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No. 2828

AN EMPIRICAL STUDY OF THE CAUSES OF MILITARY COUPS
AND THE CONSEQUENCES OF MILITARY RULE
IN THE THIRD WORLD: 1960-1985

DISSERTATION

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

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May, 1988

Kanchanasuwon, Wichai, An Empirical Study of the Causes of Military Coups and the Consequences of Military Rule in the Third World: 1960-1985. Doctor of Philosophy (Political Science), May, 1988, 206 pp., 33 tables, 1 illustration, 5 appendixes, bibliography, 72 titles.

This study analyzed the causes of military coups and the consequences of military rule in the Third World during the 1960-1985 period. Using a coup d' etat score, including both successful and unsuccessful coups, as a dependent variable and collecting data for 109 developing nations from the World Handbook of Political and Social Indicators, The New York Times Index, and public documents, sixteen hypotheses derived from the literature on the causes of military coups were tested by both simple and multiple regression models for the Third World as a whole, as well as for four regions (Sub-Saharan Africa, Asia, Latin America, and the Middle East and North Africa) and in two time periods (1960-1970 and 1971-1985). Similarly, three models of military rule (progressive, Huntington's, and revisionist models) were analyzed to assess the consequences of military rule.

The results of the study concerning the causes of military coups suggest four conclusions. First, three independent variables (social mobilization, cultural

homogeneity, and dominant ethnic groups in the society) have stabilizing consequences. Second, six independent variables (previous coup experience, social mobilization divided by political institutionalization, length of national independence, economic deterioration, internal war, and military dominance) have destabilizing consequences. Third, multiple regression models for each region are very useful; most models explain more than 50% of the variance in military coups. Fourth, the time period covered is an important factor affecting explanations of the causes of military coups.

In the analysis of the consequences of military rule, this study found that military governments did not differ significantly from civilian governments in terms of economic, education, health, and social performances. However, the study found that military rule decreased political and civil rights. Its findings are thus very consistent with the best of the literature.

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CHAPTER I

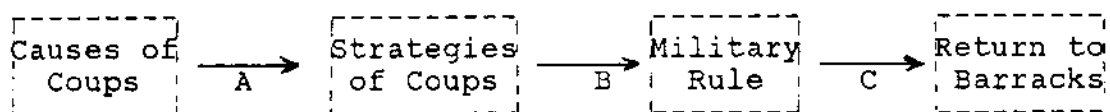
INTRODUCTION

The role of the military in politics, especially in the developing nations, is an important subject; developing nations are frequently ruled by military regimes. Many scholars have tried to analyze the causes of the coup d'etat and the performance of military regimes. Most studies are descriptive and concentrate on a particular nation. However, empirical studies, seeking to avoid subjective analysis and using statistics to support conclusions, are frequently employed in the study of this subject.

Purpose of the Study

This study seeks first to analyze the causes of military coups in developing nations during the period 1960-1985, by means of an empirical analysis. I extend and modify Jackman's (1978) African model of the causes of coups to other areas. In doing so, I seek to test some important hypotheses about which scholarly findings have been contradictory. Second, this study analyzes the consequences of military rule, comparing the major findings of previous studies concentrating on the 1950-1970 period to my analysis for 1960-1985 data.

Generally speaking, the study of military intervention in Third World politics may be divided into four parts or stages: causes of military coups, strategies of coup makers, consequences of military rule, and reasons for military disengagement or return to the barracks (see Figure 1 below).



A means sufficient military grievances.

B means a successful coup, one that follows effective coup strategies.

C means an uprising, an election, or voluntary military disengagement.

Fig. 1--A Simple Chart for the Study of Military Intervention in Third World Politics

These four parts are closely related. Usually, coup makers are not satisfied with the government. So they plan and execute a coup. Consequently, the first and the second stages are linked by sufficient military grievances (A) against the government to cause the soldiers to attempt a coup. When they attempt a coup, they must be either

successful or unsuccessful. If they are successful, they usually establish a military regime. Thus, the second and the third stages are linked by the occurrence of a successful coup (B), i.e., a coup that follows effective strategies. When a military regime has ruled a nation for a period, the military junta faces the problem of whether or how to return to the barracks. Thus, the last two stages are linked by an uprising, an election, or a voluntary disengagement (C).

A basic assumption concerning the causes of military coups is that there are sufficient military grievances for conspirators to stage a coup. These grievances result from economic and administrative failures of civilian regimes, or from a perception that military interests are threatened. Studies of the causes of military coups may be classified into two types. The first type focuses at the macro level on such factors as social, economic, and political structures. The second type focuses at the micro level on the military organization and the coup makers.

Empirical studies of the causes of coups at the macro level have been conducted by Putnam (1967), Hibbs (1973), Wayman (1975), Jackman (1978), O' Kane (1981), Ruhl (1982), and Johnson, Slater, and McGowan (1984). Putnam and Ruhl analyzed cross-national data in order to find the causes of military intervention in Latin America. Hibbs employed

causal and multiple-regression models to analyze the causes of coups in 108 nations during 1948-1967. Wayman employed a causal model and cross-national data to analyze the causes of military intervention during 1960-1970. O'Kane employed discriminant analysis and cross-national data to study the causes of coups during 1950-1970. Jackman and Johnson, Slater, and McGowan sought to find the causes of military coups using cross-national data on African nations during 1960-1982.

Examples of micro level studies are Thompson's (1973) The Grievances of Military Coup-Makers, and Horowitz's (1980) Coup Theories and Officers' Motives: Sri Lanka in Comparative Perspective. Thompson sought to find the causes of each coup by focusing on military coup maker grievances. His study included data coded on 274 military coups during 1946-1970. Horowitz interviewed 23 coup makers who participated in the attempted coup in Sri Lanka in January, 1962.

A study of the strategies of coup makers refers to the study of the planning and execution of coups. This kind of study seeks to answer how the conspirators stage a coup. A good example is Coup d' Etat: A Practical Handbook written by Edward Luttwak (1979).

When the military stages a coup, it must be either successful or unsuccessful. Effective coup strategy will

allow it to be successful. Successful coup makers usually establish a military regime. A number of scholars have sought to assess the performance of military regimes by comparing them with civilian regimes. They seek to understand the consequences of military regimes.

Examples of empirical studies of the consequences of military rule based on cross-national data include Nordlinger (1970), Schmitter (1971), Thompson (1973, pp. 20-23), McKinlay and Cohan (1975), Jackman (1976), Hill (1979), and Zuk and Thompson (1982). Nordlinger was one of the first to analyze the impact of military regimes upon economic and social change. His study was based on data collected from 1957 to 1963. Schmitter analyzed the effects of military rule in Latin America by comparing them with civilian regimes. He used data from around 1960. Thompson analyzed the effects on defense expenditures of military intervention. He used 32 successful and unsuccessful coups during 1946-1966 as his units of analysis. McKinlay and Cohan employed cluster analysis to compare the political and economic performance of military and civilian regimes for the period 1951-1970. Jackman analyzed the effects of military intervention in politics on economic development from 1960 to 1970. Hill employed multiple regression models to analyze the effects of military intervention on military spending and armed forces size. He collected data from 101

nations during 1946-1965. Zuk and Thompson examined the influence of military regimes on the military spending of developing nations during 1967-1976. They collected data from 66 nations.

The last questions in studying military intervention are how, why, and when the military returns to the barracks. An example of this type of study is Military Government and the Movement toward Democracy in South America edited by Handelman and Sanders (1980). A basic finding here is that when the economic performance of military regimes is not better than that of civilian governments, military regimes may give up their power to the civilians by holding an election.

This study analyzes the causes of military coup (the first part of figure 1) at the macro level and the consequences of military rule (the third part of the figure). It follows the ones just cited in using cross-national data to examine its central hypotheses. Before explaining the significance of this study, I will discuss the problems of cross national analysis.

Problems of Empirical Cross-National Analysis

Generally speaking, an empirical cross-national study usually faces three important problems: operationalizing the relevant concepts, missing data, and time periods covered. First, it is difficult to test some hypotheses because the necessary data cannot be collected. Very interesting theories or hypotheses are suggested to explain a phenomenon, but they cannot be operationalized. A useful theory should be a set of statements that includes some lawlike generalizations explaining and predicting some phenomena and generating hypotheses that can be tested by empirical data (Rudner, 1966, pp. 10-18). A good example concerning the causes of military coups is the "military corporate interest," in which the military is viewed as an interest group that wants to protect and to increase its own interests. Many descriptive studies suggest it as an important cause of military coups. However, this concept is very difficult to operationalize for testing hypotheses.

Second, missing data on some cases can affect the result for the whole model. For example, Robert Jackman created a powerful model of the coup d'etat in African countries. He got an R square of 0.843 in his model (Jackman, 1978, p. 1271). However, when Johnson, Slater, and McGowan (1984, p. 628) replicated Jackman's model, including six more African countries and seven more years in

their model, they got an R square of only 0.426. The dramatically decreased R square could be explained in two ways: the change of time period covered and the increased number of cases for the replicated model.

Third, the time period covered may play an important role in the analysis. Differences in time periods may produce different results. For example, a part of the difference between Jackman's findings and those of Johnson, Slater, and McGowan is no doubt due to the time period difference between their studies. Also Putnam (1967, p. 106), who analyzed social mobilization and military intervention in Latin America between 1956 and 1965, found that a high social mobilization level decreased the chance of military intervention. In contrast, Ruhl (1982, pp. 574-87), who used the same technique as Putnam, but analyzed social mobilization and military rule in Latin America between 1960 to 1970, found that a high social mobilization level increased the likelihood of military intervention.

To confront the first problem, I will use concise hypotheses that can be operationalized and tested by empirical data. To confront the second problem, I include every Third World nation that has a population of more than a half million. Most studies of the military in politics analyze geographic regions such as Latin America or Africa.

Thus, their findings are applicable only to a single area. To confront the third problem, I will analyze the period 1960-1985, dividing it into two periods: 1960 to 70, and 1971 to 85, for purposes of analysis.

Significance of the Study

This study is significant for a number of reasons. First, it fills a research gap. As discussed earlier, Jackman's model that employed multiple regression analysis to find the causes of military coups in African nations is a powerful model. However, no researchers have applied and modified his model to other regions, as I will do.

Second, this study seeks to find a general model concerning the causes of military coups in Third World nations. There are two previous studies that are similar in purpose. The first one is Hibbs's study (1973). The second one is O'Kane's study (1981). However, both studies include every nation in the world (First, Second, and Third Worlds), from which data are available. This research is concentrated on Third World nations because coups are usually a phenomenon of the Third World. According to Thompson (1973, pp. 68-69), there were 274 successful and unsuccessful coups in 59 nations during 1946-1970. Only two occurred in the First World, both in France. In other words, 99% of military coups in the post war era have occurred in the Third World. There are 109 Third World nations that have a population of

more than a half million (see the definition of the Third World on pp. 49-50 in which Greece and Portugal are considered as Third World nations, and see Appendix A). About 53% of those nations had at least one coup experience during 1946-1970. In research design terms, this study maximizes the common characteristics of the systems analyzed and seeks to use intersystemic differences to explain the phenomena of interest, following Przeworski and Teune's "Most Similar Systems" design (1970, pp. 31-39).

Third, this study considers of two time periods: 1960-1970 and 1971-1985. As mentioned earlier, the time period may play a significant part in cross-national analysis. Thus, the effects of time are analyzed.

Fourth, Third World nations are grouped into four regions: Sub-Saharan Africa, Asia, Latin America, and the Middle East and North Africa in order to determine whether there are regional effects on the causes of military coups and on the consequences of military rule. Broadly speaking, each region has some common characteristics such as culture and tradition. These characteristics may affect the causes and consequences of military intervention. For example, the traditional form of the political system is usually viewed as an important factor affecting the present political system. Each region has a unique form. The caudillo system was used in most Latin American nations. The sultan system

was used in Middle East nations. Chiefdoms were found in Sub-Saharan nations and the feudal system was found in Asia.

According to Perlmutter (1978, p. 171), the caudillo system was a "traditional, patrimonial political system, lacking continuity, political sustenance, and hierarchical social organization." This system was influenced by the Spanish legacy. The political authority of the center was undermined in the caudillo system. In the Middle East, Arab nations were influenced by the legacy of the Ottoman Empire. Military officers were subordinated to the Sultan. In Sub-Saharan Africa, Coleman (1960, pp. 252-260) classified traditional political system into four types: (1) large scale state, (2) centralized chiefdoms, (3) dispersed tribal societies, (4) small autonomous local communities. In Asian nations, especially in Southeast Asia, the traditional form of the political system was characterized as the "feudal" society. It was sharply divided between a small elite class and a peasant population (Pye, 1960, pp. 69-81). Cultural, religious, and traditional differences among those regions may produce some interaction effects relevant to explaining the causes of military coups and the consequences of military rule. Thus, region effects should be analyzed. In this study, not only are the region effects analyzed, but a model predicting coups in each region is presented.

This study is divided into seven chapters. Chapter two is a literature review which focuses on the causes and consequences of military intervention. Some hypotheses put forward by scholars that can be tested by empirical data are established. Chapter three discusses the research design. It focuses on the data, dependent variables, independent variables, indicators of these variables, operationalization, and the statistical techniques that are employed in this study. Chapter four through six relate the important findings of the study. Chapter four tests whether each hypothesis is confirmed for all Third World nations and whether each Third World region. Chapter five presents multiple regression models to explain the causes of coups and seeks to establish an appropriate model in each region. Chapter six seeks to find the effects of military rule in terms of economic, politics, social change, health care, education, and military affairs. In doing so, it controls for effects of regions and the levels of economic development. The last chapter is a conclusion.

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CHAPTER II

A REVIEW OF THE RELEVANT LITERATURE

The Causes of Military Coups

Four broad determinants have received particular attention as causes of military coups or military intervention in politics: social, economic, political, and military factors.

Social Factors

The characteristics of society are often cited as the causes of coups. There are four important social factors that are frequently discussed by scholars in the area of military intervention. First is social mobilization. Second is coup experience. Third is length of time in which the nation has been independent. Last is cultural pluralism.

Social Mobilization--According to Deutsch (1961, p. 494), social mobilization is defined as "the process in which major clusters of old social, economic and psychological commitments are eroded or broken and people become available for new patterns of socialization and behavior." In evaluating social mobilization, Deutsch suggests eight variables that are relevant: mass media, literacy, urban population, voting participation, change of

locality of residence, income growth per capita, occupational shift out of agriculture, and shift into any substantial exposure to modernity. Thus, social mobilization is linked to the rise of mass education and mass communication. In addition, it increases mass participation in social and political activities.

Finer (1962, pp. 86-88) suggests that increased social mobilization is likely to decrease the probability of military intervention. In addition, Putnam (1967), who analyzed military intervention in Latin American nations between 1956 and 1965, notes:

Social mobilization increases the number of potential political actors and diffuses increased political resources to these actors. The assumption underlying this hypothesis is that these actors will be willing and able to sustain civilian political institutions (Putnam, 1967, p. 85).

In contrast, Samuel Huntington (1968) argues that increased social mobilization will cause military intervention if a government does not have the capacity to create political institutionalization. He writes:

The relationship between social mobilization and political instability seems reasonably direct. Urbanization, increases in literacy, education,

and media exposure all give rise to enhanced aspirations and expectations which, if unsatisfied, galvanize individuals and groups into politics.... The faster the enlightenment of the population, the more frequent the overthrow of the government (Huntington, 1968, p. 47).

From Finer's and Putnam's perspective:

H1: Increased social mobilization will decrease the probability of coups.

From Huntington's argument:

H2: Increased social mobilization will increase the probability of coups, if political institutionalization is low.

Coup Experience--Many scholars of military intervention in Third World nations agree that once a coup has occurred, the probability of having another increases. O'Kane (1981, p. 301), for example, in her study of the causes of coups during the period 1950-70, finds that coups are more likely to occur in countries where there has been a previous coup.

From O'Kane's findings:

H3: Previous coup experience will increase the probability of coups.

Length of National Independence--A third factor related to the characteristics of society is the length of national

independence. There are three basic arguments concerning the length of national independence as it relates to military coups. First, some scholars argue that countries just becoming independent are highly unlikely to have military coups. For example, Wayman (1975, p. 62), in his causal model of military involvement in politics during 1960-70, found that recent independence decreased the level of military involvement. He explained that a nation that has recently gained its independence has a period of time for the government to perform its duty before the military feels it can intervene.

The second argument suggests that a recently independent nation in which external forces are withdrawn lacks political institutions with traditional or modern foundations. Therefore, the military can easily take over such a weak government. Thompson (1975, p. 462) in his review of "explanations of the military coup" reports the argument that the "political vacuum" causes military coups.

The third argument suggests a nonlinear relationship between the length of national independence and military coups. In the first years of national independence, there is a low level of military coups because the military waits to see the performance of civilian government. In the second period, there is a high level of military coups because of a lack of political institutionalization. In the third period,

there is a low level of military coups because the political institutions are better established.

From Wayman's finding, a hypothesis that accounts for the occurrence of military coups could be:

H4: The longer the length of national independence, the greater the probability of coups.

From the second argument, the hypothesis should be opposite the fourth hypothesis. That is the longer the length of national independence, the less the probability of coups.

From the third argument, the hypothesis could be:

H5: The relationship between the length of national independence and military coups is curvilinear; the number of military coups will be low in the early and late periods and high in the middle period.

Cultural Pluralism--The relationship between culture and the causes of coups is much discussed (see Coleman 1960, p. 368; Deutsch 1961, p. 501; Kuper and Smith 1969, pp. 7-26; and Jackman 1978, p. 1263). Most scholars argue that cultural pluralism based on language, religion, and ethnicity causes military coups. A major reason is that competition among different ethnic and religious groups often leads to political conflict and political instability. The military intervenes in politics in order to defend against such threats to national security. However, Coleman

(1960, p. 368) argues that "a rich pluralism makes dictatorship less likely by providing countervailing power centers which cannot be coerced into a single authoritarian system." In addition, Jackman (1978, p. 1270) finds that the presence of a dominant ethnic group, in a culturally plural situation, is likely to increase political instability.

The relationship between cultural pluralism and military coups could be stated in two hypotheses. The first one is based on most scholars' argument:

H6: The more culturally homogeneous a society, the less the probability of a coup.

It should be noted that Coleman's argument is the alternative hypothesis. That is the more culturally homogeneous society, the greater the probability of coups.

Another hypothesis concerning cultural pluralism is based on Jackman's finding:

H7: The more dominant an ethnic group in the society, the greater the probability of coups.

Economic Factors

Economic factors that are related to the causes of military coups can be divided into three groups: economic development, economic deterioration, and economic dependence.

Economic Development--Economic development usually refers to industrialization that increases the labor force employed in industry. Finer (1962, pp. 113-15) has argued that economic development, especially industrialization, diminishes the likelihood of a military coup because it increases technical complexity that sustains civilian government. In addition, Luttwak (1979, pp. 32-38) suggests that there is a negative relationship between the degree of economic development and military coups. The country that has a low per capita GNP tends to have a coup. His argument is based on the assumption that economic backwardness is a pre-condition of coups because all power is in the hands of small elites.

From Finer and Luttwak's suggestions:

H8: Higher levels of economic development decrease the probability of military coups.

Economic Deterioration--Needler (1966, pp. 616-26) finds that the overthrow of a government is more likely when economic conditions are deteriorating. Thompson (1975, p. 459-87) says that the state of the economy has been recognized as an important indicator in the evaluation of governmental performance. His hypothesis is that nations experiencing economic deterioration have increased probabilities of military coups. Nordlinger (1977, pp. 85-89) suggests that an important cause of military

intervention is found in civilian governments' performance failures. The performance failure of a civilian regime, according to Nordlinger, is related to illegal behavior, economic downturn, political violence, and finally the "legitimacy deflation" of civilian government.

From Needler, Thompson, and Nordlinger's discussion:

H9: Economic deterioration increases the probability of military coups.

Economic Dependence--A third economic factor that is allegedly linked to coups in Third World nations is economic dependence. Dependence and dependency are closely related. Caporaso (1978, pp. 1-12) defines dependence as external reliance on other nations and dependency as the process of incorporating the less-developed nations into the world capitalist system.

Thompson (1975, pp. 472-473) found that a lack of diversity in trading partners and in export commodities had a positive association with military coups. In addition, O'Kane (1981, p. 291) found that fluctuations in export prices caused military coups. These conditions were likely to occur in "those countries trading on the world market that are primary producers, specializing in a major export, and that have poor economies dependent upon the export sector as a whole."

From these findings:

H10: Higher levels of dependence upon world trade increase the probability of coups.

Political Factors

Political factors affecting the occurrence of coups can be classified into four related sets. The first is political participation, the second is political parties, the third is political turmoil, and the fourth is internal war.

Political Participation and Political Parties--Levels of political participation can have either a positive or a negative relationship to military coups. It is allegedly positive when the general population, especially the lower class, is mobilized to support the government because military interests are threatened by the lower class's interests (Nordlinger, 1977, pp. 78-85). In contrast, it may be negative when political participation supports strong political parties that are difficult for the military to take over. Jackman (1978, pp. 1262-74) found that high rates of participation combined with a dominant political party reduced the probability of coups.

The relationship between political participation, political parties, and coups can be stated in two hypotheses.

H11: Higher levels of political participation increase the probability of coups.

H12: Dominant political parties decrease the probability of coups.

Political Turmoil and Internal War--Related to political participation is political turmoil, a form of political violence. According to Gurr (1970, p. 11; using Rummel's typology, 1963, pp. 25-26), there are three forms of political violence: turmoil, conspiracy, and internal war. He defined each term as follows:

Turmoil: Relatively spontaneous, unorganized political violence with substantial popular participation, including violent political strikes, riots, political clashes, and localized rebellions.

Conspiracy: Highly organized political violence with limited participation, including organized political assassinations, small-scale terrorism, small-scale guerrilla wars, coups d'etat, and mutinies.

Internal war: Highly organized political violence with widespread popular participation, designed to overthrow the regime or dissolve the state and accompanied by extensive violence, including large-scale terrorism and guerrilla

wars, civil wars, and revolutions (Gurr, 1970, p. 11).

Gurr used two factors in distinguishing these terms: the characteristics of an organization and the degree of popular participation.

Huntington (1968, pp. 32-59) views political change in most developing countries as turmoil producing political decay because of the absence of effective political institutions. In praetorian society, Huntington (1968, p. 196) writes: "The wealthy bribe; students riot; workers strike; mobs demonstrate; and the military coup." In addition, Nordlinger (1977) views political turbulence and political violence as indicators of the performance failures of civilian governments. He notes:

Continuous political turbulence and major incidents of violence markedly reduce a government's legitimacy, since it is unable to fulfill its most basic responsibility (Nordlinger, 1977, p. 93).

Political turmoil such as riots, strikes, and internal war (such as guerrilla and civil wars) can be viewed as political instability that causes military coups. In both situations, soldiers are brought in to quell disturbances, repress internal subversion, impose martial law, prevent

riots, and break up labor strikes. Thus, military officers realize that the government has become critically dependent upon them. In addition, the intensity of political violence increases the legitimacy of military intervention because the general population see the soldiers as performing an important function of government. Thus, two hypotheses can be established as follows:

H13: Higher levels of political turmoil increase the probability of coups.

H14: Higher levels of internal war increase the probability of coups.

Military Factors

Military factors that are linked to the causes of military coups can be discussed under three headings: military corporate interest, military dominance, and foreign troops.

Corporate Interests--Explanations of coups based on military factors stress that military corporate interests "cause" coups. These interests refer to the military organization as an interest group that wants to protect and to increase its own interests such as budgetary support. When the military finds its corporate interests threatened, it may intervene to reassert them. A military organization usually seeks autonomy, honor, security, hierarchical

discipline, and an adequate level of financial support (see Thompson, 1973; and Nordlinger, 1977).

Thompson (1973, pp. 12-45) analyzed 274 coups during 1947-1970. He divided the grievances underlying coups into military "corporate" and "not-so-corporate" factors. According to Thompson, corporate factors could be separated into positional grievances and resource scarcities. Positional grievances that could cause military coups were divided into six types: autonomy, hierarchy, monopoly, cohesion, honor, and political position. Resource scarcities could be divided into four subtypes: dissatisfaction over pay, promotions, and appointments; dissatisfaction over budget allocation; dissatisfaction over general military policy; and some combination of the first three subtypes. Not-so-corporate factors were divided into three types: military factions, the adjustment of personnel, and a "societal residual." He found that "coups involving corporate factors are more successful than those involving the not-so-corporate factors" (1973, p. 50).

Nordlinger (1977, pp. 65-78) divides the military's corporate interests into three subtypes: budgetary support, military autonomy, and the absence of functional rivals and the survival of the military. He concludes that the great majority of coups is motivated by the defense or enhancement of the military's corporate interests. In addition,

Perlmutter (1977, pp. 115-122) notes that the corporate orientation of military officers is an important factor in accounting for military coups. The propensity to intervene is correlated with military corporate orientation and the political struggle within the military establishment and between the military and the nationalist civilian regime.

Military Dominance--Unfortunately, it is difficult to evaluate the effect of the military's corporate interests because of the limits of the data. For example, military autonomy, both Thompson and Nordlinger suggest, is an important factor in military corporate interest. However, in a cross-national analysis, it is very difficult to collect and to operationalize this concept. As a substitute, I focus on an estimate of "military dominance." The assumption behind military dominance is that if the military organization is a strong institution that dominates other institutions in the society, it will be in a good position to stage coups in support of its grievances. An appropriate hypothesis is:

H15: Higher levels of military dominance are likely to increase the probability of coups

Foreign Troops--A military factor that may reduce the likelihood of coups is the presence of foreign troops. Luttwak (1979, p. 44) suggests that one of the preconditions

of coups is that "the target state must be substantially independent and the influence of foreign powers in its internal political life must be relatively limited." The presence of a foreign army can be viewed as an obstacle to coups. In order to stage a coup in a country that has a foreign army present, the conspirators must either ask for the foreign power's permission or risk the coup's failure. From Luttwak's assumption:

H16: The presence of foreign troops that are capable of combat will reduce the probability of coups.

Before hypothesizing the consequences of military rule, I present some contradictory findings on the causes of military coups (see Table 1 on the next page).

TABLE 1
CONTRADICTIONARY FINDINGS ON THE CAUSES OF MILITARY COUPS

Study	Number	Year	Predictors	Outcome
1. Putnam (1967)	20	1956-1965	Social Mobilization	negative
2. Hibbs (1973)	108	1948-1967	Social Mobilization	none
3. Thompson (1975)	59	1946-1970	Social Mobilization Dominant Ethnic Group Level of Dependence	none none positive
4. Wayman (1976)	110	1960-1970	Dominant Pol/Party	negative
5. Jackman (1978)	30	1960-1975	Social Mobilization Dominant Ethnic Group Dominant Pol/Party	positive positive negative
6. O'Kane (1981)	125	1950-1970	Level of Dependence	curvilinear
7. Ruhl (1982)	20	1969-1978	Social Mobilization	positive
8. Johnson & Other (1984)	35	1960-1982	Social Mobilization Dominant Ethnic Group Dominant Pol/Party	none none none

Among the sixteen hypotheses discussed earlier, at least four hypotheses reflect the contradictory findings of social scientists (see Table 1).

The relationship between military coups and social mobilization was blurred. Jackman (1978) and Ruhl (1982) found that a high level of social mobilization increased the probability of military intervention. In contrast, Putnam

(1967) found that a high level of social mobilization decreased the probability of military intervention. However, Johnson, Slater and McGowan (1984) and Hibbs (1973, pp. 96-109) found no relationship between social mobilization and military coups.

The relationship between dominant ethnic groups and military coups was also not clear. Thompson (1975, p. 473) and Johnson, Slater, and McGowan (1984) found that the relationship between these two variables was not significant. However, Jackman found a positive relationship.

The relationship between the level of economic dependence and military coups tended to be a positive relationship. Both Thompson (1975) and Johnson, Slater and McGowan (1984) found that higher levels of dependence upon world trade increased the probability of coups. However, O'Kane (1981) noted that the relationship was curvilinear or U-shaped. She employed two indicators to evaluate this relationship. She found that "coups are less likely to occur in the middle range scores of total export proceeds as a percentage of National Income, and more likely to occur at the highest and lowest scores" (1981, p. 301).

Dominant political parties are usually viewed as having a negative relationship with military coups. Jackman (1978) and Wayman (1975) confirmed this relationship. However, Johnson, Slater, and McGowan (1984) who analyzed the causes

of military coups in Africa, like Jackman, found that the relationship was not significant.

These contradictions may stem from different research designs, different time periods, and different indexes and statistical techniques.

The Consequences of Military Rule

A number of scholars have concentrated their investigation on the consequences of military intervention. Most pay attention to the social and economic performance of military regimes. Some have studied military spending by comparing civilian and military regimes.

Nordlinger (1970, pp. 1131-1148) was one of the first to analyze the impact of military regimes upon economic and social change. He used the Adelman and Morris (1967, pp. 74-76) classification to divide 74 non-Western, non-Communist countries into three broad groups (p. 1138): countries in which the military was in direct political control during 1957-62; countries in which the military was an important political influence; and countries in which the military had little political influence. Nordlinger presented seven "modernization indicators" as dependent variables. These were the rate of growth of per capita GNP, change in the degree of industrialization, degree of improvement in agricultural productivity, rate of improvement in human resources, gross investment rate,

change in the effectiveness of tax systems, and leadership commitment to economic development.

Nordlinger used correlation coefficients to measure the relationship between military intervention and economic change. He found that the relationship was very weak. Nordlinger interpreted his findings by using the assumption that middle class interests and military class interest are closely related. He argued that the military intervenes in politics to protect their middle class interests, since most officers come from this class. He found that in the tropical African nations, that have the smallest middle classes, there were positive correlations between the military's rule and the rate of GNP increase, industrial growth, increased agricultural productivity and education expansion (p. 1147). However, when the middle class is relatively wealthy, as in Latin American nations, military regimes fail to act as modernizing agents and oppose economic and social change.

Schmitter (1971, pp. 453-458) employed multivariate and cross-sectional analysis to compare the performance of civilian and military regimes in Latin America. He found that military regimes tended to spend less of their resources on social welfare than civilian regimes. However, military regimes spent more than civilian regimes on defense expenditures. He noted that "in their moves in and out of

political life, the military seem to be driving up costs--perhaps as the civilian elites competing for their support attempt to buy them out (or in)" (p. 456). In other words, Schmitter suggested that a relationship between military rule and defense expenditures was curvilinear because it increased in the first and last periods and decreased in the middle period. For educational expenditures, he found that the pattern was not clear.

Thompson (1973, pp. 20-22) analyzed the effects of successful coups on defense spending. He collected data from 22 successful coups during 1946-1966 and sought to find the relationship between military rule and defense expenditures for the coup years and the post-coup years. The defense expenditures of those years were classified into three groups: increase, decrease, and no change. He found that the relationship between military regimes and defense expenditures was not significant.

McKinlay and Cohan (1975, pp. 1-30) analyzed the performance of military and civilian governments from 1951 to 1970 concerning four important policy performance areas: economics, military, international trade, and politics. For economic performance, they found that "in the low GNP level, military regimes are the most successful type in terms of economic development" (p. 21). This findings is similar to Nordlinger's. However, they noted that at other levels there

was not much difference among regime types, and that, overall, there was little or no relationship between military rule and economic performance. For military performance, McKinlay and Cohan found that "military rule does not lead to an increase in military expenditure or the size of the armed forces" (p. 13). For international trade performance, they found that in Africa and Asia the military regimes and the civilian regimes that experienced military regimes had a weaker commitment to international trade than civilian regimes, but that, overall, military regimes were similar to civilian regime in terms of trade balances (p. 18).

The most important findings of McKinlay and Cohan's study concerned the political performances of military regimes. They found that military regimes were characterized by a high percentage of military personnel in the cabinet and by high levels of political restrictions. The percentage of cabinet posts held by the military is a significant, if unsurprising, difference between the military regime and other regimes (civilian regimes and civilian regime that had previously experienced a military regime). They concluded that "this variable is the best differentiator of military and civilian regimes" (p. 12). More important, they found that military regimes imposed high levels of political restrictions: in a high percentage of the years in which

military regimes held power the constitution was not in full effect, the assembly and parties were banned, and especially, the Communist party was banned.

Jackman (1976, pp. 1078-97) replicated and expanded Nordlinger's study of the effects of military intervention in politics from 1960 to 1970 in the Third World nations. He discussed three models that were put forward by scholars to explain the consequences of military intervention. The first model was a progressive model. It argued that the military was a modernizing force because it was the most efficient organization in maximizing rates of modernization "with maximum levels of stability and control" (p. 1078). Political parties were not efficient organizations to modernize the nation because the parties were weak and the civilian politicians were corrupt. The second model was called a "revisionist" model. This model suggested that military governments tended to preserve and to maintain order in the society because of military corporate interests. Thus, military regimes tend to increase defense expenditure and to decrease non-defense programs such as education and health care. The third model argued that the specific outcome of military governments depended on the level of social and economic development. Where the level of development was low, or there were few middle class interests, the military was a modernizing force. When the

level of development was high, or the middle class interests were well developed, military governments were a conservative force. An assumption behind this model was that the military tended to protect the middle class interest because most officers came from this class. However, Jackman's empirical analysis indicated that "military governments have no unique effects on social change, regardless of the level of economic development" (p. 1096). The three models discussed above were not confirmed by his data for the 1960-1970 period. Thus, his findings challenge those of Nordlinger. Nordlinger's findings confirmed the third model.

Hill (1979) employed multiple regression to analyze the effects of military intervention on military spending and military manpower. He collected data from 101 nations from both the First World and the Third World during 1946-1965. He found that the higher the level of military intervention, the greater the level of military spending as a proportion of gross domestic product and the higher the level of military manpower per 1,000 working age population (p. 374).

Zuk and Thompson (1982, pp. 60-74) examined the military spending of developing nations during 1967-1976. They employed a "pooled cross-sectional time series analysis" to analyze post-coup military spending. They classified the regimes of sixty-six less developed nations

from 1967 through 1976 into three groups: military, mixed, and civilian regimes. Two important results were found. First, military and mixed regimes allocated more of their budget to defense spending than civilian regimes, based on the mean annual proportion of governmental budget allocated to the military by the regime types. Second, they found that the rate of military spending of military regimes was not higher than that of civilian regimes. In addition, they found that military coups had no significant effect on the growth of military spending per capita (p. 69). Thus, a basic assumption that the military intervenes in politics in order to protect, or to advance, their corporate interests is not confirmed.

After reviewing the literature concerning the consequences of military rule, I found that three models suggested by Jackman (1976) are an important framework to generate hypotheses for empirical test.

The progressive model is based on the concept that military regime is a modernizing force. An appropriate hypothesis is:

H17: Increased military rule improves economic, education, social, and health performances.

The revisionist model is based on the argument that military regime preserves and expands its corporate interest. An appropriate hypothesis is:

H18: Increased military rule increases military expenditures and the size of the military.

The third model suggested by Huntington (1968) is based on the assumption: "The more backward a society is, the more progressive the role of its military; the more advanced a society becomes, the more conservative and reactionary becomes the role of its military" (Huntington, 1968, p. 221).

Two hypotheses could be generated from this assumption:

H19: Increased military rule will increase economic, education, social, and health performances if a society has a low level of economic development.

H20: Increased military rule will decrease economic, education, social, and health performances if a society has a high level of economic development.

Finally, one important finding on political performance from McKinlay and Cohan's study (1975) could be stated in the following hypothesis:

H21: Increased military rule decreases political and civil rights.

Before discussing a research design for testing the above hypotheses, I present some contradictory findings on the consequences of military rule (see Table 2 on the next page).

TABLE 2

CONTRADICTIONARY FINDINGS ON THE CONSEQUENCES OF MILITARY RULE

STUDY	NUMBER	YEAR	DEPENDENT VARIABLES	OUTCOME
1. Nordlinger (1970)	74	1957-1962	GNP Growth, Change on Industrialization, and Change on Agricultural Productivity	Positive relationship if small middle class
2. Schmitter (1971)	16	1960	Social Welfare Education Expenditure Defense Expenditure	negative none curvilinear
3. Thompson (1973)	22	1946-1966	Defense Expenditure	none
4. Mckinlay & Cohan (1975)	115	1961-1970	Economic Performance Military Performance Political Performance	Positive in low GNP nation none negative
5. Jackman (1976)	77	1960-1970	Energy Consumption School Enrollment Physician Growth Radios Growth	none negative none none
6. Hill (1979)	101	1946-1965	Military Spending Military Manpower	positive positive
7. Zuk & Thompson (1982)	66	1967-1976	Military Expenditure	none

The empirical studies presented in Table 2 show that there are some contradictory findings among social scientists on the performances of military regimes. These contradictions fall into four groups: health, education, economic, and military performances.

Schmitter who compared military and civilian regimes in Latin America found that military regimes tended to have a negative policy on social welfare. According to Schmitter, higher social welfare expenditure was found in civilian regimes. However, Jackman who analyzed the growth rate of physicians in 77 Third World countries found that the relationship between military regime and physician growth was not significant.

For educational performance, Jackman found that military regimes "inhibit growth in school enrollment ratios, regardless of the level of economic development" (1978, p. 1093). However, Schmitter found in Latin American data that the relationship between regime type and educational performance was not clear.

The findings of empirical studies concerning the consequences of military government for economic performance were blurred. Nordlinger's findings (during 1957-1962) supported the assumption that military governments protected and enhanced the middle class interests.

However, Jackman found that the relationship between military rule and economic performance was not significant. He employed energy consumption per capita growth during 1960-1970 as an indicator of economic performance. He found that military rule had no effect on energy consumption. It should be noted that McKinlay and Cohan found, overall, that there was little relationship between military rule and economic performance. Therefore, Jackman's finding was similar to the overall conclusion of Mckinlay and Cohan.

The effect of military rule on defense expenditures was ambiguous. Hill reported that there was a positive relationship between military regimes and defense expenditures. In other words, Hill's finding confirmed the hypothesis that high levels of military intervention increase defense expenditures. However, Schmitter found that in Latin America military regimes increased their defense spending when they began to take power, decreased them when they ruled, and finally increased them before they gave up their power to the civilians. In other words, Schmitter found that a relationship between duration of military rule and defense expenditures was curvilinear. In contrast, McKinlay and Cohan, Zuk and Thompson, and Thompson found that there was no relationship between military regimes and defense expenditures.

To review, this chapter has examined two important relationships. First was the relationship between various factors and the causes of military coups. Sixteen hypotheses derived from a review of the relevant literature concerning the causes of military coups were presented. Second was the relationship between military rule and military performance. This relationship was stated in five hypotheses. In addition, I have presented some contradictory findings of previous studies concerning the causes of coups and the consequences of military rule. The differences in these findings are discussed and compared with this study in chapters IV-VI. The next chapter addresses the research design and statistical techniques that are employed in this study.

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CHAPTER III

RESEARCH DESIGN AND METHOD OF ANALYSIS

This chapter discusses four important topics. First is the research design and unit of analysis. Second is the analysis of the causes of military coups. Dependent and independent variables are presented with data sources for testing each hypothesis. Third is the analysis of the consequences of military rule. Independent variables, indexes, and sources of data are presented for evaluating the performance of military rule. The last part is an analysis of the data and the problems they pose for the statistical analysis.

The Unit of Analysis

Adam Przeworski and Henry Teune (1970) in their popular book, The Logic of Comparative Social Inquiry, suggest two kinds of research designs for comparative study: "Most similar systems" and "most different systems" designs. The first seeks to maximize the number of common characteristics shared by the social systems to be analyzed. It is based on the assumption that "common systemic characteristics are conceived of as 'controlled for,' whereas intersystemic differences are viewed as explanatory variables" (1970, p.

33). Thus, the researcher uses systemic factors to explain phenomena. In contrast, the second research design "centers on eliminating irrelevant systemic factors." For example, a researcher draws the samples from different systems such as Uganda and the United States. He finds that the relationship between a dependent and an independent variables (e.g. sexual permissiveness and levels of education) is the same in both samples. Systemic factors do not explain the relationship or the phenomenon. Therefore, "To the extent that general statements can be validly formulated without regard to the social system from which the samples were drawn, systemic factors can be disregarded" (p. 35).

This study seeks to understand the causes and effects of military intervention in politics by controlling for the common factors that are shared by Third World nations and using intersystemic factors such as social, economic, and political differences as "explanatory variables." Thus, the "most similar systems" design is appropriate.

The unit of analysis of this study is a nation. Every Third World nation that has a population of more than half a million is included. Since the meaning of the term "Third World" is not clear cut, the question "What decision rule will be used to include or exclude a nation?" must be answered.

Broadly speaking, "Third World" refers to developing nations in Africa, Asia, and Latin America. "First World" refers to North American and Western European nations that have the democratic form of government. "Second World" refers to the Communist nations especially East European nations (Mann, 1984, p. 396; and Plano & Olton, 1982, p. 21).

The definition above, using political systems and regions, is too broad. For example, some scholars agree that Laos, Cambodia, Cuba, Vietnam, and North Korea are "Second World" nations (Bertsch, Clark and Wood, 1978). However, other may not agree. Kurean (1982), in his Encyclopedia of the Third World, classified those countries as "Third World" nations even though they are ruled by a Communist Party. Similarly, some consider Greece, Israel, Portugal and South Africa as "First World" nations, but others may classify those countries as "Third World" nations.

To solve this problem, I use an economic system as defined by the World Bank as an important indicator in classification. "First World" refers to industrial market economies. "Second World" refers to East European nonmarket economics. These nations are not included in this study. According to the World Bank (1986, pp. 180-181), there are 101 nations that are neither industrial market nor East European nonmarket economics. However, the World Bank's

classification does not include nations that have populations of less than one million. I intend to include as many nations as I can. Nevertheless, it is very difficult to collect data for nations that have a population of less than a half million. These nations are Bahamas, Bahrain, Brunei, Cape Verde, Comoros, Grenada, Malta, Suriname, and Qatar. Therefore, I decided that to be included in this study a nation must have a population of more than a half million. Thus, seven more nations are included here than in the World Bank's reports. These nations are Guinea-Bissau, Gambia, Guyana, Swaziland, Fiji, Cyprus, Gabon. In addition, there is one nation that the World Bank does not list for political reasons. That is the Republic of China (Taiwan). In all, thus, there are 109 nations in this study (see Appendix A for the list of Third World nations).

The Analysis of the Causes of Military Coups

The dependent variable is a coup d'etat score which includes both successful and unsuccessful coups. A coup d'etat is defined as an irregular power transfer that is a forceful attempt to overthrow a government by conspirator groups such as military, security, and police forces (Jackman, 1978, p. 1264). A coup score was calculated from the frequency of coups in each country of the Third World. It was calculated for two periods: 1960-70 and 1971-85, for purposes of analysis. The comparison of the causes of coups

in the two periods is one important technique for confirming or disconfirming the hypotheses. I followed Jackman in weighting the coup scores. A successful coup was weighted by five and an unsuccessful coup was weighted by three. However, I did not add the value of plotted coups because a plot was frequently reported by a government agency. This report was difficult to confirm as reliable because a government sometimes used a report of a coup plot as a way to eliminate opposition groups. A plotted coup was weighted one in Jackman's measurement for analyzing the causes of coups in Africa. Data for 1960-1977 were collected from the World Handbook of Political and Social Indicators (Taylor and Jodice, 1983); data from 1978 through 1985 were collected from The New York Times Index (1978 through 1985)

The independent variables to be used in the analysis of the causes of military coups are social mobilization, political institutionalization, the length of national independence, previous coup experience, ethnic and linguistic homogeneity, presence of a dominant ethnic group, economic development, economic deterioration, economic dependence, political participation, presence of a dominant party, political turmoil, internal war, military dominance, and the presence of foreign troops.

In testing H1 and H2 (increased social mobilization will decrease the probability of coups; increased social

mobilization will increase the probability of coups, if political institutionalization is low), the key variable is social mobilization. Deutsch (1961, p. 504) suggests eight indicators in evaluating social mobilization. These indicators are: shift into any substantial exposure to modernity, shift into mass media exposure, increase in voting participation, increase in literacy, change of locality of residence, occupational shift out of agriculture, change from rural residence, and income growth per capita. However, I employ only five indicators in evaluating this variable. These indicators are as follows:

1. Average annual growth rate of urbanization.
2. Percent increase of adult literacy rate.
3. Percent increase of newspapers per 1,000 population.
4. Percent increase of radios per 1,000 population.
5. Percent decrease of labor force in agriculture.

Population exposed to modernity is not included because its meaning is vague. Voting participation and per capita income are not included because they are related to other hypotheses. Persons who changed locality of residence are excluded because the data are limited or unavailable.

Data for these indicators are collected from the World Tables (World Bank, 1984) and the World Development Report (World Bank, 1978 and 1986).

In operationalizing social mobilization, I followed Putnam in creating a social mobilization index by summing up each nation's standardized scores on these five indicators. In addition, percent increases in each variable were measured for two periods: 1960-70 and 1971-85. However, because data are limited for the second period, it was necessary to collect urbanization growth for 1973-1984 and other variables for 1970-1980 only.

In testing H2 (increased social mobilization will increase the probability of coups, if political institutionalization is low), the level of political institutionalization is very difficult to measure. According to Huntington (1968, pp. 12-24), the level of political institutionalization can be measured by its adaptability, complexity, autonomy, and coherence of political institutions. High levels of institutionalization are possessed by the more adaptable, more complicated, more autonomous, and more coherent organizations. A central government is an important political institution. The more adaptable and complicated a central government is, the more highly institutionalized it is. This can be measured, to a degree, by the percent increase of central government expenditure as a percentage of GDP in two periods: 1960-1971 and 1971-1980. Data were collected from the World Military Expenditures and Arms Transfers 1971-1980 (U.S. Arms Control

and Disarmament Agency, 1981) and Cross-Polity Time-Series Data (Banks, 1971).

In testing H3 (previous coup experience will increase the probability of coups), "previous coup experience" was classified into two periods: 1948-1959 and 1960-1970 because this hypothesis was tested in regression model for two different periods. In each period, a dummy variable was constructed to represent the occurrence of a coup. If a nation had a coup during any period, it was coded one. If did not have, it was coded zero. Data were collected from the World Handbook of Political and Social Indicators (Taylor and Jodice, 1983).

In testing H4 (the longer the length of national independence, the greater the probability of coups) and H5 (the relationship between the length of national independence and military coups is curvilinear; the number of military coups will be low in the early and late periods and high in the middle period), length of national independence is the independent variable. In operationalizing this variable, the number of years since national independence is used. For example, if a nation became independent in 1950, it would get a score of 35 (1985-1950 = 35). It should be noted that some nations have never been ruled by a foreign nation. In those nations, according to Taylor and Hudson (1976, p. 26), the years

since independence are scores as 210 (1985- 1775) because the modern state began about 1775 A.D. Data were collected from the World Handbook of Political and Social Indicators (Taylor and Hudson, 1976) and Political Handbook of the World, 1984-1985 (Banks, 1985).

In testing H6 (the more culturally homogeneous a society, the less the probability of coups), a culturally homogeneous society was measured by the ethnic and linguistic homogeneity of a nation. Data were collected from the Encyclopedia of the Third World (Kurian, 1982). Kurian gave the highest score of ethnic and linguistic homogeneity to North and South Korea with 100% homogeneity and the lowest score to Tanzania with 7% homogeneity. His scores were measured at the interval level; therefore, they were appropriate in regression analysis.

In testing H7 (the more dominant an ethnic group in the society, the greater the probability of coups), the dominant ethnic group was measured by the percent of the population in the largest ethnic group. Data were collected from Encyclopedia of the Third World (Kurian, 1982) and Reader's Digest 1979 Almanac and Yearbook (1979).

In testing H8 (higher levels of economic development decrease the probability of military coups), an economic development variable was constructed by summing up the standardized scores on three indicators as follows:

1. Per capita GNP.

2. The percentage of GDP produced by the industrial sector.
3. The percentage of the labor force employed in industry.

These variables were measured at two specific points of time: 1960 and 1970. Data for 1960 were employed to analyze the causes of coups during 1960-1970, and data for 1970 for analyzing the causes of coups during 1970-1985. Data were collected from the World Handbook of Political and Social Indicators (Taylor and Jodice, 1983), World Tables (World Bank, 1984), World Military Expenditures and Arms Transfers 1965-1974 (U.S. Arms Control and Disarmament Agency, 1975), World Development Report 1978 (World Bank, 1978), and Cross-Polity Time Series Data (Banks, 1971).

In testing H7 (higher levels of economic deterioration increase the probability of military coups), the levels of economic deterioration were measured by summing up standardized scores of the following indicators:

1. Average rate of inflation.
2. Average annual rate of unemployed population.

These indicators were collected from the World Development Report (World Bank, 1978 and 1986) and the Year Book of Labour Statistics (International Labour Office, 1971 and 1982). In order to test the hypotheses in two different times, these data were collected for two periods: 1960-1970

and 1973-1983. However, the economic deterioration index had a serious problem of missing data for unemployment rate. Only 14 nations for the first period and 27 nations for the second period were valid. Therefore, I was forced to drop an unemployment rate variable.

To solve this problem, a new index of economic deterioration was created by summing up Z scores of the following indicators:

1. Average rate of inflation.
2. GNP per capita growth rate (real GNP).

Before summing up, I reversed the value of the second indicator by multiplying by -1 since a high per capita growth rate indicates a low level of economic deterioration. In contrast, a high rate of inflation indicates a high level of economic deterioration. Thus, a nation that had a low GNP per capita growth rate and a high inflation rate got a high score on the economic deterioration index.

In testing H10 (higher levels of dependence upon world trade increase the probability of coups), evaluating the condition of economic dependence is a challenging task. There are at least two factors that must be discussed: trade partners and commodities.

A partner of trade, according to a dependency theorist, is an asymmetrical relationship such as the relationship between a well-developed nation (a strong nation) and a

poorly developed nation (a weak nation). The latter must rely on the former for its export goods. A weak nation has only a few partners of trade and has difficulty switching from one partner to the other because of its commodities. The commodities of weak nations are limited and usually are agricultural products such as sugar, coffee, and bananas. In addition, many weak nations supply the same commodities; therefore, competition may be high and the price of commodities low. Nevertheless, the export goods of weak nations are a major source of their income.

Two indicators were employed to evaluate the condition of dependence. The standardized scores of these indicators were summed in operationalizing this variable. These indicators are:

1. Value of primary commodities exports as a percentage of total exports in 1960 and 1975.
2. Value of export earnings from the principal partner as a percentage of total exports in 1960 and 1975.

A nation that has a high percentage for these values is heavily reliant on international trade. In other words, that nation has a high level of dependence. Data were collected from the World Development Report (World Bank, 1978) and the Yearbook of International Trade Statistics (United Nations, 1962 and 1978).

In testing H11 (higher levels of political participation increase the probability of coups), levels of political participation are indicated by voter turnout as a percentage of adult population. In the first period, data were collected in a year around 1965 and for the second period a year around 1975. However, voter turnout as a percentage of adult population in many nations was missing for the first period. Thus, I decided to use vote turnout as a percentage of the electorate for that period.

Similarly, in testing H12 (dominant political parties decrease the probability of coups), data were collected for two periods: around 1965 and 1975. Dominant political parties were identified by the percentage of the vote cast for the largest party in the election for which turnout was measured. Unfortunately, data for the first period (1965) are missing. Thus, H12 was tested only for the second period. Data for testing H11 and H12 were collected from the World Handbook of Political and Social Indicators (Taylor and Jodice, 1983).

Two important problems were faced in testing H11 and H12. First, some Third World countries never held elections. Second, some did not have a competitive system. To confront the first problem, I coded a zero score for the countries in which an election was not held. To confront the second problem, I followed Taylor and Hudson (1976, p. 57) who

classified electoral system into three types. The first type referred to nations for which "elections were scored as competitive and reasonably free." The second type referred to nations for which "elections were scored as displaying significant deviation from the competitive and free norm." The third type referred to nations for which "elections were scored as displaying extreme deviation from the competitive and free norm."

To solve the second problem, I analyzed three regression models controlling for electoral systems. Appendix C shows the Third World nations that were classified into the three types of electoral system. The nations for which there was insufficient information for judgment or which had no elections were not listed in the Appendix.

In testing H13 (higher levels of political turmoil increase the probability of coups), levels of political turmoil were represented by three indicators as follows:

1. Number of protest demonstrations.
2. Number of riots.
3. Number of political strikes.

In testing H14 (higher levels of internal war increase the probability of coups), levels of internal war were indicated by two variables:

1. Number of armed attacks.
2. Deaths from domestic political violence.

Data for H13 and H14 were collected from the World Handbook of Political and Social Indicators (Taylor and Jodice, 1983). They were collected in two periods: 1958-1969 and 1970-1977. In operationalizing both hypotheses, the standardized scores of each nation for those indicators were summed in both periods.

In testing H15 (higher levels of military dominance are likely to increase the probability of coups), levels of military dominance were summed up by using the standardized scores for each nation on three indicators as follows:

1. Military expenditure as a percent of GNP.
2. Military expenditure as a percent of the revenue of a central government.
3. Military manpower per 1,000 working age population.

Data were collected for two specific points: 1965 and 1975. Data sources were the World Handbook of Political and Social Indicators (Taylor and Jodice, 1983), World Military Expenditures and Arms Transfers 1971-1980 (U.S. Arms Control and Disarmament Agency, 1981), and Cross-Polity Time Series Data (Banks, 1971).

In testing H16 (the presence of foreign troops capable of combat will reduce the probability of coups), the key variable is the presence of foreign troops that are capable of combat in the country. There are two types of foreign

troops that are capable of combat: foreign officers on secondment to the local army, and foreign armoured divisions deployed within the host country (Wood, 1966). If there were foreign training instructors or foreign military advisors assisting the native armed forces exceeding five hundred in number, a nation was coded as having a foreign troop presence. A high number of foreign military advisors or instructors could be considered as carrying a high potential for domination of the military affairs of one country by another, because foreign advisors could play an important role in training and improving military organization. Rational coup makers should realize this in staging a coup because the influence of a foreign power is significant.

In operationalizing this concept, dummy variables were employed. If such foreign troops were present in any period between 1960-1970 and 1971-1980, the dummy variable was coded one; if not, it was coded zero. Data were collected from following sources for the first period: The Armed Forces of African States (Wood, 1966), United States Military Assistance (Hovey, 1965), The Almanac of World Military Power (Depuy, 1970), and Black Africa: A Comparative Handbook (Morrison, Mitchell, Paden, and Stevenson, 1972).

For the second period (1970's), data were collected from following sources: Reader's Digest 1979 Almanac and Yearbook (1979), Communist Nations' Military Assistance (Copper and Papp, 1983), and The Almanac of World Military Power (Dupuy, Hayes, and Andrews, 1974)

The Third World nations having foreign troop in both periods are listed in Appendix B.

The Analysis of the Consequences of Military Rule

The independent variable in the analysis of the consequences of military rule is an index of military control in each nation of the Third World. This index is calculated from the country values for duration of military rule (in months) from January 1, 1960 through December 31, 1980. Thus, the maximum score is 21 years * 12 months = 252. I followed Jackman's rule that "if elections occurred but were won by the incumbent from the officer corps who had originally gained power through a coup d' etat, such elections were not counted as interruptions to the period of military rule" (Jackman, 1976, p. 1091). The primary data sources were The New York Times Index (1978 through 1985); the Encyclopedia of the Third World (Kurian, 1982), and Political Handbook of the World, 1984-1985 (Banks, 1985).

Dependent variables for the analysis of the consequences of military rule that are employed to test H17 through H21 are classified into six groups: economic,

educational, social mobilization, political, health, and military performances.

Economic performance is measured by six indicators as follows:

1. GDP growth rate.
2. GNP per capita growth rate.
3. Investment growth rate.
4. Industrial growth rate.
5. Agricultural productivity growth rate.
6. Rate of growth of exports.

The growth rate of those indicators was calculated for two periods: 1960-1970 and 1973-1984. In operationalizing, the standardized scores of these indicators were summed. Data were collected from the World Development Report (World Bank, 1978 and 1986).

Educational performance was measured by three indicators:

1. Percent increase in secondary school enrollment.
2. Percent increase in literacy rate.
3. Percent increase in higher education enrollment.

Operationally, this variable was measured for two periods: 1960-1970 and 1970-1980, and the standardized scores on these indicators were summed. Data were collected from the World Handbook of Political and Social Indicators (Taylor and Jodice, 1983), the World Tables (World Bank,

1984) and the World Development Report (World Bank, 1978 and 1986).

The impact of military intervention upon social mobilization was evaluated by using the standardized scores of the five following indicators:

1. Average annual growth rate of urbanization.
2. Percent increase in adult literacy rate.
3. Percent increase in newspapers per 1,000 population.
4. Percent increase in radios per 1,000 population.
5. Percent increase in percent of the labor force in industry.

These indicators were collected from the World Tables (World Bank, 1984) and the World Development Report (World Bank, 1978 and 1986).

The political performance of military regimes was evaluated by using two indicators:

1. Average score on the Gastil (1980, for example) political rights index from 1973 to 1980.
2. Average score on the Gastil (1980, for example) civil rights index from 1973 to 1980.

Both indexes use an ordinal scale. Political rights involve "the right to play a part in determining who will govern one's country and what the law will be" (Taylor and Jodice, p. 60). Countries are ranked from 1 (highest degree of liberty) to 7 (lowest). Civil rights, according to Taylor and Jodice (1983, p. 64), are "those rights the individual has vis a vis the state. Particularly important are the freedom of the press and the other media and the independence of the judiciary." Countries were ranked from 1 (greatest civil liberty) to 7 (least) by Gastil, but I reversed this scale in order to give it a positive direction. Thus, in this study, the greatest degree of political freedom was indicated by a score of 7, and the least by a score of 1.

Data were collected from the World Handbook of Political and Social Indicators (Taylor and Jodice, 1983) and the Freedom in the World: Political Rights and Civil Liberties 1982 (Gastil, 1982).

The health performance of military regime are identified by three indicators as follows:

1. Percent increase in life expectancy.
2. Percent decrease in infant mortality rate.
3. Percent increase in physicians
per 1,000 population.

Data were collected from the World Tables (World Bank, 1984) and the World Development Report (World Bank, 1978). The standardized scores of those indicators were summed in order to operationalize this variable. In addition, these data were collected for two periods: 1960-1970 and 1970-1980.

Finally, two indicators of military performance were used:

1. Military expenditure growth.
2. Growth in the size of the military per 1000 population.

Data were collected from the World Military Expenditures and Arms Transfers 1965-1974 and 1971-1980 (U.S. Arms Control and Disarmament Agency, 1975 and 1981). These data were collected for two periods: 1963-1973 and 1971-1980.

The Data Analysis

Two important considerations concerning data analysis should be discussed at this point. They are statistical techniques and indexes.

Statistical Techniques

This study uses multiple regression analysis. Multiple regression analysis is an important tool in social research. However, if a researcher does not employ it carefully, it

may be useless. Before applying multiple regression in research, a researcher should understand its basic assumptions and the general problems of regression analysis.

Multiple regression analysis is a statistical technique that shows the relationship between a continuous dependent variable and two or more continuous or discrete independent variables. The objective is to predict or to estimate the value of the dependent variable by using scores on the independent variables.

William Berry and Stanley Feldman (1985, pp. 10-11) list seven assumptions that must be met in applying multiple regression analysis. The remains of this section first lists and explains each of these assumptions. Then it discusses how five of the assumptions relate to and are dealt with in this work.

1. All variables must be measured at the interval level and without error (Berry & Feldman, 1985, p. 10).

Both independent and dependent variables must be measured at an interval level. At this level of measurement, a researcher knows a specific amount that one observation is greater or less than another. Examples of observations measured at this level are height, time, income, temperature, and so forth (Nachmias, 1981, pp. 136-137). However, the major problem of measurement is measurement error. If the measures are inaccurate, the results of estimates must be inaccurate.

There are two types of measurement error: random measurement error and non-random measurement error (Berry and Feldman, 1985, pp. 26-31). Both types result from the difference between "true" variables and indicators. The true variable is a theoretical concept that a researcher wants to measure. However, he must use indicators (empirical observation to measure the concept) in analysis.

The relationship between a true variable and an indicator can be shown by the formula given by Berry and Feldman (1985, p. 27).

$$X_j^* = X_j + u_j$$

X_j^* = the indicator
 X_j = the true value
 u_j = the error term

To solve this problem, a researcher must be careful in creating an indicator, recording and coding data.

2. For each set of values for the K independent variables ($X_{1j}, X_{2j} \dots, X_{kj}$), $E(e_j) = 0$ (i.e., the mean value of the error term is 0). (Berry & Feldman, 1985, p. 10)

This assumption states that the mean value or the expected value of the error term is zero. That is the average of the error terms for each set of the independent variable (X_i) is zero. If it is not zero, the intercept or the "regression constant" will not get the precise value. However, Lewis-Beck (1980, p. 28) notes that because "the intercept estimate is often of secondary interest in social

science research, this potential sources of bias is rather unimportant."

3. For each set of values for the K independent variables, the variance of the error term is constant (Berry & Feldman, 1985, p. 10).

If variance of the error term is not constant for all values of the independent variables, a researcher will face the problem of heteroskedasticity. Heteroskedasticity refers to the situation in which the variances of the error terms change from one set of values of the independent variables to another. For example, the variance of the error term gets larger as an independent variable (X_i) increases, or the residual plots fan out from the regression line as the value of X increases. In this case, it is reasonable to conclude that the "variance of the error term is positively correlated with the independent variable" (Berry & Feldman, 1985, p. 73). Thus, the assumption is violated.

According to Lewis-Beck (1980, p. 28), the least squares estimates continue to be unbiased if this assumption is violated, but the significance tests and confidence intervals would be biased.

4. For any two sets of values for the K independent variables, $COV(e_j, e_h) = 0$ (i.e., the error term are uncorrelated; thus there is no autocorrelation). (Berry & Feldman, 1985, p. 10)

This assumption states that the error terms are not autocorrelated. Autocorrelation refers to the situation in which the error terms are correlated with other error terms.

It usually appears with time-series variables--the observations are repeated on the same unit at different points in times. When this assumption is violated, the significance tests and confidence intervals are invalid (Lewis-Beck, 1980, p. 28).

5. For each X_i , $COV(x_i, e) = 0$ (i.e., each independent variable is uncorrelated with the error term). (Berry & Feldman, 1985, p. 10)

If an independent variable is correlated with the error term, a parameter estimate will be biased. For example, a researcher employs "education" as an independent variable to explain "income" as a dependent variable. If the independent variable of "sex" is correlated with "education," but the "sex" variable is excluded from the model, the slope estimate for the "education" variable will be too large because the "education" variable is allowed to account for some income variation that is actually the product of sex differences (Lewis-Beck, 1980, p. 29).

If the fifth assumption is violated, the regression line will be biased. A researcher will face the problem of specification error. According to Berry and Feldman (1985, p. 18), specification errors may occur in two ways.

1. A researcher may have the proper variables in the model but specify the functional form of the relationship improperly.

2. A researcher may estimate a model with the wrong independent variables.

6. There is no perfect collinearity - no independent variable is perfectly linearly related to one or more of the other independent variables in the model (Berry & Feldman, 1985, p. 11).

This assumption identifies the problem of multicollinearity. Multicollinearity refers to the situation in which independent variables are intercorrelated. If multicollinearity is high, it will affect the variance of regression coefficients. In general, high multicollinearity increases the standard errors of coefficient estimates. Thus, "confidence interval for coefficients tend to be very wide, and t-statistics for significance tests tend to be very small" (Berry & Feldman, 1985, p. 41).

7. For each set of values for the K independent variables, e_i is normally distributed (Berry & Feldman, 1985, p. 11).

If this assumption is violated, tests of statistical significance will be problematical, especially with small samples. However, this problem will be eliminated for large samples because, according to the central limit theorem, "the sum of a large number of random variables will tend to be distributed normally" (Hanushek and Jackson, 1977, p. 68).

Five problems that may stem from the violations of these assumptions are relevant to this study. These are

measurement error, heteroskedasticity, autocorrelation, specification error, and multicollinearity.

Measurement Error--As mentioned earlier, the true variable is a theoretical concept that a researcher want to measure, but he must use indicators in analysis. Thus, he may face the problem of measurement error.

A good example of the problem of measurement error is the indicator of social mobilization, an important concept in explaining the causes of military coups. Each researcher may identify an indicator or an index to estimate this concept in a different way. Jackman (1978), for example, used the sum of the percentage of the labor force in nonagricultural occupations and the percentage of the population that is literate (1978, p. 1265). Hibbs (1973) added three more variables to indicate social mobilization. These are population in cities of 100,000 or more, newspaper circulation per 1000 population, radios per 1000 population (1973, pp. 56-57). Hibbs's indicator is more accurate than that of Jackman in terms of Deutsch's definition (1961, p. 503).

However, both studies faces the problem of measurement error since their indicators are not adequate to measure the whole of the concept of social mobilization. The theoretical framework concerning the relationship between social mobilization and coups is based on increased social

mobilization or dynamic social mobilization, not static social mobilization. A higher level of social mobilization is not the same as high increases in social mobilization. For example, the First World nations have a high level of social mobilization, but their percent increases in radios, newspapers and literacy might be less than that of the Third World, since Third World nations rapidly developed their communication and their education in the last two decades. In other words, the Third World probably had higher increases in social mobilization, but a lower level of social mobilization than the First World (see Deutsch, 1961, pp. 503-509 and see Huntington, 1968, pp. 47-53).

To reduce measurement error, therefore, percent increases in the five variables on page 52 are employed as an index of social mobilization and are evaluated during 1960-1970 and 1970-1980 periods in this study.

Heteroskedasticity--Heteroskedasticity refers to the situation in which the variances of the error term are not equal for each observation. In cross-national analysis, this problem often arises when the researcher uses different sources in drawing observations. For example, if the researcher collects data about inflation and unemployment rate from each government's records, he or she may face this problem because some governments may keep records more accurately than other governments. In this study, each

variable is measured from the same sources, to the maximum extent possible, in order to reduce the problem of heteroskedasticity. In addition, I frequently check the plot of regression residuals in order to check for this problem.

Autocorrelation--Autocorrelation refers to the situation in which the error terms are correlated among observations. It usually happens in time series data. The problem of autocorrelated errors can be checked by the Durbin-Watson test (Newbold and Bos, 1985, pp. 10-31), and should not be serious in this cross-national analysis.

Specification Error--Absence of specification error is necessary in regression analysis. According to Lewis-Beck (1980, pp. 26-27), there are three following requirements that underline this assumption.

1. The relationship between X_i and Y_i is linear.
2. No relevant independent variables have been excluded.
3. No irrelevant independent variables have been included.

Berry and Feldman note that specification error cannot be dealt with at the level of data analysis. They write:

This means that an investigator needs a sufficiently well-developed theory to know which variables should be in the equation and a set of

indicators that measure those variables. In particular, there is no clear cut way of knowing, after the fact, that a substantively important variable has been excluded from the analysis (Berry and Feldman, 1985, p. 25).

To reduce the problem of specification error in my study, I employ indexes that are developed from theoretical frameworks instead of using a single variable. In addition, each model in my regression analysis is aimed at testing hypotheses that are generated from theories.

Multicollinearity--Multicollinearity refers to the condition in which the independent variables that are included in the equation are highly correlated. Multicollinearity affects the variance of the regression coefficients. Usually, the higher the value of the correlation between one independent variable and all the others (e.g., if 0.70 or greater), the greater the variance and the standard deviation of the regression coefficients (Hanushek and Jackson, 1977, pp. 86-89). Consequencely, confidence interval will be wide and significant tests will be small.

To check the problem of multicollinearity, a researcher should inspect the matrix of intercorrelations among the independent variables in each equation and "regress each

independent variable in the equation on all other independent variables" (Berry & Feldman, 1985, p. 43). If the intercorrelation between two variables or the R squares of those regression models are very high, he or she should drop one variable or use an index combining two or more correlated variables to solve the problem.

Indexes

As discussed earlier, indicators are employed to measure theoretical concepts or "true variables" using variables that can be observed. Frequently, indexes composed of several variables make good indicators because they could measure the whole concept. In this study, I create seven indexes for the analysis of the causes of military coups. These are:

1. Social mobilization index
2. Economic development index
3. Economic deterioration index
4. Economic dependence index
5. Political turmoil index
6. Internal war index
7. Military dominance index

For the study of the consequences of military rule, four indexes are created:

1. Economic performance index
2. Social change index
3. Educational performance index.

4. Health performance index.

Each index is constructed by summing up the standardized or \underline{Z} score of the variables that compose it. Important characteristics of \underline{Z} scores are that the mean of their distribution will be zero and the standard deviation will be one. Thus, using \underline{Z} score for each observed variable is more valid and more reliable than summing up the raw data of observed variables because the latter are measured in such different units.

In this study, I face problems in creating indexes because of missing data. For example, the social mobilization index is summed over five observed variables. Nevertheless, only 42 nations have no missing data on all five variables. In other words, there are 67 nations that have one or more missing values on the five variables. To solve this problem, I divided the sum of the \underline{Z} scores by five for nation having good data for all five variables, by four for those with good data for four variables, and by three for those with good data for only three variables. As a result, only 15 nations had missing data for the social mobilization index. Similarly, the military dominance index and economic development index for the first period face the same problem. Military expenditures as a percent of the revenue of a central government in 1965 and the percentage of GDP produced by the industrial sector in 1960 (V51 and

V25 in Appendix D), were available for only 48 and 78 nations respectively. Therefore, I decided to drop these variables and used only two variables in creating the military index and economic development index for the first period.

This chapter discusses the general problems of research design and data operationalization. Subsequent chapters present the findings of this research.

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CHAPTER IV

SIMPLE REGRESSION MODEL FINDINGS

In chapter four, simple regression model findings are presented. Sixteen hypotheses concerning the causes of military coups are tested to show whether or not the simple hypotheses are confirmed in any period and in any region. Before presenting the finding of these models, it will be helpful to discuss briefly how to interpret a regression model. As mentioned earlier, a regression model is an equation that shows the relationship between a continuous dependent variable and one or more continuous or discrete independent variables. A simple form of the model is shown below.

$$Y_i = a + bX_i + e_i \quad (1)$$

Y_i is a dependent variable affected by the independent variable.

X_i is an independent variable used as a predictor of Y_i .

"a" is called the "regression constant" or "intercept." It is the point at which the regression line cuts across the Y_i axis. At this point, values of X_i equal zero.

"b" is the slope of the regression line. It is called the "regression coefficient." It is interpreted as the amount of increase or decrease in the value of Y_i for every one unit increase in X_i (Daniel, 1978, pp. 237-244).

" e_i " is a random error component. The model above is called a "stochastic" or a "probabilistic" because a random error is added. It is different from a "deterministic" model that identifies an exact relationship among variables (Hanushek & Jackson, 1977, pp. 11-13). "Probabilistic" models are useful for empirical analysis in the social science because the value of X usually cannot predict the value of Y exactly. Hence an "error" term is necessary to yield a completely accurate prediction. The predicted forms of a simple and a multiple regression models, which omit this error term, are shown below:

A Predicted Model of the Simple Regression

$$\hat{y} = a + bX_i \quad (2)$$

A Predicted Model of the Multiple Regression

$$\hat{y} = a + b_1X_1 + b_2X_2 + b_3X_3 \dots + b_kX_k \quad (3)$$

In both models, the relationship between Y and X variables is assumed as linear. The regression line or "least squares" line is the "best" line to predict values of Y because its estimates are, in the aggregate, closer to the

true values of Y than the estimates of any other straight line. In other words, its predictions yield the smallest variance for the error terms since "the sum of the squared deviations of the observed data points (Y_i) from the least squares line is smaller than the sum of the squared deviations of the data points from any other line that can be drawn through the data points" (Daniel, 1978, p. 244).

Regression analysis not only shows the relationship between a dependent variable and an independent variable but also estimates the strength of the relationship. The coefficient of determination (R square) is used to explain how well the regression line fits the observed data. An R square can be interpreted as "the proportion or percentage of total variation in Y which can be attributed to its linear relationship with X " (Bohrnstedt and Knoke, 1982, p. 248).

There are two kinds of significance tests for inferential statistics in regression analysis. The first is the F test. It is used to test the significance of the coefficient of determination (R square) and the whole model. A null hypothesis used by the F test is:

H_0 : There is no linear relationship between the dependent variable and the set of independent variables in the population.

The level of significance is usually set at 0.05 in social research. If a null hypothesis is rejected at this level, it means that there is a 19 to 1 chance that a linear relationship exists between the dependent and the set of independent variables in the "population" being sampled.

The second significance test used in regression, the t test, is employed to test the significance of the regression coefficients (b 's) and the intercept (a). The appropriate null hypothesis for each t states:

H_0 : The population coefficient for this variable equals zero.

Generally speaking, if the t value is greater than 2.0, it is significant at the .05 level and the null hypothesis will be rejected. A researcher would then conclude that there is a 19 to 1 chance that the relationship between the independent variable and the dependent variable exists in the population.

Social Factors and Military Coups

Social Mobilization

H1 states that increased social mobilization will decrease the probability of coups. The data for the first period (1960-1970) do not support the hypothesis because the R square for the simple regression of the 1960-1970 coup index on the 1960-1970 social mobilization index is only .004, and the regression coefficients for the independent variable are much less than their standard errors in every case (see Table 3 on the next page).

However, the hypothesis is confirmed for the second period (1971-1985). Table 3 shows that, a one unit increase in the social mobilization index is expected to decrease the military coups index by 6.518, for all nations. This coefficient is slightly more than twice its standard error. However, the R square is only .09, a value which, while statistically significant, does not suggest a very strong overall relationship between social mobilization and the coup index. At the regional level, only the Sub-Saharan African data show statistically significant support for the hypothesis for the second period (1971-1985). The coefficient of determination for the relationship between the dependent and independent variables for Sub-Saharan Africa is 0.213; 21.3% of the variance in the military coup index during the 1971-1985 period can be explained by the

TABLE 3
SOCIAL MOBILIZATION AND MILITARY COUPS

Dependent Variable: Coup Index	Constant	b Social Mo- bilization Index	Number of Nations	R Square	Sig/F	Model**
<u>First Period</u> (1960-1970)						
All Nations	8.306* (1.251)	-1.631 (2.544)	94	.004	.522	D
S/S Africa	6.241* (1.576)	-2.059 (3.634)	34	.009	.574	D
Asia	5.914* (3.050)	-3.124 (6.538)	16	.016	.640	D
Latin America	13.286* (5.326)	5.988 (16.100)	22	.006	.713	D
Middle E/N Africa	13.057* (5.114)	-1.928 (6.769)	16	.005	.779	D
<u>Second Period</u> (1971-1985)						
All Nations	7.535* (.983)	-6.518* (2.163)	93	.090	.003	C
S/S Africa	9.344* (1.655)	-8.887* (2.971)	34	.213	.005	C
Asia	8.184* (2.996)	4.011 (8.860)	15	.015	.658	D
Latin America	3.302 (3.270)	-14.581 (9.543)	22	.104	.142	D
Middle E/N Africa	7.403* (1.482)	-5.405 (3.264)	15	.174	.121	D

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

1970-1980 social mobilization index. It is also worth noting that, while their R squares and b's are not statistically significant, due to low the number of nations, the regression coefficients for Latin America and the Middle East and North Africa are also consistent with the overall result. Only the Asian data are inconsistent with the hypothesis, although their relationship is also not statistically significant.

To review, the simple relationship between social mobilization and military coups in this study does not support Jackman's finding (1978). However, Jackman's study was based on the assumption that a high level of social mobilization increased the probability of military coups because he did not measure the increase in social mobilization (see the discussion concerning measurement error on page 73). This study's findings for the second period support Finer's assumption (1966, pp. 86-88) and Putnam's finding (1967), that increased social mobilization will decrease the probability of military coups. On the other hand, the finding for the first period supports Hibb's conclusion (1973, pp. 96-109) that the relationship between social mobilization and military coups is not statistically significant.

Huntington's Thesis

H2 (increased social mobilization will increase the probability of coups, if political institutionalization is low) is disconfirmed by the Third World data in the first period. However, the hypothesis is confirmed for the second period (see Table 4 on the next page). Two independent variables--increase in social mobilization index and an interaction term, increase in social mobilization index divided by the percent increase of central government expenditure, are employed in testing this hypothesis. As discussed earlier, a central government is an important political institution. The more adaptable and complicated a central government is, the more highly institutionalized it is. Therefore, the score of increasing political institutionalization is measured by the percent increase of central government expenditure as a percentage of GDP.

The interaction term is employed in testing this hypothesis because Huntington's thesis is based on the interaction between the social mobilization and the strength of political institutions. To help interpret the interaction term, four combinations of extreme social mobilization and institutionalization scores may be imagined. For simplicity, suppose the lowest score for the increase in social mobilization index and the political institutionalization measure is 1 and the highest score is 100.

TABLE 4
HUNTINGTON'S THESIS AND MILITARY COUPS

Dependent Variable:	Constant	b1 Increase In Social Mobil'n Index	b2 Social Mobil'n Divided by % Increase of Central Gov't Expenditure	Number of Nations	R of Square	Sig/ F	Model**
<u>First Period</u> (1960-1970)							
All Nation	8.914* (1.415)	-5.589 (4.098)	966.459 (1270.122)	76	.026	.378	D
S/S Africa	7.395* (2.019)	-5.232 (10.683)	1137.053 (4757.074)	28	.021	.762	D
Asia	4.682 (2.388)	-1.260 (5.592)	231.486 (852.525)	10	.011	.961	D
Latin America	12.997* (5.678)	12.237 (24.837)	-5620.097 (11436.504)	20	.016	.870	D
Middle E/N Af.	13.190* (5.615)	-2.458 (25.298)	-2026.697 (11812.248)	14	.063	.697	D
<u>Second Period</u> (1970-1980)							
All Nations	7.812* (.965)	-8.694* (2.144)	214.097* (80.431)	88	.186	.0002	C
S/S Africa	9.483* (1.716)	-9.367* (3.006)	188.175 (133.544)	33	.266	.009	C
Asia	7.404* (3.451)	-11.624 (20.940)	603.586 (1539.012)	13	.033	.844	D
Latin America	4.769 (3.233)	-18.073 (9.355)	493.676 (261.058)	21	.250	.075	D
Middle E/N Af.	7.203* (1.536)	.005 (8.196)	-1006.660 (1393.597)	15	.208	.245	D

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

The first combination combines the lowest social mobilization and the highest political institutionalization scores. The interaction term for that combination is $1/100 = .01$. The second combines the lowest social mobilization and the lowest political institutionalization scores. The interaction term produces $1/1 = 1$. The third combines the highest social mobilization and the highest political institutionalization scores and produces an interaction term of $100/100 = 1$. The fourth condition combines the highest social mobilization and the lowest political institutionalization scores. The interaction term here is $100/1 = 100$.

Huntington thesis (H2) asserts increasing instability as the interaction term approaches the extreme of the fourth condition. The predicted model for the second period is shown below.

Predicted Coup Index(1971-1985) = $a + b_1(\text{Increase In Social Mobilization Index}) + b_2(\text{Interaction Term})$

Predicted Coup Index(1971-1985) = $7.812 - 8.694(\text{Increase In Social Mobilization Index}) + 214.097(\text{Interaction Term})$

The above model shows that a one unit increase in the 1970-1980 social mobilization index is expected to decrease

the 1971-1985 coup index by 8.69, controlling for the interaction term. The coefficient for the interaction term in the model indicates that a one unit increase in the interaction term increases the predicted coup scores by 214 with social mobilization held constant. This is unlikely to occur in the data set because the maximum value of the interaction term is only .06 for the second period. In addition, the mean of interaction term is $-.001$, the minimum value is $-.07$, and the standard deviation is $.012$. Thus, a more useful way to think about the impact of the interaction term would emphasize that a feasible $.01$ change in the interaction term would proceed a 2.14 unit change in the coup index. About 18.6% of the variance in the coup scores (1971-1985) can be explained by this model because the coefficient of determination is $.186$.

At the regional level, only the Sub Saharan African data support this hypothesis. However, the t test of its interaction term is not statistically significant. Therefore, the null hypothesis cannot be rejected ($H_0: \beta=0$). But the regional relationships, except those for the Middle East and North Africa, are consistent in direction with the hypothesis and have b 's of appreciable magnitudes.

According to Lewis-Beck (1980, p. 35-36), there are four reasons why a researcher may fail to uncover statistical significance, even though the independent

variable is related to the dependent variable. These reasons are (1) inadequate sample size (2) type II errors, (3) specification error, and (4) restricted variance in the independent variable. It is likely that the t tests for the regional models are not statistically significant in Table 4 because the sample sizes are small.

In short, the Third World data for the second period (1971-1985) support Huntington's thesis with significant regression coefficients and an R square of .186. At the regional models, the direction of relationship tends to support Huntington's thesis too.

Coup Experience

H3 (previous coup experience will increase the probability of coups) is confirmed in both periods; the regression coefficients for the previous coup experience measures are more than twice their standard errors for the data from all nations. The coefficients of determination for the relationship between the dependent and independent variables in both periods are .120 and .087, respectively (see Table 5 on the next page).

TABLE 5
PREVIOUS COUP EXPERIENCE AND MILITARY COUPS

Dependent Variable: Coups Index	Constant	b	Number of Nations	R Square	Sig/F	MODEL**
<u>First Period (1960-1970)</u>						
All Nations	4.828* (1.348)	8.632* (2.255)	109	.120	.0002	C
S/S Africa	5.500* (1.396)	8.500 (6.244)	40	.046	.181	D
Asia	3.461 (3.268)	8.205 (5.109)	22	.114	.124	D
Latin America	5.833 (5.033)	7.284 (5.854)	23	.068	.227	D
Middle E/N Africa	4.285 (6.393)	11.077 (8.178)	18	.102	.194	D
<u>Second period (1971-1985)</u>						
All Nations	3.918* (1.308)	5.664* (1.763)	109	.087	.001	C
S/S Africa	4.842* (2.288)	7.253* (3.158)	40	.121	.027	C
Asia	6.250* (2.997)	.450 (4.445)	22	.0005	.920	D
Latin America	-.0008 (4.115)	9.000 (4.786)	23	.144	.074	D
Middle E/N Africa	2.777 (1.560)	5.111* (2.206)	18	.251	.034	C

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

At the regional level, only the Sub-Saharan African and the Middle East and North African data support this hypothesis and only for the second period (1971-1985). Their regressions are statistically significant at .027 and .034, respectively. The Latin American data almost support this hypothesis because the probability of their F for the second period is .074. If the Latin American model had a larger number of cases, like the Sub-Saharan African model, the model would be statistically significant: the R square of the Latin American model is higher than that of the Sub-Saharan African model. Thus, one may conclude that the relationship between the dependent and independent variables in Latin America for the second period is of substantive, if not statistical, significance.

More important, the relationships for the dependent and independent variables for all models (both regional and general) in both periods is the positive direction predicted by the hypothesis. However, there is no relationship between the 1960-1970 previous coup experience and the 1971-1985 military coup index for the Asian data: their R square is .0005 and the significance F is .920, even though their b is also positive.

In summary, it is reasonable to conclude that previous coup experience increases the probability of military coups since this hypothesis is confirmed in both periods.

Moreover, this finding supports O'kane's study (1981, p. 301). She finds that coups usually occur in countries where there has been a previous coup.

The Length of National Independence

H4 (the longer the length of national independence, the greater the probability of coups) is disconfirmed for both periods; the regression coefficients for the years of national independence are less than twice their standard errors and the R squares are only .015 and .032, respectively (see Table 6 on the next page). At the regional level, the hypothesis is only confirmed for Sub-Saharan Africa and for the Middle East and North Africa for the second period, with significant regression coefficients and R squares of 0.133 and 0.318, respectively.

The direction of the relationship is not clear cut for the first period. The model for all nations has a positive relationship, but the regional models, except for Latin America, are negative and the relationships have very low R squares. But in the second period, the direction of the relationships is positive in both general and regional models. Thus, they support the hypothesis. Only the model for the Middle East and North Africa is very powerful, however: its R square is .318.

TABLE 6
YEARS OF NATIONAL INDEPENDENCE AND MILITARY COUPS

Dependent Variable: Coups Index	Constant	b Years of National Independence	Number of Nations	R Square	Sig/F	Model**
<u>First Period</u> (1960-1970)						
All Nations	6.740* (1.453)	.024 (.018)	109	.015	.192	D
S/S Africa	6.201* (1.521)	-.017 (.040)	40	.005	.657	D
Asia	8.259* (3.237)	-.032 (.042)	22	.028	.453	D
Latin America	.930 (6.472)	.083 (.048)	23	.123	.099	D
Middle E/N Africa	11.441* (5.378)	-.011 (.100)	18	.000	.909	D
<u>Second Period</u> (1971-1985)						
All Nations	5.280* (1.295)	.027 (.014)	109	.032	.061	D
S/S Africa	5.321* (2.086)	.109* (.045)	40	.133	.020	C
Asia	5.102 (3.040)	.022 (.035)	22	.020	.528	D
Latin America	-1.323 (6.241)	.057 (.042)	23	.081	.187	D
Middle E/N Africa	2.014 (1.606)	.068* (.025)	18	.318	.014	C

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

If the relationship is analyzed for the whole period 1960-1985 by summing the coup scores of the first and the second periods to form a new dependent variable, "Total Coup Score," the hypothesis is confirmed (see Table 7). But again the relationship between the length of national independence and coup scores is not strong: only 3.5% of the variance in military coups scores for 1960-1985 can be accounted by the years of national independence. About 96.5% of the variance in military coups remains unexplained. At the regional level, the hypothesis is not confirmed for any region (see Table 7). However, Latin American data tend to support the hypothesis: their regression coefficient for the independent variable is significant and the coefficient of determination is 0.146.

Overall, The relationship between the length of national independence and military coups is very weak. As discussed earlier, Wayman's finding (1975, p. 62) support the hypothesis and Thompson's argument (1975, p. 462) do not support this hypothesis. Therefore, this findings support neither Wayman's finding nor Thompson's explanation.

H5 (the relationship between the length of national independence and military coups is curvilinear; the number of military coups will be low in the early and late periods and high in the middle period) is confirmed (see table 7).

TABLE 7
YEARS OF NATIONAL INDEPENDENCE AND TOTAL COUP SCORE

Dependent Variable: Total Coup Scores	Constant	b Years of National Independence	Number of Nations	R of Square	Sig/ <u>F</u>	Model**
All Nations	11.656* (2.305)	.052* (.026)	109	.035	.048	C
S/S Africa	11.792* (3.124)	.091 (.067)	40	.045	.185	D
Asia	13.852 (5.266)	-.009 (.061)	22	.001	.875	D
Latin America	-1.642 (10.986)	.140 (.074)	23	.146	.071	D
Middle E/N Africa	13.629 (7.361)	.056 (.114)	18	.015	.626	D

Dependent Variable: Total Coup Scores	Constant	b1 Years of National Independence	b2 the Square of Years of National Independence	Number of Nations	R of Square	Sig/ <u>F</u>	Model**
All Nations	5.652 (4.002)	.295* (.135)	-.001 (.0006)	109	.065	.027	C
S/S Africa	8.246 (7.097)	.267 (.322)	.0008 (.001)	40	.053	.360	D
Asia	10.351 (12.555)	.114 (.406)	-.0005 (.001)	22	.006	.942	D
Latin America	-11.042 (17.025)	.459 (.444)	-.001 (.002)	23	.168	.158	D
Middle E/ N Africa	-10.559 (14.883)	.855 (.449)	-.003* (.001)	18	.195	.196	D

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

To test the fifth hypothesis, a second order model with one independent variable must be employed. The model is:

$$\text{Predicted Coup Index (1960-1985)} = a + b_1(\text{Years of National Independence}) + b_2(\text{Square of the Years of National Independence}).$$

$$\text{Predicted Coup Index (1960-1985)} = 5.652 + .295(\text{Years of National Independence}) - .001(\text{Square of the Years of National independence}).$$

The above model is a quadratic model. Quadratic models produce parabolas that open either upward or downward. If b_2 is positive, the parabola opens upward. If it is negative, it opens downward (Mendenhall and McClave, 1981, pp. 191-193). The relationship between military coups and the length of national independence, according to H5, is expected to be a negative parabola. The data for all nations in Table 7 weakly support the hypothesis. The probability of F is less than .05, but the coefficient of determination is .065.

Among the regional model, only the Sub-Saharan African model has a positive direction for b_2 . However, the probability of the F test is .360 for this model and, more important, its b 's are much less than their standard errors. Thus, its null hypothesis cannot be rejected.

It should be noted that the models for the other regions tend to support the hypothesis because their regression coefficients for the relevant independent variable are positive. But only the model for the Middle East and North Africa has a b_2 that is statistically significant.

In short, although a nonlinear relationship between the length of national independence and military coups tend to support the hypothesis, the relationship is very weak and not of substantive significance.

Ethnic and Linguistic Homogeneity

H6 (the more culturally homogeneous the society, the less the probability of coups) is confirmed, but, again, R square for the relationship is low (.043, see Table 8). This hypothesis was tested only for the second period because the independent variable (ethnic and linguistic homogeneity) was estimated in a year around 1975. Although ethnic and linguistic homogeneity does not change dramatically, it is not appropriate to employ an independent variable from 1975 to predict the dependent variable for the 1960-1970 period.

At the regional level, the hypothesis is only confirmed for the Latin American data, since the regression coefficients of other regional models are less than their standard errors. However, the direction of this

relationship tends to be consistently negative, as hypothesized. Only the Asian model has a positive relationship.

The Latin American Model is very interesting; the model is very statistically significant and its coefficient of determination is 0.249. Ethnically speaking, Latin American nations are usually composed of mestizo--mixed bloods of Hispanic with Indian, Negro, Indian, and European ethnicity. The dominant ethnic group is mestizo. Linguistically speaking, people in Latin America speak Spanish or Portuguese. The result of this study shows that a Latin American nation which has a high level of ethnic and linguistic homogeneity has a lower probability of military coups. Thus, the finding does not support Coleman's argument that "a rich pluralism makes dictatorship less likely by providing countervailing power centers which cannot be coerced into a single authoritarian system" (Coleman, 1960, p. 368).

TABLE 8

ETHNIC AND LINGUISTIC HOMOGENEITY AND MILITARY COUPS

Dependent Variable:	Constant	b	Number of Nations	R Square	Sig/F	Model**
Coup Index		Ethnic and Linguistic Homogeneity				
<hr/>						
<u>Second Period</u> (1971-1985)						
All Nations	11.717* (2.134)	-.068 (.034)	91	.043	.048	C
S/S Africa	11.530* (3.166)	-.060 (.073)	36	.019	.415	D
Asia	5.991 (5.555)	.055 (.098)	16	.022	.581	D
Latin America	24.294* (6.952)	-.236* (.089)	23	.249	.015	C
Middle E/N Africa	9.665 (5.158)	-.042 (.065)	15	.032	.523	D

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
 **"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

Dominant Ethnic Groups

H7 (the more dominant an ethnic group in the society, the greater the probability of coups) is not supported by the data for the second period. The analysis (see Table 9) shows, to the contrary, that the more dominant an ethnic group in the society, the less the probability of military coups. Though weak ($R^2 = .041$), this relationship is statistically significant.

At the regional level, the hypothesis is not confirmed in any region. Only the Middle East and North African model has the hypothesized positive relationship between the dependent and independent variables. In other regions, the direction of the relationship supports the general model. That is the more dominant an ethnic group in the society, the less the probability of military coups.

As with ethnic and linguistic homogeneity, this hypothesis was tested only for the second period because the data for the independent variable were collected in a year around 1975.

Overall, the findings on the relationship between a dominant ethnic group and military coups support Kuper and Smith's assumption that the competition among different ethnic groups in the society leads to political instability (Kuper and Smith, 1969, pp. 7-26). In other words, the more dominant an ethnic group in the society, the less the

TABLE 9
DOMINANT ETHNIC GROUPS AND MILITARY COUPS

Dependent Variable:	Constant	b	Number of Nations	R Square	Sig/F	Model**
Coup Index		% of the Largest Ethnic Group				
<u>Second Period</u> (1971-1985)						
All Nations	11.806*	-.076*	97	.041	.044	C
	(2.573)	(.037)				
S/S Africa	12.372*	-.073	37	.028	.320	D
	(3.621)	(.072)				
Asia	10.492	-.060	19	.010	.678	D
	(11.387)	(.142)				
Latin America	10.502	-.056	23	.009	.660	D
	(8.929)	(.125)				
Middle E/N Africa	-3.650	.088	14	.027	.568	D
	(13.333)	(.150)				

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

probability of military coups. In addition, this study does not support Jackman's findings of a positive relationship between a dominant ethnic group and military coups (Jackman, 1978, p. 1263).

To compare, a culturally homogeneous society measured by the ethnic and linguistic homogeneity is closely related to one with a dominant ethnic group, measured by the percent of the population in the largest ethnic group. The correlation between the ethnic and linguistic homogeneity and the dominant ethnic group is high ($r=.665$). Therefore, the results of both hypotheses are similar. Both independent variables, except for the Asian model for the ethnic and linguistic homogeneity, have negative relationships with the coup index. In addition, only the results of Latin American models have a substantive difference. The hypothesis is confirmed for ethnic and linguistic homogeneity, but it is not confirmed for the dominant ethnic group. However, the direction of the relationship is the same. One of these two independent variables should be excluded in the multiple regression model. If both are included, the models will face a problem of multicollinearity.

Economic Factors and Military Coups

Economic Development

H8 (higher levels of economic development decrease the probability of military coups) is not confirmed for either period. However, the hypothesis is almost confirmed for the second period. The probability of the regression for this period is .078 (see Table 10).

At the regional level, the Middle East and North African model is statistically significant for the second period because its t value is more than 2.00 ($.748/.366=2.04$).

The direction of the relationship tends to support the hypothesis because three regional models for the 1971-1985 period have a negative relationship. Only the Latin American model has a positive relationship. However, the R squares in this region in both periods are .000. They show that there is no relationship between the dependent and independent variables.

In short, this finding weakly supports Luttwak's explanation and Finer's assumption. Luttwak (1979, pp. 32-38) suggests that countries having a low per capita GNP tend to have coups because small elites control all power. Finer (1962, pp. 113-115) explains that economic development diminishes the probability of coups because economic development increases technical complexity that sustains the democratic government.

TABLE 10
ECONOMIC DEVELOPMENT AND MILITARY COUPS

Dependent Variable: Coups Index	Constant	β Economic Development Index	Number of Nations	R Square	Sig/F	Model**
<u>First period</u> (1960-1970)						
All Nations	9.070* (1.338)	-.219 (.775)	87	.000	.777	D
S/S Africa	9.186* (2.750)	2.092 (2.076)	33	.031	.321	D
Asia	4.945 (3.973)	-4.297 (3.602)	12	.124	.260	D
Latin America	11.520* (3.579)	.076 (2.466)	22	.000	.975	D
Middle E/N Africa	14.273* (4.746)	-1.859 (1.672)	16	.081	.284	D
<u>Second period</u> (1971-1985)						
All	7.319* (1.014)	-.782 (.439)	89	.035	.078	D
S/S Africa	6.840 (2.558)	-1.692 (1.319)	36	.046	.208	D
Asia	3.432 (2.773)	-1.052 (1.768)	12	.034	.565	D
Latin America	6.931* (2.699)	.028 (1.660)	22	.000	.986	D
Middle E/N Africa	7.442* (1.419)	-.748* (.366)	15	.243	.061	D

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

Economic Deterioration

H9 (higher levels of economic deterioration increase the probability of military coups) is not confirmed for the first period; the regression coefficients in every model are less than their standard errors and the coefficients of determination are very low (See Table 11). But the hypothesis is confirmed for the second period with a significant regression coefficient and an R square of .107. At the regional level, the Sub-Saharan African model supports this hypothesis, as does the Latin American model, marginally. Overall, about 10.7% of the variance in military coups during the 1971-1985 period can be explained by the 1973-1984 economic deterioration index. For the Sub-Saharan African data, the level of economic deterioration can account for 18.5% of the variance in the military coups during 1971-1985 period. For Latin America, the equivalent figure is 17.1%.

The direction of the regional relationship between economic deterioration and military coups tends to support the hypothesis for the second period; only the Middle East and North African model shows a negative relationship. Thus, this finding weakly supports Needler (1966, pp. 612-626), Thompson (1975, pp. 459-487), and Nordlinger (1977, pp. 85-89)'s discussion. They agree that the overthrow of government is more likely when economic conditions are deteriorating (see pp. 22-23).

TABLE 11
ECONOMIC DETERIORATION AND MILITARY COUPS

Dependent Variable: Coups Index	Constant	b Economic Deterioration Index	Number of Nations	R Square	Sig/F	Model**
<u>First Period</u> (1960-1970)						
All Nations	8.393* (1.286)	.583 (.954)	89	.004	.542	D
S/S Africa	6.309* (1.634)	1.297 (2.122)	34	.011	.545	D
Asia	5.602* (2.749)	1.016 (1.167)	16	.051	.398	D
Latin America	12.567* (2.832)	-2.651 (3.147)	21	.035	.410	D
Middle E/N Africa	14.088* (6.546)	3.155 (4.667)	14	.036	.511	D
<u>Second Period</u> (1971-1985)						
All Nations	6.903* (.992)	2.103* (.654)	88	.107	.001	C
S/S Africa	7.907* (1.736)	3.901* (1.445)	34	.185	.011	C
Asia	7.068 (3.768)	1.873 (2.670)	14	.039	.496	D
Latin America	4.862* (2.380)	2.316* (1.139)	22	.171	.055	D
Middle E/N Africa	4.856* (1.727)	-.788 (1.191)	13	.038	.521	D

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

Economic Dependence

H10 (higher levels of dependence upon world trade increase the probability of coups) is not confirmed for either periods (see Table 12). In addition, none of the regional analyses supports this hypothesis.

The directions of the relationships are also not clear since all regional models have a positive relationship for the first period, and three of four regional models have a negative relationship for the second period. In other words, only the Middle East and North African model still has a positive relationship for the second period (1971-1985).

Thus, this study does not support O'Kane's findings (1981, pp. 300-308) that the countries that are primary producers and have the high levels of dependence upon world trade have an increased probability of military coups. One reason for the different findings may be that O'Kane included the First and Second World nations in her data analysis.

TABLE 12
ECONOMIC DEPENDENCE AND MILITARY COUPS

Dependent Variable: Coup Index	Constant	b Economic Dependence Index	Number of Nations	R Square	Sig/F	Model**
<u>First period</u> (1960-1970)						
All Nations	8.977* (1.397)	1.325 (.932)	79	.025	.159	D
S/S Africa	7.013* (2.098)	.601 (1.709)	27	.004	.727	D
Asia	8.992* (3.228)	3.015 (1.866)	15	.167	.130	D
Latin America	10.074* (3.492)	2.355 (3.120)	21	.029	.459	D
Middle E/N Africa	14.252* (6.567)	1.389 (3.759)	12	.013	.719	D
<u>Second Period</u> (1971-1985)						
All Nations	8.070* (1.112)	.321 (.824)	81	.001	.697	D
S/S Africa	10.645* (2.409)	-.266 (2.771)	30	.000	.924	D
Asia	4.910 (3.384)	-.482 (1.702)	12	.007	.782	D
Latin America	7.795* (2.795)	-1.393 (1.934)	21	.026	.480	D
Middle E/N Africa	6.933* (1.392)	1.893 (1.103)	15	.184	.110	D

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

Political Factors and Military Coups

Political Participation

H11 (Higher levels of political participation increase the probability of coups) is not confirmed for either period. As discussed earlier, two problems were faced in testing this hypothesis. First some countries never held elections. Second, some countries did not have competitive political systems.

Table 13 on the next page shows that only 68 countries held elections during the 1960-1970 period, and only 58 countries during the 1971-1980 period. To solve the problem of missing data, I coded the countries in which an election was not held as having a zero score. It was reasonable to assume that the general population of those countries had zero participation in politics via elections. Thus, every country was included in the first model of the regression analysis (see Table 13). However, the hypothesis was not confirmed for either period, either for all nations, or for only those holding elections. In addition, none of the regional analyses for either period supports this hypothesis (the table for the regional models is omitted).

TABLE 13
POLITICAL PARTICIPATION AND MILITARY COUPS

Dependent Variable:	Constant	b	Number of Nations	R	Sig/F	Model**
Coup Index	% of Voters	Turnout		Square		
<u>First Period</u> (1960-1970)						
All Nations	9.311*	-.029	109	.009	.313	D
	(1.791)	(.028)				
All Nations Holding Elections	11.143	-.052	68	.007	.487	D
	(5.836)	(.074)				
Non-Competitive Systems	13.216	-.089	11	.012	.739	D
	(23.541)	(.260)				
Deviant Systems	13.696	-.037	25	.002	.830	D
	(12.817)	(.171)				
Competitive Systems	7.008	-.024	21	.002	.839	D
	(8.397)	(.117)				
<u>Second Period</u> (1971-1985)						
All Nations	7.643*	-.017	109	.004	.479	D
	(1.253)	(.024)				
All Nations Holding Elections	10.370*	-.054	58	.024	.239	D
	(3.171)	(.045)				

*The parameter estimate is more than twice its standard error. The number in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

The levels of political participation were difficult to estimate for countries did not have a competitive political system. To solve this problem, I followed Taylor and Hudson (1976, p. 57) who classified electoral systems into three types: non-competitive, deviant, and competitive systems. Regression models for each of the three electoral system types were analyzed and shown in Table 13 for the first period. I conducted this analysis for the first period only because the electoral systems suggested by Taylor and Hudson were classified during the period of 1960's (see Appendix C). They were not appropriate for analyzing military coups during the 1971-1985 period because the electoral systems might have changed in the period of the 1970's. Again, this hypothesis was not confirmed for any type of electoral system since the regression coefficients are much less than their standard errors and the R squares are very low.

Although the relationship between military coups and the levels of political participation is not statistically significant, the direction of the relationship is clear cut. It is a negative relationship in every equation (see Table 13). Thus, high levels of political participation tend to decrease the probability of military coups, though not to a statistically significant degree.

Dominant Political Parties

H12 (dominant political parties decrease the probability of coups) is not confirmed (see Table 14). However, data for the independent variable could be collected for only 47 countries because dominant political parties were identified by the percentage of the vote cast for the largest party in the election for which turnout was measured. Many Third World nations did not hold elections; therefore, this variable could not be collected. Missing data pose a serious problem in both simple and multiple regression models. It is very difficult to solve this problem; therefore, this hypothesis was tested with a simple regression model only. If this variable is analyzed in a multiple regression model, it will affect the number of cases for the whole model. Thus, it is excluded in the multiple regression models.

The findings shown in Table 14 should not be interpreted with confidence because more than 50% of the countries are excluded from the analysis. The hypothesis is almost confirmed by the Sub-Saharan African data: the probability of F (Sig/F) is .067 and the R square is .206. It is not statistically significant because there are only 17 nations in the model.

The direction of relationship for this hypothesis is clear. Both general and regional models show a negative

relationship between dominant political parties and military coups. Thus, the dominant political parties tend to decrease the probability of military coups.

In short, the results of simple regression models concerning the relationship between military coups and political participation tend to support Jackman's finding (1978, pp. 1262-74). Jackman found that a high rate of voter turnout combined with a dominant political party reduced the probability of military coups. Thus, one may conclude that a high level of political participation such as a high rate of voter turnout sustains strong political parties. These parties are difficult for officers to overthrow with a coup.

TABLE 14
DOMINANT POLITICAL PARTIES AND MILITARY COUPS

Dependent Variable:	Constant	b	Number	R	Sig/F	Model**
Coup Index		% of Voters For the Largest Party	of Nations	Square		
<u>Second Period</u> (1971-1985)						
All Nations	11.101* (3.950)	-.063 (.052)	47	.030	.237	D
S/S Africa	27.512* (9.760)	-.221 (.112)	17	.206	.067	D
Asia	9.566 (10.252)	-.043 (.142)	12	.009	.765	D
Latin America	16.498 (8.949)	-.210 (.158)	11	.165	.214	D
Middle E/N Africa	8.709 (4.647)	-.070 (.067)	5	.266	.373	D

*The parameter estimate is more than twice its standard error. The number in parentheses are the standard errors.
**"c"--confirmed hypothesis, "D"--disconfirmed hypothesis.

Political Turmoil

H13 (higher levels of political turmoil increase the probability of military coups) is not confirmed for either period; the regression coefficients are less than twice their standard errors and the coefficients of determination are .030 and .017, respectively. But at the regional level, the Latin American data strongly support this hypothesis in both periods (see Table 15). For the first period, 40.6 %

of the variance in military coups in Latin America can be explained by the levels of political turmoil. For the second period, however, they account for only 18.4 % of the variance. These findings support Nordlinger's assumption (1977, pp. 79-85) that lower class politicization in Latin America causes military coups.

According to Nordlinger, Latin America has reached the levels of modernization that "foster the emergence of a sizable urban working class and a politicized lower class" (p. 79). The lower class will challenge middle class and military interests if they participate in politics, since this class seeks a government redistribution of the national revenue in its interests. Unlike the middle and upper classes, the power resource of the lower class is "the more or less disorderly activation of numbers--the activation of voters, strikes, marches, and demonstrators, as well as land seizures, illegal strikes, and violence" (p. 80). In the view of military officers, this situation may be called "political turmoil" that may erode the national interests or their interests. Thus, the officers may stage a coup to protect their interests.

The direction of the relationships between the political turmoil index and military coups is quite consistent, if not statistically significant. All models in both periods, except the Middle East and North

TABLE 15
POLITICAL TURMOIL AND MILITARY COUPS

Dependent Variable: Coup Index	Constant	b Political Turmoil Index	Number of Nations	R Square	Sig/F	Model**
<u>First Period</u> (1960-1970)						
All Nations	8.382* (1.198)	.828 (.470)	102	.030	.081	D
S/S Africa	6.513* (1.557)	.502 (1.047)	38	.006	.634	D
Asia	6.780* (2.840)	.314 (.582)	21	.015	.595	D
Latin America	11.160* (2.034)	6.037* (1.558)	23	.416	.0009	C
Middle E/N Africa	13.075* (4.832)	2.781 (3.091)	15	.058	.384	D
<u>Second Period</u> (1971-1985)						
All Nations	7.392* (.962)	.478 (.363)	102	.017	.191	D
S/S Africa	9.318* (1.984)	.527 (1.144)	38	.005	.647	D
Asia	6.613 (2.347)	.236 (.781)	21	.004	.765	D
Latin America	6.938* (2.055)	2.575* (1.181)	23	.184	.040	C
Middle E/N Africa	6.044 (1.401)	-.548 (.669)	15	.049	.427	D

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

African model for the second period, have a positive relationship; that is, increased political turmoil increases the probability of military coups.

Internal War

H14 (higher levels of internal war increase the probability of coups) is confirmed for the data of the first period (see Table 16). However, the relationship is weak; only 6.1% of the coup variance during the 1960-1970 period can be explained by the internal war index (1958-1969).

At the regional level, the Asian data support this hypothesis for the first period and the Sub Saharan African data support it for the second period. It is reasonable to conclude that the time period covered plays an important role in the relationship between internal war and military coups. For example, at the regional level, 40.1% of the variance of military coup scores for the 1960-1970 period in Asia can be explained by the internal war index. However, for the 1971-1985 period, there is no relationship between internal war and military coups in the Asian data since the null hypothesis cannot be rejected ($\text{Sig}/F = .946$).

As mentioned in Chapter III, levels of internal war were indicated by two variables: number of armed attacks and deaths from domestic political violence. Most Third World nations face the serious problem of internal war when the general population led by Communist parties uses force to

TABLE 16
INTERNAL WAR AND MILITARY COUPS

Dependent Variable: Coup Index	Constant	b Internal War Index	Number of Nations	R Square	Sig/F	Model**
<u>First Period</u> (1960-1970)						
All Nations	8.378* (1.167)	1.827 (.712)	103	.061	.011	C
S/S Africa	6.259* (1.453)	.187 (.893)	38	.001	.834	D
Asia	5.190* (2.220)	2.904* (.813)	21	.401	.002	C
Latin America	13.297* (3.537)	7.391 (8.459)	23	.035	.392	D
Middle E/N Africa	12.867* (4.507)	4.763 (4.785)	16	.066	.336	D
<u>Second Period</u> (1971-1985)						
All Nations	7.368* (.961)	.033 (.508)	103	.000	.947	D
S/S Africa	13.682* (2.787)	15.462* (7.227)	38	.112	.039	C
Asia	6.723* (2.371)	.040 (.603)	21	.000	.946	D
Latin America	12.329* (5.248)	16.410 (13.775)	23	.063	.246	D
Middle E/N Africa	6.017* (1.325)	-.549 (.903)	16	.025	.552	D

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

against governments. Good examples of Asian nations are Vietnam, Laos, and Kampuchea. These countries experienced civil war with Communist parties in the 1960's, and the Communists conquered those nations around 1975. In the period of confrontation, the governments faced the problem of political instability. Coups and plots of coups were very high in this period because the military felt that national and their own interests are threatened. For example, the coup score of Vietnam during the first period (1960-1970) was 41, but in the second period (1971-1985) only 3. Similarly, in Laos for the first period the coup score was 42; however, it dropped to 26 for the second period (see Appendix A). The examples of these nations may explain why the relationship between internal war and military coups in Asia is statistically significant for the first period only.

The direction of the relationship between internal war and military coups is clear. For the first period, every model has a positive relationship. For the second period, only the Middle East and North African model has a negative relationship. Thus, it is reasonable to conclude that the increased internal war tends to increase the probability of military coups.

Military Factors and Military Coups

Military Dominance

H15 (higher levels of military dominance increase the probability of coups) is confirmed for the data of the first period (see Table 17). At the regional level, only the Asian data support this hypothesis. About 36% of the variance in military coups in Asia (1960-1970) can be explained by the military dominance index (1965). However, none of the analyses supports this hypothesis for the second period.

The Asian models are very interesting. The model for the first period is very statistically significant and shows a moderate relationship between the dependent and the independent variables: the coefficient of determination is .361. However, the model for the second period is not statistically significant and the coefficient of determination is only .027.

The results of the different findings for the Asian models in two periods may be explained by characteristics of Asian military regimes. Some Asian military regimes are successful in controlling their political and military organizations for very long periods. For example, in South Korea, after General Park Chung Hee led the coup in 1961, he ruled South Korea until he was assassinated in 1979. In Burma, General U Ne Win took over the government in 1962,

TABLE 17
MILITARY DOMINANCE AND MILITARY COUPS

Dependent Variable: Coup Index	Constant	b Military Dominance Index	Number of Nations	R Square	Sig/F	Model**
<u>First Period</u> (1960-1970)						
All Nations	9.307* (1.297)	1.531* (.711)	91	.049	.033	C
S/S Africa	11.067* (4.186)	3.874 (3.813)	32	.033	.317	D
Asia	4.241 (2.878)	2.798* (.928)	18	.361	.008	C
Latin America	12.816* (3.750)	1.534 (3.630)	22	.008	.677	D
Middle E/N Africa	12.486* (5.896)	.228 (2.944)	15	.000	.939	D
<u>Second Period</u> (1971-1985)						
All Nations	7.410* (.994)	-.039 (.384)	96	.000	.917	D
S/S Africa	13.279* (2.863)	3.345 (1.700)	39	.094	.056	D
Asia	7.216* (2.959)	-.815 (1.389)	14	.027	.568	D
Latin America	11.768* (4.780)	3.648 (3.375)	21	.057	.293	D
Middle E/N Africa	6.090* (1.682)	-.147 (.354)	17	.011	.683	D

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

established a socialist military regime and has ruled Burma since. In Indonesia, General Suharto has ruled the country since the failure of the attempted coup by the Communist Party in 1965.

In those regimes, there is no doubt that the military junta dominates politics. Military coups are very few because the leaders of those regimes control the military organizations firmly. Thus, it is not surprising that the coup indexes in those nations for the second period are very low. The coup score of Indonesia for the first period (1960-1970) is 14, but for the second period (1971-1985) it is zero. In South Korea, the coup score dropped from 15 to 6, and in Burma from 5 to 3 (see Appendix A).

The direction of the relationship is not consistent. For the first period (1960-1970), every model has a positive relationship between military dominance and military coups. However, only two models for the second period (1971-1985) have a positive relationship.

Foreign Troops

H16 (the presence of foreign troops that are capable of combat will reduce the probability of coups) is not confirmed for either period for the complete data set because the regression coefficients are less than their standard errors and the coefficients of determination are .000 and .003, respectively.

However, the hypothesis is confirmed for Sub-Saharan African and the Middle East and North African data for the second period. In Sub-Saharan Africa, the presence of foreign troops accounts for 20% of the variance in military coup scores during the 1971-1985 period. In the Middle East and North Africa, it accounts for 26.9% of the variance (see Table 18).

The direction of the relationship is very interesting. In both period, for the Asian and the Middle East and North African data, the regression coefficients have a positive relationship. In contrast, for Sub-Saharan Africa and the Latin America in both periods, the direction of the relationship between the dependent and the independent variables is negative. Thus, the presence of foreign troops in Sub-Saharan Africa and the Latin America tends to reduce military coups, but the presence of foreign troops in the Asia and the Middle East and North Africa tends to increase military coups.

Table 18 shows that in Sub Saharan Africa for the second period, the presence of foreign troops during the 1970's is expected to reduce the coup index during the 1971-1985 period by 10 units. In contrast, in the Middle East and North Africa, the presence of foreign troops during the 1970's is expected to increase the coup index (1971-1985) by five units.

TABLE 18
THE PRESENCE OF FOREIGN TROOPS AND MILITARY COUPS

Dependent Variable: Coups Index	Constant	b Presence of Foreign Troops	Number of Nations	R Square	Sig/F	Model**
<u>First Period</u> (1960-1970)						
All Nations Coups	7.821* (1.607)	.197 (2.306)	109	.000	.931	D
S/S Africa	6.636* (2.654)	-.981 (3.117)	40	.002	.754	D
Asia	4.333 (3.519)	5.466 (5.219)	22	.051	.307	D
Latin America	11.523* (2.778)	-3.523 (9.423)	23	.006	.712	D
Middle E/N Africa	6.800 (5.417)	9.575 (8.125)	18	.079	.255	D
<u>Second Period</u> (1971-1985)						
All Nations	7.543* (1.268)	-1.063 (1.836)	109	.003	.563	D
S/S Africa	15.750* (2.747)	-10.142* (3.284)	40	.200	.003	C
Asia	5.307 (2.852)	2.803 (4.459)	22	.019	.536	D
Latin America	7.285* (2.331)	-7.285 (7.904)	23	.038	.367	D
Middle E/N Africa	2.375 (1.634)	5.325* (2.192)	18	.269	.027	C

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.
**"C"--confirmed hypothesis, "D"--disconfirmed hypothesis.

In short, military factors, as measured by military dominance and the presence of foreign troops, do little to explain military coups in the Third World Nations.

To review, this chapter presents simple regression findings concerning the causes of military coups. Sixteen hypotheses are tested by general and regional data in two periods: 1960-1970 and 1971-1985. For the first period, the data for all nations supports three hypotheses. Three useful predictors are previous coup experience, internal war, and military dominance.

For the second period, six hypotheses are confirmed. Useful independent variables are social mobilization, social mobilization/political institutionalization, previous coup experience, ethnic and linguistic homogeneity, dominant ethnic group, and economic deterioration. Therefore, only one hypothesis is confirmed in both periods: H3 (previous coup experience will increase the probability of coups).

At the regional level, most hypotheses are confirmed in a particular region for a particular period. Only one hypothesis is confirmed in both periods for the same region. H14 (higher levels of internal war increase the probability of coups) is supported by Latin American data in both periods.

Overall, simple regression findings explain some "causes" of military coups. However, a complex model is

needed in order to better understand the causes of coups.
The next chapter will present multiple regression model
findings.

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CHAPTER V

MULTIPLE REGRESSION MODEL FINDINGS

A multiple regression model refers to a regression equation that includes two or more continuous or discrete independent variables in the analysis. Multiple regression analysis is one of the most important techniques in social science because it can explain a dependent variable with multiple causes.

For this study, military coups are assumed to have 16 causes that are stated in 16 hypotheses. All independent variables are employed in multiple regression analysis. However, two problems arise. First, missing data become a serious problem for variables measuring political participation (voter turnout as a percentage of adult population) and dominant political parties (the percentage of the vote cast for the largest party). It is so serious, in fact, that both variables must be dropped from the multiple regression models. Second, three sets of variables are highly correlated. The first set is the social variables which measure dominant ethnic group and a culturally homogeneous society. Both variables are closely related ($r=.665$, see pp. 107-109). Thus, only the dominant ethnic group is employed in the multiple regression models. The

second set relates to the length of national independence, involved in two hypotheses (H4 and H5). The length of national independence, an independent variable in testing H4, is measured by years of national independence. H5 is tested by a second order model in which the length of national independence is also measured by the square of the years of national independence. In other words, H4 and H5 employ the same variable (see pp. 97-102). Therefore, only years of national independence is employed in the multiple regression models.

The last set is the political variables: political turmoil and internal war. Political turmoil is composed of three indicators: the number of protest demonstrations, riots, and political strikes. Internal war is measured by two variables: the number of armed attacks and deaths from domestic political violence. Usually, a nation having a high number of riots and political strikes has a high number of deaths from political violence. The correlation (r) between the two variables is 0.691. To solve the problem of multicollinearity, only the internal war index is employed in the multiple regression models.

TABLE 19

THE MODEL OF MILITARY COUPS, 1960-1970

Coup Index(1960-1970) = The Dependent Variable			
Independent Variables	Beta	<u>B</u>	<u>t</u>
Social Mobilization Index (1960-1970) Divided by Political Institutionalization (X1)	-.057	-473.378	-.332
Previous Coup Experience 1948-1959 (X2)	.261	6.499	1.700
Social Mobilization Index 1960-1970 (X3)	.013	.381	.070
Economic Deterioration Index 1960-1970 (X4)	.010	.095	.079
Internal War Index 1958-1969 (X5)	.112	.948	.854
Military Dominance Index 1965 (X6)	.273	2.620	1.692
Years of National Independence (X7)	-.008	-.001	-.055
Economic Dependency Index 1960 (X8)	.305	2.546	1.886
Presence of Foreign Troop 1960-1970 (X9)	.056	1.407	.364
Economic Development Index 1960 (X10)	.189	1.149	1.160
Constant		6.138	1.729
<u>R</u> Square	.205		
Adjusted <u>R</u> Square	.049		
Significance <u>F</u>	.2469		
Number of Nations	62		

TABLE 20

THE MODEL OF MILITARY COUPS, 1971-1985

Coup Index(1971-1985) = The Dependent Variable			
Independent Variables	Beta	<u>B</u>	<u>t</u>
Social Mobilization Index (1970-1980) Divided by Political Institutionalization (X1)	.274	257.931	2.337
Previous Coup Experience 1960-1970 (X2)	.216	4.582	1.599
Social Mobilization Index 1970-1980 (X3)	-.277	-7.692	-1.925
Economic Deterioration Index 1973-1984 (X4)	.237	1.529	1.841
% of the largest Ethnic Group 1975 (X5)	-.189	-.071	-1.478
Internal War Index 1970-1977 (X6)	.113	1.845	.937
Military Dominance Index 1975 (X7)	.061	.241	.432
Years of National Independence (X8)	.058	.009	.417
Economic Dependency Index 1975 (X9)	.054	.465	.374
Presence of Foreign Troop 1971-1980 (X10)	.013	.287	.102
Economic Development Index 1970 (X11)	.011	.046	.074
Constant		7.822	2.125
<u>R</u> Square	.410		
Adjusted <u>R</u> Square	.277		
Significance <u>F</u>	.0031		
Number of Nations	61		

For the first period, the model is not statistically significant either for the whole model or for any independent variable (see Table 19). But for the second period, the model is statistically significant. There is a 1000 to 3 chance that the relationship between the independent variables and coup scores (the dependent variable) exists in the population (see Table 20).

The model can explain 41.01% of the variance of the coup scores during the 1971-1985 period. If degree of freedom are considered, it can explain 27.76% of the variance. Good predictors are social mobilization/political institutionalization, social mobilization, economic deterioration, coup experience, and the percent of the largest ethnic group.

The directions of the individual relationships are the same as the simple model findings. Only two variables have negative relations: social mobilization and the percent of the largest ethnic group. The model does not have a problem of multicollinearity since the correlations among its variables are low (see Appendix E). However, this model faces two problems. First, some variables such as the presence of foreign troops and economic dependence are not useful in explaining the coup score index. Second, the number of nations with valid data for this model is only 61; 48 nations are excluded in the analysis due to missing data. Thus, a better model is needed.

In order to find an appropriate model of military coups. SPSSx's stepwise regression that includes the procedures of forward inclusion and backward elimination is employed in analyses (SPSSx User's Guide, 1983, p. 604). Independent variables suggested by the literature review were excluded from the final models when they showed no explanatory power.

The Model for the First Period

The appropriate model that is statistically significant both for the independent variables and the whole model for the first period (1960-1970) is composed only two variables (also see Table 21):

The 1960-1970 Predicted Coup Index = $a + b_1(\text{Previous Coup Experience}) + b_2(\text{Internal War Index})$

The 1960-1970 Predicted Coup Index = $5.493 + 7.620$
 $(\text{Previous Coup Experience}) + 1.591(\text{Internal War Index})$

TABLE 21

THE SELECTED MODEL OF MILITARY COUPS, 1960-1970

Coups Index(1960-1970)= the Dependent Variable			
Independent Variables	Beta	B	t
Previous Coup Experience (1948-1959)	.305	7.620 (2.309)	3.300
Internal War Index (1958-1969)	.215	1.591 (0.684)	2.327
Constant		5.493	3.879
R Square	.153		
Adjusted R Square	.136		
Significance F	.0002		
Correlation (\underline{r}) Between the Previous Coup Experience and Internal War Index	.104		
Number of Nations	103		

*The numbers in parentheses are the standard errors.

Previous coup experience is a dummy variable. It is coded one for the countries that had a coup or an attempted coup during the 1948-1959 period. It is coded zero for the countries that did not have any coup experience during the 1948-1959 period. Thus, the predicted model for the countries that had no previous coup experience is:

$$\hat{y} = 5.493 + 1.591(\text{Internal War Index})$$

Countries having previous coup experience are expected to have coup scores higher than countries that do not have previous coup experience by 7.620, on the average.

The second predictor (internal war index) is straightforward to interpret. A one unit increase in the internal war index during the 1958-1969 period is expected to increase the 1960-1970 coup index by 1.591, controlling for previous coup experience.

The predicted model of military coups during the 1960-1970 period is very statistically significant; the probability of its F is less than one in 1,000 and the t for each independent variables is more than twice its standard error. Thus, the null hypotheses can be confidently rejected. In addition, this model also does not have a problem of multicollinearity; the correlation between the previous coup experience and the internal war index is low (.104). Moreover, this model is no problem of missing data since only a few nations (6) are excluded due to missing data for the internal war index.

However, this model is not very powerful in explaining the causes of military coups during the 1960-1970 period in the Third World, since its coefficient of determination is only .153. In other words, only 15.3% of the variance of the coup index during the 1960-1970 period can be explained by previous coup experience and the internal war index taken together.

The Model for the Second Period

The appropriate model in explaining the military coups during 1970-1985 period is given in Table 22 below. This model yielded the maximum adjusted R square.

TABLE 22

THE SELECTED MODEL OF MILITARY COUPS, 1971-1985

Coup Index(1971-1985) = The Dependent Variable				
Independent Variables	Beta	B	t	
Previous Coup Experience 1960-1970 (X1)	.200	4.021	1.960	
Social Mobilization Index 1970-1980 (X2)	-.316	-7.330	-3.026	
Economic Deterioration Index 1973-1984 (X3)	.186	1.214	1.792	
Social Mobilization Index 1970-1980 Divided by Political Institutionalization (% Increase of Central Government Expenditure During the 1971-1980 Period) (X4)	.251	195.066	2.478	
Constant		4.875	3.186	
R Square	.274			
Adjusted R Square	.236			
Significance F	.0001			
Number of Nations	80			
R Square for the Regression of X1 on X2, X3, and X4			.075	
R Square for the Regression of X2 on X3, X4, and X1			.114	
R Square for the Regression of X3 on X4, X1, and X2			.108	
R Square for the Regression of X4 on X1, X2, and X3			.057	
<u>Matrix of Correlations</u>				
	X1	X2	X3	X4
X1	1.000			
X2	-.139	1.000		
X3	.229	-.263	1.000	
X4	.092	.204	-.063	1.000

The model shows that only the 1970-1980 social mobilization index has a negative relationship with the coup index. Other independent variables have a positive relationship. The best predictor is the social mobilization index because it has the highest value of the standardized coefficient (Beta).

The regression coefficients can be explained as follows:

1. Countries that have previous coup experience (1960-1970) are expected to increase their coup index (1971-1985) by 4.02, controlling for other independent variables.

2. A one unit increase in the social mobilization index during the 1970-1980 period is expected to decrease the coup index score during the 1971-1985 by 7.33, holding other independent variables constant.

3. A one unit increase in the economic deterioration index during the 1970-1980 period is expected to drop a country's coup index score during the 1971-1985 period by 1.21, controlling for other independent variables.

4. A (very unlikely) one unit increase in the quotient of the social mobilization index during the 1970-1980 divided by political institutionalization (percent increase of central government expenditure during the 1971-1980 period) is expected to increase a country's coup index score during the 1971-1985 period by 195.06.

Thus, the predicted model of military coups during the 1971-1985 period is:

$$\hat{y} = 4.875 + 4.021(\text{Previous Coup Experience}) - 7.330(\text{Social Mobilization Index}) + 1.214(\text{Economic Deterioration Index}) + 195.066(\text{Social Mobilization/Political Institutionalization})$$

This model is very statistically significant. The probability of its F is .0001 and the magnitudes of its t values for predictors all exceed 1.75. In addition, the model does not have the problem of multicollinearity because the correlations among independent variables are very low, as the R squares for the regression of each independent variable on the other independent variables (.075, .114, .108, and .057) indicate.

However, there are 29 nations that are excluded from this analysis because of missing data for one or more independent variables. Moreover, the model can only explain 27.4% of the variance of the coup index during the 1971-1985 period. It is not a very powerful model; 72.6% of the variance cannot be explained.

Regional Models

In this part, the best model to understand the causes of military coups in each region is established. As discussed in chapter one, each region has unique characteristics that may affect the causes of military coups. Regional models are based on the "most similar systems" research design. Common factors are controlled and the different factors are viewed as "explanatory" variables (Przeworski and Teune, 1970, pp. 33-35).

In searching for the best model in each region, not all independent variables are employed in analysis because the number of nations in each region is small. For example, 22 Asian nations are analyzed. It is useless to run 16 independent variables in multiple regression analysis with 22 cases. To solve this problem, only independent variables that were statistically significant from a simple test in each region were selected. SPSSx's stepwise regression was employed to select the appropriate model. However, some models had only two significant independent variables. Therefore, SPSSx's stepwise regression was not employed in the analysis.

Sub-Saharan African Models

From Table 3 through Table 18, no hypothesis for the first period (1960-1970) is confirmed for the African data. Therefore, it is very difficult to develop a multiple regression model of any substance.

For the second period (1971-1985), there are seven hypotheses that are confirmed for the African data. The predictors or independent variables that are useful to explain the "causes" of African coups are the 1970-1980 social mobilization index, social mobilization index (1970-1980) divided by political institutionalization, previous coup experience (1960-1970), the length of national independence, the economic deterioration index (1973-1984), the internal war index (1970-1977), and the presence of foreign troops during the 1970's. Employing these seven independent variables and using SPSSx's stepwise regression in selection, the following model is very useful in understanding the African coups (see Table 23).

The model shows that the presence of foreign troops is the best predictor of Sub-Saharan African coups during the 1971-1985 period. Countries that have foreign troops present are expected to reduce their coup index scores during the 1971-1985 period by 10.38, controlling for other independent variables. This model can explain about 50 percent of the variance in military coups scores during 1971-1985 in Sub-Saharan Africa (R square is .502).

TABLE 23
THE MODEL OF MILITARY COUPS IN SUB-SAHARAN AFRICA,
1971-1985

Coups Index (1971-1985) = the Dependent Variable			
Predictors	Beta	<u>B</u>	<u>t</u>
Economic Deterioration Index During the 1973-1984 Period (X1)	.30	2.75	2.28
Presence of Foreign Troops During the 1970's (X2)	-.45	-10.38	-3.39
Years of National Independence (X3)	.34	.10	2.69
Constant		11.81	4.16
R Square	.502		
Adjusted R Square	.452		
Significance F	.0001		
Number of Nations	34		
Correlation (<u>r</u>) Between X1 and X2	-.246		
Correlation (<u>r</u>) Between X1 and X3	-.045		
Correlation (<u>r</u>) Between X2 and X3	-.029		
R Square for the Regression of X1 on X2 and X3		.062	
R Square for the Regression of X2 on X1 and X3		.060	
R Square for the Regression of X3 on X1 and X2		.002	

The correlations among the independent variables are very low (-.246, -.045, and -.029). In addition, when each independent variable is regressed on all other independent variables, the coefficients of determination are also very low (.062, .060, and .002). Thus, the model does not face a problem of multicollinearity.

The relationship between the dependent and the independent variables is straightforward. The countries, which achieved national independence early and had high economic deterioration indexes during the 1973-1984, are expected to have increased coup index scores for the 1971-1985 period. In contrast, the countries having foreign troops present during the 1970's are expected to decrease their coup indexes during the 1971-1985 period by 10.38, controlling for other independent variables. The predicted model is:

$$\text{Coup Index (1971-1985)} = 11.81 + 2.75(\text{Economic Deterioration Index}) - 10.38(\text{Presence of Foreign Troops}) + 0.10(\text{Years of National Independence})$$

Since the presence of foreign troops is a dummy variable, the predicted model for the nations that do not have foreign troops is:

$$\text{Coup Index (1971-1985)} = 11.81 + 2.75(\text{Economic Deterioration Index}) + 0.10(\text{Years of National Independence})$$

The above model is very statistically significant because the probability of F is .0001 and the t values for the independent variables are all more than 2.00.

Asian Models

Two hypotheses (H14 and H15) were confirmed by the Asian data for the first period. The independent variables in those hypotheses are the internal war index (1958-1969) and the military dominance index (1965). When both independent variables are employed in a multiple regression model, the model is very statistically significant with the probability of its F being only 2 in 1,000 and its t values all being greater than 2.00.

TABLE 24

THE MODEL OF MILITARY COUPS IN ASIA, 1960-1970

Coup Index (1960-1970) = the Dependent Variable			
Predictors	Beta	\underline{B}	\underline{t}
Internal War Index (1958-1969)	.841	2.088	2.482
Military Dominance Index (1965)	.867	2.016	2.326
Constant		3.604	1.432
R Square	.547		
Adjusted R Square	.487		
Significance F	.002		
Number of Nations	18		
Correlation (\underline{r}) Between Internal War Index and Military Dominance Index	.363		

The predicted model for Asia is:

$$\text{Predicted Coup Index (1960-1970)} = 3.604 + 2.088(\text{Internal War Index}) + 2.016(\text{Military Dominance Index})$$

The relationship between the dependent and independent variables is straightforward. The countries that have high levels of internal war and high levels of military dominance are expected to have high scores on the military coup index. A one unit increase on the internal war index during the 1958-1969 period is expected to increase the score on the military coup index during the 1960-1970 period by 2.088, controlling for the military dominance index (1965). Similarly, a one unit increase on the military dominance index is expected to increase the score on the coup index (1960-1970) by 2.016, controlling for the internal war index.

The model can explain 54.7% of the variance in military coups during the 1960-1970 period or 48.7% when the degrees of freedom are considered. For the second period (1971-1985), none of the 16 hypothesis is confirmed. Thus, a complex model cannot be developed.

Latin American Models

As mentioned earlier, the best predictor of military coups in Latin America is political turmoil. For the first period (1960-1970), the political turmoil index alone can explain about 41.6% of the variance in coup scores. For the second period (1971-1985), it accounts about 18.4% of the variance in military coups (see Table 15 on p. 123). However, other hypotheses are not confirmed by Latin American data for the first period. Only H3 (previous coup experience will increase the probability of coups) is almost confirmed ($R^2 = .144$, $F = .074$, see p. 97). When previous coup experience and political turmoil index are employed in the multiple regression analysis, the model is very statistically significant (see Table 25). Thus, the following model is the appropriate one in the first period (1960-1970).

$$\text{Predicted Coup Index (1960-1970)} = 4.115 + 9.526(\text{Previous Coup Experience}) + 6.413(\text{Political Turmoil Index})$$

Since previous coup experience is a dummy variable, the predicted model for a nation that did not experience a coup during 1948-1959 period is:

$$\text{Predicted Coup Index (1960-1970)} = 4.115 + 6.413(\text{Political Turmoil Index})$$

TABLE 25

THE MODEL OF MILITARY COUPS IN LATIN AMERICA, 1960-1970

Coup Index (1960-1970) = the Dependent Variable			
Predictors	Beta	<u>B</u>	<u>t</u>
Previous Coup Experience (1948-1959)	.342	9.526	2.226
Political Turmoil Index (1958-1969)	.685	6.413	4.457
Constant		4.115	1.120
<u>R</u> Square	.532		
Adjusted <u>R</u> Square	.485		
Significance <u>F</u>	.0005		
Number of Nations	23		
Correlation (<u>r</u>) Between Previous Coup Experience and Political Turmoil Index	-.118		

This model shows that 53.2% of the variance in Latin American coups during the 1960-1970 period can be explained by previous coup experience during the 1948-1959 period and the political turmoil index during the 1958-1969 period. The relationship between the dependent and the independent variables is easy to understand. A country that had no coup experience during 1948-1959 is expected to decrease its coup score for 1960-1970 by 9.526, controlling for the political turmoil index. In addition, a one unit increase in a country's political turmoil index during 1958-1969 is expected to increase the coup index score for 1960-1970

period by 9.526, controlling for previous coup experience. Both independent variables have a positive relationship with the dependent variable. However, the political turmoil index is the more powerful influence on military coups in Latin America, as is indicated by the value of its standardized coefficient (Beta).

This model is statistically significant with the probability of F being less than one in 1,000 and the t values all greater than 2.00; The model in Table 25 does not face the problem of multicollinearity because the correlation of the independent variables is very low ($r = -.118$).

For the second period (1971-1985), Latin American data support two hypotheses: H6 (the more culturally homogeneous the society, the less the probability of coups) and H13 (higher levels of political turmoil increases the probability of military coups). The independent variables in those hypotheses are the percent of the largest ethnic group (1975) and the political Turmoil index (1971-1977). When both variables are employed in a multiple regression model, the model is statistically significant ($F = .011$).

TABLE 26
 THE MODEL OF MILITARY COUPS IN LATIN AMERICA, 1971-1985

Coup Index (1971-1985) = the Dependent Variable			
Predictors	Beta	<u>B</u>	<u>t</u>
Political Turmoil Index (1971-1977)	.340	2.041	1.863
% of the largest Ethnic Group (1975)	-.429	-.203	-2.349
Constant		22.025	3.293
<u>R</u> Square	.360		
Adjusted <u>R</u> Square	.297		
Significance <u>F</u>	.011		
Number of Nations	23		
Correlation (<u>r</u>) Between the Political Turmoil Index and the Previous Coup Experience	-.208		

The above model does not have the problem of multicollinearity because the correlation of the independent variables is low ($r = -.208$). However, this model is not powerful because it can explain only 36% of the variance in the military coups during the 1971-1985 period (R square = .360).

The Middle East and North African Model

None of the 16 hypotheses was confirmed for the first period (1960-1970) for the Middle East and North African data. For the second period (1971-1985), there were three confirmed hypotheses. The independent variables of those hypotheses are previous coup experience during 1960-1970, years of national independence, and the presence of foreign troops during the 1970's. After employing all three independent variables and using SPSSx's stepwise in selection, I found that the model in Table 27 is useful in explaining military coups in this region.

TABLE 27

THE MODEL OF MILITARY COUPS IN THE MIDDLE EAST
AND NORTH AFRICA, 1971-1985

Coup Index (1971-1985) = the Dependent Variable				
Predictors	Beta	B	t	
Previous Coup Experience (1960-1970)	.554	5.656	3.488	
Years of National Independence	.612	.074	3.852	
Constant		-1.098	-.721	
<u>R</u> Square	.623			
Adjusted <u>R</u> Square	.573			
Significance <u>F</u>	.0007			
Number of Nations	18			
Correlation (<u>r</u>) Between the Previous Coup Experience and the Years of National Independence	-.087			

The above model can explain 62.3% of the variance in the Middle East and North African coups during the 1971-1985 period. The model is very statistically significant; the probability of its F is less than .001 and the t values for the regression coefficients of independent variables are greater than 2.00. The model is:

$$\begin{aligned} \text{Predicted Coup Index (1971-1985)} &= -1.098 + \\ &5.656(\text{Previous Coup Experience}) + .074(\text{Years of National} \\ &\text{Independence}) \end{aligned}$$

The Middle East and North African nations are expected to decrease their coup index scores for 1971-1985 by 5.656, on the average, if they did not have coup experience during the 1960-1970 period. The relationship between the coup index (1971-1985) and the length of national independence is positive. The longer the length of national independence, the greater the probability of military coups. For example, a nation that became independent in 1900 and had not coup experience during 1960-1970 gets the following predicted coup score:

$$\begin{aligned} \text{Predicted Coup Index (1971-1985)} & \\ &= -1.098 + 5.656(0) + .074(1985-1900) \\ &= -1.098 + 0 + 4.654 \\ &= 3.556 \end{aligned}$$

The model in Table 27 does not face the problem of multicollinearity because the correlation between the previous coup experience and years of national independence is very low (.087).

Summary

This chapter presents the multiple regression models in two parts. The first part presents the selected models for all nations in both periods. For the first period (1960-1970), two independent variables--previous coup experience and the internal war index--can explain 15.3% of the variance in military coups during the 1960-1970 period. For the second period (1971-1985), four independent variables--previous coup experience, social mobilization, economic deterioration, and the social mobilization divided by political institutionalization--account for 27.4% of the variance in military coups during the 1971-1985 period.

Multiple regression model findings show that general models, statistically significant in both periods, are very difficult to establish. From 16 independent variables derived from literature as the "causes" of military coups, only two variables for the first period are statistically significant for each independent variables and the whole model. For the second period, the model is composed of four independent variables. However, both models are not very useful in explanation; R squares are less than 0.30 in both models.

The second part establishes appropriate models in each region. Good predictors of the Sub-Saharan African model for the second period are economic deterioration, presence of foreign troop, and years of national independence. Useful independent variables for the Asian model in the second period are internal war and military dominance. For Latin America, previous coup experience and political turmoil are useful predictors in the first period, while political turmoil and percent of the largest ethnic group are useful in the second period. For the Middle East and North Africa, previous coup experience and years of national independence are useful in understanding military coups in this region in the second period.

Regional models are generally more powerful than the overall models. For example, only two or three independent variables can explain about 50% of the variance of military coups in each region. However, I do not agree with the strategy of Johnson, Slater, and McGowan's study (1984), who employed 11 independent variables to explain military coups in Africa in order to get a high value of R square. Their independent variables are not derived from a clear cut theoretical framework and have problems in measurement (Jackman, O'Kane, Johnson, McGowan, and Slater, 1986, pp. 225-237). In contrast, I find preferable Jackman's study (1978) using only four independent variables derived from

theoretical frameworks. The weakness of Jackman's study is the selection of a limited set of cases in his analysis.

In the next chapter, the consequences of military rule in terms of economic, education, health, social, and political performances are presented.

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CHAPTER VI

THE CONSEQUENCES OF MILITARY RULE

In this chapter, five hypotheses (H17 through H21) concerning the consequences of military rule are tested. The first four hypotheses aim to test the performance of military regimes in economic, education, social, health, and military affairs. These hypotheses are classified into three models: the progressive model, Huntington's assumption, and the revisionist model. The last hypothesis is employed to test the performance of military regimes in political and civil rights.

In testing these hypotheses, I used two steps. The first step is a test employing a simple regression model. This test seeks to find the direct effect of military regimes on various dependent variables. The independent variable is military control scores for two periods: 1960-1970 and 1971-1980. Dependent variables are economic, education, social, health, military, and political performances. Similarly, these dependent variables, except political performance, are for two periods: 1960-1970 and 1970-1980. The second step is a complex test. In this step, regional areas are controlled and multiple regression models are employed.

The Progressive Models

H17 (increased military rule improves economic, education, health, and social performances) is not confirmed for either period. For the first period (1960-1970), the regression coefficients of military control for each performance area are not statistically significant. For the second period (1971-1980), military rule has a statistically significant effect only on educational performance (see Table 28). The value of its regression coefficient is $-.008$, meaning that a one unit increase in military control improves educational performance about $.008$ units, holding other variables constant. This finding weakly supports the hypothesis because of the low value of the coefficient of determination (R square = $.085$).

The direction of the relationship is not clear. Increased military control tends to decrease economic, education, and social performance for the first period. However, for the second period, increased military control tends to increase economic and education performances. Thus, only the direction of social performance is consistency in both periods, even though its coefficients are not statistically significant. It is a negative relationship that is contrary to the progressive hypothesis.

Some previous studies present region effects are very significant. Examples are Nordlinger (1970, p. 1147) and

TABLE 28
THE SIMPLE TEST OF THE PROGRESSIVE MODEL

Independent Variables	Dependent Variables				
	First Period (1960-1970) (N=68)	Economic Performance (N=68)	Education Performance (N=76)	Health Performance (N=80)	Social Performance (N=93)
Military Control Scores	-.003 (.011)	-.007 (.004)	.003 (.003)	-.001 (.001)	
Constant	.538 (.652)	-.154 (.219)	-.215 (.183)	.039 (.061)	
<u>R Square</u>	.001	.048	.009	.021	
Adjusted <u>R Square</u>	-.013	.035	-.003	.010	
Significance <u>F</u>	.753	.056	.389	.161	
	Second Period (1971-1980) (N=59)	Economic Performance (N=59)	Education Performance (N=87)	Health Performance (N=81)	Social Performance (N=93)
Military Control Scores	.002 (.009)	.008* (.003)	-.0004 (.003)	-.0005 (.0008)	
Constant	.185 (.733)	-.482 (.243)	-.087 (.234)	.010 (.064)	
<u>R Square</u>	.001	.085	.0002	.004	
Adjusted <u>R Square</u>	-.016	.074	-.012	-.006	
Significance <u>F</u>	.770	.006	.883	.542	

*The parameter estimate is more than twice its standard error. The number in parentheses are the standard errors.

Schmitter (1971, pp. 453-458) Nordlinger found that in African nations there was a positive correlation between military regimes and economic performance. Schmitter found that military governments in Latin America spent less of their resources on social welfare than civilian government. However, Jackman (1976, p. 1096) found that military government, regardless of the geographic region, has no effects on social change.

In order to investigate the region effect of military regime on economic, education, health, and social performances, a regional effects model is built as follows:

$$\begin{aligned} \text{Performances} = & a_1 + b_1 \text{Military Control}(M) + \\ & b_2 \text{S/S Africa}(D_1) + b_3 \text{Asia}(D_2) \\ & + b_4 \text{Latin America}(D_3) + b_5 \text{MD}_1 \\ & + b_6 \text{MD}_2 + b_7 \text{MD}_3 \end{aligned}$$

MD₁ is an interaction effect between military control and Sub-Saharan Africa, MD₂ is an interaction effect between military control and Asia, and MD₃ is an interaction effect between military control and Latin America.

For the first period (1960-1970), the regression coefficients of military control for each performance area are not statistically significant. In addition, the parameter estimates for the interaction terms between military control scores (M) and regions (D_s) are not also

statistically significant (see Table 29). For the second period (1970-1980), the regression coefficient of military control is statistically significant for educational performance, again showing that increased military control increases educational performance, supporting the progressive hypothesis.

The direction of the relationship is similar to the simple test. It is not clear. Only health performance has a positive relation with military control in both period to a non-statistically significant degree. Thus, increased military control tends to increase health performance. Overall, these results do not support the progressive model for either period. These findings are, rather, consistent with Jackman's study (1976) finding that "the civilian-military government distinction appears to be of little use in the explanation of social change" (Jackman, 1976, p. 1097).

TABLE 29

THE PROGRESSIVE MODEL AND MILITARY RULE, 1960-1970

Independent Variables	Dependent Variables			
	Economic Performance (N=68)	Education Performance (N=76)	Health Performance (N=80)	Social Performance (N=93)
Military Control Scores (M)	-.039 (.023)	-.003 (.007)	.004 (.011)	-.001 (.002)
S/S Africa (D1)	-4.386* (1.704)	1.691* (.529)	-.293 (.493)	-.233 (.152)
Asia (D2)	-2.438 (2.056)	.041 (.670)	.094 (.639)	-.400 (.193)
Latin America (D3)	-4.593 (1.858)	-.203 (.613)	.130 (.550)	-.482* (.174)
Interaction Term1 (MD1)	.011 (.040)	-.003 (.013)	-.006 (.015)	.005 (.004)
Interaction Term2 (MD2)	.051 (.032)	-.0001 (.009)	.0007 (.013)	.001 (.003)
Interaction Term3 (MD3)	.042 (.031)	.003 (.010)	-.005 (.013)	-.0001 (.003)
Constant	3.924* (1.354)	-.600 (.428)	-.107 (.384)	.273* (.118)
R Square	.180	.296	.047	.179
Adjusted R Square	.084	.223	-.045	.112
Significance F	.088	.0009	.824	.015

*The parameter estimate is more than twice its standard error. The number in parentheses are the standard errors.

TABLE 30

THE PROGRESSIVE MODEL AND MILITARY RULE, 1970-1980

Independent Variables	Dependent Variables			
	Economic Performance (N=59)	Education Performance (N=87)	Health Performance (N=81)	Social Performance (N=93)
Military Control Scores (M)	.004 (.018)	.023* (.006)	.016 (.009)	.002 (.002)
S/S Africa (D1)	-3.798* (1.799)	.607 (.587)	-1.083 (.585)	.071 (.162)
Asia (D2)	2.131 (1.847)	.216 (.710)	-.846 (.727)	-.017 (.203)
Latin America (D3)	-3.774* (1.812)	.273 (.694)	-.453 (.643)	-.215 (.182)
Interaction Term1 (MD1)	.007 (.023)	-.016* (.007)	-.014 (.010)	-.003 (.002)
Interaction Term2 (MD2)	-.002 (.025)	-.022* (.010)	-.018 (.012)	-.003 (.002)
Interaction Term3 (MD3)	.003 (.023)	-.023* (.009)	-.018 (.011)	-.003 (.002)
Constant	1.833 (1.435)	-.769 (.438)	.507 (.443)	.038 (.125)
<u>R</u> Square	.424	.222	.146	.129
Adjusted <u>R</u> Square	.345	.153	.064	.057
Significance <u>F</u>	.0001	.004	.102	.096

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.

Huntington's Assumption

To test H19 (increased military rule will improve economic, education, social, and health performances if a society has a low level of economic development) and H20 (increased military rule will decrease economic, education, social, and health performances if a society has a high level of economic development), I grouped Third World nations into low, medium and high levels of economic development. Using per capita GNPs in 1970 as an indicator of the degree of economic development, I grouped those nations as follows: low development refers to nations having per capita GNPs from 69 to 179 dollars (the 33th percentile and below); medium development refers to nations having per capita GNPs from 180 to 419 (the 34th to 66th percentiles); high development refers to nations having per capita GNPs higher than 419 dollars (the 67th and higher percentiles).

In the multiple regression models, the levels of development are coded as dummy variables. Low level of development is taken as the "excluded" or reference variable whose effect is subsumed the intercept. Table 31 shows that all multiple regression models for both period fail to support Huntington's argument. Only education performance for the second period shows that a regression coefficient for military control in the 1971-1985 period is

statistically significant. It shows that a one unit increase in military control during the 1971-1980 period is expected to increase 1970-1980 education performance by .013, controlling for other independent variables. However, the interaction terms between military control and the levels of development do not show statistically significant values, which indicates that the effects of military control are not contingent on the level of development. If Huntington's argument were correct, the parameter estimates for military control and interaction terms should have been statistically significant and the slope of the low level of development should have a higher value than the slope at the high level of development. For example, education performance has a military control parameter that is statistically significant in both periods. However, its interaction terms are not statistically significant and the slopes for low development and high development for the first period are $-.02$ and $-.01(-.02+.01=-.01)$, respectively. This is contradictory to Huntington's assumption because the slope of high development is higher than the slope of low development.

The directions of the relationship are also mixed, thereby also failing to support the hypotheses. For example, the countries that have higher levels of military control during the 1960-1970 period tend to have a lower level of

TABLE 31

HUNTINGTON'S ASSUMPTION AND CONSEQUENCES OF MILITARY RULE

Dependent Variable	Constant	Military Control (M)	Medium Devel't (E1)	High Devel't (E2)	ME1	ME2	Number of Nations	R Square
<u>First Period</u> (1960-1970)								
Economic Performance	-1.27 (1.20)	-.002 (.02)	1.06 (1.68)	3.59* (1.55)	.01 (.03)	-.02 (.03)	62	.101
Educational Performance	1.34* (.35)	-.02* (.01)	-1.39* (.49)	-2.06* (.48)	.01 (.01)	.01 (.01)	76	.258
Health Performance	-.54 (.31)	.003 (.006)	.47 (.45)	.60 (.44)	.002 (.008)	-.01 (.01)	80	.074
Social Performance	.06 (.10)	.0002 (.002)	-.12 (.15)	.02 (.14)	-.001 (.002)	-.002 (.003)	93	.045
<u>Second Period</u> (1970-1980)								
Economic Performance	.99 (1.87)	.01 (.02)	-.70 (2.16)	-1.24 (2.23)	-.006 (.02)	-.02 (.03)	59	.047
Education Performance	-.42 (.44)	.013* (.005)	.04 (.61)	-.21 (.60)	-.007 (.007)	-.007 (.008)	87	.125
Health Performance	-.75 (.46)	-.004 (.005)	.63 (.59)	1.06 (1.58)	-.001 (.007)	.005 (.008)	81	.107
Social Performance	.17 (.11)	-.001 (.001)	-.28 (.16)	-.21 (.16)	.001 (.002)	.001 (.002)	93	.043

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.

economic performance. But in the second period (1970-1980), countries that have high military control scores tend to have high economic performance scores.

Again, this study supports Jackman's findings (1976) that military governments in the Third World are neither progressive or reactionary, nor do they fit Huntington's model of socioeconomic performance.

The Revisionist Models

H18 (increased military rule increases military expenditures and the size of the military) is not confirmed for either period. Table 32 shows that none of the regression coefficients for military control during the 1971-1980 period is statistically significant. In addition, all regression coefficients for the interaction terms for regions and military control are not statistically significant. Thus, the cross-national analysis of the Third World data during the 1960-1980 period confirms that military regimes do not differ to a statistically significant degree from civilian governments in the size of their military expenditures and the growth in size of their military manpower. Nevertheless, the direction of the relationships is consistent. Countries that have high military control scores tend to decrease their military expenditure in both periods, contrary to the hypothesis.

However, the growth of military manpower in both periods tends to increase for the countries that have high military control scores.

These findings do not support Hill's finding (1979, p. 374) that the higher the level of military intervention, the greater the level of military spending as a proportion of gross domestic product. Hill employed "military intervention" as the independent variable and collected data from both the First World and the Third World during the 1946-1965 period in his analysis. The differences in both independent variable operationalization and time period covered may partially account for the different results of Hill's study and this study.

On the other hand, these results do support Zuk and Thompson's findings (1982) that the rate of increase of military spending for military regimes is not higher than that for civilian regimes in the Third World from 1967 through 1976.

TABLE 32

THE REVISIONIST MODEL AND CONSEQUENCES OF MILITARY RULE

Independent Variables	Dependent Variables			
	First Period (1960-1970)		Second Period (1970-1980)	
	Military Expenditure** (N=94)	Military Growth*** (N=97)	Military Expenditure (N=100)	Military Growth (N=100)
Military Control(M)	-.021 (.043)	.009 (.029)	-4.344 (2.357)	.332 (.399)
S/S Africa (D1)	.792 (3.081)	-.489 (2.016)	-309.698 (211.130)	82.356* (34.308)
Asia (D2)	1.147 (3.519)	.976 (2.405)	-584.573* (248.318)	28.027 (40.737)
Latin America (D3)	-4.626 (3.445)	.177 (2.251)	-581.813* (239.360)	66.490 (39.618)
Interaction Term: MD1	.033 (.075)	.095 (.051)	2.199 (2.985)	-.452 (.497)
Interaction Term: MD2	-.015 (.057)	-.008 (.039)	4.340 (3.815)	-.720 (.637)
Interaction Term: MD3	.029 (.059)	-.024 (.040)	4.374 (3.389)	-.820 (.568)
Constant	9.851 (2.429)	1.880 (1.560)	646.551 (155.473)	3.594 (26.362)
R Square	.066	.080	.111	.099
Adjusted R Square	.009	.008	.044	.035
Signif/F	.533	.359	.130	.156

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.

**For the first period, military expenditures growth is for 1963-1973; for the second, it is for 1971 to 1980.

***For the first period, the growth in size of the military is for the 1963-1973. For the second period, it is for 1971-1980.

Political Performance

H21 (increased military rule decreases political and civil rights) is confirmed in both periods. Table 33 shows that military rule directly affects political and civil rights performance. A one unit increase in military control during the 1971-1980 period is expected to decrease the 1973-1980 political right and civil right indexes by 0.014 and .013, respectively, holding other independent variables constant. The interaction terms show that regional effects are not significant. This result supports McKinlay and Cohan's study (1975) finding that military regimes impose high levels of political restrictions.

Political performance, measured by political and civil rights indexes, shows that military governments restrict political participation and activities. Elections are suspended. Political parties are usually dissolved. The press and mass media do not have full freedom.

The reasons for the restriction on political and civil rights may be explained as follows. First, military officers usually believe that a good nation should keep order. Conflicts among interest groups are not good for the nation. Demonstrations, strikes, and riots by various interest and pressure groups are dangerous for national security. This view comes from the socialization of the officers. They are trained to command and to obey. They are not accustomed to

TABLE 33
POLITICAL PERFORMANCES AND MILITARY RULE

Independent Variables	Dependent Variables	
	Political Right Index (N=109)	Civil Right Index (N=109)
Military Control Scores (M)	-.014* (.005)	-.013* (.004)
S/S Africa (D1)	-1.156* (.475)	-.887* (.428)
Asia (D2)	-.470 (.538)	-.634 (.485)
Latin America (D3)	.846 (.548)	.907 (.494)
MD1	.006 (.006)	.007 (.006)
MD2	.005 (.008)	.008 (.007)
MD3	-.002 (.007)	-.003 (.007)
Constant	3.721 (.365)	3.846 (.329)
<u>R</u> Square	.281	.277
Adjusted <u>R</u> Square	.231	.227
Significance <u>F</u>	.0000	.0000

*The parameter estimate is more than twice its standard error. The numbers in parentheses are the standard errors.

discussion and compromise. Second, military governments are characterized by a low level of political participation and competition and a low level of political penetration from above (Nordlinger, 1977, pp. 110-116). They are different from democratic governments that have a high level of participation and competition for the selection of the rulers. They are different from Communist governments that have a high level of political control and penetration from above.

The consequences of military rule, compared to civilian rule, shows that only the political performance of military regimes is statistically significant and different from civilian governments. Other performances are not statistically significant. Neither progressive nor revisionist models are supported by the Third World data during the 1960-1970 and 1970-1980 periods. In addition, Huntington's assumption is not supported by these data. Therefore, a simple distinction between military and civilian governments is not very useful in understanding the consequences of military rule.

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CHAPTER VII

CONCLUSION

Assessment of the Study

This study uses simple and multiple regression analysis to develop overall and regional models of the causes of military coups and the consequences of military rule in two periods, 1960-1970 and 1971-1985.

The 1960-1970 simple regression models support four hypotheses drawn from the literature:

1. Previous coup experience will increase the probability of coups.
2. The longer the length of national independence, the greater the probability of coups.
3. Higher levels of internal war increase the probability of coups, and
4. Higher levels of military dominance increase the probability of coups.

For the second period (1971-1985), six similarly derived hypotheses were confirmed:

1. Increased social mobilization will decrease the probability of coups.
2. Increased social mobilization will increase the probability of coups, if political institutionalization is low.

3. Previous coup experience will increase the probability of coups.

4. Cultural homogeneity decreases the probability of coups.

5. Dominant ethnic groups in the society decrease the probability of coups, and

6. Higher levels of economic deterioration increase the probability of coups.

While four simple hypotheses were confirmed, the multiple regression model for the first period (1960-1970) included only two useful predictors that account for a modest 15.3% of the variance in military coups. These predictors were previous coup experience (1948-1959) and the internal war index (1958-1969). For the second period (1971-1985), the best multiple regression model used only four independent variables as predictors: previous coup experience (1960-1970), the social mobilization index (1970-1980), the economic deterioration index (1973-1984), and the interaction of social mobilization and political institutionalization. These predictors explained 27.4% of the variance in military coups during the 1971-1985 period.

The results of the study, from both simple and multiple regression analysis, suggest two basic conclusions. First, three independent variables have stabilizing consequences: social mobilization, cultural homogeneity, and

dominant ethnic groups in the society. Increased social mobilization decreases the probability of coups. It supports Finer's assumption (1966, pp.86-88) and Putnam's (1967, p. 85) discussion: increased social mobilization increases the number of political actors who are willing to participate and sustain civilian governments. Cultural homogeneity and dominant ethnic groups in the society decrease the probability of coups. This supports for the view that the competition among different ethnic groups in the society leads to political instability (Kuper and Smith, 1969, pp. 7-26).

Second, it appears that six independent variables have destabilizing consequences: previous coup experience, social mobilization divided by political institutionalization, length of national independence, economic deterioration, internal war, and military dominance. Social mobilization divided by political institutionalization is an interaction term used to test Huntington's thesis (1968, p. 47): increased social mobilization will increase the probability of coups, if political institutionalization is low. Length of national independence is an indicator to test Wayman's assumption (1975, p. 62) that there is a low level of military coups for the first years of national independence because the military waits to see the performance of civilian government. Previous coup experience, economic

deterioration, internal war, and military dominance are variables that "cause" political instability.

Multiple regression models for each region were very useful since each model explained more than 50% of the variance in military coups. The predictors for the Sub-Saharan African model were economic deterioration, presence of foreign troops, and years of national independence. The predictors for Asian model were internal war and military dominance. The predictors of the Latin American model were previous coup experience and political turmoil. Finally, two useful predictors in the Middle East and North African model were previous coup experience and years of national independence.

The results of regional model suggests two conclusions. First, each region has unique characteristics concerning political instability or military coups. For example, the model of military coups in Asia is based on two significant variables: internal war and military dominance. In contrast, the model of military coups in Latin America is based on previous coup experience and political turmoil. Second, the time period covered is an important factor in explaining the "causes" of military coups; some significant independent variables for the first period (1960-1970) are not significant for the second period (1971-1985).

In the analysis of the consequences of military rule, only one hypothesis was confirmed in both periods. This hypothesis stated that increased military rule decreases political and civil rights. Other findings concerning the consequences of military rule were negative: military governments do not differ significantly from civilian governments in terms of economic, education, health, and social performances. When regions and level of development are controlled, the results of analysis are the same. No statistical significant link exists between the performances of civilian governments and those of military governments.

Implications

Two implications should be advanced for further studies. First, a future empirical study on the causes of military coups should be supplemented with a strong regional knowledge since a regional model is very useful. In addition, causal and non-recursive models should be employed in future analysis in order to find relationships among independent variables affecting to military coups.

Second, regime types may more appropriate than a simple distinction between military and civilian governments for a future study of the consequences of military rule. Characteristics of military regimes may be classified into various patterns according to the degree of convergence between the military and civilians in each government, for

example (Kossok, 1971; Perlmutter, 1980; and Hanneman, 1985). However, one problem in employing regime types to analyze the performance of military regimes is the changing roles of the military in politics in each nation. Therefore, it is very difficult to use a cross national design to study this topic. A researcher would probably need to employ longitudinal or time-series analysis.

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APPENDIX A

APPENDIX A

THIRD WORLD NATIONS AND COUP SCORES

ID CODE = Identification code of each nation
 REGION: 1 = Sub-Saharan Africa;
 2 = Asia; 3 = Latin America;
 4 = Middle East and North Africa; 5 = Other
 COUP1 = Coup scores during 1960-1970
 COUP2 = Coup scores during 1971-1985
 EXP.1 = Coup experience during 1948-1959
 EXP.2 = Coup experience during 1960-1970
 EXP.1 and EXP.2: 0 = absence; 1 = presence

NATION	ID CODE	REGION	COUP1	COUP2	EXP.1	EXP.2
AFGHANISTAN	700	2	0	23	0	0
ALGERIA	615	4	24	3	1	1
ANGOLA	540	1	3	8	0	1
ARGENTINA	160	3	41	16	1	1
BANGLADESH	771	2	0	23	0	0
BENIN	434	1	39	23	0	1
BHUTAN	760	2	0	0	0	0
BOLIVIA	145	3	24	46	1	1
BOTSWANA	571	1	0	0	0	0
BRAZIL	140	3	5	0	1	1
BURMA	775	2	5	3	1	1
BURUNDI	516	1	16	11	0	1
CAMEROON	471	1	0	3	0	0
CENTRAL AFRICAN	482	1	5	13	0	1
CHAD	483	1	0	19	0	0
CHILE	155	3	6	8	1	1
CHINA	710	2	12	0	1	1
COLOMBIA	100	3	8	0	1	1
CONGO	484	1	30	8	0	1
COSTA RICA	94	3	0	0	1	0
CUBA	40	3	3	0	1	1
CYPRUS	352	5	3	5	0	1
DOMINICAN REP.	42	3	32	0	0	1
ECUADOR	130	3	35	16	1	1
EGYPT	651	4	6	13	1	1
EL SALVADOR	92	3	16	11	1	1
ETHIOPIA	530	1	3	29	0	1
FIJI	950	5	0	0	0	0
GABON	481	1	13	0	0	1
GAMBIA	420	1	0	3	0	0
GHANA	452	1	8	32	0	1

GREECE	350	5	13	8	0	1
GUATEMALA	90	3	8	10	1	1
GUINEA	438	1	0	8	0	0
GUINEA-BISSAU	404	1	0	5	0	0
GUYANA	110	3	0	0	0	0
HAITI	41	3	14	3	1	1
HONDURAS	91	3	5	10	1	1
HONG KONG	720	2	0	0	0	0
INDIA	750	2	0	0	0	0
INDONESIA	850	2	14	0	1	1
IRAN	630	4	0	13	1	0
IRAQ	645	4	54	6	1	1
ISRAEL	666	4	0	0	0	0
IVORY COAST	437	1	0	0	0	0
JAMAICA	51	3	0	0	0	0
JORDAN	663	4	0	0	1	0
KAMPUCHEA	811	2	5	18	1	1
KENYA	501	1	0	3	0	0
KOREA (NORTH)	731	2	0	0	0	0
KOREA (SOUTH)	732	2	15	6	1	1
KUWAIT	690	4	0	0	1	0
LAOS	812	2	42	26	0	1
LEBANON	660	4	3	3	1	1
LESOTHO	570	1	5	0	0	1
LIBERIA	450	1	0	17	0	0
LIBYA	620	4	11	6	0	1
MADAGASCAR	580	1	0	10	0	0
MALAWI	553	1	0	0	0	0
MALAYSIA	820	2	0	0	0	0
MALI	432	1	10	0	1	1
MAURITANIA	435	1	0	13	0	0
MAURITIUS	590	1	0	0	0	0
MEXICO	70	3	0	0	0	0
MONGOLIA	712	2	0	0	0	0
MOROCCO	600	4	0	9	1	0
MOZAMBIQUE	541	1	0	0	0	0
NEPAL	790	2	5	0	1	1
NICARAGUA	93	3	3	5	1	1
NIGER	436	1	3	11	0	1
NIGERIA	475	1	8	18	0	1
OMAN	698	4	0	0	0	0
PAKISTAN	770	2	8	11	1	1
PANAMA	95	3	13	0	1	1
PAPUA NEW GUINEA	910	5	0	0	0	0
PARAGUAY	150	3	0	0	1	0
PERU	135	3	15	8	1	1
PHILIPPINES	840	2	0	0	0	0
PORTUGAL	235	5	3	17	0	1
RWANDA	517	1	0	5	0	0
SAUDI ARABIA	670	4	0	3	0	0
SENEGAL	433	1	9	0	0	1
SIERRA LEONE	451	1	13	9	0	1

SINGAPORE	830	2	0	0	0	0
SOUTH AFRICA	560	1	0	0	0	0
SOMALIA	520	1	8	3	0	1
SRI LANKA	780	2	3	0	0	1
SUDAN	625	1	18	21	1	1
SWAZILAND	572	1	0	3	0	0
SYRIA	652	4	48	0	1	1
TAIWAN	713	2	0	0	0	0
TANZANIA	510	1	0	0	0	0
THAILAND	800	2	0	29	1	0
TOGO	461	1	18	0	0	1
TRINIDAD&TOBAGO	52	3	0	0	0	0
TUNISIA	616	4	0	0	1	0
TURKEY	640	4	11	10	0	1
UGANDA	500	1	5	45	0	1
UNITED ARAB EMI.	696	4	0	0	0	0
UPPER VOLTA	439	1	5	20	0	1
URUGUAY	165	3	3	20	0	1
VENEZUELA	101	3	27	0	1	1
VIETNAM (SOUTH)	817	2	41	3	1	1
YEMEN (NORTH)	678	4	34	16	1	1
YEMEN (SOUTH)	680	4	8	5	0	1
YUGOSLAVIA	345	5	0	0	0	0
ZAIRE	490	1	13	3	0	1
ZAMBIA	551	1	0	3	0	0
ZIMBABWE	552	1	5	0	0	1

APPENDIX B

APPENDIX B

THIRD WORLD NATIONS AND MILITARY CONTROL SCORES

INDEPENDENCE = Years score of national independence
 MILITARY1 = Military control scores during 1960-70
 MILITARY2 = Military control scores during 1971-80
 TROOP1 = Foreign troops during 1960-70
 TROOP2 = Foreign troops during 1971-80
 TROOP1 and TROOP2: 0=absence; 1=presence

NATION	INDEPENDENCE	MILITARY1	MILITARY2	TROOP1	TROOP2
AFGHANISTAN	66	0	90	0	1
ALGERIA	23	66	120	1	1
ANGOLA	10	0	0	1	1
ARGENTINA	169	65	84	0	0
BANGLADESH	14	-9	64	0	0
BENIN	25	38	108	1	0
BHUTAN	210	0	0	0	0
BOLIVIA	160	132	118	0	0
BOTSWANA	19	0	0	1	1
BRAZIL	163	79	120	0	0
BURMA	37	105	120	0	0
BURUNDI	23	49	120	0	0
CAMEROON	25	0	0	1	1
CENTRAL AFRICAN	25	60	105	0	0
CHAD	25	0	69	1	1
CHILE	175	0	87	0	0
CHINA	36	0	0	0	0
COLOMBIA	174	0	0	0	0
CONGO	25	28	120	1	1
COSTA RICA	164	0	0	0	0
CUBA	83	0	0	1	1
CYPRUS	25	0	5	1	1
DOMINICAN REP.	141	33	0	0	0
ECUADOR	163	72	77	0	0
EGYPT	63	132	120	1	0
EL SALVADOR	164	126	120	0	0
ETHIOPIA	210	0	75	1	1
FIJI	15	0	0	1	0
GABON	25	0	0	1	1
GAMBIA	20	0	0	1	1
GHANA	28	53	81	0	0
GREECE	155	37	43	1	1
GUATEMALA	164	36	0	0	0
GUINEA	27	0	0	0	1

GUINEA-BISSAU	12	0	2	1	1
GUYANA	19	0	0	0	0
HAITI	181	0	0	0	0
HONDURAS	147	87	96	0	0
HONG KONG	0	0	0	1	1
INDIA	38	0	0	0	0
INDONESIA	40	57	120	0	0
IRAN	210	0	0	0	1
IRAQ	53	132	120	0	1
ISRAEL	37	0	0	0	0
IVORY COAST	25	0	0	1	1
JAMAICA	23	0	0	0	0
JORDAN	39	0	0	1	1
KAMPUCHEA	32	9	51	0	1
KENYA	22	0	0	1	1
KOREA (NORTH)	40	0	0	0	0
KOREA (SOUTH)	37	115	120	1	1
KUWAIT	24	0	0	1	0
LAOS	36	124	56	1	1
LEBANON	44	0	0	0	0
LESOTHO	19	0	0	1	1
LIBERIA	138	0	9	0	0
LIBYA	34	16	120	0	1
MADAGASCAR	25	0	99	1	1
MALAWI	21	0	0	1	1
MALAYSIA	28	0	0	1	1
MALI	25	25	120	0	1
MAURITANIA	25	0	30	1	1
MAURITIUS	17	0	0	1	1
MEXICO	175	0	0	0	0
MONGOLIA	64	0	0	1	1
MOROCCO	29	0	0	0	1
MOZAMBIQUE	10	0	0	1	1
NEPAL	210	0	0	0	0
NICARAGUA	147	0	0	0	0
NIGER	25	0	80	1	1
NIGERIA	25	60	105	0	0
OMAN	34	0	0	0	0
PAKISTAN	38	132	53	0	0
PANAMA	82	27	120	1	1
PAPUA NEW GUINEA	10	0	0	1	0
PARAGUAY	174	132	120	0	0
PERU	164	39	113	0	0
PHILIPPINES	39	0	0	1	1
PORTUGAL	75	0	26	0	1
RWANDA	23	0	90	1	1
SAUDI ARABIA	53	0	0	0	0
SENEGAL	25	0	0	1	1
SIERRA LEONE	24	13	0	1	1
SINGAPORE	20	0	0	1	0
SOUTH AFRICA	51	0	0	1	1
SOMALIA	25	13	120	0	0

SRI LANKA	37	0	0	0	0
SUDAN	29	79	120	0	0
SWAZILAND	17	0	0	0	0
SYRIA	39	93	120	1	1
TAIWAN	36	0	0	1	1
TANZANIA	22	0	0	0	0
THAILAND	210	132	107	1	0
TOGO	25	48	120	1	1
TRINIDAD&TOBAGO	23	0	0	0	0
TUNISIA	29	0	0	0	0
TURKEY	62	65	32	1	1
UGANDA	23	0	99	1	0
UNITED ARAB EMI.	14	0	0	0	0
UPPER VOLTA	25	60	120	1	1
URUGUAY	157	0	94	0	0
VENEZUELA	174	0	0	0	0
VIETNAM (SOUTH)	31	86	52	1	0
YEMEN (NORTH)	67	99	120	1	1
YEMEN (SOUTH)	18	6	120	1	1
YUGOSLAVIA	67	0	0	0	0
ZAIRE	25	61	120	1	1
ZAMBIA	21	0	0	1	0
ZIMBABWE	5	0	0	1	1

APPENDIX C

APPENDIX C

ELECTORAL SYSTEMS OF THE THIRD WORLD

A. Countries for which elections were scored as competitive and reasonable free. The year of election is in parenthesis.

Botswana (1965)	Ceylon or Sri Lanka (1965)
Chile (1965)	Costa Rica (1966)
Ecuador (1966)	El Salvador (1966)
Gambia (1966)	Greece (1964)
Guyana (1964)	India (1967)
Israel (1965)	Jamaica (1962)
Lebanon (1964)	Malaysia (1964)
Mexico (1964)	Nepal (1959)
Pakistan (1965)	Panama (1964)*
Papua New Guinea (1964)	Peru (1963)
Philippines (1965)	Thailand (1957)*
Trinidad and Tobago (1966)*	Turkey (1965)
Uganda (1963)	Uruguay (1966)

Note: Charles Taylor and Michael Hudson listed Panama, Thailand, and Trinidad and Tobago having the electoral system in Type A. However, data for voters as a percentage of electorate were missing. Thus, These nation were coded as missing data in analysis.

B. Countries for which elections were scored as displaying significant deviation from the competitive and free norm:

Afghanistan (1965)	Argentina (1963)
Bolivia (1964)	Brazil (1966)
Burma (1960)	Burundi (1965)
Cambodia (1962)	Colombia (1966)
Congo-Kinshasa (1965)	Cyprus (1960)
Dahomey or Benin (1959)	Dominican Republic (1966)
Ethiopia (1965)	Guatemala (1964)
Iran (1963)	Jordan (1963)
Kenya (1963)	South Korea (1963)
Kuwait (1963)	Laos (1965)
Lesotho (1965)	Libya (1965)
Morocco (1963)	Nigeria (1964)
Rwanda (1965)	Senegal (1966)
Singapore (1963)	Sudan (1965)
South Vietnam (1966)	Syria (1961)
Tanzania (1965)	Tunisia (1964)
Venezuela (1963)	Yugoslavia (1966)
Zambia (1964)	

C. Countries for which elections were scored as displaying extreme deviation from the competitive and free norm:

Algeria (1964)	China (1962)
Ghana (1965)	Guinea (1963)
Haiti (1961)	Indonesia (1960)
Iraq (1958)	Ivory Coast (1965)
Liberia (1963)	Nicaragua (1967)
Niger (1965)	North Korea (1962)
Paraguay (1963)	Portugal (1965)
Rhodesia (1965)	Sierra Leone (1965)
South Africa (1966)	Togo (1963)
United Arab Republic (1964)	

Sources: Charles L. Taylor and Michael C. Hudson. 1976. World Handbook of Political and Social Indicators. Second Edition. New Haven: Yale University Press, p. 57.

APPENDIX D

APPENDIX D

CODE BOOK

NUMBER	VARIABLE	CONTENTS OF COLUMNS	VALUE
1-3	V1	NATION ID CODE	.....
5	V2	AREAS	.....
7-8	V3	COUP SCORES 1960-70	.....
10-11	V4	COUP SCORES 1971-85	.....
13-15	V5	MILITARY CONTROL 1960-70	.....
16-18	V6	MILITARY CONTROL 1971-80	.....
19-22	V7	G/R OF URBANIZATION 1960-70	.....
23-28	V8	% INCREASE LITERACY 1960-70	.....
30-35	V9	% INCREASE NEWSPAPER 1960-70	.....
36-41	V10	% INCREASE RADIO 1960-1970	.....
42-45	V11	% DECREASE AGRI/LABOR 60-70	.....
46-49	V12	G/R OF URBANIZATION 1973-84	.....
51-56	V13	% INCREASE LITERACY 1970-80	.....
57-62	V14	% INCREASE NEWSPAPER 1970-80	.....
1-6	V15	% INCREASE RADIO 1970-80	.....
7-10	V16	% DECREASE AGRI/LABOR 70-80	.....
12-17	V17	% INCREASE CENTRAL EX. 60-71	.....
18-23	V18	% INCREASE CENTRAL EX. 71-80	.....
25	V19	COUP EXPERIENCE 1948-59	.....
26	V20	COUP EXPERIENCE 1960-70	.....
27-29	V21	YEARS SCORE OF INDEPENDENCE	.....
30-32	V22	% THE LARGEST ETHNIC GROUP	.....
33-35	V23	% HOMOGENOUS LANG/ETHNIC	.....
35-39	V24	PER CAPITA GNP 1960	.....
40-41	V25	% OF GDP P/B INDUSTRY 1960	.....
42-45	V26	% OF LABOR IN INDUSTRY 1960	.....
46-50	V27	PER CAPITA GNP 1970	.....
51-52	V28	% OF GDP P/B INDUSTRY 1970	.....
53-56	V29	% OF LABOR IN INDUSTRY 1970	.....
57-60	V30	A/R OF UNEMPLOYMENT 1961-70	.....
61-64	V31	A/R OF UNEMPLOYMENT 1972-81	.....
1-3	V32	% OF PRIMARY COM/EXPORT 1960	.....
4-6	V33	% OF EXPORT FOR PARTNER 1960	.....
7-9	V34	% OF PRIMARY COM/EXPORT 1975	.....
10-12	V35	% OF EXPORT FOR PARTNER 1975	.....
13-17	V36	VOTER TURNOUT IN 1965	.....
18-19	V37	ELECTORAL SYSTEM IN 1965	.....
20-24	V38	VOTER TURNOUT IN 1975	.....
25-29	V39	% OF VOTER FOR L/PARTY 1975	.....
30-33	V40	NUMBER OF PROTEST 1958-69	.....
34-37	V41	NUMBER OF RIOTS 1958-69	.....

38-41	V42	NUMBER OF POL/STRIKE1958-69
42-45	V43	NUMBER OF PROTEST 1970-1977
46-49	V44	NUMBER OF RIOTS 1970-77
50-53	V45	NUMBER OF POL/STRIKE1970-77
54-57	V46	NUMBER OF A/ATTACKS 1958-69
58-64	V47	DEATHS OF D/POL VIO.1958-69
1-4	V48	NUMBER OF A/ATTACKS 1970-77
5-11	V49	DEATHS OF D/POL VIO.1970-77
12-14	V50	% OF MILITARY EXP. 1965
15-18	V51	% OF MIL/REVENUE IN 1960
19-21	V52	MILITARY PER 1,000 IN 1965
22-24	V53	% OF MILITARY EXP. 1975
25-27	V54	% OF MIL/REVENUE IN 1971
28-30	V55	MILITARY PER 1,000 IN 1975
32	V56	FOREIGN TROOPS 1960-70
33	V57	FOREIGN TROOPS 1971-80
34-37	V58	G/R OF GDP 1960-70
38-41	V59	G/R GNP PER CAPITA 1960-76
42-45	V60	G/R INVESTMENT 1960-70
46-49	V61	G/R INDUSTRY 1960-70
50-53	V62	G/R AGRICULTURE 1960-70
54-57	V63	G/R EXPORTS 1960-70
58-61	V64	G/R IMPORTS 1960-70
1-4	V65	A/R INFLATION 1960-70
5-8	V66	G/R OF GDP 1973-84
9-12	V67	G/R GNP PER CAPITA 1965-84
13-17	V68	G/R INVESTMENT 1973-84
18-21	V69	G/R INDUSTRY 1973-84
22-25	V70	G/R AGRICULTURE 1973-84
26-29	V71	G/R EXPORTS 1973-84
30-33	V72	G/R IMPORTS 1973-84
34-38	V73	A/R INFLATION 1973-84
39-42	V74	% INCREASE SE/SCHOOL 1960-70.....
43-48	V75	% INCREASE HIGHER ED 1960-70.....
49-53	V76	% INCREASE SE/SCHOOL 1970-80.....
54-59	V77	% INCREASE HIGHER ED 1970-80.....
60-62	V78	POL/RIGHT INDEX 1973-80
1-3	V79	CIVIL RIGHT INDEX 1973-80
4-8	V80	% LIFE EXPECTATION 1960-70
9-14	V81	% RE INF/MORTALITY 1960-70
15-20	V82	% INCREASE PHYSICIAN 1960-70.....
22-26	V83	% LIFE EXPECTATION 1970-80
27-32	V84	% RE INF/MORTALITY 1970-80
33-38	V85	% INCREASE PHYSICIAN 1970-80.....
40-44	V86	MILI/EXP. GROWTH 1963-73
45-49	V87	G/Z OF MILITARY 1963-73
50-55	V88	% INCREASE MILI/EXP.1971-80
56-61	V89	% INCREASE MILITARY 1971-80

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APPENDIX E

APPENDIX E

THE MATRIX OF CORRELATIONS AMONG PREDICTORS FROM
TABLE 20

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11
X2	.05	1.00	-.22	.25	-.02	.12	-.09	.32	.26	-.05	-.22
X3	.14	-.22	1.00	-.19	.12	.02	.12	-.38	-.06	.35	.31
X4	-.05	.25	-.19	1.00	-.13	-.00	-.12	.23	-.10	-.11	.13
X5	-.14	-.02	.12	-.13	1.00	.02	.34	.18	-.16	-.05	.34
X6	.01	.12	.02	-.00	.02	1.00	.18	-.01	-.30	-.07	-.05
X7	-.02	-.09	.12	-.12	.34	.18	1.00	-.11	-.49	.01	.31
X8	-.23	.32	-.38	.23	.18	-.01	-.11	1.00	.05	-.36	.08
X9	.10	.26	-.06	-.10	-.16	-.30	-.49	.05	1.00	.07	-.23
X10	.03	-.05	.35	-.11	-.05	-.07	.01	-.36	.07	1.00	-.21
X11	-.15	-.22	.31	.13	.34	-.05	.31	.08	-.23	-.21	1.00

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