understandings and informal networks; they often represent a form of individual self-help; they typically avoid any direct, symbolic confrontation with authority. To understand these commonplace forms or resistance is to understand much of what the peasantry has historically done to defend its interests against both conservative and progressive orders. It is my guess that just such kinds of resistance are often the most significant and the most effective over the long run. . . Their individual acts of foot dragging and evasion, reinforced by a venerable popular culture of resistance and multiplied many thousand-fold, may, in the end, make an utter shambles of the policies dreamed up by their would-be superiors in the capital. (Scott 1985, pp. xvi-xvii)

The behavior of people working at the ground level of the Polio Eradication Initiative makes sense when it is approached in terms of Scott's formulation of everyday resistance. There were a number of ways that district employees resisted the directives of their superiors: through refusal to work, falsification, what is normally referred to as "corruption," false compliance, and direct confrontation, among others. These strategies bear examination in some detail.

Refusal to Work

One of the clearest forms of resistance to superiors is the strike. Government health employees in Pakistan are not unionized, and in a context of high unemployment one would not expect strikes to be common occurrences in the Polio Eradication Initiative. However, at least one quite limited strike did occur. Through an administrative miscommunication, workers in one district were overpaid for training during one campaign. By the next campaign, the mistake had been corrected and the workers were back to being paid 50 cents for training. Their response was to refuse to attend. Polio eradication planners noted in the campaign report that they would, in the future, avoid "gathering all supervisors in one or two places to conduct training there and likewise to avoid calling for strike."

Much more common than strikes were less organized refusals to work on polio. Finding people, especially women, to do the door-to-door vaccination was an ongoing problem in some districts. In one district, less than half of the Lady Health Workers on the books worked on polio campaigns. In another, difficulties in obtaining "volunteers" to work as vaccinators were so severe that the campaign was routinely extended from three days to nine or twelve days so that the limited workforce could cover the city.

Even those who agreed to work on campaigns might not perform all the tasks expected of them. This was a particular problem with teams working at "transit points," as they were supposed to vaccinate all children that came by. As they did not have a fixed area that could be checked, it was easy for them to take time off from work. Supervisors who arrived to find them not at their posts were told they had just left for a moment, to go to the bathroom, or to get a drink of water, or to pray. (Transit point workers were notorious for praying even at times of the day when no prayer was requisite.)

Another ongoing problem was teams' recording of "missed children." At each house teams visited, they were supposed to ask whether any children were not at home, to record the names and ages of those children, and return to the house during "catch-up days" to vaccinate them. This entailed quite a bit of work and was a step team members were wont to skip. As covering "missed children" was essential to achieving a rate of vaccination coverage high enough to interrupt polio transmission, this was a critically important omission.

In poorly run districts, supervisors shirked duty too. In one district I was monitoring, I spent the better part of a day trying to find one Area In Charge, who had left a note saying that he was checking teams in a remote part of his area and that there might not be a cell phone signal there. Tanveer and I drove to that area, which was completely uninhabited but in fact had excellent cell phone coverage. Later, we were told that the man in question had a "*very* old cell phone," which explained why he couldn't get a signal in the areas where he was checking nonexistent teams vaccinating nonexistent populations. The supervisors in Sabazkot described in Chapter 3, who arrived late, didn't have vaccine, and claimed to vaccinate children when they had not, are a less

extreme example of the same type of behavior. And this was not limited to lower-level supervisors; one doctor told me that Campaign Support Persons ‘don’t work half the time—if it’s raining they just sort of phone in.’ In the worst-performing districts, EDOs, too, would not attend evening meetings.

Falsification and Lying

Tied to a refusal to work was a falsification of the requisite records to make it appear as if work had actually been done. Several examples of this were described in Chapter 3. Teams could chalk the next day’s date on a house if they did their work ahead of time, or mark a house as containing no children if no one was home and they did not want to have to return another day. As the previous chapter describes, much more widespread than this sort of falsification on the team level was falsification of monitoring results, an activity which involved participants from the teams up to the Campaign Support Persons and perhaps the district leadership.

The structure and pattern of falsification of monitoring results is worth examining closely. The comment by Javed in Chapter 3 asserting that his zonal supervisor ‘doesn’t actually do any checking, and he expects us to feed him lunch every day’ is revealing. Rather than go door-to-door as he was supposed to do, Javed noted, his zonal supervisor copied Javed’s own door-to-door monitoring results. Insofar as those numbers were good, of course, this worked in Javed’s favor. In return, Javed was expected to purchase lunch for his supervisor.

As the previous chapter describes in some detail, I experienced repeated appeals to my humanity as a superior to overlook the mistakes of those I was supervising. I was also, often unwittingly, on the receiving end of gifts of food and hospitality. At some

point during each day of work, lunch was inevitable. Lunch was an activity I looked forward to with some trepidation. Those whose work I was evaluating unfailingly insisted on paying for my lunch, something which they could often ill afford. Further, once I had accepted a free lunch I found that expectations that I would cover up any mistakes were generally heightened. Once I had accepted hospitality, become a guest and a friend, it was more difficult for me to fulfill my role as evaluator. Attempts on my part to pay for everyone's lunch were often stoutly resisted on the grounds that they would be hurt were I to resist their hospitality. (In Pakistan, splitting of checks is unheard of.) Tanveer and I would resort to elaborate schemes where he would pretend to get up and go to the bathroom during the meal and surreptitiously pay the bill; even this did not always work, as our would-be hosts had usually already warned restaurant staff not to let us pay. In Marcel Mauss' terms, I had an "obligation to receive," and I would in turn be expected to give something—namely, a positive evaluation—back (Mauss 1967).

Both Javed and I were caught in relationships of reciprocity, ones in which lunches or hospitality were extended to superiors, and in turn the shortcomings of inferiors were overlooked. As my use of the words "superiors" and "inferiors" implies, these relationships were not equal ones. They were, rather, ones characterized by *inequality* as well as *reciprocity*, commonly referred to as "patron-client" relationships (Foster 1963; Weingrod 1968). Again, James C. Scott provides a useful definition:

> The patron-client relationship—an exchange relationship between roles—may be defined as a special case of dyadic (two-person) ties involving a largely instrumental friendship in which an individual of higher socioeconomic status (patron) uses his own influence and resources to provide protection or benefits, or both, for a person of lower status (client) who, for his part, reciprocates by offering general support and assistance, including personal services, to the patron. (Scott 1972, p. 92)

Scholars have made two observations about patron-client relationships that illuminate the reasons for their importance in the context of the Pakistani health

bureaucracy. The first is that they tend to be found in situations where other systems of authority are unpredictable (Foster 1963). As I will describe later in this chapter, systems of accountability were often perceived by people low in the hierarchy of the Pakistani health bureaucracy to be capricious; here patron-client relationships provided low-level employees like Lady Health Workers and Areas In Charge, as well as their supervisors, with a "personal security mechanism" in an uncertain context (Scott 1972, p. 102)[47].

The second characteristic of patron-client relationships relevant to our discussion of resistance is that they often "undermine the formal structure of authority" (Scott 1972, p. 92). A myriad of patron-client relationships in the Pakistani health system melded into a system quite effective at obscuring areas of poor work. In fact, the patron-client system was so effective at covering up "red areas" of low vaccination coverage that by 2006, incidence of reported "red areas" was not correlated, as it should have been, with poliovirus circulation. Several years previously, "red areas" had been a strong predictor of likely polio cases; the negative attention given to "red areas" apparently resulted in attempts, as in the case of Fahad described in Chapter 3, to cover them up. Evidently the majority of such attempts were successful.

While patron-client relationships were ubiquitous in the Pakistani health system, they were also approached with some degree of ambivalence even by those who

[47] As the function of patron-client relationships in this context was to provide primarily job security, and not other material benefits, to the client, they differ from what Weingrod has called "party-patronage" relationships (Weingrod 1968, p. 381). In such relationships, described in the context of a government health bureaucracy by Dan Smith (Smith 2003), clients receive access to perks such as high-paying contracts in return for political support of a patron. This was emphatically *not* the case in the Polio Eradication Initiative, where little of value to clients was in play; polio vaccine was not a valuable commodity in Pakistan, and as will be discussed in this chapter, pay given for work on polio was much too low for assignment to polio work to be a reward. On the contrary, assignment to polio was, as for the Area In Charge discussed above, often a dangerous liability: it carried the risk of being fired, with little monetary benefit. It was as protection from this risk of job loss that low-level employees in the Pakistani government health system engaged in patron-client relationships.

participated in them.[48] The following accusations were leveled by a subordinate against a WHO district-level official in a letter to WHO headquarters in Islamabad:

> He is a bewildered and misdirected personality at odds with every one in the district and behaving as a master. His attitude to the district authorities is also not appreciable. He used to take gifts from CSPs [Campaign Support Persons] and others and lunch/dinner from poor vaccinators.

Nor was I immune from justified criticism. In a previous campaign in Kaifabad, I had been assigned to do monitoring in Malakot on the third day of the campaign. Everything looked very good, but we mostly only saw what we were showed. The zonal supervisor traveling with us called teams and Area In Charges as we approached: "Be ready—a team of foreigners has come for checking." Where we did find problems, the explanation was always that these areas were slated to be covered later in the day. As always, as we traveled, we accumulated layers of supervision. At one point there were seven of us traveling together.

Oranges were in season in Malakot, and once the Campaign Support Person, who was traveling with us, asked Tanveer to stop. He jumped out of the car and rapidly purchased a large crate of oranges at a roadside stand, which he placed in my trunk. Once it became clear that the oranges were a gift for me, we were already well down the road, and returning them seemed impracticable. How would I get the Campaign Support Person to take the money back? And, perhaps not irrelevantly, I really liked Malakot's oranges.

About a month later I was back in Malakot interviewing Lady Health Workers. I spoke to a doctor who worked for the health department. He asked if I had worked on the previous campaign. I said yes. 'I heard about you,' he said. 'You came as far as the

[48] This is similar to the attitude of others in poor countries who rely on "corrupt" practices even as they decry them as immoral (Smith 2007).

orange stand, let them buy you oranges, and turned around.' My only defense—ignorance—was a weak one.

Corruption

While many would—and did—view the instances of patron-clientism described here as corrupt, I am hesitant to use that term to describe that behavior because, as in the case of Fahad and I described in Chapter 3, engaging in behavior that would protect the jobs of subordinates often seemed like a moral course of action (cf. Smith 2001; Werner 2000). However, I am willing to gloss as "corruption" instances in which people siphoned money off of the Polio Eradication Initiative for purely personal gain.[49]

Such instances were relatively rare, but they did occur. Once I came across an Area In Charge who had vastly overestimated the number of children in the area he was responsible for, and then created phantom teams to cover the nonexistent children. He then pocketed the money allocated for these teams. It is important to note that, given the low rate of pay for teams, the amount of money the Area In Charge gained from this extensive exercise in falsification was less than $30.[50]

It bears emphasizing that given the relatively small amounts of money involved, monetary corruption did not significantly impact the trajectory of the Polio Eradication Initiative. The majority of instances I was aware of were, like the one described here, very small-scale, on the level of petty pilfering. The extremely high levels of supervision in the Polio Eradication Initiative meant that large-scale diversion of funds was very

[49] Even this stance, however, presents problems. Poorly-paid officials who engaged in such activities often justified them, rightly or not, as getting what was due them from an extraordinarily moneyed project. Foreign consultants enjoyed salaries many orders of magnitude larger than the tiny amounts of money low-level employees were able to pilfer.

[50] While I reported this information, no action was ever taken, perhaps because the man in question had successfully established patron-client relationships with influential superiors. I never saw any such instances of pilfering in Kaifabad, which was a much more tightly run district.

difficult.[51] But insofar as such small-scale corruption fits into the constellation of activities that constitute resistance, it is significant. And as the number of children under 5 in Pakistan reported to Polio Eradication Initiative planners by districts was significantly higher than that recorded in the national census, practices like the one described here probably were not uncommon.[52]

False Compliance

Once a mid-level government official invited a foreign WHO employee to speak to officials in her area about the importance of polio eradication. Pleased at the seeming collaboration from an area of the country that had always been difficult, the WHO employee gladly made the trip.

When he arrived at the meeting, the government official spoke to the others assembled in Urdu. She indicated the WHO employee, who could not understand her words. 'Listen to him politely,' she is reported to have said, 'but you can do whatever you want.'

In this case, and in others, government officials made a show of being compliant and supportive of polio eradication, but this was only a show. Here, the supervisor made explicit to her subordinates that although she expected them to *appear* interested in what WHO leadership had to say, they did not have to take the actions that the WHO was suggesting.

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[51] In fact, on several occasions, WHO and UNICEF employees in Islamabad attributed obstructive behavior by politicians or government health employees in certain districts to those people's frustration that they could not get their hands on polio money.

[52] This was an ongoing sore point; districts claimed that the census had been of poor quality (which was probably in fact the case), and the census did not record the large numbers of Afghan refugees. Nonetheless, as census numbers of children under 5 were generally divergent from numbers that districts claimed they vaccinated, and census numbers were nearly always lower, falsification at one or more levels was probably fairly widespread.

Direct Confrontation

While false compliance was a common occurrence, one that indicated that the Polio Eradication Initiative wielded enough power to ensure at least discursive commitment to polio eradication[53], in certain albeit rare contexts Polio Eradication Initiative officials found themselves facing direct insubordination. The cases I observed were generally when people felt would-be superiors were stepping out of bounds, and when those people had little real authority.

For example, in one district I worked with another foreign consultant, not a WHO employee but a "volunteer" from another South Asian country deployed by CDC.[54] This man was trying to get vaccinators in the district in question to standardize their recording of non-polio, "routine" immunizations.

"You shouldn't be giving vaccine to children over one year old," the foreigner said.

"You wouldn't give vaccine to an unvaccinated two-year-old?" a vaccinator asked, in a challenging sort of way.

"*We wouldn't*," said the foreigner sternly.

"WE ARE," the vaccinator shot back.

It is worth noting that in this case of direct insubordination, the foreigner in question had, it appeared to his subordinates, overstepped his bounds by dealing with issues other than polio. The value of his advice was also questionable. In this context, the subordinate was emboldened enough to engage in direct, confrontational resistance.

Other Strategies of Resistance

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[53] In Scott's terms, they controlled the "public transcript" (Scott 1990).
[54] Foreign "volunteers," unlike their underpaid Pakistani counterparts, enjoyed a very generous "per diem" and stayed in some of the country's best accommodations.

The methods of resistance listed here do not come near exhausting the strategies employed by people working on polio in various times and places. As Chapter 3 describes, a number of additional strategies were used in Kaifabad. Grumbling ('whatever you say, Madam') was a commonly used strategy, a way of expressing discontent without the appearance of insubordination (Scott 1990). Bargaining ('we'll accept four outside evaluators, but we get to choose two') was another commonly used strategy of resistance. Simple evasion was another effective strategy, as in the case of a team of Lady Health Workers who ducked into an alleyway when they saw me coming.

Strategies of resistance employed by district workers were multiple, diffuse, and unorganized. Taken together, however, they could, from the perspective of the foreign consultant, form a nearly impenetrable shield. While they were not planned in a coordinated way, their effectiveness as a whole was impressive. Were it not for these strategies of resistance, polio would likely have been eradicated in Pakistan years ago.

Isn't There a Difference Between Corruption and Resistance?

In anthropological literature, at least, "resistance" is often infused with a positive valence. "Corruption," in contrast, is rarely viewed positively. My grouping of "corruption" with "resistance," then, might be viewed by some readers as a romanticization of corruption. Part of my answer to this charge is that in the case of the Polio Eradication Initiative, I would not argue that resistance was necessarily a positive social force. But beyond that simple assertion, my approach to "corruption"—and its fraught relation with resistance—bears some explanation.

Discussing corruption's relationship with "development"[55] is hardly new. There are two major positions in an ongoing debate about the impact of corruption on "development." Let's call them the "corruption-blocks-development" thesis and the "corruption doesn't matter" thesis.

A proponent of the "corruption-blocks-development" thesis is Thomas Friedman, who wrote in the bestselling *The World Is Flat:*

> These rural Indians understood, at gut level, exactly why it was not happening for them: because local governments in India have become so eaten away by corruption and mismanagement that they cannot deliver to the poor the schools and infrastructure they need to get a fair share of the pie. (Friedman 2005, p. 383)

Similarly, the prominent anticorruption NGO Transparency International argued that in South Asia,

> It is now a fairly established fact that corruption is severely undermining development objectives in South Asian countries by hindering economic growth, reducing efficiency, acting as a disincentive to potential investors and, above all, by diverting critical resources meant for poverty alleviation. (Transparency International 2002, p. 5)

Given that Transparency International ranks Pakistan in the top quartile for corruption among the world's countries (Transparency International 2008),[56] and that in one of their surveys 96% of respondents reported encountering corruption in the Pakistani health sector (Transparency International 2002, p. 2), on the surface it is plausible that corruption could be the culprit in polio eradication's difficulties.

Polio eradication was not free from corruption. But, as I argued above, if "corruption" refers to the siphoning off of money, it happened on such a small scale that

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[55] What, exactly, constitutes "development" is a can of worms that probably need not be opened here. For my purposes here, "development" can be defined as "the successful implementation of development projects". Whether the successful implementation of such programs will lead to "development" in some larger sense is a separate question, to which I believe the answer is probably no.

[56] When, in 1996, Pakistan was reported by Transparency International to be the second most corrupt state in the world, it was joked that "it was Pakistan's fate never to be first in anything" (Verkaaik 2001, p. 355).

in and of itself, it was almost certainly not the reason for the difficulties faced by the project.

The situation changes a bit if one considers the patron-client relations described above to be "corruption," as they likely had a somewhat larger impact on the trajectory of polio eradication. But if one accepts Transparency International's own definition of corruption as "the misuse of entrusted power for private gain," it is not at all clear that patron-client relationships, and the falsification they entail, constitute corruption.[57] What makes patron-client relationships so tricky from the perspective of a supervisor—and what likely contributes to making them so pervasive—is that, in the context of poor job security, protecting a subordinate from being fired often appears to be a moral course of action. The main benefits a patron receives from a patron-client relationship are often respect and deference, not material items one can refuse (Wolf 1966).While it is true that the lunches I consumed technically constituted private gain, I would have preferred to pay for them myself.

Regardless of whether one considers patron-client relationships to constitute "corruption," however, their impact on the trajectory of polio eradication, while more considerable than that of monetary corruption, was probably not *in and of itself*, apart from other techniques of resistance, sufficient to stymie the project. This brings us to the "corruption doesn't matter" thesis, whose most visible proponent is probably the economist Jeffrey Sachs. In the bestselling *The End of Poverty*, Sachs wrote:

> If the poor are poor because they are lazy or their governments are corrupt, how could global cooperation help? Fortunately, these common beliefs are misconceptions, only a small part of the explanation, if at all, of why the poor are poor. I have noted repeatedly that in all corners of the world, the poor face structural challenges that keep them from getting even their first foot on the ladder of development. (Sachs 2005, p. 226)

[57] Whether a particular action is "corrupt" is a question that will often be answered differently depending on the position of the person making the determination (Gupta 1995)

Sachs' approach is appealing in its refusal to blame the failures of development projects on the poor or their "culture" rather than on structural factors.[58] Sachs is correct, too, to note that corruption per se is no more than a miniscule piece of the explanation of why "development" is not happening in many parts of the world, and is not sufficient to explain the failures of many development projects.

But I am not prepared to disregard the impact of corruption entirely. If corruption did not have a significant impact on the trajectory of polio eradication on its own, neither did the occasional strike, or grumbling by employees, or the odd act of insubordination. However, this constellation of strategies of resistance, *taken together*, coalesced into something significant, something with the ability to derail planners' objectives.

Acts of corruption *functioned* in much the same way as other acts of resistance. However, the question of motives is one that deserves consideration. After all, while a strike is an act clearly resisting the demands of one's superiors on ideological grounds, the act of pocketing money might have more to do with opportunism than ideological opposition. Once again, James C. Scott offers a useful perspective:

> The problem lies in what is a misleading, sterile, and sociologically naïve insistence upon distinguishing "self-indulgent," individual acts, on the one hand, from presumably "principled," selfless, collective actions, on the other, and excluding the former from the category of *real* resistance. . . To ignore the self-interested element in peasant resistance is to ignore the determinate context not only of peasant politics, but of most lower-class politics. It is precisely the fusion of self-interest and resistance that is the vital force animating the resistance of peasants and proletarians. . . To require of lower-class resistance that it somehow be "principled" or "selfless" is not only utopian and a slander on the moral status of fundamental material needs; it is, more fundamentally, a misconstruction of the basis of class struggle, which is, first and foremost, a struggle over the appropriation of work, production, property, and taxes.

Scott's argument applies in the case of corruption in the Polio Eradication Initiative. Corruption fits neatly into the matrix of resistance insofar as it was, like the other forms

[58] In this respect, an awareness of history is useful. As Scott notes, "colonial office until the twentieth century was regarded more often than not as an investment in an exclusive franchise that was expected to yield a good return to the political entrepreneur who acquired it" (Scott 1969, p. 315).

of resistance carried out by people at the lowest level of the polio eradication hierarchy, in large part about how much work could be expected to be extracted from people at a rate of pay insufficient to fill their children's bellies. The frank anger many employees felt over the issue of their pay will be discussed in the next section. My argument here is *not* necessarily that pilfering from the Polio Eradication Initiative, or other acts of resistance that employees engaged in, were moral acts. It is, simply, that these acts, and their significant effects in making polio eradication very difficult to achieve, can be understood as part of a matrix of resistance.

Why Resist?

Workers in Pakistani districts were *not* resisting the achievement of polio eradication per se. No one desired the ongoing paralysis of children. Workers I spoke to were unanimous in their opinion that vaccinating children against polio was a moral act. The reasons that people *did* resist varied slightly depending on their position in the health department hierarchy.

Lady Health Workers and Area In Charges: Pay and Respect

Lady Health Workers were nearly unanimous in their complaints over one issue: pay. Lady Health Workers received a salary of about $30 a month for their part-time work for the health department; they received an additional $2 a day for campaign days and 50 cents for attending training. The women I interviewed nearly all felt that the pay they received was much too low when one considered the work they had to do. This complaint applied both to the pay for polio campaigns and to their general salaries as Lady Health Workers. The few women I spoke to who did not complain about pay for

polio work were those who held higher posts and whose pay was above $100 per month. Thus complaints about low pay for polio days were tied to overall dissatisfaction with salary.

Many of the women interviewed were frankly angry about how much they were paid. It made them feel disrespected and undervalued, especially when, as they pointed out, the success or failure of polio eradication depends on their work. Compounding the sense of disrespect related to pay was the fact that most Lady Health Workers knew that Campaign Support Persons earned around $17 per day. That the services of Campaign Support Persons should be valued so highly while their own remuneration was minimal was experienced as a slight.

Several women interviewed had a husband who earned little or nothing, and were attempting to support their families through their work as a Lady Health Worker. However, their pay, even when combined with polio pay, was not nearly enough to provide anything of substance for their families. One focus group discussed this issue:

> Lady Health Worker 1: It's true that when someone asks how much we make we are ashamed, we don't tell the truth, we just say it's enough to live on.
> Lady Health Worker 2: Now they did a good thing by raising the pay for polio days from 400 to 600 rupees [from about $7 to about $10 for five days of work]. But we get it so late. When Allah is happy, then we get paid.
> Lady Health Worker 3: And the money for meetings—we don't always get it. Sometimes.
> LHW 1: Only sometimes and then only very little.
> LHW 2: Here in Pakistan if an unskilled laborer works from 8 in the morning to 4 in the afternoon he will get 200 rupees [$3.50] per day. This 120 rupees [$2] per day is not enough, we have to go door to door. To get to other villages we have to pay bus fare, to the center and to the villages; the money goes in the bus fare. We do this work because, okay, it's related to our work as a Lady Health Worker, so we should do it.

Women I spoke to in individual interviews were also upset about pay:

> Pay is very low; they might as well not pay us at all. Then they say we don't work hard enough.

> Every day we spend 20 or 30 rupees [50 cents] on transportation. Look, every day there is a meeting, and we have to pay bus fare for that. Then we pick up the vaccine and that same bus fare... On Day 5 when we submit our re-checking report, we have to spend the bus fare again. Think about it: for all those days, daily going to the health post and picking up the vaccine takes

> time, it takes bus fare, and then of course there is the actual work of vaccination to be done, it's a big problem.
>
> You can spend millions of rupees from the top, you can do anything from the top, but practically we have to do the work. If you don't respect us we won't do good work.
>
> All the workers say our pay is so low, they say who knows how much money is coming to us from above, and how much we actually get.

It is interesting to note that, as in the last quote above, many Lady Health Workers suspected—incorrectly—that their superiors were skimming off some of their pay. Their reasoning was that a huge international program like the Polio Eradication Initiative would probably not pay them so little. But, in fact, it did.

Lady Health Workers also felt disrespected by upper-level supervisors; they felt that while good work was not appreciated, mistakes were blown out of proportion. One of the focus groups of Lady Health Workers that I held discussed this issue:

> Lady Health Worker 1: The vaccinators [Area In Charges] are good, but the people who come for checking put way too much pressure on the vaccinators and way too much pressure on us.
> Lady Health Worker 2: We're human, we make mistakes. If there's some small mistake, they turn it into this big thing, and where there is good work, they don't say anything or they ignore it.
> LHW 1: And then they tell people in Kaifabad, and we have to go to Kaifabad so many times…
> LHW 2: Take this woman here. She has always done good work. Last month she had an accident and she told her vaccinator about it and that she couldn't work. Still there was a complaint lodged against her and she got a termination letter. She went to Kaifabad and they reinstated her but they cut one month of pay—that's no way to treat someone.
> LHW 1: They should cooperate with us at least a little.
> LHW 3: The vaccinators [Area In Charges] are good. But the people in Kaifabad who sit on chairs all day… If some child is missed, after all we are the children of humans, we make mistakes, anyone can make a mistake. Tell the Kaifabad team—deal gently with us, don't terminate us or cut off pay so immediately.
> LHW 4: They stop people's pay.
> LHW 3: They stop one, two months of pay, and then you have to go to Kaifabad how many times to get your pay reinstated.

Lady Health Workers did not question the value of immunizing children. But they were underpaid and they felt disrespected. Most of them were working because they were in need of money, but they were receiving very little. The core ground-level workforce of the Polio Eradication Initiative was at best disgruntled and at worst irate.

Area In Charges were concerned largely about the same issues as Lady Health Workers: pay and respect. However, Area In Charges were paid somewhat better than Lady Health Workers. They were usually drawn from a class of workers that made $100 a month or somewhat more, and their additional pay on polio days was about $2.40 a day. Thus, they were generally not angry about pay in the way that Lady Health Workers were. However, several noted that their polio pay was usually spent on incentives for their team members in the course of their work: "two samosas for each team member when I visit them make them happy, make them feel appreciated," one explained to me.

Area In Charges were also subject to the whims of their supervisors and expected to show respect, as one described to me:

> Some time ago another madam came to the evening meetings in Kaifabad. She only spoke a little Urdu. . . She started talking to us in English. One of our friends is a vaccinator over in [name of area]. He only studied to eighth class, is a great worker, but he doesn't know when to shut up. He stood up in protest: "Please, get someone who can talk in Punjabi, or at least Urdu!" Later he got in trouble with the EDO: "Why did you disrespect her?"

Polio eradication leadership, to this Area In Charge, was by turns unintelligible (the foreign consultant), and capricious (the EDO). If Area In Charges could not, like Lady Health Workers, be characterized as a group as angry, polio campaigns often seemed to Area In Charges like a giant pain with little benefit. Once I was with several Area In Charges when we were served *zamzam*, holy water from Mecca. We turned toward Mecca and drank the small glasses of water while offering a prayer. 'Pray that polio will be eradicated,' said one Area In Charge. 'Then we won't have to keep on doing this any more [*jān ćhūt-jāegi*].'

District Leadership: Is Eradication Possible? And Who Will Care?

The position of the district leadership was in many ways more complicated than that of the Lady Health Workers. Their position involved them in contradictory roles.

Sometimes they exerted power over lower-level workers to carry out the demands of the Polio Eradication Initiative, and at other times they resisted those same demands coming from WHO (cf. Chandavarkar 1991).

Polio eradication activities took a lot of time and energy, which inevitably left less time to focus on other health goals. Because of the nature of polio campaigns as an *eradication* strategy, participation was mandated for each district; clearly, the strategy would not be effective if some districts could opt out. But many people in district leadership felt that polio eradication campaigns were not the best use of time.

Some government officials resented the large amounts of money that UN agencies felt free to spend. At one campaign inauguration, I witnessed the following exchange between a government official (*not* in the health department) and a UNICEF employee as glossy "End Polio" planners and pins were being passed out to everyone in attendance:

> Government official: How much do you pay for rent for your office?
> UNICEF employee: I don't know.
> Government official: Did you guys print these planners?
> UNICEF employee: Yes.
> Government official: How much did you spend for each one?
> UNICEF employee: I don't know.
> Government official: Did you guys make these badges [pins]?
> UNICEF employee: Yes.
> Government official: How much did you spend for each one?
> UNICEF employee: I don't know.

The government official's implication was clear—that UNICEF is a money-wasting machine.

But resistance, for district leadership, was not primarily about pay or resources but about ideology (cf. Rogers 1991). If, as I argued in Chapter 2, belief in eradication as a strategy is akin to religion, there were plenty of doubters in Pakistani districts. Many people in district leadership felt that if polio had not been eradicated yet, after nearly ten years of campaigns in Pakistan, it never would be. One high-level district official in

Kaifabad opined that routine immunizations had been "suffering" because manpower was always diverted for polio campaigns. "Polio will not be eradicated," he told me. Similarly, I attended one meeting where an EDO told Area In Charges, 'Polio does interfere with routine EPI work because it takes so much time. We'll do campaigns, though, because WHO and the donor agencies want it that way, and it's okay.'

District leadership was pressed harder and harder with each passing year to be committed to polio eradication, a goal many believed to be unrealistic and to detract from more pressing issues such as low levels of routine immunization. That nominal district health leaders could not make decisions on priorities themselves, and had to constantly chase after the latest global health fad advocated by WHO, probably rankled. Further, the political benefits of achieving eradication were questionable.

In the administrative structure that Pakistan inherited from the British Raj, policy was set by secretariats in the capital while administration of everyday duties was the responsibility of the district administration (Islam 2004). In this system, district-level bureaucracies were "top-down," not accountable to people living in the district in question (Cheema, et al. 2005). In 2001-2, Musharraf implemented a far-reaching program of decentralization, creating new local governments and making EDOs accountable to the new district elected official, the *nazim*, in addition to the provincial or district governments (Keefer, et al. 2003). EDOs are now accountable to two masters, as most policy decisions and funding still come from Islamabad, but the *nazim* can request the transfer of an EDO if he is unhappy with him.[59]

[59] Transfers may result in the provincial government giving the EDO in question a "posting for punishment" in a notoriously tough district. Polio eradication officials frequently decried this practice, as it resulted in the worst EDOs being placed in the most difficult districts, compounding problems of management.

This system significantly weakened the power of the federal government to put pressure on EDOs, and drew the EDOs into politics at the district level.[60] The extent of the EDO's involvement in local politics in a place like Kaifabad remained opaque to me, as it did to most other foreign consultants, but I was often under the impression that there were backstage maneuverings which I did not understand. Anecdotes of *nazims* exerting pressure on EDOs to make political appointments, even down to the level of Lady Health Worker, were in wide circulation.[61]

Decentralization was not uniformly bad for health outcomes. Some important indicators, such as the percentage of doctors showing up for work at rural health posts, have improved dramatically since 2000.[62] This indicates that local demand for health services can result in political pressure and improvement in service delivery. Thus, were a large proportion of the Pakistani population to be passionate about polio, as the United States population was in the 1950s, there might be political pressure for eradication activities to be of the highest quality. But there was not. Thus, for an EDO, to have to spend two weeks focusing on polio eradication at the expense of other projects as many as eight times a year could be a frustrating imperative.

Pakistanis, as a whole, were not opposed to polio immunization.[63] When the immunization teams came to their houses, almost everyone gave drops to their children. But this acceptance was mostly passive: it was the very rare parent who would bring their

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[60] As Weber pointed out, the introduction of electoral politics into bureaucracies tends to make the bureaucracies less efficient and precise (Weber 1978).

[61] These anecdotes were often used to explain why an EDO did not fire a particularly intrasingent or poor-performing worker.

[62] Musharraf has put emphasis on this indicator, and the pay of health post doctors has been raised, so the credit for its improvement may not lie entirely with decentralization, but rural people's ability to demand services from a local elected government is probably not irrelevant.

[63] The Polio Eradication Initiative's best estimates of the number of people who refused immunization for their children was less than 1% of the total population.

child to the health post to get additional doses of vaccine if their child was missed during the campaign.[64] And given the large and very pressing problems facing the nation, polio coverage certainly did not rate as an election issue anywhere in Pakistan.

Historian James Colgrove notes that in the United States in the early 1900s, polio "sparked a popular terror far out of proportion to the number of deaths it caused" (Colgrove 2006, p. 114; Oshinsky 2005). This is *not* the case in Pakistan, or in many other poor countries, largely because of differences in the epidemiology of poliovirus in a place like the United States and in a place like Pakistan. In wealthy industrialized countries with temperate climates, prior to the development of polio vaccines, polio was an *epidemic* disease, sweeping through the population, often in the summer, and paralyzing relatively large numbers of people, older children and adults as well as infants, all at once. In poor countries with scant sanitation infrastructure and warm climates, like Pakistan, polio's transmission is very different. In these areas (and in Europe prior to around 1850), polio is an *endemic* disease, affecting mostly infants and occurring at a constant level rather than in epidemic waves (Smallman-Raynor, et al. 2006).[65] Epidemics are better able to inspire terror than diseases occurring constantly at low levels. Even in the United States, once polio vaccination became available and the threat

[64] I conducted interviews with 26 lower-middle-class mothers of children under 5 in the Punjab. Only one of these women would take action by taking their child to the health post if they were missed during polio rounds. The woman in question had adopted a child after 10 years of infertility. The child was much doted on; the mother was exceptional in her unwillingness to expose him to risks of *any* kind.

[65] The reasons for this appear to be tied to improved sanitation in wealthy industrialized countries. In places with poor sanitation, the virus is present in the environment at fairly high levels. Most people are infected with the virus at a young age. As infants who contract poliovirus are less likely to become paralyzed than adults, most infants are exposed to "immunizing infections" with poliovirus. (Some of these infants do become paralyzed.) With the development of sanitation infrastructure, infants cease to be infected with poliovirus (and may receive lower levels of maternal antibodies against poliovirus) and thus the natural immunity in a population decreases. This leaves older children and adults susceptible to waves of epidemic, paralytic polio (Smallman-Raynor, et al. 2006).

of epidemic less immediate, public enthusiasm for vaccination waned quickly (Colgrove 2006).

Further, with the introduction of polio immunization in poor countries, the burden of disease from polio shifts to focus nearly entirely on the poor (Risi 1997). As with the frustrating headmaster in Kaifabad, the elites that drive priorities in Pakistan felt—accurately, in fact—that polio was not a disease likely to strike *their* children.[66] Without great concern over polio on the part of elites, it was unlikely to become a political priority.

Yet in their optimism, some planners in Geneva continued to insist that with better "social mobilization," polio could become a political issue in Pakistan. A high-level WHO official who visited Islamabad told Pakistani WHO employees that they had to create popular demand for polio immunization, which in a democracy would naturally lead to the quality of polio campaigns being a political priority. With limited control over districts, planners in Geneva continued to wait in vain for "political commitment" that never arrived—and that never would. In the absence of such commitment, they resorted to other techniques to put pressure on districts.

Resistance and Power

Acts of resistance do not exist in a vacuum. When people resist, they are resisting *something* (or someone) with power over them. Several scholars have suggested that identifying acts of resistance can help in pinning down that nebulous thing called "power." Foucault suggests "using this resistance as a chemical catalyst so as to bring to

[66] About two thirds of the polio cases reported in 2006 in Pakistan were from the very lowest economic stratum.

light power relations, locate their position, and find out their point of application and the methods used" (Foucault 1982, p. 780). Lila Abu-Lughod notes usefully that such an approach leads away from a romanticization of acts of resistance as "signs of human freedom" and toward an understanding that people resist because they are "caught up" in webs of power relations (Abu-Lughod 1990). Douglas Haynes and Gyan Prakash note further that power and resistance are "constantly intermeshed," not separable entities but continually acting on and shaping one another (Haynes and Prakash 1992, p. 19). Acts of power and resistance are mutually constitutive. If we are to speak of everyday techniques of resistance, then it is useful too to examine everyday techniques of power. Each is shaped by the other. The everyday acts of power used by district-level supervisors in the Polio Eradication Initiative will be the focus of the next section.

First it is useful to clarify what I mean by "power" in the context of district-level interactions. Here, Weber's definition of power as "the probability that one actor within a social relationship will be in a position to carry out his own will despite resistance" is useful (Weber 1978, p. 53). This dyadic model of power and resistance leaves out "structural power" (Barrett 2002), historical and political-economic determinants of power relations that extend far beyond relationships between, say, international consultants and Area In Charges at the district level. The complexity of what constitutes power in polio eradication will be explored in some detail in the next chapter. However, looking at power and resistance in terms of interpersonal relationships at the district level is a good starting point. As Sivaramakrishnan explains, drawing on Wolf,

> Dominant figures—landlords, merchants, government officials, and priests—stand at a crucial point between the lives of peasants and the world beyond the villages they inhabit. These intermediaries are nodes in the webs and nets of connection. (Sivaramakrishnan 2005, p. 349)

Thus examining how supervisors exerted power at the district level can serve as an entrée into wider webs of power relations. Also, the everyday techniques of power that people such as WHO employees exerted at the district level are important in their own right. It is through these strategies of everyday power that employees of the Polio Eradication Initiative attempted to ensure high immunization coverage of Pakistani children—the only way to eradicate polio.

Everyday Power

World Health Organization and UNICEF employees had no direct control over any district employees. As discussed in the above section, since decentralization, the national government, too, had only limited power over the district. In the absence of direct bureaucratic systems of accountability, Polio Eradication Initiative officials resorted to a number of tactics of everyday power. They used techniques including propaganda, perks, surveillance, and occasional rewards for good work to get district-level workers to work hard on polio eradication. They also constructed a parallel bureaucracy of their own employees, from whom they could demand accountability, to perform key tasks.

Propaganda[67]

WHO and UNICEF employees in Islamabad were well aware that many people at the district level doubted that polio eradication would ever be achieved. They believed (correctly, in my view) that this affected the quality of work being performed. So they continually provided district-level workers with optimistic statements aimed at

[67] The term for propaganda in the Polio Eradication Initiative was "social mobilization," which was the explicit responsibility of UNICEF.

convincing people that polio eradication was imminent if work was done well. For example, a bulletin sent to district officials highlighted the following "key messages" on the cover (emphases in original):

> Pakistan is making progress towards stopping polio.
>
> Polio in Pakistan has never been as geographically localized as it is now reinforcing the possibility of success.
>
> The fact that large areas in the country are without circulation of poliovirus including AJK (since 2000), FANA (since 1998), Islamabad (since 2003) and central & northern Punjab (for 2 years) reinforce that strategies work.
>
> Polio eradication is possible now more than ever before.
>
> We must work together to ensure eradication of polio from Pakistan.

Similarly, the tally sheets provided to immunization teams had a cover letter which stated,

> With the grace of Allah, the assistance of parents, and your work [*koshishon*], polio has practically disappeared from Pakistan [*taqrīban khatm ho gā'i he*]. If such work continues, polio will be completely eradicated very soon.

The effectiveness of such messages was, by 2007, questionable. District-level workers had been hearing for five years that polio was on the verge of eradication, and they were skeptical of continuing declarations that the end of polio was immanent. But officials continued to make these claims.

Polio eradication planners in Islamabad also attempted to convince district-level workers to do good work through less direct means. For example, several TV spots shown across the country highlighted the work of exceptionally good supervisors and teams; it was hoped that the promotion of these role models would encourage other teams to do good work as well. Given team members' reasons for resistance, I believe it is unlikely that such spots had a large impact.

Perks

In a few, relatively rare cases, the Polio Eradication Initiative was able to sweeten its message with a significant perk such as a trip to Geneva. Given their expense, such trips were reserved for major decisionmakers and government officials. Such trips did sometimes prove effective. A CDC official mentioned to me the case of a high-level provincial elected official invited to Geneva for a meeting. There, polio eradication "captured his imagination," the CDC official said, and subsequently the Polio Eradication Initiative saw huge gains in that province. Such converts to polio eradication were extremely valuable, but they were relatively rare.

Surveillance

The Global Polio Eradication Initiative had to carry out two types of surveillance: surveillance of poliovirus circulation, and surveillance of government workers performing immunization. Surveillance of poliovirus circulation was an enormous job, involving a network of WHO employees in every area of Pakistan who continuously visited hospitals, clinics, and doctors searching for paralyzed children.[68] When people in polio eradication talked about "surveillance," they were using the term in the public health sense, referring to surveillance of circulating poliovirus.

In addition, although it was rarely acknowledged publicly, polio eradication planners were also conducting surveillance of government workers. Key in achieving this

[68] These workers collected stool samples from everyone in the country under 15 years old experiencing "acute flaccid paralysis." The samples were then sent to the national lab in Islamabad for testing. As acute flaccid paralysis has many other causes besides polio, samples from an enormous number of cases—over 4,000 per year—were collected by workers and processed by the lab. If poliovirus was found in a stool sample, the virus was genetically sequenced to give information on the given virus' relationship to other polioviruses circulating in Pakistan. Thus patterns of circulation could be tracked. The surveillance system for polio in Pakistan was by far the most extensive surveillance system ever developed in the country, and it was reasonably sensitive; while the odd case of polio was almost certainly missed, it is unlikely that the system was blind to significant areas of virus circulation.

was the procurement of *independent* observers—people who would report accurately on what was happening in a given district, without being pulled into local politics or local systems of patron-client relations. Polio Eradication Initiative management attempted to procure independent observers in at least two ways: by deploying international consultants, and by shifting WHO employees to different parts of the country when observing campaigns.

The position of the international consultant is one that deserves further attention. There were over 40 international consultants working on polio eradication in Pakistan, the highest concentration of such workers in any country at any time in the Polio Eradication Initiative.[69] Each international consultant cost WHO approximately $10,000 per month, and taken together their salaries, per diem, and benefits amounted to $4.5 million per year, significantly more than the combined salaries of WHO's 200 Pakistani employees. While the remuneration of international consultants was not common knowledge, most Pakistanis working on polio eradication, whether they worked for WHO or for the government, knew it was exhorbitant. Stories circulated, for example, of an international consultant living in one of Pakistan's most posh hotels.

When I began my fieldwork, this expenditure on foreigners seemed counterproductive, and seemed to reflect two troubling institutional assumptions: first, that local knowledge was unimportant, and second, that Pakistanis were not capable of running an immunization program. Few international consultants spoke Urdu, much less the local languages used where they worked; they were shifted around so frequently that

[69] "Highest concentration," here, is per capita population in the country in question. The official name for international consultants was "Short Term Consultants," the idea being that they were in the country only a brief time, until polio was eradicated. Their contracts were 11 months long. However, in practice many of them stayed in Pakistan for long periods—several had been there as long as six years.

they never got to know much about a given district; and their high salaries, personal Land Rovers (with drivers), and frequent travel alienated them from local culture. Officially, international consultants were in districts to provide "technical support," and they were largely very well credentialed; but supervising the placing of drops of vaccine in children's mouths was not an activity for which a medical specialization provided much help.

International consultants are a mainstay of many development projects, and many observers have commented on precisely these issues of distance from host cultures (Jenney and Simmons 1954; Justice 1986; Pfeiffer 2004; Tendler 1975). Some have not pulled punches: Graham Hancock described international aid workers as "lords of poverty," money-hungry, arrogant bureaucrats who do not care about the needs of the poor (Hancock 1989). While I was unprepared to cast such aspersions on their character—most foreign consultants, like Dr. Ibrahim, were truly committed to the eradication of polio, and Pakistan was not an easy post even at such very high rates of salary—I expected to condemn foreign consultants as ineffective and expensive, much better replaced by the legions of Pakistani nationals who could be hired for the cost of one foreigner's pay.

But there is a method to the madness. Over a year in Pakistan, I came to appreciate that foreign consultants were indispensable tools to Polio Eradication Initiative planners. They were so useful for *precisely* what makes them unattractive to anthropologists: their alienation from Pakistani society as a whole and their Pakistani government counterparts in particular. This separation from local culture, politics and social relations allowed them to report honestly on what they saw, to avoid the webs of

patron-clientism and politics that at times trapped even the most intelligent and scrupulous Pakistanis working at the district level, and to realistically believe that it was the quality of work in districts where they were posted, not their political savvy, that would most likely affect their career advancement.

In fact, Polio Eradication Initiative planners consciously ensured that international consultants would retain their outsider-ness. The primary way they did so was by reassigning them to new districts every few months. While planners valued cultural awareness—at a meeting in Geneva some international consultants were praised for being "good at reaching out to the local community"—ultimately it was foreigners' status as *outside* observers that made them valuable. A high-level official in Geneva told me, "lots of internationals in a broken situation increase your span of control." He elaborated that it was the "element of outside eyes" that made them so useful; Pakistani national staff "live there," he noted, so it was "impossible" for them to get outside of the system. He added, however, that in some places Pakistani national staff were better than the international staff. "Got to have a mixture," he said. National employees were valuable for their local knowledge; international employees were, in a sense, valuable for their freedom from it.

In addition to employing foreign consultants, polio eradication planners conducted surveillance of government employees by deploying staff from one area of the country to work on campaigns in different areas. In one particularly intractable city, the dates of the campaign were shifted to allow as many national and international staff as possible to be on hand after completing the campaign in their own districts. Similarly, the offices in Islamabad emptied out on campaign weeks, as all of the WHO and UNICEF

employees[70], national and international alike, traveled to different areas of the country to "support" the campaign.

The question of whether such surveillance improved campaign quality is an interesting one. Planners were under the impression that it did. A report on an international conference call in 2003 stated that the participants agreed that "international consultants have been most effective tool in improving campaign quality" in Pakistan. Similarly, a WHO report for a public health audience on polio eradication in Pakistan stated that shifting employees to different areas during campaigns was a strategy designed "to achieve optimal coverage in areas of highest risk" (World Health Organization 2006g, p. 244).

The postulate that additional monitors leads to better campaigns is unproveable with the data currently available. More accurate monitoring activities could result in *lower* coverage numbers for a given district, even in the context of a better campaign. However, I suspect that surveillance by outsiders does improve campaign quality.

When I was working on one campaign (not in Kaifabad), I stayed with my good friend Farzhana. One evening, we visited a friend of hers, Reema, for tea. There was not really space in Reema's miniscule two rooms for her own two preschoolers, much less the four additional ones that belonged to Farzhana and me, but Reema did her best to make space for us, moving boxes of medicines outside so we would have a place to sit. (Reema's husband worked for the health department, Farzhana explained later, and pilfered medicine for resale to supplement his small income.)

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[70] WHO officials would have loved for government employees to participate in campaign "support" in various districts. However, government officials almost never went. The relationship between WHO, UNICEF and government officials at the national level will be explored in detail in Chapter 5.

A few days later, Farzhana told me that she had run into Reema at the corner store. Farzhana asked how she was and Reema said things were hectic at her husband's work; he was an Area In Charge for the polio campaign.

'Polio campaigns used to be relaxed,' she complained, 'but this time some team has come from Islamabad with some madam for checking, and everybody is scrambling. My husband had to drive over an hour in the pouring rain on his motorcycle to deliver vaccine. Even his zonal supervisor, who never shows up during the campaigns, is working hard.'

Farzhana laughed and asked if Reema knew who the madam was.

Upon learning the madam had recently been at her house for tea, Reema was annoyed. 'If I'd known it was only *her*,' she said, 'I never would have let my husband drive that far in the rain at night.'

In areas where outside monitors were not able to go, campaign quality was often poor. The prime example of this are what people in polio eradication called "security compromised areas," which were often prime locations for virus circulation. This appeared in most cases *not* to be a direct result of unrest—there were nearly always windows of opportunity in which to go door-to-door. Rather, all UN employees, nationals and internationals alike, were banned from going to such areas.[71] Without UN supervision, the actual quality of the campaigns in these areas was, in the words of one report, a "question mark." Ongoing poliovirus circulation in many of these areas

[71] This, and many other security restrictions on mobility faced by UN employees, was a nearly constant source of friction between UN polio eradication staff and UN security staff. Polio eradication staff largely felt that the security rules were overly restrictive and prevented them from performing their duties in the best possible manner. For example, several foreign consultants got into a heated exchange with a foreign UN security staffer at a meeting over the issue of the requirement that UN staff ride in 4-wheel-drive UN vehicles, usually Land Rovers. The polio eradication staff argued that these vehicles were unnecessary and cumbersome in urban areas. The security staff insisted that no concessions could be made on this point.

indicated that campaign quality was in fact poor. While in general these districts faced a number of challenges,[72] this indicates that the presence of what were called "external monitors" did have an effect.

Ultimately, however, the outside observers had no direct power. Their observations could result in public shaming, and negative reports to supervisors, and their presence did have an effect. However—and ongoing virus circulation in Pakistan is proof of this—simple surveillance, without teeth in terms direct lines of accountability, was not enough to ensure campaigns of the very highest quality.

Positive Reinforcement

Aware that workers felt they were not being appreciated for doing good work, UN officials in Islamabad planned and implemented a "Polio Heroes" award system designed to recognize the best teams and Area In Charges. This system had not yet been fully implemented by the time I left Pakistan, so I cannot comment reliably on its effectiveness. A system recognizing good work was certainly a positive step. However, the rewards—certificates and perhaps meeting an elected official—were purely symbolic. It was unlikely to cause a revolution in worker motivation.

Construction of Parallel Bureaucracy

Given that they were unable to exert direct control over government workers, WHO and UNICEF constructed parallel bureaucracies of their own, with workers in every district. For example, most districts had a government employee, a doctor, who was responsible for disease surveillance. However, WHO was unable to rely on them to search for paralyzed children, both because, as a senior WHO official explained, they

[72] These districts often had a higher percentage of refusals and a low percentage of Lady Health Workers—but, as WHO officials were quick to point out, other districts with these challenges were still able to carry out high quality campaigns.

often lacked “necessary enabling factors” like vehicles and fuel allowances and because, as doctors, many of them felt they were “too senior for fieldwork.” So WHO had its own surveillance officers in every district, the people who were in fact responsible for poliovirus surveillance in Pakistan. Initially, it had been hoped that the WHO surveillance officers would be phased out, but that had never proved possible. While there were some government surveillance officers who did work hard, by and large the WHO surveillance officers did the work of visiting hospitals and doctors, searching for paralyzed children and collecting stools. Because virus surveillance was an activity that could be carried out with a relatively limited workforce, WHO was able to run its surveillance system almost entirely through its own employees (all of whom were Pakistani). Because of this, the poliovirus surveillance system in Pakistan was very good.

Campaigns, however, required a workforce much too large for WHO or UNICEF to create on its own; there were about 200,000 team members in Pakistan. For campaigns, they had to rely on government workers. Still, they did their best to create a parallel system supplementing the government system. International consultants were, of course, part of that system. So were Pakistani officers at the district level, people like Dr. Ahmed. In addition, WHO gave substantial per diems to Campaign Support Persons (about $17 per day) during campaigns; they were considered “short-term” WHO employees. The Campaign Support Persons, and other, longer-term employees, were hired away from the government health system for a limited time to work for WHO. While they were working for WHO, they received substantially higher salaries; when their contracts were up, they went back to working in their government posts. This was supposed to be an exercise in “capacity building,” improving the government workforce. However, it also meant that

many Pakistani WHO employees had deep ties to the government health system, and could not operate independently of it.

The everyday techniques of power used by WHO and UNICEF in Pakistan were effective; they ensured that polio eradication was the most far-reaching public health projects ever carried out in Pakistan. Families out of the reach of any other health project were reached, and reached again and again, by vaccinators carrying polio drops to their doors. What was achieved by the Polio Eradication Initiative, and the considerable pressure it exerted, was nothing short of miraculous.

But it was not enough. The resistance of district-level workers was effective too. It was enough to prevent campaigns from being quite good enough to eradicate polio. And so, ironically, government workers in the district were stuck with an ever-more-demanding schedule of polio campaigns.

Land Cruisers

Ahmad is a driver for the World Health Organization office in Islamabad, and Tanveer befriended him as they were both waiting in the parking lot one day. The WHO office has a huge fleet of white Toyota Land Cruisers and Hilux pickup trucks (the same as the American Tacoma), and all of them are operated by drivers. Whenever anyone working for the World Health Organization goes anywhere for work, they are required by UN security regulations to ride in one of these radio-equipped, four-wheel-drive vehicles.

The Land Cruisers are a highly visible sign of polio eradication; at one meeting I attended in Peshawar, the proliferation of large white vehicles overflowed the parking lot of the small hotel where the meeting was being held and blocked the road outside. The vehicles are a luxurious perk for the Pakistani employees of WHO; while high-level Pakistani government employees travel in jeeps, low-level government supervisors in the Polio Eradication Initiative use motorcycles or bicycles—often provided for the purpose with international money. The Land Cruisers are also, at times, a real nuisance. They are useful in rural areas with bad roads, but in Pakistan's dense city centers they are useless. They are much too wide to fit down the narrow alleyways of the cities; it is often difficult to find a place to park them within walking distance of where a WHO employee needs to work. And while there is an enormous fleet of them, in the height of a vaccination campaign they can be in short supply. Some WHO employees argued with UN security staff that they should be able to travel without the Land Cruisers, without success.

Ahmad has worked as a driver at WHO for several years. Drivers' official job is to drive the vehicle wherever the WHO employee in question needs to go, and wait for them until they are done doing whatever it is they need to do. In many cases this extends as far as picking them up at home and bringing them to the office each morning. Drivers also fill many additional roles on an unofficial, ad-hoc basis: they are tour guides, translators, and passers-on of gossip and information obtained from drivers of Pakistani government vehicles. Ahmad's pay is around 15,000 rupees ($250) a month. This is, in general, decent pay, about 50% more than government drivers earned. But Ahmad is not entirely satisfied. He is annoyed that drivers for UNICEF make nearly twice his salary. (UNICEF salaries are uniformly very high for all positions, and Pakistani WHO employees, even those who by their own admission are paid decent salaries, commonly mention this discrepancy as a sore spot.) Moreover, like nearly everyone else working on polio eradication—in theory a temporary program—his contract only extends for three months. Thus far, it had been renewed, but he told Tanveer, 'one month I am happy, the next I begin to worry, and the third I feel sick.'

Chapter Five

Islamabad

The commitment of the government has been absolute. WHO international official at Pakistan's "Technical Advisory Group" meeting, April 2007

Let me also reinforce that from the government we have tremendous political leadership and commitment. . . The PM and the First Lady have been leading polio campaigns. . . The political leadership is absolutely clear. Pakistani Minister of Health, "Technical Advisory Group" meeting, April 2007

UN employee 1: *The problem is ownership of the government—they are thinking that <u>they</u> are supporting <u>us</u>—*
UN employee 2: *I just got call from [a government official] to put together a presentation on polio and write a speech for the minister. Well, whose program is it?*
UN employee 1: *That's how it runs.*

The problem is that it's supposed to be a government program, but it's not. WHO official, Islamabad

Polio eradication in Pakistan was officially a government program, with "support" from international organizations like WHO. In certain times and places, this was in fact how things actually worked. As hundreds of thousands of Pakistani government employees did the work of vaccinating children, polio eradication *was* a government program in a very real sense. As one WHO official noted, the progress made in greatly reducing the number of polio cases in Pakistan would never have been possible without government involvement.

But polio eradication was *not* a Pakistani government program in that it was initiated, funded, and administered by international UN agencies and the governments of wealthy countries like the United States, the United Kingdom, and Japan. Polio

eradication was taken on by Pakistan in response to international directives, not because it was an issue of national importance. As an *eradication* program, this internationally mandated approach was unavoidable; if polio is to disappear entirely, every country *must* simultaneously implement the recommendations of the Global Polio Eradication Initiative.[73] Still, the official line was that polio eradication was a project of the Government of Pakistan.

The fact that this ideal—"polio eradication is a government program"--was repeated often is an indicator of the fiction's fragility. There was an ongoing, low-level struggle in Islamabad that centered around who should be responsible for the work of administering polio eradication. In practice, UN agencies ran the project in Islamabad. They did so in large part reluctantly—as this chapter will describe, they attempted to get government employees to take on planning and administrative duties, but met with significant resistance.

And yet, even as they hired large Islamabad- and field-based staffs to do the work that the Pakistani health system did not, UN agencies worked hard at maintaining the fiction of government ownership. The PowerPoints, reports, and letters that UN employees prepared were often printed on government letterhead and signed by government officials. These same government officials represented the program at international meetings, though they usually had to be briefed beforehand by UN employees.

It is important to note that this gap between the ideal model according to UN officials, and what people say actually happened, is not unique to the Polio Eradication

[73] That said, many other global health programs—for example, the Measles Initiative described later in this chapter—are similarly structured, despite their status as control, rather than eradication, programs.

Initiative in Pakistan. On the contrary, it is a characteristic of almost all human societies. As a classic anthropology text notes:

> Two different levels of thinking may be broadly distinguished. First, there are people's notions about what they actually do, the manner in which they conceive their own social system and the world they live in. And secondly, there are their beliefs about what they and other people *ought* to do, their legal and moral values or norms… Since no mortals (so far as we know) suppose themselves to inhabit the best of all possible worlds, there are always some social relationships in which real and ideal, what is and what ought to be, are distinguished. Not *all* husbands, wives, neighbours, rulers, are perfect. (Beattie 1964, p.37)

Some societies have ideals driven by religious doctrine; the Polio Eradication Initiative has ideals driven by the WHO's official policy. These ideals are extremely powerful, and drive practice in profound ways. But to *equate* them with practice would be a mistake. In societies with ideals of honesty, fidelity, and respect for private property, people still lie, cheat, and steal (though they may be punished for it); and in societies with ideals of national governments embracing international mandates, government officials drag their feet (not, as it turns out, a punishable offense—though some UN officials probably wish it were).

Structural Power

To gain a more nuanced understanding of this issue—to grasp who creates the ideal, and why, and also why it is not uniformly embraced—it is necessary to revisit the issue of power. In the previous chapter, I described several "everyday techniques of power" that UN employees used in attempts to cut through the resistance of low-level employees and to ensure high-quality immunization campaigns. These included, among others, the creation of propaganda, the surveillance of low-level workers, and the provision of perks and other rewards. My focus up to this point has been on such on-the-ground, everyday techniques of power, those that I can describe through vignettes and

concrete examples because they are directly observable aspects of interpersonal relations. These everyday techniques of power are very important. But to limit our exploration of power relations to observable interactions would be to miss some crucial dynamics in the Polio Eradication Initiative.

Much of the power exerted in polio eradication is what several theorists have called "structural power." Drawing on Foucault, Eric Wolf explains that "structural power shapes the social field of action so as to render some kinds of behavior possible, while making others less possible or impossible" (Wolf 1990, p. 587). The exertion of structural power may often be invisible, since as it simply prevents certain courses of action from ever being feasible, someone observing the situation might find no visible conflict.[74]

As Stanley Barrett elaborates, structural power is a result of "the shape of the institutional framework of society" (Barrett 2002, p.20). This framework is a global one. Paul Farmer refers to "historically given (and often economically driven) processes and forces that conspire to constrain individual agency"[75] (Farmer 1996, p. 23). The economic and political legacies of colonialism, for example, place those government officials in charge of directing policy for the Pakistani health system in a weak position vis-à-vis international agencies and the goals of nations like the United States. When it comes time to decide what Pakistan's public health priorities are, Pakistani officials may

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[74] By this I do not mean to imply that structural power is a miasma that somehow exists apart from social interaction. Timothy Mitchell's description of what he calls "enframing" is helpful. Structural power, he says (though he does not use that term), "will seem to be *external* to practice," but is actually "most internal, most integral, and continuously at work *within* social and economic practices" (Mitchell 1990, p. 571).

[75] Here, Farmer is defining "structural violence," but he means the same thing as other theorists referring to "structural power." While the term "violence" has important uses in Farmer's work, it is not entirely appropriate here. I believe Farmer would agree that while the attempt to deliver polio vaccine multiple times to the most medically underserved children on earth is an endeavor that requires the mobilization of a great deal of power, classifying it as "violence" would be unfair.

have to defer to the desires of officials from the United States or the UN. And they may find it in their best interests to do so without argument.

The impressive size and reach of the Polio Eradication Initiative is, in many ways, a testament to the structural power of the United States. The polio elimination project in the Americas that became the model for the Global Polio Eradication Initiative, described briefly in Chapter Two, was certainly not reducible to a United States directive. However, it was possible in large part because of the support of American members of Rotary, the CDC, and USAID.

Similarly, the support of the United States government, coupled with American members of Rotary, has been critical to the Global Polio Eradication Initiative. As Peter Evans of the WHO's Expanded Programme on Immunization explained in 1994, the United States pushed hard for polio eradication in the early years of the Initiative, perhaps at the expense of other programs:

> EPI [the Expanded Programme on Immunization] has been influenced by our donors. . . [The] USA wants polio immunization. Europeans want infrastructure building (primary care). Their fight is very big and important.. . . . Expense of eradication is very high. It will take half of EPI funds. (quoted in Muraskin 1998, p. 72)

The United States government, through the CDC and USAID, is the single largest donor to polio eradication, having contributed over $1 billion thus far (World Health Organization 2008a, p. 8).

Currently, at a time when other major bilateral donors are becoming skeptical that eradication will be achieved, the United States has not wavered in its stated commitment to polio eradication. In interviews, representatives of several other bilateral donor organizations in Pakistan told me that they were re-evaluating their contributions to polio

eradication; one had reduced funding for the program. USAID shows no signs of taking such steps.

There are several major reasons for the U.S. government's support for polio eradication. Polio, unlike, say, malaria or tuberculosis, is a disease with a personal emotional weight for many Americans who remember outbreaks of polio in the early and mid- 1900s and, with the advent of the Salk and Sabin vaccines, its eventual elimination from the United States. The American membership of Rotary, which numbers nearly half a million, is no exception, and Rotary has been an effective lobby in the United States Congress. Bill Foege, the former director of the CDC and a supporter of eradication,[76] testified before a Senate subcommittee:

> Some people in this room will recall that April day in 1955 when a press conference at the University of Michigan announced that the Salk vaccine actually protected children against polio. It is almost impossible to recreate the feeling of that day, but the next day around the United States, simultaneously and spontaneously, there were signs in store windows that said, thank you, Dr. Salk. Well, as you know, we struggled with the best mechanisms, but we finally got it right, and 25 years after the vaccine was introduced, we had the last outbreak in this country. But we did not automatically go the next step and commit to global eradication. It took a catalyst, and as we have heard repeatedly this morning, that catalyst was Rotary International. It was not just the resources that we have heard about of millions of hours of work or millions of dollars. It was their role as a collective conscience. Gandhi once said that his interpretation of the Golden Rule is that he should not be able to enjoy something denied to others, and Rotary reminded us that we cannot enjoy having our children and grandchildren free from polio unless we give all parents that same joy. (United States Government 1999,p. 31)

In addition to the moral imperative invoked by Dr. Foege, the United States has financial reasons to support polio eradication. Achievement of eradication would mean that, ultimately, polio immunization in the United States could be halted.[77] In the 1990s,

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[76] Dr. Foege is a veteran of the Smallpox Eradication Program and has been a staunch supporter of polio eradication.

[77] Unfortunately, the weakened live virus in oral polio vaccine can live for years in the guts of certain immunocompromised individuals. These individuals will continue to excrete vaccine virus which has the potential to become virulent (Bellmunt, et al. 1999). Therefore, immunization can not cease immediately upon the achievement of eradication. However, it is reasonable to assume that immunization against polio could cease at some point in the future if polio is eradicated.

the United States spent on the order of $250 million a year for oral polio vaccine[78] (Taylor, et al. 1997). Achievement of polio eradication could result in significant financial savings for the United States.

Leading figures in public health (significantly, those who favor "primary health care" programs over eradication programs) have argued that as polio eradication's primary financial benefit will accrue to wealthy countries, and as polio's effects on overall morbidity and mortality are minor compared to other major diseases, it is "shortsighted for donors to use their considerable influence to promote polio eradication if this delays or diverts long-term investment by poor countries in sustainable health systems" (Taylor, et al. 1997, p. 924). Whether polio eradication activities in fact contribute to or detract from "sustainable health systems" is a matter of fairly intense debate (e.g. Bonu, et al. 2003; Loevinsohn, et al. 2002; Sutter and Cochi 1997). District-level government health department employees in Pakistan largely felt that it did detract from other activities. That said, the considerable resources and single-minded focus of the Polio Eradication Initiative in Pakistan resulted in the provision of vaccination (albeit only for one disease) for populations who were previously almost entirely outside the reach of government health services. Also, other achievements of the Polio Eradication Initiative, such as the creation of a comprehensive and sensitive disease surveillance system in Pakistan (albeit one staffed entirely by WHO), *could* improve prevention of other infectious diseases in the future.

[78] In 2000, the United States switched from use of oral polio vaccine to use of injectable vaccine, which is generally more expensive but has fewer adverse effects. I was unable to find figures on the amount that the United States now spends per year on injectable polio vaccine, perhaps because it is commonly combined in a single injection with other immunizations.

Whether the net effects of the Polio Eradication Initiative on health in Pakistan were positive or negative, however, its *existence* was a manifestation of the structural power of countries like the United States. Polio eradication is *not* simply a United States program. The US government's contributions, while substantial, are only around a fifth of the total cost of the project. Further, administration of a program simultaneously in every country of the world would have been impossible without the involvement of an organization like WHO. But the United States' enthusiasm for polio eradication carried much more weight in world policymaking than the lack of enthusiasm of the government of a place like Pakistan.

Pakistani government officials' ambivalence about the program was never voiced publicly—as the quotes at the beginning of this chapter attest, they were verbally supportive. But, as I will describe later in this chapter, national government officials *did* resist polio eradication's mandates. The process by which structural power can silence opposition bears further attention. Another program of mass vaccination that began during my time in Pakistan—for measles rather than polio—provides an excellent case study for examining this issue.

Measles Elimination: The Project Nobody Wanted

In early 2007, as polio cases continued to appear in several areas of Pakistan, a new and ambitious program of measles control began its pilot phases in Pakistan. The project, which initially aimed to reduce the incidence of measles by 50%, was part of the Measles Initiative, a program modeled on the Global Polio Eradication Initiative. The WHO's Eastern Mediterranean Region had set a goal of regional elimination of measles

by 2010. Achievement of this goal (widely viewed as entirely unrealistic, a product, a WHO official told me, of a "global competition" for ambitious goals between WHO regions) would require a number of mass measles-immunization campaigns in Pakistan.

Organization of measles immunization campaigns, and the creation of a measles surveillance system in Pakistan, was a huge job. But the Measles Initiative had only one dedicated employee in the country; after all, it was a "government program." While the hiring of additional staff was planned, as of 2007, they had not yet materialized. The WHO polio eradication staff, already working 60-hour weeks, were now expected to take on planning, implementation, and surveillance of campaigns for yet another disease. Government employees were to be given yet more campaigns on top of polio campaigns, giving them even less time to deal with other health issues. Measles vaccine, unlike the polio vaccine used in Pakistan, was injectable rather than oral and thus required trained workers to give shots; also unlike polio vaccine, if administered incorrectly it could have serious side effects.

It is not surprising, then, that neither government employees nor WHO employees were enthusiastic about the Measles Initiative. The mystery, to many, was why the Pakistani government had agreed to take on measles campaigns at all.

"I don't know why," one foreign representative of a bilateral aid agency told me. "Maybe they cannot say no."

A polio eradication official in Geneva had an answer. "It was really pushed on the Ministry of Health by WHO and UNICEF."

The structural power of the major partners in the Measles Initiative—including the CDC, the Red Cross, WHO, and UNICEF—was sufficient to ensure implementation

of a major new health initiative in Pakistan even when the timing seemed bad to everyone involved. The feeling of many in Pakistan—government official, Pakistani and international WHO official alike—that it would be better to implement measles campaigns only when the burden of polio campaigns was lighter was not sufficient to counter the structural power of the Measles Initiative's major international partners and donors.[79]

A stream of foreign consultants visited Islamabad to assist with getting the Measles Initiative off the ground; they were largely, probably justifiably, upset about the lack of progress towards implementing campaigns in Pakistan. At one meeting, a particularly frustrated CDC official repeatedly asked a government official, "Does the minister know there's a measles campaign?" (The government official remained sullenly silent in response to these questions.) "Be sure to tell the minister there's a measles campaign," the CDC official continued, ostensibly as a joke, but nobody laughed. He instructed the government official to collect additional information from districts, and to implement an information campaign for doctors in Pakistan, who were apparently largely unaware that measles campaigns were about to begin.

After the meeting, the government official, who had remained largely silent during the formal meeting, complained to a Pakistani WHO employee in Urdu:

> They should deal with these things themselves. They have 110 kinds of meetings—meetings upon meetings. And they have unrealistic expectations--you need three weeks for the stuff they want immediately. As for the complaints about doctors not knowing about the campaign, whose responsibility was that? And why didn't they collect data themselves at district meetings? Now they want me to collect data from all of the districts. I swear to God, I'm upset by their style of demanding things.

[79] Several people suggested that Measles Initiative planners had originally planned to implement measles campaigns only after polio eradication, but when eradication had not been forthcoming, had decided they could not wait any longer to begin work in a country with high measles morbidity and mortality.

Here, a government official who was supposed to be running the program found himself treated like an underling of foreign officials. It rankled.

Also clear in the government official's frustrated outburst was that despite the official line that measles control was a program of the Government of Pakistan, he considered it clear that it was, in fact, a program of the international organizations. "They should deal with these things themselves," he said, indicating that he felt measles control was not *his* purview. His rhetorical question, "whose responsibility was that?" implied that measles campaigns were not his responsibility. In fact, on paper, nearly all Measles Initiative activities were the responsibility of the government. The government official's position implied that since it was the international organizations that had insisted on measles campaigns being initiated, they should take responsibility for carrying out the work of the campaigns themselves. It is not surprising, then, that the UNICEF official responsible for implementing measles campaigns in Pakistan often found himself attempting to get government officials to carry out training, planning, and pilot campaigns, and falling hopelessly behind.

It is significant—and diagnostic of structural power—that while there was widespread discussion in private at all levels of the Polio Eradication Initiative about dissatisfaction with concurrent implementation of measles campaigns, such sentiments were rarely aired publicly. The government official quoted above aired his dissatisfaction in Urdu, after the meeting; in English, during the meeting, when international officials could understand him, he had not voiced such complaints. If one were to rely on official statements, one would see only a *positive* synergy between polio and measles campaigns. The Polio Eradication Initiative's own literature states that, as part of "mainstreaming"

polio eradication, a goal is for all countries to have "polio operations. . . fully integrated with those for measles" (World Health Organization 2004).[80] Similarly, the weekly surveillance update email from the WHO Pakistan office in November 2007 stated:

> Supplementary immunization activities for measles are currently being conducted in Sindh province and the remaining uncovered areas of NWFP and Balochistan. Polio eradication staff is supporting the monitoring of these activities. In high risk populations, especially in areas where there is difficult access to all children, oral polio vaccine (OPV) is also being given. Anecdotal feedback from the field shows that there is great acceptance for measles vaccination from the community. Many refusal have been covered during the measles campaign in areas like South & North Waziristan Agencies.

Here, it is emphasized that implementation of measles campaigns has made certain populations *more* accepting of polio vaccine.[81] Many polio planners were concerned about the opposite effect—that the implementation of measles campaigns on top of polio campaigns would leave both health workers and parents tired of immunization drives and *less* likely to immunize children against polio. That there were areas in which measles campaigns did in fact assist with polio eradication activities is doubtless true. However, it is significant that it is the *positive* effects of measles campaigns only that were aired publicly. That the negative effects were discussed only in private is an indication of structural power (c.f. Scott 1990). It also reflects the strength of the culture of optimism in the World Health Organization.

Resistance in Islamabad

There was no such visible conflict in Islamabad over the use of mass polio campaigns as a public health strategy in Pakistan—likely because they had been around so long that the issue had largely already been decided. (Door-to-door campaigns in

[80] An unspoken assumption in this goal was likely that polio would be eradicated before measles activities would be scaled up.

[81] Some of the communities in question had organized "demand refusals." Tired of receiving no health services other than polio vaccine, they had attempted to refuse to allow their children to be vaccinated against polio unless other services were also provided.

Pakistan started in 1999, about eight years before I did my research.) In addition, unlike measles planners, polio eradication officials had long ago given up on getting government officials to do routine activities for them. At one meeting, there was a discussion of getting the Ministry of Health to send a letter to one district with some problems in the surveillance system. A high-level Pakistani WHO official argued successfully that rather than get the government to send a letter, the WHO should send it themselves. If left to the government, "it will get stuck in the bureaucratic chain," he said, shrugging his shoulders.

Polio eradication staff had twice-weekly planning meetings for officials from WHO, UNICEF, and the government. These were held in a government office. "We are trying to convince our governmental colleagues that this is their meeting," a WHO official explained, "otherwise our conference room is much more comfortable." However, government officials were often not present. "Same people here… same people missing… same excuses," another WHO official sighed one day.

When WHO officials did try to get high-level government officials to perform tasks for polio eradication, they often met with resistance, as in the following exchange following a request from a high-level WHO official that high-level government officials visit poor-performing districts where WHO officials could not go because of security restrictions:

> Government official 1: The provincial government can take the lead on it.
> Government official 2: We can write a letter or can arrange a meeting—how many districts are there?
> WHO official: Six or seven.
> Government official 2: They will be happy to come here.
> WHO official: It's better if you go to the province. . .
> Government official 1: The provincial office should take the lead.
> Government official 2: We can write a letter.
> WHO official: My suggestion is this—if we want zero transmission by May, now is the time—a high level federal level mission going from Islamabad to this area.

> Government official 2: When?
> WHO official: Within a week's time.
> Government official 2: Dr. A's availability is very important and Dr. A is not available next week.

In this exchange, the request that high-level government officials go to a key area of poliovirus transmission was deflected with arguments that oversight was the *province's* responsibility; that people from the areas in question "would be happy" to come to Islamabad; and that key officials were "not available."

In February of 2007, two Pakistani health employees were killed, and a third injured, by a car bomb in Bajour, in Pakistan's Tribal Areas, while working on polio immunization activities. Government and WHO officials agreed that a government award and monetary support for the families of these workers was an important gesture. In late February, government officials said that they planned to recognize the men with a national award, and by March 1, the CDC had sent checks of $1,000 each for the three families to Islamabad. Subsequently, the government approved additional compensation for the families. The plan was that the checks would be given with the national award. The issue came up repeatedly in meetings over the following months.

> *March 22*
> Government official: The Minister of Health will be in Nowshera on the 8th; we can visit the family and hand over the check then.
> WHO official: Make sure the check is ready.
> Government official: The Secretary [of Health] had very kindly agreed to present the family with a civil award, we just need to decide which one.
> WHO official: Great, that's very good.
>
> *April 5*
> WHO official: The government funds have still not arrived…The Minister of Health's planned trip to Nowshera was a very good plan but [smiling] unfortunately it did not materialize.
>
> *April 12*
> Government official 1: The checks are ready, but we are just waiting how we will deliver these checks.
> Government official 2: We did plan a visit by the minister but. . .
> Government official 1: During the NIDs [polio campaign] we can plan to take him.
> Government official 3: Civil awards would not be a bad idea.
> Government official 2: The previous Secretary of Health agreed to civil awards but. . .

> *May 14*
> UNICEF official: Dr. B [the government official quoted on March 22nd] said 'they should come here to Islamabad to get the checks.' He said, 'A thousand dollars is nothing—why a big ceremony for that?'
> WHO official: It is becoming embarrassing.
> UNICEF official: Just give them the money so they can use it.
>
> *May 17*
> Government official: The minister was supposed to go but he didn't. I absolutely agree with you- it's more respectful to do the ceremony in Nowshera than to make the families come to Islamabad. It should be done as soon as possible.

The checks were ultimately given to the families in Islamabad in early June.

Such techniques of foot dragging and false compliance were government officials' primary modes of everyday resistance in Islamabad. As in the case of measles, government officials made it clear through their actions, and the occasional comment, that polio eradication was *really* a UN program, even if they were going along with it. WHO and UNICEF officials' arsenal of techniques of everyday power to overcome this resistance (described at the district level in Chapter 4) was quite slim in Islamabad. They could not perform surveillance on the Minister of Health; and as the section below describes, their propaganda had little impact on high-level government officials. They were left with perks; the Minister of Health and high-level immunization officials were regularly flown to Geneva and Cairo for meetings. Structural power was sufficient to ensure verbal support for polio eradication; but it was not sufficient to get government officials to make it their first priority.

In public statements, government officials in Islamabad said that they were completely personally committed to the goal of eradication. "Polio is our number one health strategy," said the Minister of Health to WHO officials who were visiting from Geneva. (He did immediately diminish the strength of this statement by saying that the "alongside number one strategy" was routine immunization.) However, in my ten months

in Pakistan, I saw the Minister of Health only that once. High-level government officials' support of polio eradication was impressive in speech but lukewarm in practice.

Decisionmaking and Accountability: The Case of Monovalent Vaccines

The extent of the structural power UN organizations and other "partners" like the CDC possess can be best seen in cases where government and UN officials disagree on a given issue. A case in point is the controversy over monovalent vaccines.

There are actually three distinct types of poliovirus, called Type 1, Type 2, and Type 3. Type 2 has apparently been eradicated; no circulating Type 2 poliovirus has been observed since 1999. Type 1 and Type 3 are still with us. Type 1 is a more virulent virus than Type 3, causing paralysis in a higher percentage of the people it infects. Type 1 is also more likely to spread over long distances, even internationally; Type 3, as a CDC virologist observed, "stays home."

Immunity to one type of poliovirus does not confer immunity to the other two types. Thus, polio vaccines have traditionally contained all three types of poliovirus. Such vaccines, because they contain all three virus types, are called "trivalent" vaccines.

In 2005, with financial support[82] from the Gates Foundation, the Global Polio Eradication Initiative introduced "monovalent" oral polio vaccines, which confer immunity to only one type of poliovirus. The advantage to monovalent vaccines is that they are better at producing immunity for the specific type of virus they target. For example, in India monovalent oral Type 1 polio vaccine (mOPV1 for short) protects 80% of children against wild polio virus Type 1 after 5 doses, compared to 14 doses for

[82] The per-dose efficacy of mOPV1 against Type 1 paralytic polio was 30% in this study, compared to 11% for trivalent vaccine (Grassly, et al. 2007).

trivalent vaccine (Grassly, et al. 2007). The disadvantage of monovalent vaccines is, of course, that they confer immunity to only one of the two currently circulating types of poliovirus.

The official rhetoric in the international community upon the development of mOPV1 was optimistic. Monovalent vaccine was touted as a key to achieving eradication. Steve Cochi of the CDC said, "All the other countries eradicated poliovirus using trivalent OPV alone, while monovalent OPV types 1 and 3 are now available, providing potent, additional tools" (World Health Organization 2006c). The global Advisory Committee on Polio Eradication met in late 2005, and concluded, according to WHO reports, that "with sufficient resources and expanded use of mOPV1, all polio-affected countries except Nigeria can stop this disease by mid-2006" (World Health Organization 2006b).

There was only one case of Type 3 paralytic polio in Pakistan in 2005, and international experts concluded that Pakistan should be using monovalent Type 1 vaccine instead of the trivalent vaccine they had been using thus far. An "informal technical consultation" held in May of 2005 concluded,

> The predominance of Type 1 poliovirus in the remaining transmission in Pakistan suggests that the programme is reaching the stage where use of monovalent OPV [oral polio vaccine] type 1 can provide important advantages in stopping the remaining chains of transmission. . . the programme should plan for the use of mOPV1 in both the September 2005 NID [National Immunization Days] and the November 2005 SNID [Sub-National Immunization Days] rounds. The Ministry of Health should ensure that the necessary steps for approval of use of mOPV1 in Pakistan are taken as quickly as possible. (World Health Organization 2005c)

Given the international enthusiasm for monovalent vaccines, Pakistani government officials had little choice but to license and use mOPV1; they were also, at least publicly, supportive of adoption of mOPV1. The Minister of Health gave his verbal support to the

plan both in Geneva and in Islamabad (Maqbool 2 September 2005; World Health Organization 2006h).

However, the introduction of mOPV1 in Pakistan did not have quite the effect that was hoped. By the end of 2006, 40 cases of paralytic polio were found in Pakistan, up from 28 in 2005. The use of mOPV1 was associated with a reduction in the number of Type 1 cases, to 20 in 2006 compared to 27 in 2005. The unintended side-effect of the use of mOPV1 in Pakistan, however, was a resurgence of Type 3 poliovirus in the country. While some had assumed that Type 3 poliovirus had been eliminated from Pakistan, there were 20 cases of paralytic Type 3 polio in 2006, up from only 1 in 2005.

With this setback, the extent to which government workers at a number of levels perceived the decision to use mOPV1 in late 2005 and early 2006 as the World Health Organization's imperative, and not a decision for which the Pakistani health system was responsible, became clear. Government employees in districts with outbreaks of Type 3 virus, and officials at the national level, criticized the WHO and its partner agencies for having made a bad decision. Ultimately the issue was who was to blame for the increase in cases in 2006 over 2005: district employees and government workers for poor campaigns, or international policymakers for introducing mOPV1 too soon, before Type 3 virus had really disappeared from Pakistan? This issue surfaced at a "Technical Advisory Group" meeting of international policymakers in Islamabad in April of 2007. A pediatrician from Karachi asked of the use of mOPV1, "Was it premature?"

A WHO official responded that campaign quality was the important issue, "whatever type of vaccine you are using."

After some discussion of the patterns of transmission of Type 3 polio, another WHO official defended use of the monovalent vaccine. “This vaccine has worked,” he said. “We knew there were going to be risks. I still believe very much that [using mOPV1] was absolutely the right decision.”

The report prepared by the Technical Advisory Group highlighted “successful introduction of mOPV1 with a subsequent clear impact on WPV1 [Type 1] transmission.”

Pakistani WHO officials had already been steadily disseminating optimistic messages regarding mOPV1 in Pakistan. The “surveillance bulletin” sent to districts in April 2007, for example, stated in bold letters on the front page,

> In 2007, for the first time ever, there are fewer type 1 polio cases than type 3 cases in key endemic areas suggesting that the strategy of wide-scale use of monovalent oral polio vaccine type 1 (mOPV1)—which protects children twice as fast against type 1 polio than the traditionally-used trivalent OPV—is working. [emphasis in original]

The documents that the World Health Organization prepared for an international audience were resolutely optimistic regarding the use of mOPV1 in Pakistan. A document from the Eastern Mediterranean Region in Cairo stated, “The strategic measures adopted by the programme since 2004. . . as well as the use of monovalent OPV type 1 (mOPV1) have led to substantial improvements in the quality of supplementary immunization activities and in the immunization status of children in Pakistan” (World Health Organization 2006f, p. 7). The Global Polio Eradication’s Annual Report for 2006 stated, “In a demonstration of the impact of mOPV1, no type 1 polio cases have been reported from reservoir areas in northern Sindh since 2005 and southern Punjab since July 2006” (World Health Organization 2007a).

In response to the rise in cases of Type 3 polio, the Technical Advisory Group told Pakistani officials to license and begin use of monovalent Type 3 vaccine (mOPV3). When the Minister of Health came to the meeting, a high-ranking WHO official requested that mOPV3 be licensed for use in Pakistan as soon as possible. “It is a bold thing to throw at the feet of the minister,” he said, “but this will make a difference.”

The high-ranking officials at the meeting sold mOPV3 as the answer to the problems caused by mOPV1. For example, when one foreign consultant (known for speaking his mind) opined that an outbreak of Type 3 polio in north Sindh was due to the use of mOPV1 in that area, another person who worked in Sindh responded, “When we get monovalent type 3 vaccine, that will be the right response for chasing the virus in that area.” A high-ranking WHO official from Geneva said, “I am very satisfied with that response.”

Licensure of mOPV3 was purely a government responsibility, not in the hands of WHO employees in Islamabad, and it proceeded much more slowly than WHO officials would have liked. In fact, the requests by the officials at the Technical Advisory Group meeting to the minister came several months *after* the government was supposed to have been processing the licensing of mOPV3. In response to WHO official’s complaints about slowness as the vaccine remained unlicensed in May, one government official shrugged his shoulders. “It’s not our fault,” he said. “They [the vaccine manufacturer] didn’t submit the paperwork.” Monovalent Type 3 vaccine was licensed for use in Pakistan in June—more slowly than WHO officials considered ideal, but more quickly than many of them had dared to expect.

Decisions about the type of vaccine to use in a given area—mOPV1, mOPV3, or trivalent vaccine—are judgement calls; the monovalent vaccines were new, and international "experts" in Geneva and Atlanta, and WHO officials in Islamabad, did their best when deciding what vaccines to use in what area. My aim here is not to second-guess those decisions. Rather, I want to show how these decisions are a result of power relations and can engender resistance.

Decisions about which polio vaccines will be developed, licensed, and used are made by officials at the World Health Organization and the CDC. These decisions are influenced by several cultural characteristics of these organizations: optimism about the ease with which eradication will be achieved, and a belief in the power of technological solutions to health problems (c. f. Packard 1997). Officially, officials in Geneva and Atlanta "recommend" or "advise" national governments on these issues, but in practice, government officials, while they may resist through techniques like foot-dragging, have little choice but to follow the recommendations of international "experts." International officials gave the rhetoric of their advisory capacity substantial lip service—claiming, for example, that licensing of a monovalent vaccine was "a bold thing to throw at the feet of the minister"—but their structural power was such that the minister had little choice but to comply.

The response of the World Health Organization to strong arguments that international officials had miscalculated in the case of mOPV1 in Pakistan was an interesting one. Institutional optimism was so strong that admission of a minor setback was out of the question. Instead, a questionable decision was recast as a step forward: mOPV1 was "working," it had an "impact." If mOPV1 had *any* drawbacks, they would

be solved by mOPV3. Government officials, who had little choice but to accept the "recommendation" that they license mOPV3, were skeptical.

Optimism and Pessimism in Islamabad

In August of 2000, *The Lancet* reported on Pakistan's progress in polio eradication:

> Despite containing poliovirus transmission for the first time, Pakistan will not be able to eradicate poliomyelitis by the end of this year, the deadline set by WHO in 1998 for global eradication of polio, health officials said last week. "We will hopefully stop the spread of the virus by June next year, but it is almost impossible to eradicate it by [the end of] 2000", Mohammad Azam (National Institute of Health, Islamabad, Pakistan) told *The Lancet.* Last week, WHO Medical Officer, Anthony Mounts argued that the country could completely eradicate polio by the year 2000, but Azam disagreed… (Ahmad 2000)

In 2000, then, WHO officials argued that eradication in Pakistan was possible on a very short time frame; government officials took a less optimistic and, in retrospect, much more realistic stance. The situation had not changed in 2005, when I did my pilot research. The WHO Medical Officer was confident that polio would be eradicated in Pakistan by the time I began my fieldwork in late 2006. His government counterpart was confident that it would not.

I am reluctant to draw firm conclusions as to why government officials in Islamabad resisted the demands of the Polio Eradication Initiative. I never felt comfortable or close enough with any high-level government official to speak frankly about this issue. Certainly they desired the eradication of polio, though this goal was not and would never be a high priority for Musharraf's administration given the other problems facing the country. However, government officials' realism, when compared to UN optimism, provides a plausible theory.

Pakistan was not in a position to *refuse* to carry out a major goal of UNICEF and the World Health Organization. Compliance was requisite. Once Pakistan agreed to a major health initiative, there was, in the words of one high-level government official, "intense pressure" to meet stated goals. But these goals were often wildly optimistic, perhaps impossible in the time frame provided. That UN officials would meet with government resistance in this scenario is not entirely surprising.

Government officials were tossed on the winds of global health fads. International mandates from the Global Alliance for Vaccines and Immunizations, the Polio Eradication Initiative, and the Measles Initiative left little space for government officials to shape vaccination policy in Pakistan. This is not necessarily a bad thing—health initiatives have long been on the bottom of the Pakistani government's agenda, and the country's health indicators are unimpressive[83]—but it does shape the way that government officials approach what are ostensibly their own health projects.

Policy: The Power of an Ideal

Early in my research, I spoke with a UN official frustrated with the lack of commitment to polio eradication by the Pakistani government. She spoke wistfully of Ethiopia, which had no government to speak of, so the WHO was able just to step in and do what needed to be done to eradicate polio. She mentioned that if Musharraf could just get the army to conduct vaccination campaigns, that would probably be more effective.[84] At the time, such sentiments were distasteful to me; they were uncomfortably

[83] For example, WHO estimates of Pakistan's infant mortality rate (80 per 1,000) and its under-5 mortality rate (100 per 1,000) are the highest in South Asia, even compared to much poorer countries such as Nepal and Bangladesh (World Health Organization 2007c).

[84] The Pakistani Army has a reputation for transparency and effectiveness, especially compared to bureaucracies like the Pakistani health system.

neocolonial. But, with time, the logic of her arguments began to carry some weight. I began to wonder: why *didn't* WHO and UNICEF carry out campaigns themselves in districts where government resistance was all but insurmountable?

I asked that question to another UN official later on in my fieldwork. "Because it's a government program," she said, "and that would just entrench the idea"—

She broke off. I finished for her: That it's actually a UN program and government ownership is a farce? She nodded and shrugged.

In truth, the Polio Eradication Initiative needed the Pakistani government to carry out eradication campaigns in Pakistan. No other organization had the reach, especially in security-compromised areas, to marshal the workforce of over 200,000 people needed to immunize children during campaigns. As another WHO official pointed out, the contribution of government employees' time was considerable. The Polio Eradication Initiative did not have the money or the reach to create such an extensive organization without the government's assistance. Also, the widespread perception of the Pakistani population that polio vaccination was a *government* initiative was important in a populace often distrustful of foreign intervention.

Still, there was no a priori reason that, in theory, UN organizations could not have used the government health system to run vaccination campaigns in most of the country, and done the work themselves in the relatively limited areas where there was poor campaign quality, as evidenced by ongoing virus circulation. However, as the official's comment above indicates, the *ideal* of polio eradication's being a government program, regardless of how things actually worked in practice, prevented such blatant bypassing of the government from even being an option. It also prevented UN officials from using

tactics such as threats or coercion, either of government employees or of parents who refused vaccination for their children. As I will discuss in the next chapter, such restraint on the part of WHO employees has not always been the norm.

As I mentioned at the beginning of this chapter, the ideal represented by policy does not determine what happens on the ground. David Mosse has argued that in development projects, policy is not *designed* to reflect what is happening in implementation. The function of policy, he argues, is to get multiple stakeholders on board and speaking in the same terms, to frame projects for donors; it does not necessarily deeply shape how projects are implemented (Mosse 2005).

It is undoubtedly the case, as I will explore in the next chapter, that polio eradication policy was shaped more powerfully by international development rhetoric and culture than by the exigencies of vaccination in Pakistani cities. But policy ideals had very real effects in the Polio Eradication Initiative. The ideal that polio eradication would be a "government program" in Pakistan meant that while WHO and donor countries had the structural power to get the program put into place, and to ensure that the Pakistani government vaccinated 30 million children multiple times a year, they were limited in their ability to ensure accountability for performance, as well as to cross any lines that would interfere with the *appearance* of government control.

It is for these reasons that WHO officials, as elucidated in the Introduction, consistently lamented their inability to take action. As official after official noted, they *knew* what the problems were, and which districts they existed in. But they could not do anything to change what was happening on the ground because of the policy directive that polio eradication be owned by governments. UN employees in Islamabad found

themselves in the unenviable position of being accountable to their superiors in Cairo and Geneva for the progress of polio eradication, responsible for planning nationwide vaccination campaigns, and yet being unable to exercise any real control over the practices of vaccination in Pakistan.

Development and the State

Much current work on the relationship between development projects and nation-states focuses on the trend in the neoliberal era for NGOs to take on many tasks formerly carried out by national governments (Ferguson 2006; Pfeiffer 2004; Sharma 2006; Sharma and Gupta 2006). James Ferguson and Akhil Gupta write of "an emerging system of transnational governmentality" characterized by "the outsourcing of the functions of the state to NGOs and other ostensibly nonstate agencies" by international agencies (Ferguson and Gupta 2002, p. 982). Gupta and Aradhana Sharma explain:

> Neoliberal governmentality is characterized by a competitive market logic and a focus on smaller government that operates from a distance. Neoliberalism works by multiplying sites for regulation and domination through the creation of autonomous entities of government that are not part of the formal state apparatus and are guided by enterprise logic. This government-at-a-distance involves social institutions such as nongovernmental organizations, schools, communities, and even individuals that are not part of any centralized state apparatus and are made responsible for activities formerly carried out by state agencies. Neoliberalism thus represents a shift in the rationality of government and in the shape and nature of states. (Gupta and Sharma 2006, p. 277)

Many of these theorists aim to point out that the national state is not the only entity involved in governance, and that the boundaries of the "state" are neither obvious nor clear (c.f. Abrams 1977; Asad 2004). These points are well taken.

But these trends are not universal. The involvement of NGOs is *not* threatening government control over the Pakistani health sector. Outside of earthquake-affected areas, where NGOs have proliferated with such abandon that (to the chagrin of evicted tenants) they have taken over many of the buildings left standing, few NGOs are

particularly visible in Pakistan.[85] UN officials in the Polio Eradication Initiative could not get around the Pakistani government even if they wanted to. No other organization was extensive enough to carry out the activities necessary for the eradication of polio. Further, UN officials were tied to the ideal of polio eradication's being a government program.

Not that taking on the task of administering polio campaigns significantly buttressed the power of the Pakistani government. It is often argued in the anthropological literature on development agencies, most famously by James Ferguson (Ferguson 1994), that administration of a development project expands the power of the entity administering it, whether that be a nation-state or an NGO. But the Polio Eradication Initiative is simply much too narrowly focused on the administration of oral polio vaccine to have significant wide-reaching effects in *any* arena. Unlike some development projects studied by other anthropologists (Ferguson 1994; Li 2007), the Polio Eradication Initiative does not aim to remake society. It aims only to administer oral polio vaccine. Its side-effects, whether positive or negative, are, I believe, minimal.[86] The existence of the Polio Eradication Initiative was less about the *expansion* of state bureaucratic power than about the *limits* of that power, as government employees at all levels were harnessed to a task that they were not particularly enthusiastic about.

The landscape of the distribution of power between nation-states and international organizations is multilayered and complex. The "shift" represented by neoliberalism is far from total. Even as international organizations, both multilateral and bilateral, work around national governments in some development projects, they are tied by their own

[85] There are a few notable exceptions in the health sector, such as Edhi (which is best known for providing ambulance services) and the Aga Khan Health Services. While AKHS does provide health services paralleling those of the Pakistani government, it does so only in limited geographical areas.
[86] For example, any role that the Polio Eradication Initiative has on the place of Pakistanis in the world system is completely insignificant compared to the impact of the War on Terror.

rhetoric or by practical necessity to working directly through them in others. In such cases, power struggles between international organizations and governments—conflicts, often just below the surface, over who gets to make major policy decisions and who is held accountable for reaching goals—will be common. These struggles are fluid and ongoing. They are likely, in many cases, to determine the success and failure of the development projects to which both international organizations and national governments claim to be committed.

Inequality, Resistance, and Polio Transmission

The underlying reason for the difficulties faced by the Polio Eradication Initiative in Pakistan was that, simply, the task was so difficult. As I mentioned in Chapter Two, as many as ten doses of Oral Polio Vaccine are necessary to confer immunity against polio to children living in many areas of South Asia. In much of the country, fewer than 60% of children have received *routine* (as opposed to campaign-based) immunizations including the basic three doses of Oral Polio Vaccine—which points to the dual challenges of poor health infrastructure and the need for even *more* doses of vaccine to be administered during campaigns.

The populations where poliovirus is still circulating in Pakistan are the country's most marginalized and impoverished: Afghani refugees, nomads, residents of urban slums. Nonexistent sanitation infrastructure, the necessity of living packed into small tents or homes (sometimes constructed, of necessity, amidst the garbage dumps of wealthier home-dwellers), inadequate nutrition, and the reluctance of health department

workers like Lady Health Workers to visit these areas[87] conspire to leave these populations prey to a number of diseases. One of them is polio.

As I mentioned previously, if three doses of vaccine were all that were required to confer immunity to polio in Pakistan, elimination would likely have already been achieved in the country.[88] The *root* problem underlying ongoing polio transmission is poverty—and its effects such as poor sanitation, poor nutrition, high rates of diarrhea, and overcrowding—not lack of vaccination per se. Yet the Polio Eradication Initiative focuses solely on immunization. In this respect, it is subject to James Ferguson's critique that development projects draw attention away from political sources of inequality and focus instead on technical interventions (Ferguson 2006).

The Polio Eradication Initiative does not challenge global systems of inequality, and it is so narrowly focused on vaccination that it does not attempt to address other issues contributing to poliovirus circulation, such as poor sanitation. Yet I am not willing to condemn it for this reason. I have not yet seen a plan for the elimination of global inequality that is likely to be implemented. Improving sanitation across Pakistan is a slightly more achievable goal, and one that would have wide-reaching positive effects, but given the nation's high rates of population growth and urbanization, it is an extraordinarily tall order, and progress on this front has been incremental. Nor have Rotarians and Senators given improved sanitation their steadfast support. If the Polio Eradication Initiative focuses on vaccination, the path of least resistance, it cannot be entirely faulted. Its planners know well the art of the possible.

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[87] I did a study on immunization coverage in nomadic populations in Pakistan for the Polio Eradication Initiative, reproduced in Appendix B.

[88] By the end of 2006, surveillance data indicated that around 95% of children aged 0-36 months in Pakistan had received at least three doses of oral polio vaccine.

Some scholars have argued that the efforts expended on polio eradication would have better been spent improving primary health care (Renne 2006). But the choice between polio eradication and strengthening basic health services is not an either/or proposition. Polio eradication is a cause able to mobilize vast resources, such as the money provided by Rotary, that would not have been available for primary health care. Its narrow scope and technical focus are limitations, but not a priori reasons to condemn it.

I agree with the Polio Eradication Initiative officials who insist that polio eradication in Pakistan is "technically feasible." In Pakistan's belt of highest population density, the northern Punjab, with a string of megacities including Lahore, Gujranwala, Faisalabad, and Rawalpindi, no polio case has been observed since 2004. These extremely high-density cities, with high summer temperatures and poor sanitation, are ideal poliovirus habitat. Yet elimination *has* been achieved in these areas.

A key factor in stymieing the achievement of elimination of polio, I believe, is what officials referred to as "management issues." Polio Eradication Initiative planners have done extensive analyses on what indicators are correlated with districts with ongoing poliovirus circulation. There are only a handful of indicators predictive of polio transmission. Some of them—a lower number of doses of oral polio vaccine per child, more poorly covered areas during campaigns, higher population density—are predictable ones, not particularly revealing of underlying factors. Others are more informative. The following factors have been found to be significantly correlated with ongoing polio transmission in a given district:

1) routine immunization coverage of less than 60% ($p=0.001$) (Islamabad

National Surveillance Cell data)

2) frequent transfers of the District Health Officer (aOR=5.1, 95% CI=1.03-25.5) (Lowther, et al. 2002)

3) status as a "security-compromised area;" this indicator just missed statistical significance (p=0.066) (Islamabad National Surveillance Cell data).

On the surface, these indicators are unrelated to one another, and all three do contribute to ongoing poliovirus transmission in and of themselves. Low routine immunization coverage means additional campaigns are needed to bring many children up to a baseline three doses of vaccine; frequent administrative transfers make for breaks in continuity; and insecurity makes planning difficult.

But none of these indicators should be, in and of themselves, sufficient to sustain poliovirus transmission. Districts with ongoing virus circulation are required to carry out additional "sub-national" campaigns in addition to national campaigns—three in 2006 and five in 2007—which should more than make up for subpar routine immunization rates. Even if district leadership changes, the procedures for carrying out polio vaccination campaigns remain the same, and the workers know the drill—there have been more than 50 campaigns thus far in Pakistan. Finally, as I discussed in the last chapter, fighting in all areas of Pakistan is sporadic, and while campaigns must sometimes be postponed in some areas they can almost always be carried out later.

What *is* significant about these indicators is what all of them are proxies for: district health departments with poor accountability, voracious politics, and little commitment to the ideal of childhood immunization. These factors certainly contribute both to poor routine immunization coverage and to high rates of turnover in district

administrations. They do not, of course, cause security problems in a district. However, these problems are compounded by insecurity. As I argued in the last chapter, lack of UN security clearance prevents WHO or UNICEF employees from traveling to insecure districts, leaving district health departments without the supervision and surveillance that these agencies use to pressure districts to implement quality vaccination campaigns. In insecure areas, too, other problems are likely to dwarf the threat of polio, and government employees may resist more tenaciously the suggestion that they take on some risk to their own safety to eradicate a disease which does not seem to be a major problem.

In short, a key reason—to my mind, *the* key reason—for ongoing poliovirus transmission in Pakistan is what planners in Islamabad called "management issues." Subsumed under this category were lack of *actual* (as opposed to verbal) commitment by health authorities from the village level to Islamabad, and what Polio Eradication officials called "inefficient utilization of human and financial resources" (and I called, in Chapter 4, corruption, patron-clientism, and refusal to work). In short, the difficulties faced by the Polio Eradication Initiative in Pakistan are, I believe, primarily attributable to what I have described as a matrix of resistance on the part of government employees at a number of levels.

Air Travel

I leave Kaifabad for Geneva in the torrid heat of early June, when each evening the always-weak electricity in my windowless house gives out entirely, and I pray there is enough water to stand in the shower with my clothes on in order to cool off just enough to fall asleep. I board the crowded plane from Kaifabad to Abu Dhabi, filled with migrant workers, with a huge sigh of relief: it is air-conditioned! When my second plane begins the descent into Geneva, circling around the sparkling lake ringed with snow-capped mountains, I feel I have entered an alternate universe.

Sarah is an American who works at the World Health Organization headquarters in Geneva.[89] She and her family live in an apartment in a village outside the city, with small neighborhood shops including a bakery and a restaurant surrounded by rolling green fields. Her office—which has clearly not been renovated since the 70s or earlier—is in the WHO complex, a cluster of buildings on a hill not far from the center of Geneva, and served by a clean and reliable bus service, which she uses. Her daughter also takes public transportation to her private international school, a complex of beautifully restored old buildings on well-kept grounds whose fees of about $25,000 a year are paid by WHO. While her family enjoys living in Geneva, Sarah's job is hard on them; she is often gone more than two weeks out of every month.

Wherever she goes, Sarah always stays in the best accommodations, which range from excellent in capital cities to questionable at best in the remote areas of Pakistan she visits to observe and monitor polio campaigns. I suspect the UN has a negotiated rate with the Islamabad Marriott, where she spends the most time when she is in Pakistan, but rates for the public there exceed $200 a night. She is able, there, to keep in touch with her office and family in Geneva via a broadband Internet connection, and exercise in their weight room or swim in the pool.

Sarah's job is very demanding. When she is in Geneva, she regularly goes to the office on evenings and weekends, putting in close to seventy hours a week. When she is traveling, she may work more hours than that. She does it because she loves it, because it inspires her to be part of a historic goal like the eradication of polio, because she believes deeply that eradication is possible and that she has a responsibility to do everything that she can to make it happen. She is thankful that WHO flies her business class so that she can get some sleep, but nonetheless she is often in a state of perpetual jet-lag. She's so far into sleep debt, she says, that she's lost all hope of ever catching up.

[89] Because I saw different aspects of high-ranking WHO officials' lives in different phases of my fieldwork, "Sarah" is a composite of several people.

Chapter Six

Geneva

I am an optimist. Bill Gates (Gates 2008)

The Shift from International to Global Health

I began a master's program in international health in 2003, but graduated in 2005 with a degree in global health. The change in the moniker of my department reflected a larger trend: the term "global health" is replacing the previously dominant "international health" in the language of academics and bureaucrats working toward improving health in poor countries (Brown and Fee 2006). This change in appellation is intended to reflect the nature of disease in an increasingly globalized world, and to shift focus to linkages across boundaries rather than on individual nations:

> While international health has sought to make systematic comparisons across national frontiers, global health views health and disease in a comprehensive, world-wide, integrated manner. This change in perspective on the world's health and health problems has emerged as a result of the establishment of newer and closer physical, economic, social, cultural, financial, and political linkages between nations, collectively referred to as globalization. One of the results of globalization is that morbidities and mortalities, once geographically unique, are no longer so confined. (Imperato 2001, p.77)

The focus on global health carries with it an increased emphasis on the ideal of collaboration. This is framed as essential to the success of global health in the new millennium:

> Health problems today truly are global, and do not lend themselves to narrow parochial solutions. Cooperation, collaboration, and communication are more than a trendy shibboleth; they are ignored at the peril of genuine pandemic. (Banta 2001, p. 75)

Partnerships are the preferred mode of collaboration in this new global health. They provide a way of taking on projects too large for a single government or agency. The Global Alliance for Vaccines and Immunizations (GAVI), the Global Fund to Fight AIDS, Tuberculosis, and Malaria, the Stop TB Partnership, the Measles Initiative, and the Roll Back Malaria Partnership are all extremely large partnerships including some combination of multilateral and bilateral agencies, governments, and private-sector organizations. Many of these projects are modeled, more or less explicitly, on the Polio Eradication Initiative, the first global partnership of this type. In the current climate of collaboration, even partnerships need partners: for example, the Global Fund, itself a partnership, is listed as a partner of the Roll Back Malaria Partnership.

This proliferation of partnerships marks an important conceptual and cultural shift in the field of what is now global health. The conceptualization of the relationship between organizations such as the World Health Organization and the governments of poor countries like Pakistan as "partnership" and "collaboration" has important implications for the ability of international organizations to exert the power needed to carry out ambitious goals like eradication. The extent to which the culture of global health differs from the culture of international health thirty years ago, and the implications of this cultural shift, are clear when one compares the methods of the Polio Eradication Initiative to the single successful attempt at eradication, the Smallpox Eradication Program.

The Smallpox Era

The last naturally occurring case of smallpox was in a Somali cook in 1977.[90] The eradication of smallpox is widely and justifiably regarded as one of the great achievements of international health, and cited by thinkers of widely divergent philosophies as an example of the best of international assistance (Easterley 2006, p. 242; Sachs 2005, p. 260). In the world of development, where progress is often all too elusive, smallpox eradication was an unqualified success.

Many of the challenges faced by would-be smallpox eradicators were very similar to those that have proven so formidable in the attempt to eradicate polio. The following description of the Pakistani government's efforts in smallpox eradication describes problems different in specifics, but not in nature, to the obstacles to eradicating polio in that country:

> By December 1968 major problems had become apparent. The government did not increase the budget [as it had promised] but, in fact, decreased it by 30%--to 1 million rupees. The plan envisaged the use of local body vaccinators as part of the complement of personnel but they were responsible to their own union councils (administrative units each responsible for a population of about 10,000) and the councils, in turn, to the Ministry of Basic Democracy. As the WHO adviser was to report: "A number of vaccinators have been appointed under political pressure and many of them are recommended by influential persons and are engaged in other duties or private jobs." … The Ministry of Basic Democracy was, with difficulty, persuaded to issue an order to the union councils directing local body vaccinators to work with the programme, an order which was subsequently ignored as often as it was respected. (Fenner, et al. 1988, p. 691)

In short, World Health Organization representatives attempting to carry out smallpox eradication in Pakistan encountered government resistance of the type I described in Chapter 4: foot-dragging, false compliance, and patron-clientism.

Government officials in other countries, too, resisted WHO mandates. Lawrence Brilliant, who wrote a book on his experiences as a WHO employee in the Smallpox

[90] Several other cases occurred in 1978 when smallpox virus escaped from a lab in Birmingham, England.

Eradication Program in India,[91] noted that there were a few high-level government officials deeply committed to smallpox eradication, and that they and WHO officials in New Delhi formed a true team. However, not all Indian government employees believed that smallpox eradication was an important goal:

> However high a priority it was for the world community, as a whole smallpox eradication was not a priority for India so long as the number of cases appeared to be declining. The relative impact of smallpox [compared to other diseases] was negligible. . . many policy makers felt that smallpox was more a priority for the United States or the USSR than for India. (Brilliant 1985, pp. 30-33)

Nor were Indian officials convinced that the methods advocated by the World Health Organization were the right way to go about smallpox eradication.[92] In at least one instance, the Indian Minister of Health publicly raised objections to World Health Organization methodology—but immunization activities were carried out according to WHO's preferences. Thus it is not entirely surprising that government workers at all levels in India, aware of these disagreements, sometimes resisted carrying out their duties with the zeal that foreign WHO employees desired (Greenough 1995).

I have argued in this dissertation that resistance on the part of government employees is the primary reason why polio is not yet eradicated in Pakistan. The question then becomes: if there was resistance to smallpox eradication as well, how was smallpox eradicated? The primary reason is that, because of differences in the transmission of the viruses and the effectiveness of the vaccine, smallpox eradication was much easier than

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[91] Brilliant first came to India in an overland journey in buses from London to Bangladesh with a "counterculture group" led by Wavy Gravy. Later, he and his wife, inspired by the "LSD saga" of Richard Alpert, returned to India to become devotees of Neem Karoli Baba, a saint with an ashram in the Himalayas. They stayed there until Neem Karoli Baba told Brilliant—who was trained as a doctor—that it was his religious duty to work for the World Health Organization to eradicate smallpox. The WHO was initially skeptical of Brilliant, but he ultimately became part of the core team to organize and lead smallpox eradication in India (Brilliant and Brilliant 1978).

[92] Smallpox was eradicated using the method of search and containment, where smallpox cases were actively sought out and quarantined, and everyone who had come in contact with the case was vaccinated. Though this method ultimately proved extremely effective at interrupting smallpox transmission, it was initially controversial as many people felt that mass vaccination of the entire population was a superior strategy.

polio eradication. Most people gained immunity to smallpox after only a single dose of vaccine; in the case of polio in Pakistan, some children need as many as ten doses. Every case of smallpox was symptomatic, making it easy to trace transmission; there are hundreds of "silent" and untraceable polio infections for every person who develops paralysis. Smallpox vaccine was even effective *after* people had already been exposed to smallpox, provided they had not yet developed symptoms.

There were also significant differences between the Smallpox Eradication Program and the Polio Eradication Initiative in how WHO employees in each project dealt with resistance. The most striking difference was in their approach to people who refused vaccination. In the Polio Eradication Initiative, people who refuse vaccination for their children are visited repeatedly by people attempting to persuade them to change their minds, but coercive tactics have, to my knowledge, never been used in Pakistan. At an orientation in Islamabad for some international workers sent by the CDC to work on polio eradication for three months, a man from Africa asked why police were not used to vaccinate refusals. There were a few suppressed smiles.

"Constitutionally," a high-ranking Pakistani WHO official responded, "Pakistan is a democracy. . . To me, the major issue is management; it's not really religious refusal."[93]

WHO officials in the Smallpox Eradication Program were less sanguine about refusals. Forcible vaccination of refusals was not official policy, but it was a fairly widespread practice by foreigners working for the program in South Asia (Greenough 1995). Lawrence Brilliant described one such encounter in India:

[93] The official referred to "religious refusal" because the larger discussion was about a few pockets of people who refused vaccination on the grounds that it was unIslamic. In general, Pakistan's most prominent Muslim clerics supported polio immunization.

> In the middle of the gentle Indian night, an intruder burst through the bamboo door of the simple adobe hut. He was a government vaccinator, under orders to break resistance against smallpox vaccination. Lakshmi Singh awoke screaming and scrambled to hide herself. Her husband leaped out of bed, grabbed an ax, and chased the intruder into the courtyard.
>
> Outside, a squad of doctors and policemen quickly overpowered Mohan Singh. The instant he was pinned to the ground, a second vaccinator jabbed smallpox vaccine into his arm.
>
> Mohan Singh, a wiry 40-year-old leader of the Ho tribe, squirmed away from the needle, causing the vaccination site to bleed. The, government team held him until they had injected enough vaccine; then they seized his wife. Pausing only to suck out some vaccine, Mohan Singh pulled a bamboo pole from the roof and attacked the strangers holding his wife.
>
> While two policemen rebuffed him, the rest of the team overpowered the entire family and vaccinated each in turn. Lakshmi Singh bit deep into one doctor's hand, but to no avail. (Brilliant and Brilliant 1978)

There were, in fact, good reasons for smallpox eradicators to be more diligent about covering refusals than polio eradicators. I agree with the WHO official, quoted above, who opined that refusals were much less of a pressing issue in polio eradication than what he called "management" (and I, in Chapters 4 and 5, conceptualized as resistance). This is because of differences in the methods of the two programs. Smallpox eradication was achieved by creating a firewall of vaccinated people around each case of smallpox. A small pocket of refusals could derail the effectiveness of this strategy. Polio eradication, in contrast, depends on what epidemiologists call "herd immunity," or the immunity of the majority of the general population to polio.[94] In this approach, refusals are troubling but, so long as they remain a small percentage of the overall population, will not cause the strategy to fail.

Interestingly, one smallpox veteran I spoke with said that smallpox eradicators "became *less* coercive at the end," when they were ultimately successful. "We used force sometimes—and it didn't work," he said. The key to achieving high vaccination rates, in his opinion, was hiring health workers from infected villages, and not outsiders, to perform containment activities.

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[94] The epidemiology of polio rules out search and containment, the strategy used in smallpox eradication, as an effective method in polio eradication.

But foreign officials in the Smallpox Eradication Program in South Asia did not use coercive tactics only on people who refused vaccination. They also did their best to coerce government officials who were unsupportive of their efforts into action. Often this took the form of exerting power they did not actually possess. For example, faced with the prospect of a city that was exporting large amounts of smallpox to other areas of India, Lawrence Brilliant placed the city under quarantine, ordering that all buses and cars entering the city be stopped and everyone inside vaccinated. Similarly, trains were kept away from the central station, and disembarking passengers were checked to make sure they were vaccinated (Brilliant and Brilliant 1978). What is most striking about this episode is not, however, the action taken but the fact that it was a foreigner who took it upon himself to do what he felt needed to be done regardless of the extent of his official authority. One commentator wrote, "as a United Nations employee, he had no legal authority to close the city, but he did so by force of will, inspired by idealism and youthful daring" (Tucker 2001, p. 104).

Lawrence Brilliant was not alone in possessing this particular brand of chutzpah. In early 1975, the Smallpox Eradication Program in Bangladesh was in crisis. India and Pakistan had eliminated smallpox, but in Bangladesh cases continued to occur, nearly 4,000 of them in April 1975 (Fenner, et al. 1988). The situation was perilous because the Secretary of Health was considering abandoning the strategy of searching for cases and vaccinating around them, or "surveillance-containment," which had been so successful elsewhere, and returning to the less effective strategy of mass vaccination:

> His personal experience with smallpox control in the Ministry had been confined to the period since Bangladesh's independence, and for the last 4 years optimism had been expressed by the staff during and immediately after the monsoon each year, but epidemics and emergency programmes inevitably followed in the spring. For advice he turned most often to the WHO Representative in Bangladesh, a public health physician but one who understood neither smallpox

> epidemiology nor the eradication strategy any better than the Secretary of Health. With smallpox incidence rising and with increasing international interest as to whether Bangladesh could or would be able to stop transmission, tensions were great. The Secretary of Health and the WHO Representative repeatedly and vehemently demanded that the surveillance-containment programme should be stopped and the entire population vaccinated forthwith. (Fenner, et al. 1988, pp. 841-2)

Into the center of this dispute stepped D. A. Henderson, the head of the Smallpox Eradication Program in Geneva. A smallpox veteran who worked in Bangladesh told me, "When we were in real trouble, D. A. Henderson came from Geneva and threatened to quarantine the country, which he had no power to do, but it worked." The WHO Representative who advocated mass vaccination also left. The strategy of surveillance-containment continued, and smallpox was eliminated from Bangladesh just six months later, in November 1975. Bangladesh's last smallpox case, and the world's last naturally occurring case of *Variola major,* the more virulent form of smallpox, was a two-and-a-half year old girl named Rahima Banu.

Such actions are *not* the modus operandi in polio eradication. WHO officials in polio eradication know where the problems are and what would be required to rectify them. But they are powerless to do so. Of course, officially the foreigners in smallpox eradication were powerless to do so as well. But they did not let official rules get in the way of eradicating smallpox. If they felt coercion—whether of government employees or people who refused vaccination—was necessary, then they used it. This is a major difference in the cultures of the Polio Eradication Initiative and the Smallpox Eradication Program.

Coercion and Success

I believe that the Smallpox Eradication Initiative's culture of using any means necessary, along with the fact that smallpox eradication was easier from an

epidemiological point of view, forms part of the explanation for its success. Eradication of a disease requires the simultaneous cooperation of people in all corners of every nation on earth. It is inevitable that in some areas, would-be eradicators will encounter resistance, whether from recipient populations or the employees of delivery systems. Some of this resistance will be strong enough that standard techniques of "social mobilization"—radio and television advertisements, photo ops by high-ranking government officials—are insufficient to counter it. Coercive methods in certain times and places may be necessary. Coercion alone is certainly not a recipe for success in an eradication program; as the smallpox veteran quoted above observed, it is often not the best strategy. Malaria eradication's reliance on coercion rather than productive relationships with potentially supportive recipient populations was a major weakness in its strategy (Packard 1997). But eradication is difficult enough that if it is to be successful, moderation cannot be the modus operandi.

The longer an eradication program drags on, the more difficult success becomes. In polio eradication, planners often speak of "fatigue." In polio-endemic countries like Pakistan, workers have been told year after year that this one will be the last, that eradication is imminent and long hours and great attention to detail are needed *now*. These workers are tired and in many cases have lost faith. Workers in countries that have already eradicated polio are also prone to fatigue. Having eliminated polio through hard work, they must nonetheless keep up extremely high vaccination coverage rates lest importations from polio-endemic countries undo their efforts. The more years this must be done, the harder it is to muster the enthusiasm—and the funding—for eradication.

Once activities were scaled up, smallpox was eradicated quickly enough that fatigue did not form the problem it currently does in polio eradication. India, for example, went from around 190,000 cases of smallpox a year to zero in just twelve months (Brilliant 1985). They were able to do so primarily because of the epidemiology of smallpox. But coercive methods also played a part where resistance was present. In the final stages of eradicating smallpox from India, forcible vaccination of refusals and coercion of government officials to adopt extreme steps like quarantine were part of the matrix of strategies that interrupted transmission on the short time scale necessary for success.

Of course, it is impossible to know what would have happened had smallpox eradication officials *not* threatened government officials in places like Bangladesh with punitive action that they could not actually take. Perhaps smallpox would have been eradicated anyway. Or perhaps Bangladesh would have returned to mass vaccination and smallpox would have reinfected India, leading to a long, drawn-out campaign that ended in failure. The eradication of smallpox was far from a foregone conclusion; D. A. Henderson has said that it was "just barely" eradicated (Roberts 2006).

Eradication is such a difficult goal that a large number of factors—and a good-sized dollop of luck—are necessary for its achievement. An excellent surveillance system, sufficient structural power to get all nations on earth to adopt the goal simultaneously, driven leadership—all these are absolutely necessary to end forever the transmission of a disease that is, in theory, eradicable. In addition, there are a number of more idiosyncratic factors, ones that may be important in certain times and places and not others. These include the ability to carry out eradication activities in the context of armed

conflict, the ability to adapt and create new strategies to deal with unique situations, the capacity to draw on the local knowledge of people living in places from Manila to Malawi, and the ability to use coercion when it is necessary.

I am not stating that coercive methods are morally justifiable. I am, rather, attempting to bring an unpleasant but nonetheless true facet of the goal of eradication to light. Coercion in the face of resistance may prove necessary for an eradication program, with its twin demands of compliance both across large portions of the globe and on a very short time scale. If eradication is to be a public health goal—and, given the enthusiasm of Bill and Melinda Gates for the concept, it likely will be for some time—this objectionable truth must be dealt with. Wishing it away leads to precisely the kind of quagmire that the Polio Eradication Initiative currently faces.

I am *not* arguing for the widespread use of coercive methods in eradication programs—even from an extremely narrow public health point of view, they could certainly backfire. The coercive methods used in smallpox eradication likely negatively affected other public health initiatives (Greenough 1995). What I am advocating is a sober acknowledgement of the fact that just because a particular goal is noble does not mean that everyone on earth will enthusiastically support it. Some people, somewhere on earth, will always have political or religious reasons to object—or, as in the case of government workers in the Polio Eradication Initiative in Pakistan, little reason to give the program overwhelming support. Rhetoric of "partnership" or "collaboration," or the use of standard "social mobilization" programs, will not make these problems go away. Honest discussion of the issues involved, and honest appraisal of what can be

accomplished with the methods one is willing to use, would be a step in the right direction.

I would also like to make it clear that I would never argue for the utility of coercive methods in *control* programs,[95] which rely on long-term, sustainable strategies, and where coercion can play no productive role. Eradication programs are special cases. My argument here is weakened by the fact that there is only one successful eradication program to compare with polio eradication. Certainly coercive methods are not in and of themselves a recipe for success; excellent surveillance, potent vaccines or other tools, and a disease whose epidemiology lends itself to eradication are essential. But in comparing two global eradication programs, one successful and one floundering, one of the key differences that emerges is their method of dealing with resistance.

Smallpox, Polio, and the Culture of Global Health

When they encountered resistance, Smallpox Eradication Program officials often used force. Polio Eradication Initiative officials tend to wait, proclaim optimistic statements, and hope things will change. Why was it that officials in the Smallpox Eradication Program felt free to use coercive methods while those in the Polio Eradication Initiative do not?

Some have opined that foreigners working on smallpox eradication were more likely to use coercive methods because they were isolated from supervision. It is certainly true that the introduction of cell phones has revolutionized communication in South Asia. As in the case in Chapter 3 when I arrived to do checking in an area where checking was

[95] The vast majority of global public health programs are control programs, aimed at keeping transmission of disease low, but not at eradicating the disease entirely from the wild. See Chapter 2 for further discussion of the difference between eradication and control.

supposed to be postponed, powerful officials are now never more than a phone call away. Especially in remote areas where communication was previously slow, expensive, or nonexistent, the ability of lower-level employees to use cell phone to check on someone's *actual* authority provides an important check on foreigners' ability to use coercive methods.

But improved communications alone do not explain the relative absence of coercive methods in the Polio Eradication Initiative. If word reached officials in the Polio Eradication Initiative that a given foreign consultant was using coercive methods against refusals, no matter how belatedly they received that information, the person in question would likely be fired. (I have never, in fact, heard of such behavior, as the use of coercive methods is simply out of the question.) There was a culture of rule breaking in the Smallpox Eradication Initiative, one which justified any means necessary to achieve the eradication of smallpox.

Dr. M. I. D. Sharma, the acting commissioner of health for the Indian government and an active participant in smallpox eradication in India, prepared a "review of recipes for eradication of smallpox in India." These included "rules, regulations, and the routine breaking of rules and regulations" (Brilliant 1985, pp. 146-7). Lawrence Brilliant adds that there are important reasons that it was the foreigners in the program who were most likely to break rules:

> There are risks in ignoring rules and breaking regulations, and the willingness to take those risks might have been greater in a temporary program that was not, for most of the participants, a lifetime career… To some extent, experience from smallpox does corroborate an important aphorism: You can't make an omelet without cracking a few eggs. (Brilliant 1985, p. 155)

This culture of rule-breaking differed from the overall culture of the World Health Organization at the time; Brilliant described the Smallpox Eradication Program as "what

sociologist Max Weber has called a 'charismatic organization,' quite different from the formal organizational structure commonly associated with WHO." He added, "an honest look at WHO in the postsmallpox years must acknowledge some degree of backlash against the zest of the eradicators" (Brilliant 1985, pp. 71, 158).

To some degree, the culture of rule-breaking in the Smallpox Eradication Program reflected the personality of its leadership. In a book on smallpox, Jonathan Tucker described the college years of D. A. Henderson, head of the Smallpox Eradication Program:

> Tall and lanky (six feet, two inches), D. A. had a booming voice, an infectious grin, and an entrepreneurial spirit. He became editor of the college yearbook in his junior year, and he and his roommate founded a radio station that broadcast through the pipes of the campus heating system. They also devised creative strategies for bending the school rules. Although students were banned from having cars and everyone rode bicycles, there was no rule against motor scooters, which Henderson and his roommate used to zip around campus. Oberlin subsequently banned scooters but agreed to "grandfather in" the two young men on grounds of financial hardship. Exploiting another loophole, Henderson purchased a 1937 Oldsmobile as the "official car" of the college radio station. (Tucker 2001 pp. 39-40)

But the credit, or blame, for the methods used in smallpox eradication cannot lie entirely with D. A. Henderson. Nor is it entirely plausible that the Smallpox Eradication Program was a total aberration, culturally different from most global public health projects before or since, especially when one considers that several of the highest-level officials in the Polio Eradication Initiative are smallpox veterans. Rather, I believe the primary reason for the difference in approach between the Smallpox Eradication Program and the Polio Eradication Initiative is the shift in the larger culture of what used to be "international" and is now "global" health. The rhetoric of collaboration and partnership has real effects. As one global health practitioner put it to me, the "kind of containment strategies that worked" for smallpox "are not acceptable in today's public health world."

The new paradigm, she opined, was "better from the point of view of respect", but worse when it came to completing an ambitious goal like eradication.

Power and Partnership

The ideals of global health limit the exercise of power by agencies such as the World Health Organization. Certainly no one in the Polio Eradication Initiative ever mentioned this to me as a burden or a limitation. The sorts of methods used in the Smallpox Eradication Program simply never arose as a possibility in Pakistan. If they were suggested, as in the conversation with the visitor from Africa cited above, they were not taken particularly seriously. The ideals of "collaboration" and "partnership," while fraught enough in practice, are sufficient to keep coercive methods from becoming a possibility.

But in addition to the arguably positive effect of limiting the amount of coercion that employees of the World Health Organization could use against the officials or citizens of poor countries, the rhetoric of partnership also obscures the power relations that do exist. As I argued in the last chapter, significant power was brought to bear on the Pakistani government to get them to accept programs such as polio eradication and measles elimination. Yet because the relationship between the World Health Organization, UNICEF, and the Pakistani government is officially a "partnership," the difficulties inherent in this relationship, and the resistance that employees of the Pakistani government present, cannot be discussed openly at the policy level. World Health Organization employees at all levels know what is happening; they are not deluded by the policy ideals. But in policy and planning, they have to hold tight to the fiction of

Pakistani government partnership. The larger global health audience—donors, "partners," Ministers of Health—demands that language. The World Health Organization provides it. In doing so, they ensure the continuation of the Polio Eradication Initiative.

This language has the dual effect of papering over the exercise of power by the World Health Organization and other multilateral and bilateral agencies, and of preventing open discussion in public forums about the nature of the problems that polio eradication faces. Governments are presented as enthusiastic "partners," which prevents a public admission that some governments are resisting the demands of the Polio Eradication Initiative. Because, in official rhetoric, everyone is collaborating, serious public debate about what would truly be necessary to achieve eradication, and the amount of power that organizations like the World Health Organization should be willing to exert, is out of the question.

Of course the WHO officials working on polio eradication are very intelligent, and people based in Geneva know that the Pakistani government is a tenuous "partner." Despite public proclamations that Pakistan was making progress and had government commitment, in private a WHO official in Geneva said what everyone inside the project knew: "hardly anything has improved; the underlying problem has not been addressed." The official added that the strategy of "hoping against hope that Musharraf is going to wake up and become a polio champion" had been ineffective.

But while WHO employees in Geneva, as well as those in Islamabad and in districts across Pakistan, had clear perceptions of the problems they faced, the policy ideals of collaboration and partnership limited their ability to take action. In the era of smallpox eradication, people working for the WHO simply did whatever was necessary.

The subtle cultural shift in global health over the past thirty years has made taking such action in the era of polio impossible.

Thus organizations such as the World Health Organization, in the era of global health, have significant leeway to exert structural power. They can do so because the use of such power is easily masked by the language of collaboration and partnership. They are able to pursue the goals of polio eradication and measles elimination in Pakistan, whose government is not enthusiastic about these programs. However, at the same time, international organizations are quite limited in their ability to use overt power, such as coercion, to take the steps that would be necessary to actually complete the projects that they have initiated. Thus the Polio Eradication Initiative remains marooned somewhere between success and failure, having achieved the miraculous through a combination of structural power and actual collaboration, but not able to carry out the morally questionable acts of coercion that might secure eradication.

Donors, Skeptics, and the Big Muddy

In 2006, the smallpox veterans Isao Arita and Frank Fenner, along with Arita's colleague Miyuki Nakane, published an article in *Science* arguing that despite the "enormous benefit to mankind" represented by the Polio Eradication Initiative, "global eradication is unlikely to be achieved" (Arita, et al. 2006, p. 852). They based their argument on the biological differences between polio and smallpox viruses and vaccines, and on the "greater degree of political independence" of many poor countries in the post-Cold War era (p. 853). (Both the United States and the USSR supported smallpox eradication.) They also mentioned the long duration of the Polio Eradication Initiative as

a factor inhibiting eradication. Accompanying their article was a more general "news focus" piece, which included skeptical viewpoints from several prominent figures in public health. Included was D. A. Henderson, who was head of the Smallpox Eradication Program. "However diligent they are, however much the staff does its best, there are very serious obstacles that militate against eradicating polio," Henderson was quoted as saying (Roberts 2006, p. 832). In another interview, Henderson said, "When we succeeded with smallpox, virtually all of my colleagues at the time felt that we had just barely made it. And there were so many positive things about smallpox eradication that made it so much easier than polio" (Thigpen 2004). Though Henderson's name was not on the article by Arita, Nakane, and Fenner, he was rumored in polio eradication circles to have been behind it.

The "news focus" article also featured the predictable optimistic statements from polio eradication leadership. David Heymann, the highest-ranking WHO official responsible for polio eradication, used the purported support of the governments of polio-endemic countries like Pakistan as an argument for continuing the attempt at eradication. "As long as the partners and countries are willing to make the effort, it is not for Isao [Arita] or me to say that eradication is not feasible," he said (Roberts 2006, p. 835).

But the WHO leadership's attempts at damage control notwithstanding, the sentiments expressed in the *Science* article, especially given the people expressing them, were a serious threat to the Polio Eradication Initiative. Both Isao Arita and D. A. Henderson had supported polio eradication at some point during the program (de Quadros 1997; Roberts 2006). Their change of heart was significant, and reinforced the doubts of many donors.

In Pakistan in late 2006, the Polio Eradication Initiative was running out of money. Influenced both by the *Science* article and their own misgivings, several major donors were scaling back their support for polio eradication. For example, JICA, the Japanese bilateral aid agency, had provided between $8 million and $10 million for oral polio vaccine in Pakistan every year from 2000 to 2004. In 2005, however, they reduced their vaccine funding to $6.5 million, and in 2006, they provided only $3.9 million for vaccine. This reduction in funding, a representative of the agency told me, was due to the opinion of some Japanese officials that the program was a "failure." In late 2006, David Heymann visited Pakistan in a successful attempt to procure enough funding from donors to ensure the continuation of the program. During his visit, a WHO official with the *Science* article in his briefcase joked that he was carrying "dangerous literature."

By February of 2007, the monetary situation was desperate. Margaret Chan, the Director-General of the World Health Organization, held an "Urgent Stakeholder's Meeting" in Geneva. Government representatives of polio-endemic countries and representatives of major "partners" and donors were present. D. A. Henderson and Isao Arita also attended. The meeting was framed as an opportunity to assess whether polio eradication was worth continuing. However, by most accounts it was largely a festival of optimism; the PowerPoints presented at the meeting were full of optimistic statements about "new approaches" (in the case of Pakistan, they referred to "new cross-border strategies" which were in reality only an incremental improvement over what had been going on for several years). "We can't give up now, was more of the feeling," someone who attended the meeting told me. I was told that Arita and Henderson remained largely silent.

The meeting was successful, a stay of the impending execution of polio eradication for lack of money. High-level officials at key donor organizations were sufficiently convinced of the likelihood of polio eradication to provide additional funding. A representative of a bilateral donor agency in Islamabad told me that the result of the meeting was to "put a lot of pressure on us. . . The meeting has done some—I don't know if it was good work." He added, "Otherwise we were not planning to provide" any funding in 2007.

But if bilateral donors were persuaded to give additional funding, they (aside from USAID, which was always supportive) made it clear that they were skeptical about the effectiveness of that funding. The following exchange between a representative of a bilateral organization and a high-level representative of the World Health Organization took place at Pakistan's "Technical Advisory Group" in Islamabad a few months after the conference in Geneva. The donor representative was complaining that, although polio eradication appeared to be an excellently run program, the expected date for eradication of polio from Pakistan had been pushed back three years in a row. Each year she was asked to come up with exceptional funding to assist in finishing the job.

> Donor representative: I almost wish I hadn't believed you. . . We also have to be realistic—what if it doesn't happen?. . . Otherwise it's very difficult to do it on a year to year ad hoc basis.
> WHO official: I can understand your disappointment. I hope you will believe me—I think this year the target is more realistic—[monovalent vaccines] have not been widely tried yet. I do believe this window of opportunity is more transparent. Have faith.[96]

At this meeting, a representative of the World Bank, another donor, stressed the need for a "three year financing plan" with contingency plans if polio was not eradicated each year. The government representatives at the meeting agreed to provide one. (Predictably, WHO employees in Islamabad were the ones who ultimately wrote it.)

[96] The "window of opportunity" the official was referring to—the elimination of polio from Pakistan by the end of 2007—was not met.

A representative of one bilateral donor agency told me that they were concerned that polio eradication activities were, in addition to not eradicating polio, negatively influencing other immunization activities. Various surveys showed various levels of routine immunization coverage in Pakistan. The survey used by Polio Eradication Initiative officials showed 77% coverage. But another survey, which the donor representative cited, showed only 50% coverage. "One reason may be—polio," he said. "This is a difficult situation for us," he added. "We are still believing that there is a chance that this disease could be eradicated." This donor, like the Japanese, had scaled back their funding but not eliminated it entirely.

WHO officials in Geneva were acutely aware that they needed to make real progress—and soon—to keep donors on board. "Donors are tired," Bruce Aylward, the head of polio eradication at WHO, told the media. "And there's always a risk with goals and targets. We have four countries left. If three hit the goal, you are in good shape. If all four of them miss, people will want to take another hard look" (Donnelly 2007). A WHO employee I spoke to in Geneva was more direct. "If we don't finish *somewhere* by the end of the year, we're going to be screwed."

Ultimately, polio was not eradicated in any of the four endemic countries by 2007. Pakistan and Afghanistan were widely viewed as the closest to achieving eradication, but polio retained its tenacious hold in several areas of circulation. Yet the Polio Eradication Initiative was able to obtain enough funding to keep activities going, in part because of a 200 million dollar grant from the Gates Foundation and Rotary. There is no a priori reason to believe that the next few years will be better for polio eradication

than the past few years. Yet the Polio Eradication Initiative was able to secure the money it needed to continue the elusive quest for eradication.

One of the reasons that polio eradication is attractive to donors is that the program is extraordinarily well run and tightly supervised. Donors can feel confident that the Polio Eradication Initiative will do what it says it will do—on schedule, and carefully monitored. A representative of one bilateral donor told me, "we don't have to invent something to monitor it. It's easy." Another told me, "it's meeting all the agreed outputs." Donors can give to polio eradication and know exactly where their money is going.

In choosing whether to continue supporting the project, donors to polio eradication are engaging in a type of decision common enough, and fraught enough, that there is a literature devoted to it. Polio eradication's end stages are a classic case of what scholars of management call "escalation of commitment to a failing course of action."[97] Research and theory on this topic flourished in the aftermath of the Vietnam War. Studies—most of them conducted using undergraduates at American universities—showed that people were actually likely to pour *larger* investments into failing courses of action than successful ones (Staw 1976). Scholars wanted to know: what drives people to invest additional resources in an endeavor that has thus far not yielded the expected benefits? They found a number of factors leading to irrationally large investments in failing projects.[98] A number apply to polio eradication. People are especially likely to "throw good money after bad" when:

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[97] While I would not yet pronounce polio eradication a failure (perhaps evidence of my own entrapment in the escalation of commitment), the project certainly fits the mold of this literature: it is a project which has vastly exceeded original projections of the time and money that would be required to bring it to a successful conclusion.

[98] "Irrational," here, refers to actions that cannot be justified on a cost-benefit basis.

- Projects are perceived as being close to completion (Boehne and Paese 2000; Garland and Conlon 1998).
- There are large amounts of "sunk costs" already committed to the project. When (as in polio eradication) success of the project would allow someone to recoup these sunk costs and break even, the temptation to make additional investments is very strong. Several studies of gambling have shown that people who are losing badly become very reckless, looking for a potential payoff in an attempt to break even (Post, et al. 2007; Thaler and Johnson 1990).
- Failures can be explained by external factors or flukes (Staw 1981). Though a cogent argument could be made for polio eradication's difficulties not being flukes at all, high-level leadership insisted that they were, as with the official in Geneva who told me that they had been "unlucky."
- The person making the decision about whether to allocate additional resources is the same person who initially decided to embark on the failing course of action (Brockner 1992; Staw 1981). This effect is especially strong when the person in question is insecure in their job or defending an unpopular position (Fox and Staw 1979). People who need to justify that the initial decision to pursue a goal was correct are more likely to make extreme gambles in the hope that it succeeds.

The end stages of an eradication program seem tailor-made to exacerbate this "knee-deep in the big muddy" phenomenon. Because the end stages of any eradication program are the most difficult, failure is likely to come at the point where, as in polio eradication, the

project is, as Musharraf put it, "a 99.9% success," and where vast amounts of energy and money have already been invested.

In the case of polio eradication, too, the World Health Organization has its professional reputation riding on the success of the project. The WHO no longer occupies the global leadership role on health issues that it once enjoyed. In the late 1990s, it was, according to some observers, an "organization in crisis" (Brown and Fee 2006, p. 62), able to survive only by entering partnerships with the new major global health players such as the World Bank and the Gates Foundation. While polio eradication is not exclusively a WHO program, its global leadership works out of Geneva, and failure of the project would be a heavy blow to the WHO.[99]

Optimism Revisited

In part, the optimistic statements prepared by the World Health Organization, in which governments are committed, new vaccines are breakthroughs, and eradication is imminent, are calculated attempts to keep donors on board. The more skeptical donors become, the more resolutely optimistic employees of the World Health Organization feel they have to be to ensure that they have the money to keep on going. Sometimes, a few WHO employees told me, they deliberately take a "glass half full" approach.

But the optimism in the World Health Organization is not *simply* calculated. There is a deep culture of optimism in the Polio Eradication Initiative there, and people at the highest levels of leadership that I spoke to genuinely believed, it seemed to me, that

[99] For this reason, the WHO has recently given increased attention to the vastly smaller guinea worm eradication project. It "becomes a political issue," someone in Geneva explained to me: the World Health Organization will be in desperate need of a success story if polio eradication fails, and some hope that guinea worm eradication could be it.

eradication of polio was imminent. Whether one views this as commitment to a vision or, in the words of a CDC employee, as "self delusion," this culture of optimism has concrete implications for the course of polio eradication. It was probably necessary to get polio eradication off the ground, and is not irrelevant in polio eradication's ability to keep donors hooked. But it has less positive effects as well.

Most crucially, the culture of optimism prevents hard-nosed, objective analysis of what would truly be necessary to achieve polio eradication. It fosters the appealing but naïve assumption that because a goal is worthy, it will find support in all corners of the globe. It allows planners to avoid dealing with the most intractable problems of resistance and insecurity by explaining away failures as bad luck. In short, by preventing open discussion and debate about the very real difficulties the project faces, the culture of optimism contributes to polio eradication's current quagmire.

The current climate of global health, with its emphases on partnership and collaboration, provides particularly fertile ground for unbridled optimism to grow. Part of the culture of optimism is allowing global health's language to stand as if it represented reality. By recasting reluctant governments as "partners" and disgruntled workers as "volunteers," the lexicon of global health assists in obscuring the real problems of resistance from public view.

Optimism is not limited to the new global health. Eradication is a Utopian project, and a strong dose of optimism is necessary to attempt it. Historically, the culture of optimism has been strong in all of the World Health Organization's major eradication programs. Lawrence Brilliant wrote of a "climate of optimism" amongst the WHO employees of the Smallpox Eradication Program (Brilliant 1985, p. 30). The historian

Randall Packard points out that malaria eradication was characterized by a postwar "optimism about our ability to transform the world" (Packard 1997, p. 289).

And it is not only would-be disease eradicators that are optimistic. Development projects generally are driven by a faith in the idea that transcendence of poverty and sickness is possible and, given enough money, immanent.[100] Celebrity economist Jeffrey Sachs, one of the architects of the Millennium Development Goals, says forcefully, "I reject the plaintive cries of the doomsayers who say that ending poverty is impossible" (Sachs 2005, p. 328). Sachs' message is that poverty can be *ended*, worldwide, given enough development aid. Sachs' voice—one that refuses to let rich countries make excuses about our abysmal failure to assist the poor—is a useful one. And his arguments are appealing to potential donors. But poverty will not be eradicated by 2025.

Optimism in development is a double-edged sword, a necessary evil. It is a very useful tool in procuring money. It permits attacks on problems that would otherwise seem impossible. The danger comes when that optimism undercuts those very projects by preventing stern analysis of the problems they face, and what would be necessary to overcome these problems. When optimism leads, as in the case of Sachs, to a dismissal of the impact of the legacy of colonialism and of ongoing patterns of exploitation, problems wait in the wings. When, as in the case of polio eradication, optimism prevents planners from acknowledging the power relationships that they bump up against daily, a quagmire results.

The way forward is not to abandon hope about the ends, but to become more realistic about the means. There are no perfect solutions to the complexities of

[100] Lionel Tiger refers to this as an "ambient thoughtless optimism which has persisted about economic development" (Tiger 1979, p. 267).

implementation in global health projects. The elites who control the governments of many poor countries like Pakistan have little reason to make the health of the poor their first priority, especially given the extremely pressing demands from other quarters. Bypassing the government entirely and working through NGOs, however, often weakens health systems and has its own set of problems (Pfeiffer 2004). These dilemmas are difficult ones, with no easy answers and no perfect solution.

The unfortunate current modus operandi in global health, driven by the synergistic demands of the culture of optimism and the need to please donors, is to frame the fraught power relationships between funders, planners, and implementers in terms of partnership and collaboration. This allows for the continuation of imperfect projects, but otherwise serves no one well: the donors who want their money to make an impact, the people who devote their lives to working towards improvement in global health, and most importantly, the poor and sick.

The End of the Line

I walk to Zainab's house from my house in Kaifabad, through streets not wide enough for a car, redolent with the smell of raw sewage from the open gutters that run down both sides of the road. None of the houses in her neighborhood has a yard. They all share three walls with other homes, the fourth wall flush with the narrow alleyway. Most of the houses are two stories high, with one extended family on each floor.

Zainab lives on the ground floor of one small house with her husband's parents, his three brothers, and their families. I have never counted exactly how many children live in this space, but their enthusiasm always overwhelms me as they pull me through their gate into their tiny, rundown entryway and attempt to force their beleaguered parrot to perform some new word for me. Some of the children are usually preparing potatoes to be made into French fries at Zainab's brother-in-law's tiny and struggling storefront shop.

Zainab's room, which she shares with her husband and six children, is barely large enough for the heavy and ornately carved bed and dresser that were her dowry. (Some of the older children sleep in the extended family's shared living room.) Her husband is a driver in a government office and makes Rs. 10,000 (about $160) a month—not enough for Zainab to be able to afford a separate home for her family. As always, Zainab seats me on the bed, plumps the pillows around me, and goes to make me tea. In this female space, Zainab's younger sisters-in-law and I allow our cotton *dupa ā*s, or headscarves, to fall off our heads while we talk. They are both fairly recently married, and still wearing the fancy clothing that was in their bridal trousseaus.

Over milk tea, biscuits, samosas, and French fries (Zainab is always a generous hostess), I turn on my audio recorder and interview Zainab about the immunization of her children. Of Zainab's six children, two are under five. Zainab has made sure that both of them got their full course of routine immunizations. Both her young children received polio drops in the last door-to-door campaign. Zainab is a talkative woman, and she readily elaborates on anything she can think of having to do with polio immunization:

> The woman who comes to our house to give polio drops, she's become my friend. Even if I'm not here, she'll make sure she gives my children the polio drops before she leaves. Whenever she comes, especially in the winter, she'll have a cup of tea here. She's a good woman [*ek acchī mohazab sī 'aurat hai*]. There's a young girl who comes with her.

And there you have it: the most interesting, detailed, in-depth conversation about the polio campaigns I had with any of the 78 mothers I interviewed. Zainab believes that vaccination is a good thing; she has gotten to know the woman who came door-to-door delivering polio vaccine; really, what more is there to say?

Chapter Seven

Conclusion

A world free of measles by 2015 is not a dream.
Ciro de Quadros (de Quadros 2004)

We have a real chance to build the partnerships, generate the political will, and develop the scientific breakthroughs we need to end this disease. We will not stop working until malaria is eradicated. Bill Gates (Gates and Gates 2007)

Any goal short of eradicating malaria is accepting malaria. It's making peace with malaria. It's rich countries saying, we don't need to eradicate malaria around the world as long as we've eliminated it in our own countries. That is just unacceptable.
Melinda Gates (Gates and Gates 2007)

The field of global public health is currently in an era of unprecedented funding and ambitious goal-making. It is not surprising that, in this climate, the ideal of eradication would find supporters. The World Health Organization, as well as other major global health funders and organizations, are poised to attempt massive eradication efforts targeting measles and—shockingly, to many observers including myself—malaria.

In their conception, both of these projects rely very heavily on the ideals of partnership and collaboration that I argue in this dissertation have prevented polio eradication from yet becoming a success. While the project of malaria eradication is too new to have an explicit structure, Bill and Melinda Gates, in announcing their commitment to eradication, called for partnership from entities as diverse as governments, UN agencies, NGOs, and corporations. In describing the way forward in cases where governments were not sufficiently committed to malaria eradication, Bill Gates opined that the solution was yet more partnership: "helping strengthen some of

these African based regional groups and continent wide groups may be an important part of the fight against malaria" (Gates and Gates 2007).

The Measles Initiative is a partnership explicitly modeled on the Polio Eradication Initiative, and including many of the same players—WHO, UNICEF, and the CDC. (The major difference is the private-sector partner: the Red Cross takes the place of Rotary in the Measles Initiative.) As I discussed in Chapter 5, the Measles Initiative in Pakistan is being carried out by precisely the same people as the Polio Eradication Initiative. As Chapter 5 also notes, the problems of resistance that make the eradication of polio so difficult in Pakistan are *already* being faced by the Measles Initiative there.

Both of these projects are heavily shaped by the culture of optimism that characterizes global health. The rebirth of optimism about the possibility of the eradication of malaria is striking, given that the mid-century malaria eradication program was one of the more spectacular failures in the history of global public health. The revitalization of the malaria eradication concept necessitates a resistance to learning from the past. In her speech advocating malaria eradication as a global health goal, Melinda Gates mentioned the previous attempt at malaria eradication, but sidestepped the extremely serious problems it faced by saying simply, "the world wasn't ready for a long fight" (Gates and Gates 2007).

As I will describe in more detail below, malaria eradication will be extraordinarily difficult, probably impossible. But many of the major players in global health have embraced it. Immediately after Bill and Melinda Gates announced eradication as a goal, Margaret Chan, the Director-General of the World Health Organization—invoking polio eradication as a model—promised the support of the WHO (reportedly without first

discussing the issue with some of the people who would be involved) (Roberts and Enserink 2007). "I… pledge WHO's commitment to move forward with all of you," Chan said. "And, I dare you to come along with us" (Chan 2007c).[101] In an editorial, the editors of the influential journal *The Lancet* stated, "only by setting our collective sights higher will we make the progress we know we can make against malaria" (Lancet 2007, p.1459). In fact, the influence of the Gates Foundation is so great that many people who believe, with good reason, that malaria eradication is impossible reportedly feel reluctant to voice that opinion publicly (McNeil 2008). This phenomenon has a name—the "Gates Effect" (Roberts and Enserink 2007).

In Chapter Six, I argued that the culture of optimism in global health, as well as commitment to the ideals of partnership and collaboration, prevent open discussion of the problems polio eradication is facing, and thus contribute to its ongoing problems. The projects aiming to eradicate measles and malaria, like polio eradication, are characterized by optimism and a belief in the possibilities of partnership. It is likely that the projects to eradicate measles and malaria will face the same problems of resistance that have presented such a challenge to the eradication of polio, and will be similarly ill-equipped to handle them. The lessons of polio eradication could prove to be critical ones for these two very big, very ambitious, very difficult projects. In this chapter, I present concrete suggestions for how to make planning for these projects better.

[101] Speaking later to reporters from the journal *Science*, Chan backpedaled a bit, saying somewhat nonsensically, "It is elimination-slash-eradication, depending on the availability of tools" (Roberts and Enserink 2007). (The difference between elimination and eradication is discussed in Chapter Two.)

Waiting in the Wings

The Measles Initiative has not declared itself an eradication program, and probably will not do so if polio eradication is not achieved. However, people involved in the project—many of whom were instrumental in launching the Polio Eradication Initiative—have indicated that if polio is eradicated, they want measles to be next. A number of recent articles have argued that measles eradication is "technically feasible" (de Quadros, et al. 2008; Fenner 1999; Meissner, et al. 2004; Orenstein, et al. 2000). The Measles Initiative's leaders seem to regard polio eradication as a test case. If polio is eradicated, that would provide an excellent impetus to push the Measles Initiative, which has made substantial headway in reducing measles mortality worldwide, into high gear (Orenstein, et al. 2000). "Launching a global initiative on measles eradication will require demonstrating that polio has been eradicated," writes Ciro de Quadros, an influential leader in both the polio and measles elimination efforts in the Americas (de Quadros 2004, p. 137).

Would-be eradicators of malaria, too, are hoping that the eradication of polio will give their project a boost. Bill Gates said, "We're very committed to polio because we think success there will breed positive excitement. A failure there would definitely be a setback for malaria and all diseases. Just the whole idea of success would seem so remote that that would hurt a lot." However, he immediately added, "Our commitment [to malaria eradication] won't wane no matter what happens in this area. It's a lifetime commitment on our part. And, I do think people will join in" (Gates and Gates 2007). Malaria eradication, then, will probably remain a goal no matter what happens in the course of polio eradication.

The difficulties faced by the Polio Eradication Initiative in its end stages can provide important lessons to the eradication programs to come. To be successful, the eradication programs of the future must avoid the morass in which polio eradication is currently mired: of knowing what would be necessary to secure eradication but being unable to take the necessary action to achieve it. Planning for some organizational changes, which I will describe below, might make this unenviable position avoidable.

Is Eradication Possible?

Perhaps the most important cautionary tale that the Polio Eradication Initiative offers is that eradication of a disease in the current global political system is extremely difficult. The programs aiming to eradicate polio, measles and malaria face challenges of a different order from those faced by smallpox eradication, for several reasons. First, as I described in Chapter Six, the biological and epidemiological characteristics of the smallpox virus and the nature of the vaccine made eradication of smallpox easier than any of the currently targeted diseases. But perhaps even more importantly, smallpox eradication took place in a different era, that of late stage colonialism and of the Cold War. Smallpox eradication was originally championed by the USSR and gained traction when the United States agreed to throw its weight behind the project (Fenner, et al. 1988). The combined structural power of the US and the USSR in the recently-decolonized world probably outshadowed the power of any organization in the current era. In this globalized world, eradication may simply be impossible.

It is my position that the programs attempting to eradicate measles and malaria are ill-advised. If polio *is* eradicated, planners should thank their lucky stars, give health

staff across the world a well-deserved week-long paid vacation in lieu of yet another vaccination campaign, and hang the eradication concept up on the wall until the development of a different world-system or a bona fide magic bullet. The chances of either the measles or malaria eradication programs succeeding are slim, and the impacts of their failure would be significant.

The real dangers of the failure of such a large eradication program, along with a sense of heartache for the enormous amount of work that millions of people have put into the project, are why I am unable to advocate an abandonment of polio eradication. Proponents of ending the Polio Eradication Initiative have called for a return to "effective control," defined as less than 500 cases per year globally (Arita, et al. 2006, p. 853). But this is an unrealistic strategy for polio in South Asia, where the current program of near-monthly door-to-door campaigns just keeps polio under "control." In the absence of a global eradication effort, neither the funding nor the motivation for these recurring campaigns would be forthcoming. The current high levels of population immunity would evaporate.[102] Polio cases in South Asia would probably leap quickly into the thousands each year, and importations to other areas of the globe would likely be inevitable.

The historical case of the mid-century malaria eradication campaign is instructive. In the decades after the World Health Organization gave up on malaria eradication and switched its goal to control, there was a resurgence of malaria.[103] Funding for malaria

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[102] While those who have already been immunized sufficient times will remain immune, children born over the next several years would form a huge underimmunized group more than sufficient to fan transmission. The three doses of oral polio vaccine provided through routine immunizations are not sufficient to confer immunity in many children, and the WHO's estimates of overall routine immunization in coverage, by far the highest estimates I have seen, report around 80% of children are fully immunized—not enough to seriously limit polio transmission.

[103] The parallels between malaria eradication and polio eradication are not perfect. A major reason for the resurgence of malaria was insect resistance to DDT and parasite resistance to chloroquine,; biological resistance of this nature is not an issue in polio control because a vaccine is available. However, the

decreased, and malaria research slowed (Brown 1997). (D. A. Henderson reported that one planner felt "the program had done a far better job in eradicating malariologists than malaria" (Henderson 1999).)

Community Participation and Vertical Programs

I am often asked by people outside the Polio Eradication Initiative whether the answer to polio eradication's problems is increased community participation. If grassroots support for polio eradication could be tapped, this reasoning goes, the problems of resistance by government employees could be overcome. At some level, this line of reasoning is correct. For instance, smallpox eradication veterans have told me that working with local communities was key to eradicating the disease in India.

The problem is that polio is not a ranking public health problem in Pakistan. In a country where one in ten children die before they reach the age of five, polio now paralyzes fewer than 100 children each year. Also, as I discussed in Chapter Five, polio's status as an endemic, not an epidemic, disease in Pakistan means that it does not evoke the fear that it did in the mid-century United States. In the case of smallpox eradication, community participation was sought when active cases of smallpox were in the vicinity—when anyone around could understand the danger. Polio eradication, which relies on mass vaccination of the entire population, cannot rely on the fear of parents around a single polio case to mobilize nationwide vaccination.

Polio eradication planners do their best. When I was in Pakistan, they launched a major "social mobilization" campaign of "polio true stories" hosted by a popular

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disappointment of the failure of malaria eradication led to malaria's becoming "a low prestige disease, associated with an inglorious past" (Brown 1997, p. 136). Similar problems would likely arise if the goal of eradication was abandoned in the case of polio.

television personality. These spots told the life stories of people handicapped by polio, usually ending with a "key message" delivered by the polio survivor. These spots were well received by the mothers I knew. But in a world with myriad other health threats, not to mention the question of how to make meager incomes stretch to cover food, clothing, and school fees, polio immunization was, while widely viewed as a good thing, simply not a priority for most women. They accurately assessed the threats to their children, and polio did not make the top of the list. Nor should it have. It was a priority disease only for those who were trying to eradicate it. Community participation was not, and would never be, forthcoming.

These realities are often used to argue against "vertical" programs like eradication, which are often divorced from the needs of their putative beneficiaries, and in favor of the Primary Health Care model, which aims to involve the recipients of health care initiatives in setting agendas and implementing projects. [104] As I discuss in Chapter 2, the debate between proponents of "vertical" and "community-based" programs is one of long standing. I confess I began my fieldwork with a prejudice against vertical programs. But as I saw in greater detail how the Polio Eradication Initiative worked, I became to some degree a convert. The narrow focus and clear goals of polio eradication allowed for a level of accountability which, while not perfect, was far greater than that in the more diffuse, putatively community-based projects I had observed in the country. Because the project had clear benchmarks and clear, measurable standards, people could be held accountable for the quality of their work. As this dissertation describes in detail, this accountability was not total, and not sufficient to rapidly secure the elimination of

[104] The most influential conception of Primary Health Care is the Alma-Ata Declaration, which states, "The people have the right and duty to participate individually and collectively in the planning and implementation of their health care" (World Health Organization 1978, p. 1).

polio from the country. But the quality of work in polio eradication was nonetheless better than that in any other government health initiative I have observed in Pakistan. Of course, accountable, functioning Primary Health Care is the ultimate goal. But vertical programs can implement key interventions quickly even in areas where village-level health provision is in shambles.

Thus, while I would argue against the adoption of another eradication program, judicious use of vertical programs—in combination with programs based in the Primary Health Care model—can ensure that key interventions are delivered. The Global Alliance for Vaccines and Immunizations (GAVI), which funds routine immunization in Pakistan, is an example of such a program. It aims to ensure that 90% of Pakistan's children receive the full course of routine immunizations. This project, like an eradication program, has clear goals and easily measurable indicators. Unlike polio eradication—viewed by many at the district level as something of a wild goose chase—routine immunization coverage is widely viewed as an important goal by health staff. The GAVI system includes most of the same players as polio eradication, and is probably subject to the same problems of resistance. Its goal of 90% routine immunization coverage is very ambitious, and ultimately unlikely to be attained. But since it is not an eradication program, even if it does not meet its stated goals it can still claim a level of success.

Eradication programs are fundamentally risky ventures in a world in desperate need of proven solutions. But it appears that whatever the fate of polio eradication, the implementation of other eradication programs is all but inevitable. In this chapter, I offer some suggestions for planners of eradication programs. If eradication programs are to be attempted (and I think it would probably be better if they were not), it is important that

the potential barriers to eradication—and what would be necessary to overcome them—are clearly conceptualized and planned for.

Technical and Operational Feasibility

Chapter Two introduced the concepts of "technical" and "operational" feasibility, often used to assess whether a given disease is eradicable. Technical feasibility refers to the biologic characteristics of the disease and the effectiveness of the tools we have to fight it. Technical feasibility does not take into consideration issues like logistics, the existence of delivery systems, or the disruption caused by events like war. The eradication of measles is generally considered to be technically feasible (Losos 1999). The eradication of malaria is not. Even its most fervent supporters admit that the tools to eradicate malaria are not currently available—although they have faith that they will be developed through new research. Thus they are pushing ahead. "We'll use today's tools today," one enthusiast said, "and tomorrow's tools tomorrow" (McNeil 2008). The technical feasibility of the eradication of polio is generally accepted, yet it is proving extremely difficult to eradicate. The optimism necessary to launch an eradication program against a disease not eradicable with existing methods is, from my perspective, stunning. Improved control would be a realistic goal.

Operational feasibility refers to the capacity of systems to deliver the necessary interventions to the necessary places in order to achieve eradication. The Polio Eradication Initiative is a testament of the ability of copious funding and international pressure to *make* a project operationally feasible. Polio eradication requires a cold chain of refrigeration to deliver fresh vaccine door-to-door in the remotest corners of the earth.

It requires trained doctors acting as surveillance personnel in every part of the globe, with the transportation and equipment to reach, in short order, any family, anywhere, whose child becomes paralyzed. It requires a global network of laboratories with the staff and equipment to take stool samples from those paralyzed children (delivered rapidly through yet another cold chain) and determine rapidly whether those children were infected with poliovirus, and if so, of what type. On paper, all of this would have seemed impossible in a place like Pakistan, and yet it has all been achieved, and is functioning extraordinarily well. In a year working on polio eradication in Pakistan, for example, I never saw a single vial of vaccine whose heat-sensitive label indicated a break in the cold chain. The logistical structure of the Polio Eradication Initiative in Pakistan was nothing less than a miracle of planning and funding, and it worked very well. The problems faced by polio eradication are not operational in the sense that, in the words of one WHO official, the WHO and its international partners had been able to put all the "necessary enabling factors" in place.

Polio eradication planners have claimed that the term "operational feasibility" encompasses "societal and political considerations" and not just logistics (Aylward, et al. 2000, p. 285). The argument in this dissertation is that it is *precisely* societal and political considerations that are preventing polio eradication from being successful. Yet polio eradication leadership insists that the "operational feasibility of achieving it has been demonstrated under every circumstance imaginable" (Aylward, et al. 2000, p. 292). Thus, as I mentioned in Chapter Two, in practice the term "operational feasibility" is used as if a project that works in one relatively resource-poor country, such as Brazil, should work in all poor countries—as if differences in context are insignificant. Operational

feasibility, as it is currently used, does not adequately conceptualize the political barriers to successful implementation of global health projects.

Other Dimensions of Feasibility

It would be worthwhile to let operational feasibility refer primarily to logistics, and to deal with other barriers to eradication under the rubric of different types of feasibility. As I described in the Introduction, many people working in polio eradication in Islamabad blamed the failures of the project on "management issues." When people in polio eradication mentioned management as a problem, they were usually complaining about the inability or unwillingness of district health officials to ensure that their employees carried out polio eradication activities with the level of attention to detail necessary for eradication. They were referring to situations like the one I describe in Chapter Three, where ensuring a high-quality immunization campaign did not appear to be the district health leadership's only or primary goal.

The issue of "management" is one that deserves attention, as its importance in global health in general and eradication in particular is often noted (Foege, et al. 2005). Halfdan Mahler, then WHO's Director-General, called smallpox eradication "a triumph of management, not of medicine" (Bate 2007, p.102). After achieving smallpox eradication, D. A. Henderson, head of the Smallpox Eradication Program, called for the global eradication of "bad management" (Hopkins 1989, p. 134). Smallpox veteran Bill Foege wrote that "the lack of management skills appears to be the single most important barrier to improving health throughout the world" (Foege 2005, p. xvi).

But what, exactly, lies behind "bad management" is worth examining. At a basic level, to be a good manager one must have the *ability* to organize, lead, and motivate one's staff. But a lack of ability at the district level was not what made polio eradication so difficult. There *were* probably cases in which district health leadership were simply ineffective or disorganized leaders. However, the issues that made polio eradication so difficult were not primarily issues of the ability of district health staff to organize and plan. (In any case, the World Health Organization had international consultants in nearly every district to conduct activities like planning.)

The problem was really *resistance*, both from the district health leadership and their employees, including doctors, vaccinators, Lady Health Workers, and "volunteers." Where district leaders were completely unable to control their staff, this was often because they were facing widespread resistance from their employees. And district health leadership themselves often resisted the imposition of international mandates.

Such resistance is intimately tied to politics. Within the district, the variety of behaviors that I have argued form a matrix of resistance are intensely political in at least two senses. First, what goes on at the district level is deeply shaped by what is often called "office politics." This sort of politics has been usefully defined as "the management of influence to obtain ends not sanctioned by the organization or to obtain sanctioned ends through non-sanctioned influence means" (Mayes and Allen 1977). Patron-clientism, falsification, and corruption are all examples of this sort of politics. They are also, as I argued in Chapter Four, forms of resistance.

Second, resistance at the district level is tied to local electoral politics. Were the quality of polio immunization campaigns to be an election issue in Pakistan, there would

be much greater pressure from elected officials on district health leadership to conduct high-quality campaigns. Without such pressure, the influence of electoral politics on the trajectory of polio eradication may be negative, as in the anecdotes I heard about poor-performing workers being retained because an elected official wanted the support of their extended families. In the context of limited or passive public support for a given public health initiative, the insistence of international agencies that they form a district health administration's first priority is likely to be something to be resisted.

At the national level, too, resistance is political. There, resistance is related both to resentment over agenda-setting by powerful nations, and to the myriad other extremely pressing political issues facing the nation's leaders. In the context of a country that often appeared to be sliding towards civil war, it is likely that Musharraf—facing very serious threats to his legitimacy from groups as diverse as the Taliban and lawyer's associations—did not lose sleep over whether the number of polio cases was decreasing. The political context in which an eradication program is carried out will necessarily affect the level of attention that can be given to the project at the highest levels of government, and the level of resistance to the insistence of international officials that an eradication program be a national priority.

Given the importance of politics to the trajectories of eradication programs, it would be useful to formally introduce a third dimension of feasibility, which should be called "political feasibility." This would include an analysis of the likelihood that governments would find commitment to a given project compelling from a *political*, and not simply a humanitarian, point of view. Planners do currently spend considerable energy evaluating the impact that political considerations have on health projects, but

these discussions are marred by several conceptual weaknesses. They largely ignore the issue of international power relations, they too readily accept verbal support as actual support, and they incorrectly assume that political support for a given global health goal is something that it is possible for global health officials to "generate."

Political Considerations in Eradication

One influential framing of the factors necessary to eradicate a disease, formed at the Dahlem Workshop in 1999, focuses on "societal and political criteria" for eradication rather than "operational feasibility." These criteria include the following:

> - Political commitment must be gained at the highest levels, following informed discussion at regional and local levels. A clear commitment of resources from international sources is essential from the start. A resolution by the World Health Assembly is a vital booster to the success of any eradication programme.
> - The limitations, potential risks, and points of caution for eradication programmes include… the potential that programmes will not address national priorities in all countries, and that some countries will not follow the eradication strategy; the perception of programmes as "donor driven". . . (Dowdle 1999)

In the second bullet point above, the reasons for the resistance of national and local governments to eradication programs are cogently laid out. But the proposed steps to overcome these problems, listed in the first bullet point, have proved insufficient to overcome resistance in the Polio Eradication Initiative in Pakistan. This is because while structural power is sufficient to secure *verbal* support by the Pakistani government for polio eradication—including supportive statements by the highest-level politicians and supportive votes at the World Health Assembly—it is not sufficient to ensure the *actual* commitment of the government at the levels necessary to secure eradication. The statement that "political commitment must be gained" at all levels is unrealistic. How is one to gain political commitment, simultaneously, in all areas of all countries in the world, for a project that many feel do not address their most urgent needs? As the

Pakistani case illustrates, no amount of propaganda is enough when a country has other pressing problems. There are also many relevant aspects of the "political"—wars, coup attempts, elections—over which the actions of global health officials will have little influence.

Political Will

The concept of "political will" is a common conceptualization of the importance of government commitment in global health. For example, in 2006, a polio eradication press release mentioned political will as a key factor in the remaining four polio-endemic countries. A senior CDC official was quoted as saying, "Eradicating polio is no longer a technical issue alone. Success is now more a question of the political will to ensure effective administration at all levels so that all children get vaccine." Similarly, a representative of Rotary said, "Polio eradication hinges on vaccine supply, community acceptance, funding and political will. The first three are in place. The last will make the difference" (World Health Organization 2006d).

At some level, the emphasis on political will is correct. If politicians at all levels in Pakistan, from the district to the national level, suddenly decided that the eradication of polio was *truly* their first priority, the virus would not have much of a future in the country. However, as the anthropologist Lynn Morgan has pointed out, the concept of political will leaves too much out of the picture:

> The international agencies' recent emphasis on "political will" is misguided in three ways. First, "political will" focuses analytic attention on the individual country, thus directing attention away from the crucial role played by the agencies themselves in determining the health policies of less-developed countries. Second, it implies that the political structures within each country are comprised of unified groups that can choose to forge unified national health policy, without considering how internal conflicts may inhibit this process. Third, it implies that health improvements depend simply on commitment by international leaders, thus diverting attention

> from global relations of dependency and institutionalized inequality that create and perpetuate poverty and ill health in many less-developed countries. (Morgan 1989, p. 233)

These critiques hold in polio eradication, a project where resistance is encountered because of the externally mandated nature of the project, and where the lack of a unified power structure within the country itself is also unquestionably an issue. The concept of political feasibility, then, should address the very real issues that the concept of political will aims to represent, while better taking into account power relations and complexity.

It is worth noting what happens when global health's culture of optimism meets a tricky and frustrating issue like a lack of "political will." Rather than examine the underlying causes of such a problem, the common reaction is to advocate the *creation* of "political will," as if it were a birthday cake, just requiring the right ingredients. In the quote that opens this chapter, Bill Gates spoke of political will as something it is possible to "generate." In the case of polio eradication in Pakistan, the verbal support of high-level politicians has been generated by the application of structural power, but actual support or will has proved resistant to generation. Sometimes, influential politicians can be converted to the cause by high-level meetings with passionate advocates. There are several influential politicians in Pakistan who became true polio eradication supporters in this way. However, in other cases, this strategy will never work. To assume that an internationally mandated program, no matter how noble, could become the passion and priority of every politician at every level of every country in the world, especially in the face of the inevitable competing priorities, is unrealistic.

Political Feasibility

In short, I find three major flaws in most official, on-paper policy about the need for political support for global health initiatives. First, it is too easily assumed that verbal and symbolic support, whether in the form of a vote at the World Health Assembly or a warm reception for a WHO official from Geneva, equals real, substantive commitment to a given global health goal. In the case of polio eradication, the Pakistani government had little reason not to *appear* supportive, but they also had many more immediate priorities. Second, the assumption that "political will" can be created or generated, at least without some type of coercion, is a facile one. Verbal support is probably possible to generate, given judicious application of power, but *actual* support is a trickier issue, possible in some cases but not in others. Third, discussions of politics in the global health literature largely ignore the elephant-in-the-room issue of power relations: that global health goals are set by the world's rich and powerful, implemented in part with the aid of structural power, and that resistance to such power is something that should be expected.

Evaluating political feasibility should involve an honest evaluation of power relations in the project in question. What are the structures of power in the project? Which countries or organizations are the driving forces behind the project, and which are going along with it only because they have little real choice in the matter? How extensive is the support needed for the project from governments whose actual commitment will likely be minimal? What reasons might these governments have to resist carrying out international mandates (i.e., no great perceived benefit to the politicians in question, requires large investments of time and energy)? The answers to these questions can help

planners predict where they will likely have problems, and where alternate plans—the nature of which I'll describe in a moment—may be necessary.

Lack of Will, or Resistance?

Part of avoiding polio eradication's morass is giving its problems the correct name: resistance. Rather than working fruitlessly on generating political will in impossible situations, planners should instead recognize, name, and plan around resistance. As I have argued in this dissertation, resistance is a matrix of diffuse and disorganized behaviors which, taken together, can derail the plans of superiors. At the district level in Pakistan, the techniques of resistance included, among others, refusal to work, lying, reliance on patron-client networks rather than formal structures of authority, petty corruption, and evasion. At the national level, foot dragging and false compliance were primary modes of resistance.

My insistence on calling these behaviors resistance may seem at first simply to be a matter of semantics. But a shift in the conceptualization of problems from "lack of political will" to "resistance" may yield important, perhaps revolutionary, changes in the way these problems are apprehended. Talking about resistance as a lack of political will encourages the mirage that with more and more of the same advocacy and "social mobilization," things may change. Thinking about these problems as "resistance" forces an admission that methods of persuasion will do little to change the patterns of behavior that stymie eradication, and that perhaps what is needed is an entirely different approach.

Reaping the Benefits of Partnership

The major problem faced by polio eradication is that, while planners and officials at the World Health Organization and other agencies know well the problems they face, there is little that they can do about them. The World Health Organization is an organization *of governments*. Its policy is set, at least officially, by the World Health Assembly, a forum in which each country on Earth has one vote. World Health Organization employees' official role is to advise and assist governments in doing what they themselves have decided to do. As I described in Chapter Five, this is not how things may work in practice, but the fiction of government ownership ties the hands of WHO officials. As an organization of governments, the WHO cannot bypass them.

The "spearheading partners" in the Polio Eradication Initiative have a division of labor that fits each organization's strengths and generally works quite well. The American CDC assists with technical advice and the creation of world-class laboratories across the world. UNICEF focuses on "social mobilization." And the World Health Organization runs the surveillance system and is responsible for oversight of vaccination campaigns.

Over twenty years, these roles have become so calcified and so institutionally deep that I never heard the possibility of changing them discussed. In these end stages of the project, what are strengths in most times and places have become weaknesses. The World Health Organization, with access to every country in the world and a large staff trained in epidemiology and public health, is an ideal organization to oversee a

worldwide eradication project. But when it meets with government resistance, its hands are tied. It cannot bypass the government.[105]

Conceptualizing the problems that polio eradication is facing as "resistance" makes the World Health Organization's difficulty in this situation clear, and points to a different course of action. The Polio Eradication Initiative is a vast partnership with many diverse stakeholders. This could be a strong asset in times of trouble if flexibility, the ability to draw on the varied strengths of the organizations involved in a variety of ways depending on the demands of a given situation, had been built into the system from the start.

In polio eradication, in large measure, all the agencies involved have accepted the World Health Organization's structural limitations as the Polio Eradication Initiative's structural limitations. An eradication program demands the opposite: that everyone involved uses every last bit of influence they have in the end game. The World Health Organization is forced to work only through governments. However, not all the "partners" in a major eradication program must be so limited. In the case of polio eradication, major donors and partners like Rotary International and USAID could work with whatever sorts of agencies they want—NGOs, local village leadership, or religious organizations, to name a few.

The eradication programs of the future will also be partnerships. The potential *flexibility* of an initiative with a diversity of organizations involved is a powerful and currently untapped resource. What is needed is planned adaptability, alternate strategies

[105] Even if the World Health Organization is able to get the Ministry of Health on board for a particular initiative, this does not automatically secure the support of any government as a whole, especially if demands from other sectors such as the military seem more pressing.

folded into the system from the start. Here, I outline what such a plan might have looked like in the case of polio eradication.

A Flexible Structure

The ultimate success of smallpox eradication was due in part to institutional flexibility. In that project, planners were flexible enough to switch from the method of mass vaccination to the controversial but ultimately more effective technique of surveillance and containment, securing eradication.[106] In the case of polio, because of the nature of the virus and the vaccine, mass vaccination is the only method available. But while there are limits on methodological flexibility in polio eradication, more structural and organizational flexibility could have been built into the project.

As the elimination of polio from most of the world illustrates, the current organizational system for polio eradication is in most places a good one.[107] However, continued transmission in four countries indicates that this system is not ideal in all places. What is needed in polio eradication is a way to create new organizational structures in areas where the standard protocol isn't working.

A framework for creating such structures could have been built into the project. Polio eradication had several deadlines for securing eradication: first 2000 (which was entirely unrealistic given the project's late scale-up) and, subsequently, 2005 (a deadline which gave countries like Pakistan the time they required).[108] Missing the second deadline could have served as a watershed moment for the project, a time for changing strategies and reorganizing structures that were not working. The Polio Eradication

[106] Chapter Six discusses smallpox eradication in more detail.
[107] This system is described in some detail in Chapter Two and illustrated schematically in Appendix A.
[108] Additional information on the history of the Polio Eradication Initiative is presented in Chapter Two.

Initiative's partner agencies could have agreed, *ahead of time*, that missing the 2005 deadline would be a sign that structural changes were necessary. A possible framework for such changes could have been as follows:

The existing structure would remain the same in districts where transmission had ever been interrupted for some significant length of time, perhaps a year.[109] This would consolidate the considerable gains the Polio Eradication Initiative had made, and allow institutional memory to remain intact in areas where the system functioned fairly well.

In districts were polio remained stubbornly entrenched despite years of the existing system, the structure of implementation (though not the basic methods) would be changed entirely. The World Health Organization would no longer be responsible for overseeing campaigns in those areas. Instead, another partner—one that could work with agencies *outside* governments—would take on that responsibility. USAID, which routinely implements projects in Pakistan in "partnership" with NGOs as well as the government, would be one possible agency to take on administration of campaigns.[110] (While USAID is not an official "spearheading partner," it is a major donor and currently involved in funding vaccine procurement and "social mobilization" for polio eradication in Pakistan.) Polio eradication leadership could also look beyond the "usual suspects" in implementing agencies to consider atypical and, perhaps, more productive partners in particularly tough areas. For example, the government of Saudi Arabia has contributed to

[109] Determination of whether transmission had actually been interrupted would, of course, have to take the quality of surveillance in the area into account.

[110] Anthropologists have criticized the practice of bypassing government health services in favor of NGOS because it weakens the government health system (Pfeiffer 2004). However, in the case of an eradication program, relieving government employees of the responsibility for eradication activities might well free them to do a better job at providing primary health care.

polio eradication and might be able to forge unconventional partnerships in security-compromised areas.

An international overseeing agency, like USAID, would probably need to hire an implementing organization in the district in question. Unconventional choices should also be considered when deciding which organizations will be chosen for implementing vaccination campaigns. While health NGOs would be obvious choices, they do not exist in all places, nor would they always be the best at implementing vaccination campaigns. The beauty of polio immunization is that it requires almost no health knowledge to carry out effectively. Religious organizations, local groups, or NGOs from other sectors should be explored as possible implementing agencies.

In designing district-level backup plans, contracting with agencies that have significant ties to the communities they will need to reach is a worthwhile goal. Agencies should have support and legitimacy in the populations they will be serving. However, it should be accepted that polio immunization is not, and will not become, a major priority for recipient populations in Pakistan. Thus, expectations for contributions from local populations should be kept realistic. For example, contracting agencies cannot reasonably be expected to carry out repeated, time-intensive immunization campaigns with volunteer labor.

NGOs or other organizations would likely not be free of some of the same problems that exist in government health systems. Patron-clientism is certainly present in NGOs in South Asia (Lewis 2004). Dissatisfaction over the poor pay provided to ground-level female workers, too, would not disappear just because the agency providing employment was an NGO rather than the government (c.f. Sharma 2006). But there

would be several key advantages in bypassing the government in difficult districts. First, the leadership of the organization in question would have had more of a choice about whether to take on polio eradication than the district government did, and hence can reasonably expected to be more committed to that goal. Second, there can be *direct* lines of accountability and control between an organization like USAID and an organization like a local NGO in ways that are not possible between the World Health Organization and a district government.

Planning for Flexibility

Planning for which NGOs or other organizations could be alternate agencies should take place on a district-by-district basis, and in some cases on levels below that of the district. The first step would be a study, perhaps an ethnographic study, of organizations in the district that would have the reach and the motivation to carry out such a major project. Such studies should be carried out in problematic districts several years before alternate agencies would need to take over.

Early planning is essential to avoid the calcification of roles that currently characterizes polio eradication. The basic design of the backup plan for polio eradication would need to be negotiated with the government well ahead of the target date for eradication. This negotiation might prove difficult. On the other hand, it might be a relief to government officials to have an alternate strategy in the wings, one for which they do not shoulder so much responsibility and so much blame. Also, as the potential embarrassment of being relieved of polio eradication duties would fall primarily to *district* governments, the national government might be willing to agree to such a

proposal. Ultimately, if the structural power of international organizations is sufficient to drive policy to the extent that eradication programs with no overwhelming local support can become national priorities, that same structural power can be used to dictate the terms of implementation of these eradication programs.

Micro-level planning is key to the success of backup plans. No organization save the national government will likely be large enough to take over operations for an entire country. Nor should they: in areas where the government is doing a good job, it would be unwise to replace them. Other large organizations which might be excellent agencies for certain areas of the country—the example of the extraordinarily well-organized and well-received Aga Khan Health Services in Pakistan's Northern Areas leaps to mind—would be liabilities in other areas. The Aga Khan Health Services, in this example, serves primarily Ismaili Muslims, a minority group, and does not have a large infrastructure and staff, or widespread popular trust and support, in most parts of the country.

In some districts, particularly in urban districts with huge populations, the problem of district-wide coverage might be tackled most effectively by using several different organizations to cover different areas of the district. Each agency should focus on areas where they are strong. As long as the boundaries each agency serves are clear—something which should be fairly simple given the street-by-street maps and plans that the Polio Eradication Initiative has already generated—such division might allow each agency to serve areas where they are most likely to be well-informed and well-received. Monitors from a given agency could also be dispatched to assess the coverage rates of a *different* agency, which might lead to more accurate feedback on problem areas.

Planning and training of the organizations chosen as backup agencies would need to be started about a year before they took over. This would give them time to get up to speed in terms of the planning and organization needed to carry out such a major project. World Health Organization personnel that know a lot about the areas in question could be transferred to the implementing agency to create some institutional knowledge and memory.[111]

Shifting to a new and untried strategy does, of course, carry risks. However, repeating the same things that have not worked in the past is an excellent recipe for failure. While shifting the responsibility for campaigns to a different set of organizations is a huge change, not *all* polio eradication activities in troubled districts need be changed. Activities—such as surveillance in Pakistan—that the government agencies and WHO are handling very well on their own should be left the way they are. Having different agencies carrying out immunization campaigns and surveillance could improve surveillance accuracy, since the discovery of cases would no longer reflect poorly on the district government reporting them.

It is probably too late for polio eradication to suddenly become flexible; such plans likely could not be implemented now. But it is not too late for other eradication programs to think very hard about ways that they could be flexible in areas where eradication proves difficult. The strategy I outline here for polio eradication might transfer fairly well to a measles eradication program. It's hard to know exactly how these

[111] Both international and national staff currently routinely switch agencies between the CDC, the WHO, UNICEF, and the Pakistani government, both to take new jobs and to take temporary contracts with the understanding that their old job will await their return. Given this existing fluidity, a mechanism for allowing employees to contract with other agencies on a temporary basis should be possible.

suggestions might apply to a malaria eradication project, since the tools to eradicate malaria don't currently exist.

I am wary of being taken over by the culture of optimism myself, of falling into the trap of presenting a tweak that would secure eradication. The strategy I suggest here is not a cure or a panacea for the variety of very tough obstacles that eradication programs face. But explicit awareness of power relationships and resistance as well as formal planning for institutional flexibility would, I believe, make eradication programs better placed to reach their goals. Taking these steps might shift the balance just a bit from the possible toward the probable.

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Appendix A
Organizational Charts

Figure 1: The Global Level

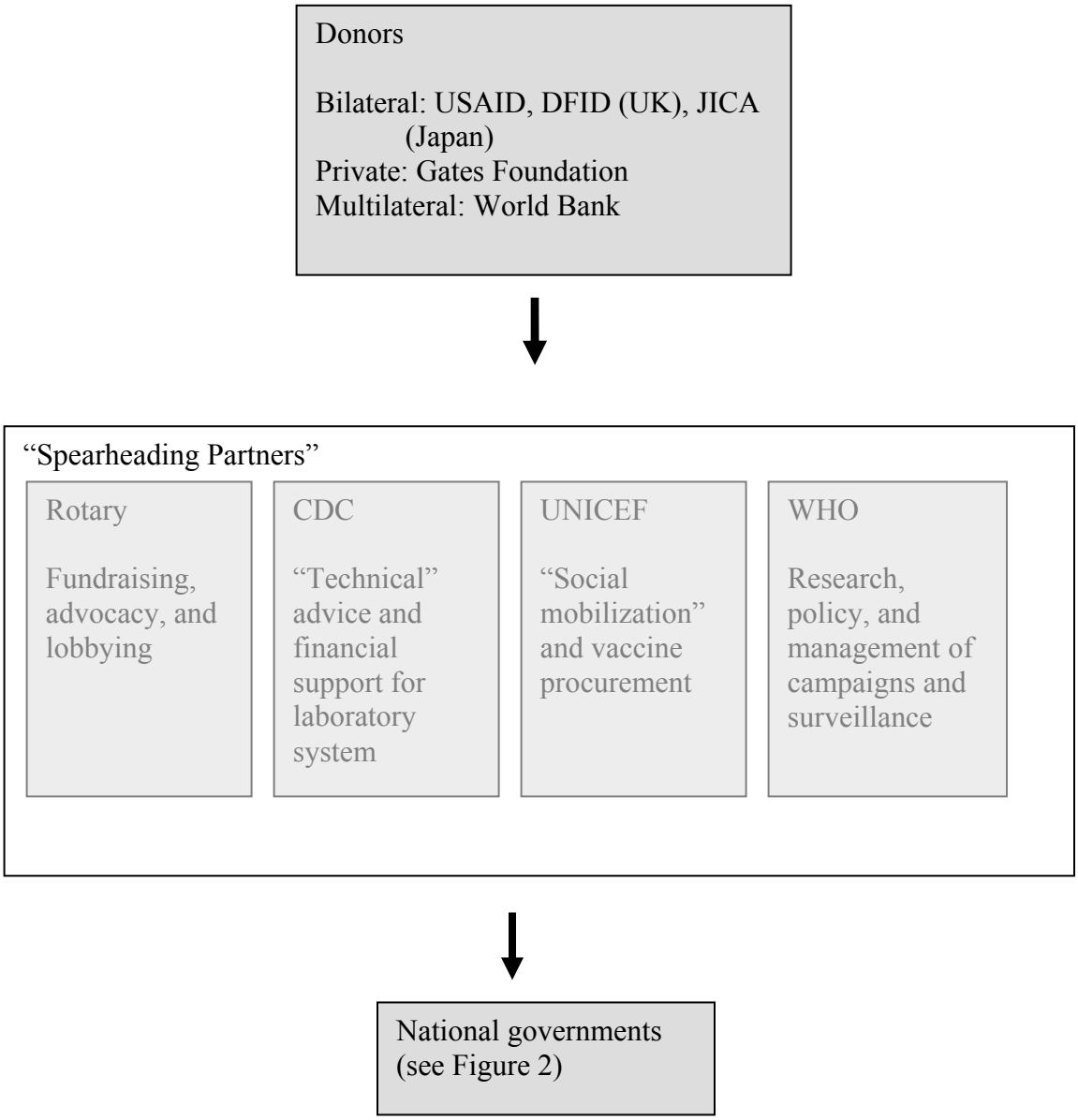


Figure 2: The National Level (Islamabad)

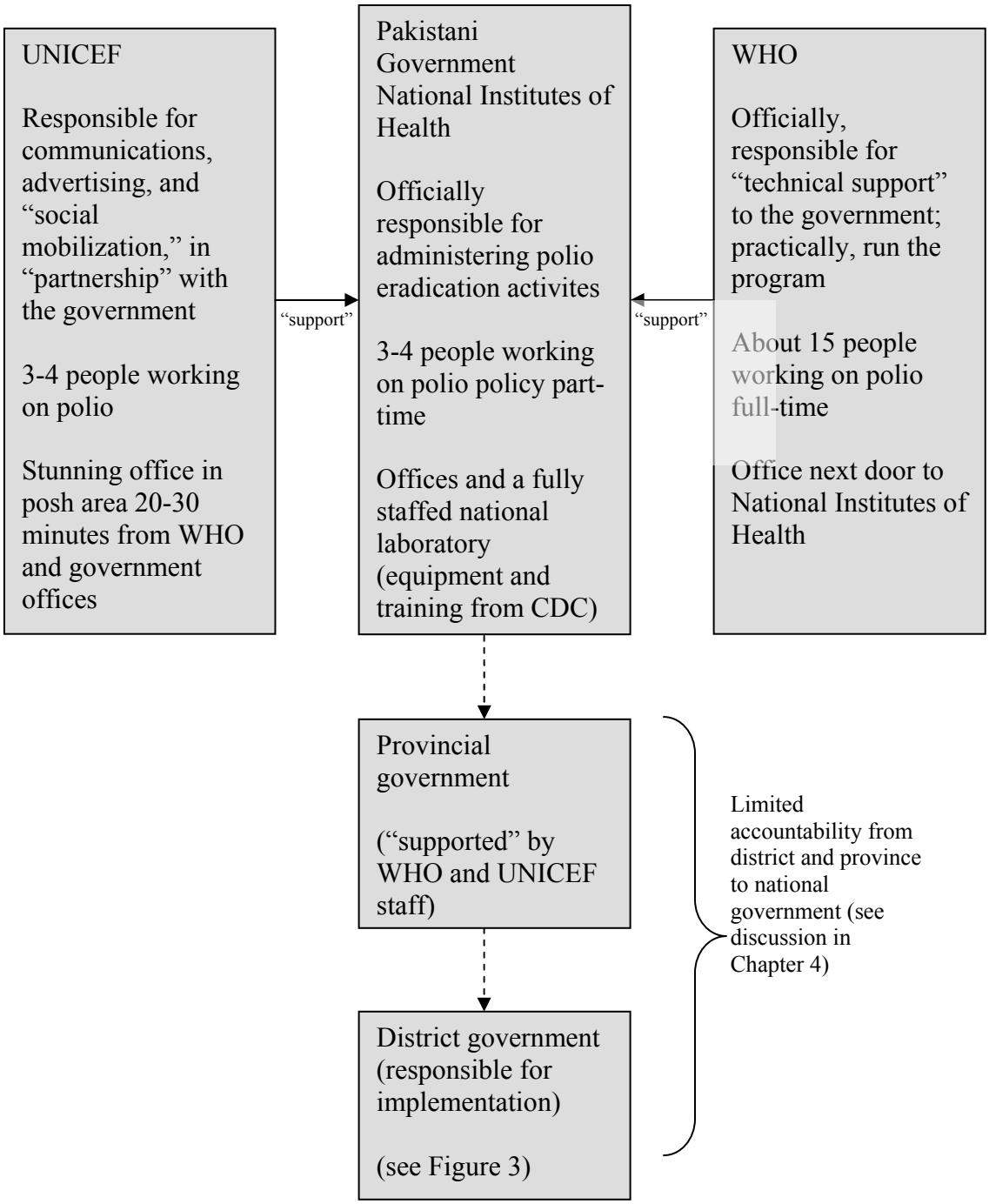
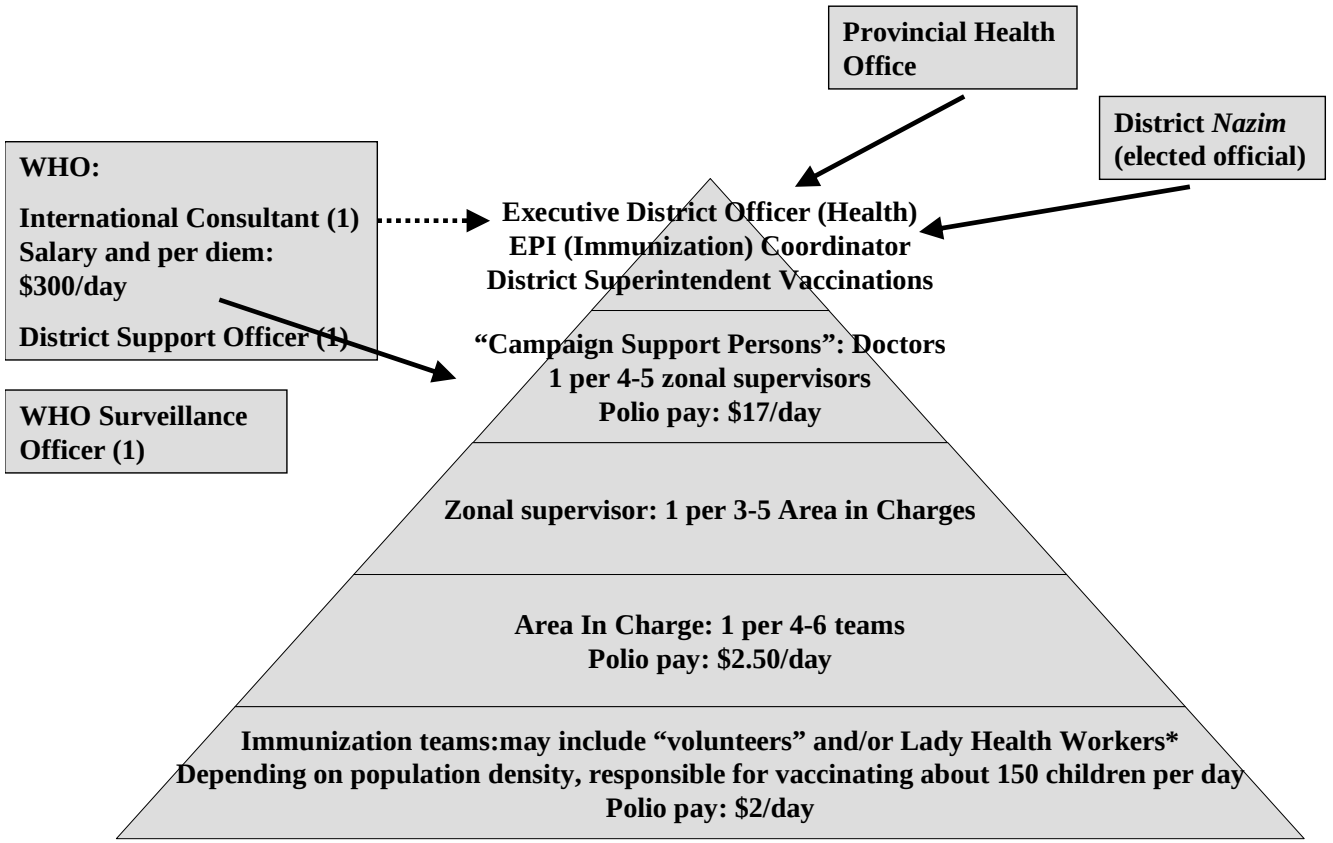


Figure 3: The District Level



* "Volunteers" were not true volunteers; the appellation was used for non-health department staff recruited to work on polio campaigns (see discussion in Chapters 2 and 3)
Lady Health Workers were part-time health department staff.

Appendix B
Mobile Populations and Polio Campaigns in Kaifabad

Svea Closser
With Tanveer Awan

Executive Summary

- Interviews were conducted with 52 families living in temporary housing in the Kaifabad area, representing 100 children under 5. Teams covering mobile families were followed during campaign monitoring. Interviews with 21 female team members and 2 focus groups of Lady Health Workers (LHWs) were held to discuss coverage of mobile populations.

- Only 77% of the children surveyed had received Oral Polio Vaccine (OPV) in the last campaign, and only 24% of those surveyed about routine immunizations had received the full course of childhood immunizations.

- Families interviewed were very accepting of OPV, with only one refusal in the families interviewed (based on the fact that the child was "too young"). Many team members reported that mobile families were more enthusiastic about OPV than members of the general population.

- During the campaign, many teams cut corners in covering mobile populations, neglecting to go tent-to-tent or to record unavailable (NA) children. The major reason for this appears to be prejudice against mobile populations on the part of campaign workers and a desire to get out of slum areas as rapidly as possible.

- Some children in mobile populations are persistently unavailable (NA) during the day.

- Provision of stickers to teams for marking on tents and straw huts would encourage visiting tent-to-tent and recording of unavailable (NA) children.

- The creation of evening mobile teams to visit large mobile populations to cover NA children not available during the day would facilitate the covering of persistently unavailable NA children, and likely improve the performance of daytime teams.

Introduction

Mobile populations are a population of concern in the Polio Eradication Initiative in Pakistan. Poliovirus epidemiology in Pakistan indicates that polio is being transmitted from place to place by mobile populations. In addition, existing polio cases come

disproportionately from minority and marginalized populations, including mobile populations. This study focused on mobile populations in Kaifabad district. The aims of the study were to estimate coverage in these populations, to determine reasons for missed children, and to provide recommendations for improving coverage in mobile populations.

Methods

Data was collected from three different populations, using three different methodologies.

Part I: Family Interviews.

Short structured interviews were conducted in mobile populations with mothers of children under 5. Interviews were conducted in Kaifabad district. Interviews lasted between 2 to 5 minutes on average, though a few were longer. Interviewees were asked about their income, education, family composition, immunization coverage of their children (both through routine immunization and polio campaigns), and awareness of polio social mobilization activities.

Due to the lack of a census of mobile populations and other populations living in temporary housing, choosing interviewees based on a random sample was not possible. Mobile families were located by searching for temporary housing in Kaifabad district, and by asking polio eradication staff if they knew of any mobile populations in the area. Some mobile families were identified by stopping people traveling with goats. We defined “mobile” broadly, including people living in tent villages that had been in place for several years in our sample. We did our best to include highly mobile populations in

the sample, but these populations were the most difficult to find and may be underrepresented. For example, though Gujjar bakkarwaals are a highly mobile population that historically moves through Kaifabad district, we could not find any for inclusion in our sample. We did not include "kacchi abadis" consisting of more permanent structures such as clay homes in the sample.

In large tent villages, we interviewed one family for approximately every 10-15 tents. In settlements of 5-15 families, we interviewed two families in the entire settlement. In settlements of less than 5 families, we interviewed one family. This method does not yield a random sample. It represents an attempt to ensure respondents from a variety of settlements while avoiding over-representation of any single settlement in the sample. Interviews were conducted in Urdu or Punjabi. In some Pashto-speaking families, the mother of the children did not speak Urdu or Punjabi, in which case the interview was conducted with another relative of the children (usually a male relative was present who could speak Urdu or Punjabi). These interviews were not audiorecorded as we found that the presence of an audiorecorder made many female interviewees in these populations uncomfortable. Information collected from the standard questions in these interviews was entered into EpiInfo for analysis.

Part II: Monitoring and Observation

During the January round, we participated in standard campaign monitoring activities in Kaifabad district. In the course of this work, we attempted to focus on mobile populations where possible. Coverage surveys of several mobile populations were taken during the course of the campaign using standard Polio Eradication Initiative

methodology of taking a cluster of 7 households, and several poorly covered or missed areas were re-covered with the teams responsible for those areas.

Part III: Team Interviews.

Semistructured interviews lasting from 5 to 30 minutes each were conducted with 21 female team members responsible for carrying out vaccination for polio immunization campaigns in Kaifabad district. These team members were identified with the assistance of Area in Charges that traveled with us to the team members' houses. Interviews were conducted in privacy out of earshot of the Area in Charge. Interviewees were asked about their experiences with polio eradication, whether they covered any mobile populations during the campaigns, and whether there were any special difficulties in covering mobile populations.

In addition, two focus groups of Lady Health Workers, one with 21 participants and one with 12 participants, were conducted during LHW trainings in Kaifabad district. Participants in the focus groups were different from participants in the individual interviews. Focus groups were asked to discuss their experiences with the campaign, and asked about their experiences with mobile populations.

Both individual interviews and focus groups were conducted in Urdu and were audiorecorded. Urdu transcripts of these interviews were prepared, and sections of the transcripts were translated into English.

Results

Part I: Family Interviews

Fifty-two mobile families were interviewed, representing 100 children under 5. The demographic profile of the sample is as follows:

Type of Residence

Tents	32 (62%)
Straw huts	12 (23%)
Clay huts	8 (15%)

Primary Language

Pashto	25 (48%)
Punjabi	21 (40%)
Saraiki	3 (6%)
Farsi	2 (4%)
Pahari	1 (2%)

Place of Origin

Punjab	23 (44%)
Afghanistan	19 (37%)
NWFP	9 (17%)
Balochistan	1 (2%)

The most common places of origin in Punjab were Sargodha (6 families) and Multan (6 families). The most common place of origin in NWFP was Waziristan (4 families).

Profession of father

Goat herder	18 (35%)
Other animal herder	4 (8%)
Laborer (mazdoor)	7 (14%)
Skilled laborer (mistri)	2 (4%)
Balloon seller	5 (10%)
Beggar	4 (8%)
Flower salesman	3 (6%)
Snake charmer	3 (6%)
Boot polisher	1 (2%)
Mochi (shoe repair)	1 (2%)
Bangle sales	1 (2%)
Taxi driver	1 (2%)
“Whatever he can find”	1 (2%)

The mean number of children for mothers in the sample was 3.2 (SD=1.9). The average estimated family income was Rs 5,000 per month (SD=Rs 2,000), though many respondents had seasonal income or were unsure of income and responded with phrases like “whatever comes in, we spend it on food.” None of the mothers interviewed were literate in Urdu.

Routine immunization coverage in the study population was low. Routine immunization information was collected for 79 children under five in the sample. Of those children, only 19 (24%) had received the full course of routine immunizations (or, for children under 9 months of age, were current on their routine immunizations). Thirty-six children (46%) had received some routine immunizations. Many mothers mentioned to us that they did not know where to obtain routine immunizations. Several mothers requested directions to the nearest health center and asked whether or not it was “too late” to immunize children over 1 year of age.

Being Pashto-speaking was significantly associated with having a lower probability of receiving routine immunizations in this sample (χ^2=12.98, p=0.01, though in interpreting the p-value it should be kept in mind that this is not a random sample). Of the 20 Pashto-speaking families asked about routine immunizations, only 2 (10%) had obtained a full course of routine immunizations for any of their children. This may be related to profession, as all of the animal herders interviewed were Pashto-speaking.

Of the 100 children in the sample, only 77 (77%) had received OPV during the last campaign. Of the 23 children who did not receive OPV during the last campaign, 19 were missed because no team ever visited their home. Three were missed because the child was unavailable (NA) when the team visited (according to the parents none of these

NA children were recorded). One missed child was a refusal (perhaps a soft refusal): her parents say they did not give her OPV because she was “only three months old”. Having a missed child in the previous polio campaign was not correlated with primary language, place of origin, type of dwelling, or occupation in this sample.

Fourteen families in the sample were asked whether they knew about the campaign before the team members came to the house. Only two families (14%) had heard about the campaign, both through mosque announcements. Both of these families were Punjabi-speaking and lived in urban areas. A few families interviewed had radios, but we did not observe a TV in any home.

Part II: Monitoring and Observation

On Day 4 of the January campaign in Kaifabad district (the first catch-up day), we checked tent colonies in Kaifabad city, and called teams to re-cover poorly covered or missed areas. In addition, we focused on mobile populations where possible in post-campaign monitoring (PCM). It is our impression, as well as that of the STC (Short-Term Consultant) working on the campaign, that mobile populations continued to be less well covered than the general population in the January round. What follows is a summary of the missed children found in these areas during these activities and the reasons they were missed.

Description of Area	Day Observed	Number of Children Missed	Qualifies as Missed/Poorly Covered Area?	Reasons children were missed
●Cluster of 3 tents in rural Kaifabad ●Pashto-speaking; migrant workers	Evening of Day 3 of campaign	5+	Missed	●Tents were not visited by the team; they were visible from nearby houses but were about a 5 minute walk away. Teams visited the houses nearby.
●Cluster of 5 dwellings: mixed tents/kacchi abadis in Kaifabad City. ●Punjabi-speaking; mostly working as unskilled laborers	Day 4 of campaign	3	Poorly Covered	●Team did not go house-to-house; children were called to the entrance of the group of dwellings ●One child (1 1/2 year old boy) was "too scared" (according to his mother) to leave his house to go to where the team was. However, he readily accepted polio drops when we came to his door. ●Two children were NA but were not recorded because the team did not go house to house
●Cluster of about 30 tents in Kaifabad City ●Punjabi-speaking; mostly working as beggars, baloon sellers, etc.	Day 4 of campaign	20+	Missed	●Team did not go house-to-house; children were called to a central location. Therefore, sleeping children or children who did not come to the central location were missed, and NA children were not recorded. ●Even when brought back to the area and brought tent-to-tent with the AIC and zonal supervisor present, the team was primarily interested in getting out of the area as quickly as possible. They repeatedly commented on the dirtiness of the people and children encountered and the smelliness of the compound. They actively resisted recording NA children because it meant they would have to come back to this area a third time. NA children may be more common in this population because many young children were out begging with their mothers. • Chalking on tents was difficult, and the team did not attempt it.

Description of Area	Day Observed	Number of Children Missed	Qualifies as Missed/Poorly Covered Area?	Reasons children were missed
●Neighborhood of about 30 tents in Kaifabad City ●Punjabi-speaking	Day 4 of campaign	about 15	Missed	●According to the AIC, this tent colony is on the border of two UCs, and there was some confusion about which UC it belonged to. The team from one UC covered half of it before they were stopped by an AIC because it was not in their area. The team from the other UC never covered the missed area, perhaps because the tents nearest the entrance of the community had been covered. ●Because tent marking was not possible, NA children were not systematically recorded.
●Cluster of about 8 tents on major highway in Kaifabad City ●Punjabi-speaking; flower salesmen	Day 5 of campaign	2	No	●No tent marking was done and so NA children were not recorded. The missed children were NA during the rounds. ●The supervisor who accompanied me to this area was impolite to the residents. When they asked him about treatment for their children, nearly all of whom had scabies, he told them to "look at the filth you live in".
●Cluster of 4-5 tents in rural Kaifabad ●Pashto-speaking; goat herders	Day 1 of PCM	2	No	●The missed children were out with the goats at the time the team visited their houses. In the case of at least one child, the team recorded the child as NA and visited the tent again but the child remained missed.

Part III: Team Interviews

Many team members interviewed said that there were no special difficulties encountered in covering mobile populations. In fact, it was repeatedly mentioned that in Kaifabad district, mobile populations were *more* accepting of OPV than was the general population. “Those people are so cooperative,” one LHW commented, “there isn’t a single one that is a refusal.” Another LHW said, “As soon as they see me they run to bring their children to me. They take more of an interest in giving their children OPV than Punjabis do” (the mobile populations in this woman’s area were Pathan).

A few team members mentioned that they, themselves, were reluctant to cover these populations. One LHW explained:

> Look, I was scared because one, the houses are far apart, and two, Pathans live there. I’m scared of Pathans. They say ‘who is this, who’s come here’. There were two of us, we were both women, we went there to give them polio drops. Well, in one tent there was a pregnant woman. She was in pain. She said ‘come here’. We were scared, we didn’t know what was inside, so I made out a referral slip and told her to go to the BHU, that there was an LHV there that would help with her delivery. There, those Pathans’ children are dirty too, bare feet, in a horrible state. There are some places I just don’t want to go to give polio drops. But what to do, it’s a job. I have to go.

Another LHW said, “I’m scared of their dogs, and on top of that they’re Pathans, they don’t listen.” Another mentioned that she didn’t like going into tents, so she would call all the children in such settlements together to a central point.

Several team members working in rural areas mentioned that mobile populations were inconvenient to cover, because they were located far away from villages covered during campaigns. One woman said, “they live far away, and there are these uninhabited areas, and jungle, we two ladies have to cross these areas.”

While some of the team members interviewed said chalking on tents was difficult or impossible, others said it could be done. One LHW said of chalking, “It’s possible. We write on each tent. We tell people to separate out their own children.” However, when I

asked if stickers would be a useful tool, most interviewees said stickers would be useful in such populations. A few opined (probably correctly) that stickers would provide benefits for people doing the checking, but not for the teams themselves.

Several team members also mentioned that stickers would be useful in marking tents where dogs were present, as it would mean less time spent standing at the tent. The presence of dogs was mentioned as a problem in covering mobile populations by a number of team members in rural Kaifabad.

Several respondents serving mobile populations of Pashto-speakers noted language barriers as a problem. “The main thing is language,” one LHW said. Another LHW described how she determined which children would receive OPV in the absence of a reliable translator:

> And children that are 4 or 5 years old, we have them grab their ears like this [reaching over the top of her head]. When they grab their ear, the child that can grab it with difficulty is 4 years old, the child who can grab it more easily is 5 years old, and those older than that grab it very easily—we estimate age like that when deciding who to give drops to. What to do—you can’t understand anything about age.

While team members have found strategies like this help to overcome language barriers, many say language barriers remain a problem.

I asked most of the team members whether unavailable (NA) children were more common in mobile populations and strategies they used to deal with this issue. In animal-herding populations, respondents said, older children (3 or 4 years of age) were often away with the animals. In city-based populations where the mother might beg or work as a servant, team members said young children dependent on their mothers’ milk often left with her during the day. Several respondents mentioned that they visited mobile

populations first thing in the morning in order to catch as many of these children as possible before they left their homes. One focus group discussed this issue in depth:

> LHW 1: You asked about people who live in tents, right?
>
> SC: Yes.
>
> LHW 1: Well, try this: get somebody who lives near the tents, give them the job of covering them, the minute he gets up in the morning he should go cover those children.
>
> Multiple women: [laughter] That's right, that's absolutely right.
>
> LHW 1: Because these are people that are wanderers, people who sell things from carts.
>
> LHW 2: They leave early in the morning.
>
> LHW 3: Those women also work, and they take their children with them. Some of them collect iron, others sell bangles and they take their children with them.
>
> LHW 4: Those that beg also take children with them—4 and 5 year old children also beg.
>
> LHW 1: There's one that sells silver dishes. She leaves very early in the morning—she has a fixed time with the dealer—and she takes her children with her.
>
> LHW 3: That's how children get missed.
>
> LHW 1: To cover those children you'd have to get there before 7 AM—if you got there at 6 AM you could cover those children.
>
> LHW 5: It would have to be someone who lives in the area.
>
> LHW 6: By the time we get there [in the morning] they have already left.
>
> LHW 1: She comes back home after 5 in the evening, so I can't cover those children, they usually remain missed.
>
> LHW 2: And tents are not in the settled areas, they're away from other houses.
>
> LHW 7: It takes time to get there. . .
>
> LHW 3: Ladies can neither go that early nor that late.
>
> LHW 2: If someone came in the evening at 6—because these people finish work at 5 and come home.

Discussion and Recommendations

OPV coverage of mobile populations during SIAs in Kaifabad appears to be much lower than that of the general population. In addition, these populations have extremely

low coverage of routine immunizations. The barriers to immunization in these populations do not appear to lie with the parents, as in general they are very accepting of OPV. Rather, the problem appears to lie with (1) team members' prejudice against these populations and a desire to get out of these areas as quickly as possible; (2) the fact that many children are away from their homes when the team visits, and are not recorded as NA; and (3) factors such as distance and language barriers.

Chalking on tents and straw homes is more difficult than chalking on houses. In addition, many team members interviewed identified additional barriers to chalking in these populations, such as dogs. Whether these are legitimate reasons not to do chalking or just excuses, the end result is that chalking is rarely performed in mobile populations. Because of this, it is much easier for teams to cut corners, neglecting to go tent-to-tent and neglecting to record NA children.

The provision of stickers to teams to use for marking on tents and huts would, we think, have several positive benefits. First, and most importantly, it would force teams to travel tent-to-tent. This will ensure better coverage of shy and sleeping children, and will facilitate the recording of NA children. Second, it will provide a useful help to teams who do good work and genuinely want to mark homes but are stopped by such factors as dogs or difficulties in chalking. Third, it will enable the teams to find the tents of NA children when they return, which can be difficult in large tent colonies. Finally, the provision of stickers, and the training that accompanies them, will focus attention on mobile populations during training, and re-emphasize their importance to teams. In such trainings, the importance of recording and re-covering NA children in these populations should be stressed.

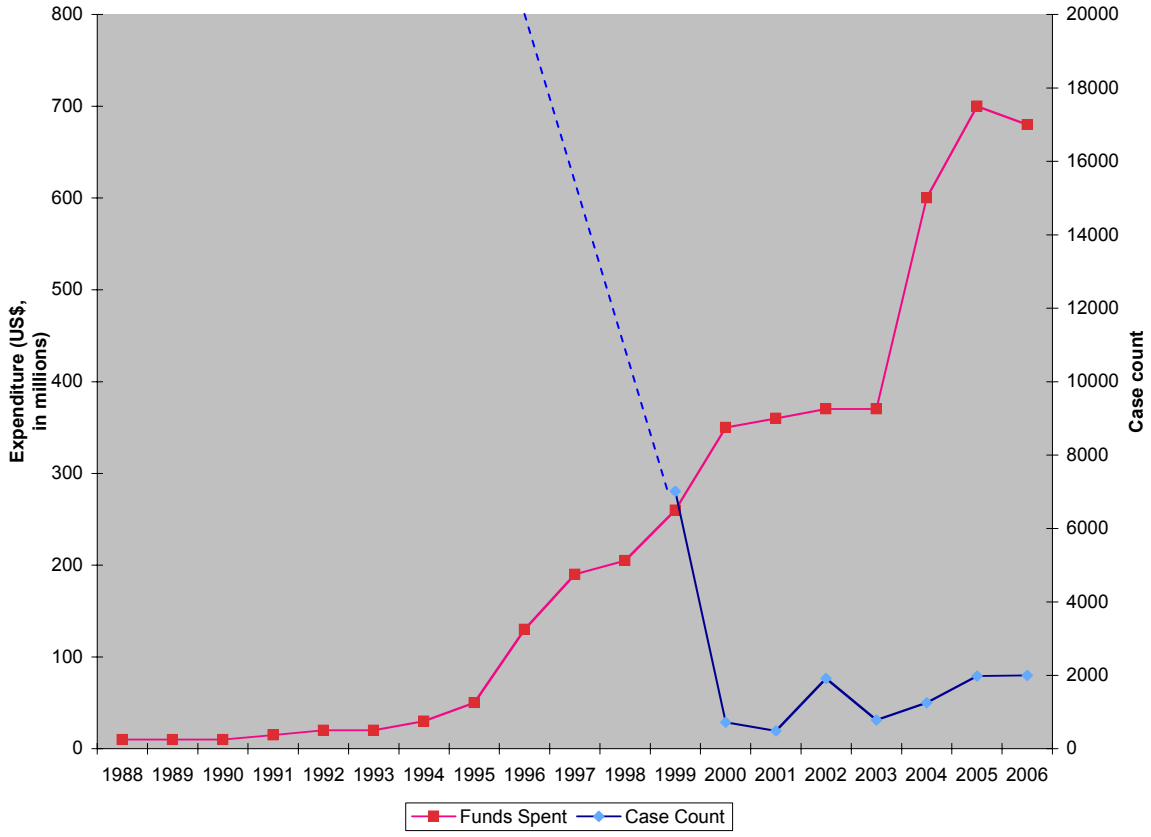
The creation of special teams to work in the late afternoon and evening, visiting large tent colonies to cover NA children missed because their parents were away during the day, would likely be very useful. These evening teams should collect lists of NA children from the regular day teams. Such evening teams should be provided with transport, and could cover multiple settlements in one evening. The creation of such teams would have several benefits. First, it would force the daytime teams to go tent-to-tent, and pay careful attention to the recording of NA children, because they would know that the evening teams will be relying on this information. If a day team did not go tent-to-tent, this problem would immediately be recognized by the evening team. Second, the evening teams could find children at home that are never there during the day, such as children who always leave with animals or with their mothers. Third, if the evening teams included a minority language-speaker (for example, a Pashto speaker in Kaifabad district) problems of language could be overcome in this second visit. Ideally, one team member should come from these mobile populations, as members of these populations tend to know where other tent populations are located. In addition, having a known person on the team would help alleviate some of the problems that might be encountered in visiting areas at dusk.

These teams should be used to cover other difficult-to-reach populations, such as Hindu populations, that may not be highly mobile. This is especially important because many mobile populations with low OPV coverage may stay in a given area for months or even years before moving, but polio eradication workers in Kaifabad district tended to define “mobile” very narrowly, as “here today, gone tomorrow”.

These strategies should be implemented in addition to, not instead of, existing strategies, such as checkpoints, for covering highly mobile populations. Populations on the move during campaigns might still be missed even with the inclusion of these additional strategies. However, these strategies would, we think, improve coverage both of mobile populations in a given area for a few weeks or months, as well as coverage of other marginalized populations such as Hindus and Afghan refugees, which continue to harbor polio transmission.

Finally, though this may be outside the reach of the Polio Eradication Initiative, additional efforts should be made to improve routine immunization coverage in mobile populations. The efforts of some vaccinators in rural Kaifabad, who have brought routine vaccinations to the doorstep of some mobile populations, is to be commended. Similar outreach efforts in urban areas would be much appreciated by many of the mobile mothers we interviewed.

Appendix C
Polio Eradication Initiative Expenditures and Case Count



This chart shows (1) the increase in expenditure on the Polio Eradication Initiative from its inception in 1988 through 2006, and (2) the global polio case count, which has not changed significantly in the last five years despite impressive increases in funding. The dotted line indicates an estimate of cases; a sensitive surveillance system was not in place globally until about 1999. In 1995, the World Health Organization estimated that there were about 100,000 cases of polio globally. (World Health Organization data)