INTRODUCTION

The study of revolutions remains much like the study of earthquakes. When one occurs, scholars try to make sense of the data they have collected and to build theories to account for the next one. Gradually, we gain a fuller understanding of revolutions and the conditions behind them. And yet the next one still surprises us.

Jack A. Goldstone, *Revolutions: Theoretical, Comparative, and Historical Studies*

As the twenty-first century approaches, has liberal democracy triumphed in the world?[1] And, amid democratization, is social revolution doomed?[2] Are democracies immune to insurgencies?

Logically, in a democracy, opponents of an elected regime should compete at the ballot box rather than risk their lives fighting the regime. As Samuel P. Huntington pointed out, "Perhaps the most important and obvious but also most neglected fact about successful great revolutions is that they do not occur against democratic political systems. . . . Revolution requires political institutions which resist the expansion of participation."[3] The same point is made by Jeff Goodwin and Theda Skocpol: "The ballot box . . . has proven to be the coffin of revolutionary movements."[4] The principle was also endorsed by Ché Guevara:

> One should never try to start a revolution against an elected government, for the populace will not turn in a revolutionary direction while electoral alternatives remain an option and retain an appeal.[5]

The historical record suggests validity for the argument that democracy stymies social revolution. Not one established, elected regime has

been overthrown by a Marxist guerrilla movement—at any time, in any place in the world.[6] During the 1960s and 1970s, various elected Latin American governments—namely the Venezuelan, the Uruguayan, the Argentine, and the Colombian—confronted guerrilla movements, and none of these governments even came close to defeat by the revolutionaries.[7] All four governments received considerable support from the United States.[8]

In the first three nations, the challenges endured only a few years, ending amid greater democratization in Venezuela and intense repression in Uruguay and Argentina. In Venezuela after 1959, the new government of Rómulo Betancourt confronted between one and two thousand guerrillas, most of them university students influenced by the recent victory of Fidel Castro in Cuba and disturbed that Betancourt had shifted rightward after their joint ousting of a dictator. Popular support for the guerrillas was, however, minimal and dissolved almost entirely after a successful election in 1963.[9] In Uruguay, between roughly 1967 and 1972, elected governments faced about fifteen hundred Tupamaros; at first, these youthful urban guerrillas' spectacular, selective attacks were supported by many disaffected Uruguayans, but then the guerrillas' violence became more random, and the movement "totally estranged itself from public opinion."[10] In Argentina between 1973 and 1976, Presidents Juan Perón and then his widow Isabel Perón were challenged by perhaps five thousand urban guerrillas, among whom the Montoneros were the most salient; most of the guerrillas had worked for the return of Perón to Argentina in the hope that his government would initiate socialist policies and were angry when it did not.[11]

Only in Colombia has an elected, civilian regime confronted enduring guerrilla violence. Indeed, in comparison with the revolutionaries in Venezuela, Uruguay, and Argentina, the number of Colombian guerrillas was greater; they were also able to dominate parts of the national territory.[12] However, various caveats are necessary. Although the Colombian government was elected and civilian, during the 1960s and 1970s it was in various respects less deserving of the democratic label than were the Venezuelan, Uruguayan, and Argentine governments during the periods mentioned above.[13] Also, despite the guerrillas' strength in particular regions of the country, at no time did they pose a challenge to the

Colombian state.[14] Originating to a greater degree than elsewhere amid long-standing patterns of local political violence, Colombia's guerrilla groups were divided among themselves and failed to develop a coherent strategy for taking power.[15] Indeed, revolutionary victory was not necessarily their goal, especially as more of the guerrillas mingled with drug traffickers and bandits.[16]

The four governments that did fall to social revolution in Latin America during this century were all authoritarian; three were personalist dictatorships.[17] In Mexico in 1910, Porfirio Díaz had ruled for more than forty years. In Bolivia in 1952, a military junta had nullified an election won the previous year. In Cuba in 1959, Fulgencio Batista had canceled elections and ruled repressively for more than six years. And, in Nicaragua in 1979, Anastasio Somoza had been the third member of a dynasty ruling Nicaragua since the 1930s. All three revolutionary movements that came to power in the world in 1979 toppled despots: Somoza in Nicaragua, Eric Gairy in Grenada, and Shah Mohammed Reza Pahlavi in Iran.

According to the current conventional wisdom, social revolution in Latin America should be doomed not only because the democratic wave is flowing in the region but also because East bloc support for leftist revolution has ended.[18] As the Berlin Wall crumbled in November 1989, Mikhail Gorbachev's government discarded conventional Marxist principles and Deng Xiaoping's regime introduced free market reforms in the People's Republic of China. In Cuba, Fidel Castro's regime struggled. Major external support for Marxist movements in Latin America became a virtual impossibility.

In contradiction to the conventional wisdom and the historical record, however, the thrust of this book is to suggest that revolution is not a Cold War relic in Latin America. Although liberal democracy is the historical current and a major factor deterring revolution in Latin America, significant attempts to struggle against the current will continue. Although Latin America has not seen a successful revolution since the initiation of the third democratic wave and the collapse of the East bloc, it has seen two very strong revolutionary movements, even after 1989.

This book examines the two revolutionary movements in Latin America that seriously challenged incumbent governments at the end of the 1980s and into the 1990s: the Farabundo Martí National Liberation

Front (Frente Farabundo Martí de Liberación Nacional, FMLN) in El Salvador and the Shining Path (Sendero Luminoso) in Peru. Given my interest in revolutionary movements that posed actual threats to the state, I did not compare the Salvadoran and Peruvian experiences with those in Colombia or Guatemala, two other nations where revolutionary movements have endured. The Colombian guerrillas did not seriously endanger the government at any time during the 1980s. In Guatemala, the guerrilla coalition did threaten the regime in the early 1980s but only briefly, for about a year.[19] By contrast, in both El Salvador and Peru, the possibilities were real that the revolutionary movements would take power.

There is widespread awareness in the United States that the Salvadoran government was imperiled by the FMLN. Said a U.S. diplomat in December 1979: "If confronted with a Nicaragua-type situation the El Salvadoran military establishment could easily collapse in four to six weeks."[20] Commented a U.S. scholar: "By 1983 the rebels were actually winning the war."[21] Looking in hindsight at the Salvadoran conflict, a U.S. Green Beret concluded, "El Salvador has survived what appeared to be its probable demise in the early 1980s."[22]

Although the period of greatest threat to the Salvadoran government was probably between 1979 and 1982, the FMLN's challenge continued until the signing of peace agreements in January 1992 (see chapter 2). The year 1989—the year that the Berlin Wall fell—was one of intense guerrilla action in El Salvador. When the FMLN's proposals for modifications of the March presidential elections were rejected, the guerrillas coordinated more serious sabotage of the elections than ever before: "They [the FMLN] succeeded in severely disrupting the vote. . . . Their transport ban left almost all roads deserted except for military convoys. Petrol stations were bombed, about 90% of the country's electricity supplies were sabotaged, and water was cut."[23] Later in the year, on 11 November, the FMLN launched its largest offensive: thirty-five hundred insurgents occupied San Salvador, and other units attacked military positions in most major cities. Having surprised the Salvadoran military by the scale of their attack, the rebels defended their positions for some two weeks, even after the Salvadoran military resorted to aerial bombing. The offensive was deemed the "military high point of the war" by FMLN commander Joaquín Villalobos.[24]

Scholars and political leaders agree virtually unanimously that U.S. aid to the Salvadoran government prevented a takeover by the FMLN.[25] Proclaimed European scholar Harald Jung in 1984: "Since the January offensive in 1981, the guerrilla force in El Salvador has gained such a military strength that only massive support from the United States could save the Salvadoran army from defeat."[26] Manus Midlarsky and Kenneth Roberts echoed this sentiment: "There would appear to be little doubt that only extensive U.S. military assistance . . . has prevented the military defeat of the Salvadoran government since 1981."[27] Political leaders made similar assessments. Villalobos commented that "the level of intervention developed by the North American government constituted an external factor that began to alter the correlation and, as a result, the war changed its character. This was the most decisive factor of them all."[28] Said another FMLN commander in 1981: "Only one thing still holds up this government, and it is the same thing that props up all puppet regimes: imperialism's dollars and the political alliance of the most retrogressive sectors."[29] A different tone was struck by Alvaro Magaña, provisional president of El Salvador between 1982 and 1984: "The attitude of the U.S. government, during my tenure as interim president, was what definitely saved this country."[30]

By contrast, there is no widespread awareness in the United States that the Peruvian government was endangered by Sendero Luminoso. Many Americans do not believe that a movement as savage and brutal as Sendero could threaten an elected government. But it did. Only when Sendero leader Abimael Guzmán was captured in September 1992 did the threat posed to the Peruvian state end. Because there is limited knowledge of the threat posed by the Shining Path, I will cite numerous statements to that effect, most of them made between 1990 and the capture of Guzmán in 1992, first by Peruvian and then by non-Peruvian analysts.[31]

Peruvian expert Enrique Obando worried that "the state is on the verge of defeat. The armed forces could tumble down at any moment."[32] Reflecting after the capture of Guzmán on the fears of 1991 and 1992, Obando described the period as "extremely black . . . when people thought Sendero was about to take Lima, the government would fall. There was real fear, in the population and in the armed forces."[33] Warned Gustavo Gorriti: "If they [the Shining Path] continue this way, they will be able to beat the Peruvian state."[34] In another assessment,

Gorriti explained his pessimistic view: "If this is a war of apparatuses, Shining Path will win because it is more efficient, better organized and has better intelligence."[35] Agreed Carlos Iván Degregori: "In the early 1990s, the Shining Path was the most important guerrilla movement in Latin America, and it posed a real threat to the state."[36] The scholar Luis Pásara referred to the problem of "a Sendero Luminoso that threatens to take over the entire country."[37] Among the Peruvian public, 32 percent of respondents in one Lima poll in 1991 thought that Sendero would win.[38] By August 1992, even government officials acknowledged that Peru was "at war" and that Lima had become "the Beirut of the Andes."[39]

By the early 1990s, non-Peruvian analysts were also very worried about the possibility of a Shining Path victory. Simon Strong, a British journalist and author of a book in English devoted exclusively to the Shining Path, was a pessimist: "[In my book] I say that [the triumph of Sendero Luminoso] is probable."[40] A U.S.-based specialist concluded that "the Shining Path has become a direct threat to the government of Peru."[41] Warned two other analysts: "The potential of Guzmán's followers to bring down the elected government in Lima should not be underestimated."[42] Newspaper headlines for articles on events in Peru threatened a fall: "Plagued by a Host of Ills, Peru May be Beyond Help";[43] "Peru Risks Slide into Terrorist State beyond Rescue;"[44] and "Terrorist Noose Tightens in Peru."[45] At a hearing on Peru, both Bernard W. Aronson, assistant secretary of state for Inter-American Affairs, and Representative Robert G. Torricelli, head of the House Western Hemisphere subcommittee, speculated about what a Sendero victory would mean for the world.[46] Pleaded one expert to the U.S. public and policymakers: "Save Peru from Sendero."[47] Reflecting on Sendero after the capture of Guzmán, the respected Inter-American Dialogue reported that "many knowledgeable observers believed by the early 1990s that the Shining Path might overwhelm the Peruvian state."[48]

This book asks one primary question and several corollaries: Why were the FMLN and the Shining Path able to mount such serious revolutionary challenges between 1980 and 1992? Why were they able to recruit thousands of militants and gain the support of at least 10 percent of their respective populations? Why were they able to do this despite the fact that the Peruvian government had been elected since the onset of the movement, and the Salvadoran since 1984? And why,

despite the fact that in the Peruvian case external support was almost nonexistent?

In social science terms, I seek to identify the cause of the expansion of the revolutionary movements—the trigger, the catalyst, the sine qua non, or the independent variable. For social scientists, the demonstration of cause is difficult.[49] The cause of a revolutionary movement cannot be something that was always present or that has not changed in some way; if something had always been present or had not changed, then it cannot explain the timing of the emergence of the movement. In other words, the cause of the revolutionary movement beginning in El Salvador in the late 1970s and the movement expanding in Peru in the 1980s must be something that was different from previous years or different from other nations—or else, in the logic of social science, a similar revolutionary movement should have occurred earlier or elsewhere as well. For social scientists, causation requires evidence that something different happened, and it is logical to assume a link between the changes in the independent variable and the dependent variable (in this case, the revolutionary movement).

During the course of my research, it became clear that the reasons for the emergence, expansion, and ultimate fate of the two revolutionary movements were different.[50] I argue that the pattern of variables that made up the revolutionary trajectory in El Salvador was essentially similar to those in other countries during the Cold War and, accordingly, does not sharply contradict recent scholarly theories of revolution, developed primarily on the basis of cases from the Cold War era. By contrast, the interplay of variables in the Peruvian case may be a harbinger of new revolutionary patterns during the post–Cold War era—and does contradict recent scholarly theories of revolution, which we now perceive to have been theories appropriate only for their historical moment.

The most prominent theorists of revolution writing during the Cold War identified an authoritarian regime type as the key variable in the emergence of revolutionary movements; they distinguished regime-type variables from economic variables and argued that regime-type variables are the most important (see chapter 1). It is agreed in this book that, despite the holding of elections in El Salvador during the 1980s, political exclusion was the sine qua non in the Salvadoran revolutionary equation. During the period of the formation of the groups

that composed the FMLN, the authoritarian Salvadoran regime committed human rights violations on a massive scale unprecedented since the 1930s. Political opening—as the U.S. role in El Salvador increased and a civilian, Christian Democratic president was elected in 1984—reduced support for the FMLN, among the middle classes in particular. Still, for most Salvadorans, "democracy" meant more than elections—especially elections that were not especially free or fair (see chapter 3).

By contrast, during the period of the formation of the FMLN in the 1970s, the Salvadoran macroeconomy performed relatively well; economic concerns were not salient for the Salvadoran middle classes or recent university graduates aspiring to enter the middle classes. Nor, despite increasing land scarcity, was there a clear pattern of deepening poverty that threatened peasants' food security in El Salvador.

Accordingly, the Salvadoran case conforms to the dominant scholarly theories of revolution during the 1970s and 1980s. But it is also important to ask about the outcome stage of the revolutionary trajectory: why did the FMLN not win power, given that by most criteria the FMLN's revolutionary organization was stronger than, say, Fidel Castro's in Cuba prior to 1959?[51] The answer lies in the large-scale U.S. support for the Salvadoran government. This support was an important boon, enhancing living standards for the Salvadoran middle classes and enabling the U.S. government to pressure the regime for political reforms. The continuing human rights violations in El Salvador, however, made U.S. support for the regime controversial within the United States; U.S. support would probably have been less massive if the Salvadoran government had not responded at least somewhat to U.S. demands for political opening. In previous cases, when Latin American dictatorships had refused U.S. requests for a political opening, the U.S. government had decided not to rescue the threatened despot—and in those cases the revolutionary movement had succeeded.

Accordingly, in Latin American countries during the Cold War, there was a particular interplay among the variables in the revolutionary trajectory. The strength of the revolutionary organization was not key to whether it actually achieved power. The "successful" revolutionary movements in Cuba and Nicaragua did not defeat the regime's security forces on the battlefields of the capital city; rather, the Cuban and Nicaraguan dictators left their countries. One of the primary reasons why both dictators left was their realization that, since they were unwill-

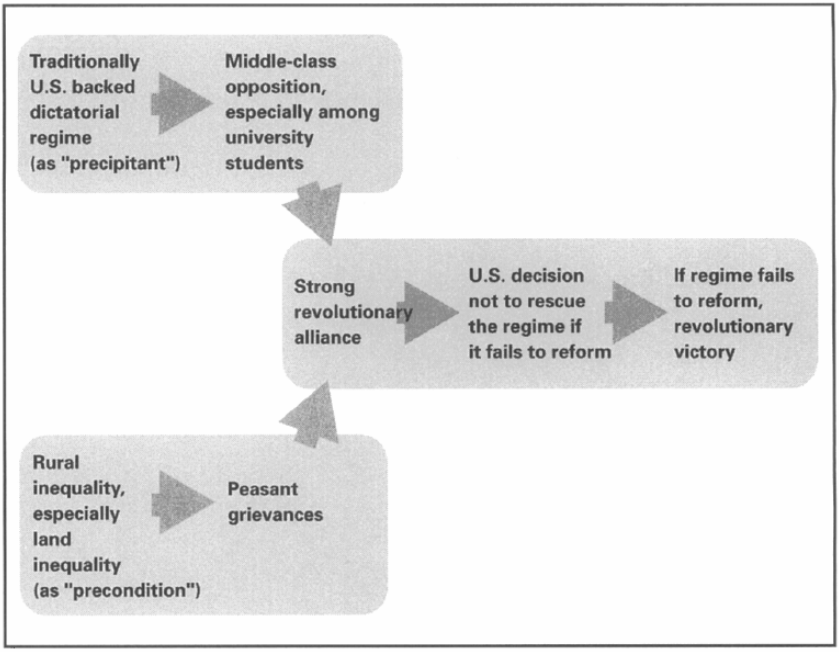

Figure I.1. Revolution in Latin America during the Cold War
Source: A composite of Huntington (1968), Blasier (1972), Booth (1991), Brockett (1991), and Wickham-Crowley (1992), based especially upon the cases of Cuba and Nicaragua. Among these scholars, only Wickham-Crowley incorporates the variable of U.S. policy.

ing to democratize their regimes, they would not be rescued by the U.S. government—and in both cases U.S. support had been critical to their maintenance of power. Lobbied by prodemocratic groups within the United States and from each country, the U.S. administration assessed (according to its ideological orientation and intelligence capability at the time) the character of the incumbent regime relative to the character of the revolutionary organization challenging it and decided not to rescue the regime from the revolutionaries' challenge. (See figure I.1.)

In Peru, by contrast, the interplay of variables contradicts scholarly theories of revolution developed during the Cold War. Political exclusion was not a key impetus to revolution. Rather, between 1980 and 1991, elections in Peru were fair and the electoral process was inclusive. Marxist parties participated in the political process, electorally and otherwise. Whereas FMLN militants in El Salvador frequently cited political exclusion as the main reason for their decision to join the movement, Shining Path guerrillas did not (see chapter 6).

Rather, the sine qua non in Peru's revolutionary experience was the nation's economic debacle. During the 1970s, not only were rural inequality and land scarcity increasing in the highlands of Peru—despite an ambitious agrarian reform effort—but also a threat to peasants' subsistence emerged. In addition, despite brief macroeconomic upturns between 1980 and 1982 and again between 1985 and 1987, Peru's overall economic performance during the 1980s was disastrous (see chapter 4). The economic decline exacerbated the already serious plight of Peru's rural highlands poor; it also dashed the middle-class expectations of the vast numbers of new university graduates. Peru's teachers, many of whom were the first in their families to gain an education and had aspired to professional lifestyles, found themselves unable to provide for their families' basic human needs; they were especially angry. The economic devastation was so severe that it was perceived as causing death and thereby, for some Peruvians, justifying Sendero's killings; salaries were "inhuman" and "[government officials through their policies] are killing the people."[52]

Of course, economic catastrophe alone is insufficient to create revolutionary equations; rather, it must interact with organizational, political, and international variables. As an organization, Sendero was extremely adept at taking advantage of the new kind of revolutionary space that had become available in Peru: Sendero targeted teachers and students, whose numbers were much larger than in the past and whose expectations had been severely dashed; its ideology was fundamentalist, repudiating elections—an ideology that would have been anomalous in previous years; and, although its exaltation of violence alienated most Peruvians, at some places and in some times violence facilitated an image of an organization that punished wrongdoers and that achieved its objectives. Confronted by economic crisis and a shrewd, savage revolutionary movement, the traditionally weak capabilities of Peru's state eroded further. Neither the Belaúnde nor the García government effectively countered either the guerrilla movement or the security forces' human rights abuses. And, in the late 1980s and early 1990s, when Sendero became a very real threat to the survival of the Peruvian state, the movement was underestimated in most sectors of the U.S. government, which continued to prioritize antidrug and economic liberalization policies; in some respects U.S. antidrug policy actually abetted Sendero.[53] The Peruvian

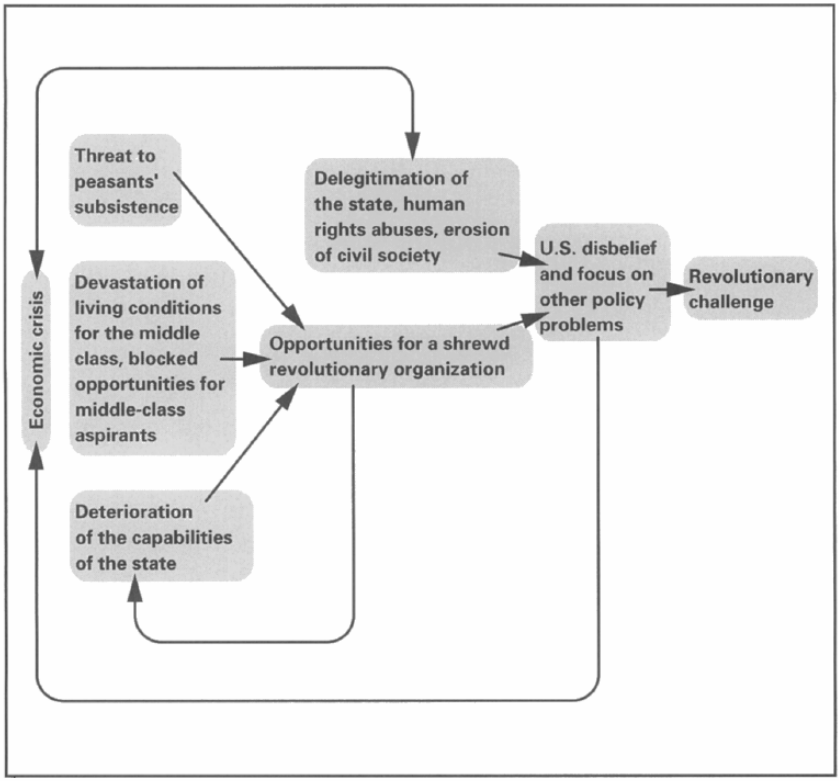

Figure I.2. Causes of the Revolutionary Movement in Peru, 1980–92

revolutionary equation—economic crisis that weakens a formally democratic but not particularly legitimate state, multiplied by a revolutionary organization that shrewdly takes advantage of these adverse conditions amidst minimal U.S. support—may be a harbinger of a post–Cold War revolutionary pattern. (See figure I.2.)

Chapter 1 of this book presents its scholarly framework. The first section summarizes the theories of revolution that are to be tested and ultimately modified in this study. Then I discuss my research design and in particular my choice of Ecuador as a negative or control case for comparison and contrast with Peru. The final section defines the key terms "revolution" and "democracy."

Chapter 2 describes the FMLN and the Shining Path as revolutionary organizations. The chapter highlights the major differences between the two, indicating that, if these very different organizations were both

relatively successful, there is no set of criteria for an "effective" revolutionary organization that can be determined by social scientists. Rather, the effective organization is one that is appropriate to its context; both the FMLN and Sendero presented an alternative for those citizens who were angry about the most salient problems in their countries. The chapter undermines voluntarist interpretations of revolution by emphasizing that what matters is not the organization, but the fit between the organization and its context. Revolutionary organization is a necessary but never sufficient variable in a revolutionary equation.

Subsequent chapters describe three key variables in revolutionary equations: politics, economics, and the international context. As chapter 1 highlights, these are the key variables whose significance to revolutionary outcomes has been most intensely debated by theorists of revolution.

Chapter 3 examines the degree to which Peru and El Salvador meet democratic standards. The chapter analyzes the extent to which electoral processes in the two nations have been "free and fair." The thrust of the chapter is that, by and large, between 1980 and 1991 Peru was characterized by a free and fair electoral process including participants of Marxist inclinations. By contrast, although political space for the opposition increased in El Salvador and elections became more competitive, in my judgment they fell short of classification as free and fair. Accordingly, it is not surprising that the Peruvian militants rarely mention political exclusion as an explanation for their adherence to the revolutionary organization, whereas their Salvadoran counterparts do (see chapter 6).

I also suggest in this chapter that, even though conventional international standards for democracy were met in Peru during this period and perhaps even met in El Salvador by the early 1990s, many citizens were dissatisfied with their governments and were not as ready as were international analysts to label them democratic. Citizens in both countries were concerned about the performance of their governments: they worried that the governments were not resolving the problems of economic crisis and insurgency. Citizens believed that the governments should have been able to combat corruption and human rights violations more effectively; they wondered why both the governing parties and the opposition parties seemed unable to present cogent alternative policies.

Chapter 4 compares the Peruvian and Salvadoran economies during the 1970s and 1980s. In El Salvador, most national economic trends were positive during the 1970s, when the guerrilla groups were forming. The expectations of high-school and university graduates for entry into the Salvadoran middle classes were being met. Living standards among the peasantry improved in numerous respects; there was no widespread threat to subsistence. For many peasants, land scarcity was a serious grievance —but for the most part these were not the peasants who composed the FMLN's key social bases. By the 1980s, most Salvadoran economic trends were negative; but in Peru after 1976, the trends were much worse. The economic debacle both endangered peasants' food security and blocked educated young persons' access to the middle class. Economic reversal eroded state institutions—perhaps provoking greater corruption, perhaps not, but certainly sparking greater popular anger about corruption.

Chapter 5 analyzes the international context, specifically U.S. policy toward Latin American revolutions. First, it demonstrates a key theoretical point: during the Cold War, revolutionary movements in Latin America succeeded not when they met the government head on and won, but when they confronted a regime that had become illegitimate—not only to middle-class and popular groups within the country but also to the U.S. government—and that the U.S. government did not seek to rescue.

The chapter then examines the U.S. responses to the crises in El Salvador and Peru. In El Salvador, the U.S. response to the growth of the FMLN drew upon past responses to similar Latin American revolutionary organizations supported by East bloc countries during the Cold War. The U.S. government was able to bolster the Salvadoran regime financially and militarily at the same time that it prodded the regime toward greater political openness. By contrast, in Peru, Sendero was expanding as the Cold War ebbed. The movement was Maoist, unaligned with any superpower rival to the United States and unlikely to become so aligned in the future. Accordingly, the extent to which Sendero threatened U.S. strategic interests in Latin America was not clear. The appropriate U.S. response was also not clear, given that Sendero arose in response to a very different set of problems than had traditionally triggered Latin American revolutionary movements. The set of policies that served U.S. interests in previous revolutionary contexts would not succeed in Peru. Amid U.S. officials' uncertainties and

competing policy priorities for the Peruvian government, neither the Reagan nor the Bush administration significantly bolstered the Peruvian regime.[54] Until 1992, the U.S. priorities in Peru appeared to be the implementation of free market reforms and the prosecution of the antidrug campaign, despite the fact that both efforts created difficulties for counterinsurgency, at least in the short run.

Drawing upon the information about the political and economic conditions in El Salvador and Peru presented in chapters 3 and 4 and upon the description of the U.S. role in chapter 5, chapter 6 offers integral explanations of why the two revolutionary movements expanded. The chapter first describes the revolutionary militants' backgrounds and experiences, and provides their own explanations for their actions. Then, based on the premise that citizens' attitudes about their nation's politics matter, the chapter compares Salvadorans' and Peruvians' interpretations of their circumstances. Finally, integrating various scholarly emphases about the differences in political regimes, economic conditions, revolutionary organizations, and U.S. policy, the chapter assesses the two countries' revolutionary equations.

Revolutionary movements will recur in the post–Cold War era in Latin America. Indeed, the embers of Cold War revolutionary movements continued to flicker in Guatemala until a peace agreement in December 1996, and sharply reignited in Colombia in 1996–97.[55] Moreover, since the initiation of the research for this book, a revolutionary challenge has been raised by two different groups in Mexico: first, the Zapatista National Liberation Army (Ejército Zapatista de Liberación Nacional, EZLN) in Chiapas, and then the Revolutionary Popular Army (Ejército Popular Revolucionario, EPR) in Guerrero and Oaxaca. The EZLN, although sparked in part by the authoritarianism of the Mexican regime in Chiapas, resembles the Shining Path in its roots in an increasingly destitute part of the country and in its militant protest against the prevailing economic order; for neither the Senderistas nor the Zapatistas were reasonably fair elections a sufficient response to their concerns.[56] Although information about the EPR is limited, it appears to be more similar to the Shining Path: the EPR is predominantly Maoist, it is not cautious about the use of violence, and its leaders appear to be well organized but not particularly articulate.[57] Together, the emergence of the Sendero Luminoso and the Mexican revolutionary

movements as well as the expansion of the movements in Colombia suggest that revolutionary movements will endure in the post–Cold War era, but that the factors that make up a successful revolutionary equation will be different.