

A theory of revolution

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Overview

The focus of this study is an empirical examination of some causes of revolution.¹ While prior studies have delineated dimensions of conflict behavior within nations (Rummel, 1963, 1966, 1967; Tanter, 1965, 1966) in order to discover the variables most representative of internal conflict, a purpose of the present inquiry is to discover their theoretical significance. A typology of revolution is presented and two possible causes of revolution—changes in economic development and level of education—are examined regarding the extent of their association with certain characteristics of revolution. Regional differences are found which imply a fundamental distinction between at least two of the categories in the typology.

¹This study is a part of a series on revolutions and their implications for international relations and especially some consequences for international business communities. Acknowledgments are due to Harold Guetzkow of the International Relations Program at Northwestern University for his suggestions during formative stages of this inquiry. Thanks are due to the Ford Foundation for a fellowship given to the junior author and to the National Science Foundation for its assistance to the senior author. Helpful comments were made by Richard A. Brody, James C. Davies, and Robert C. North.

Finally, hypotheses are offered to account for some of the findings of this study.

A Categorization of Revolutions

Prior to a discussion of theoretical significance, it may be useful to inquire into the meaning of revolution itself. This exercise in definition appears necessary primarily because prior usage of the term has been somewhat ambiguous. To the Hegelian, the revolutionary idea is equated with irresistible change—a manifestation of the world spirit in an unceasing quest for its own fulfillment. Similarly, the Marxist, although opposed to Hegelian idealism, sees revolution as a product of irresistible historical forces, which culminate in a struggle between the bourgeoisie and the proletariat. Hannah Arendt (1965, pp. 34–40), on the other hand, interprets the revolutionary experience as a kind of restoration, whereby the insurgents attempt to restore liberties and privileges which were lost as the result of the government's temporary lapse into despotism. Indeed, aspects of the American Revolution as well as some recent anti-colonial revolutions may be amenable to Arendt's interpretation. The insurgents might view the colonial elite as strangers who have usurped the freedoms which,

TABLE 1
CHARACTERISTICS OF FOUR TYPES OF REVOLUTION

Type of revolution	Mass participation	Duration	Domestic violence	Intentions of the insurgents
Mass revolution	High	Long	High	Fundamental changes in the structure of political authority and the social system
Revolutionary coup	Low	Short to moderate	Low to moderate	Fundamental changes in the structure of political authority and possibly some change in the social system
Reform coup	Very low	Short, sometimes moderate	Low	Moderate changes in the structure of political authority
Palace revolution	None	Very short	Virtually none	Virtually no change

mythically or otherwise, once belonged to the people now in revolt.

Tocqueville (1955, p. 8), on the other hand, has employed a more empirical approach to the problem of revolution, and has defined it as an overthrow of the legally constituted elite, which initiated a period of intense social, political, and economic change. Crane Brinton (1952, pp. 3-4) has continued this empirical thrust by differentiating between the *coup d'état*, as a simple replacement of one elite by another, and major revolutions such as the French or Russian, which were accompanied by social, political, and economic changes. Similarly, with respect to Latin America, George Blanksten (1962, p. 72) suggests that we should distinguish between the *coup d'état* and revolutions such as the Mexican experience, which eventually had profound consequences for the structure of that society.

The distinction between two forms of revolution may provide a basis for the development of further classifications. For example, Harold Lasswell and Abraham Kaplan (1950, p. 252) present a further refinement in the classification of revolution by the introduction of a three-category typology in which they differentiate between palace revolutions, political revolutions, and social revolutions. Edwin Lieuwen (1960,

pp. 22-24) constructs a similar classification, but instead of the palace revolution he discusses "*caudillismo*" (predatory militarism), which is a common form of the *coup d'état* in Latin America. These three forms of revolution appear to reflect an increasing degree of change initiated by the successful insurgents, and may be placed on a rank-order of increasing political or social change. James Rosenau, in fact, constructs such a classification of revolution.

Personnel wars are defined by Rosenau as those which are fought over the occupancy of existing roles in the structure of political authority (Rosenau, 1964, pp. 63-64). An example of this type is the palace revolution or Latin American *caudillismo*. A second category is what Rosenau calls the authority wars, or those in which the insurgents compete not only for the occupancy of roles in the political structure, but for their arrangement as well. Struggles to replace dictatorships with democracies would be classified as authority wars. The final classification is that of the structural wars, in which the goal of the insurgents is the introduction of social and economic changes in the society. Wars involving Communist factions would fall under this heading. In addition, Rosenau notes that structural wars contain elements of both personnel and authority wars.

Changes in the occupancy of government roles, as well as the arrangement of these roles, would automatically take place if the insurgents were successful in a structural war. Similarly, the authority war is personnel-oriented, because the arrangement of political roles would seldom, if ever, be altered without a change in the occupancy of these roles. In Rosenau's ranking of the three types of internal war, personnel wars would occupy the lowest rank with regard to the degree of societal change; the authority wars would occupy an intermediate rank, and the structural wars would receive the highest rank.

Samuel Huntington (1962, pp. 23–24) has suggested a classification of revolution in which four categories are enumerated: the internal war, the revolutionary coup, the reform coup, and the palace revolution. Huntington's use of the concept "internal war" differs from the meaning attributed to that concept in earlier systematic studies. For that reason the term mass revolution² will be substituted for internal war as used by Huntington. The terms mass revolution and palace revolution correspond respectively to Rosenau's structural and personnel wars, while the revolutionary and reform coups both may be placed under the heading of the authority wars. Kemal Ataturk's revolution in Turkey, for example, illustrates what Huntington might call a revolutionary coup, whereas the 1955 coup in Argentina might be classified as a reform coup. The

² One may also distinguish between various types of mass revolution. Lawrence Stone (1966, pp. 162–63), for example, presents a typology which differentiates among the *Jacquerie*, the *Anarchistic Rebellion*, the *Jacobin Communist Revolution* and the *Militaristic Mass Insurrection*. However, a purpose of this study is to compare the larger categories of revolution (e.g., mass revolution vs. palace revolution) rather than to engage in a detailed examination of subcategories.

major difference between the two forms is in the degree of change initiated in the structure of the political authority. The "Young Turks" implemented a complete revision of the political authority which led to a truncation of the Ottoman Empire and the establishment of a republic. The revolt against Peron, on the other hand, was an attempt at reform, in that Peron's mismanagement of the economy and the dissatisfaction of major political forces, such as the Roman Catholic Church, led to a revolt against what had become an oppressive political executive.

The existence of several *types* of revolution suggests that we might be able to isolate different *characteristics* of revolution. Karl Deutsch (1964, pp. 102–104) proposes that the degree of mass participation in a revolution, as well as its duration, may be essential to an adequate description of the revolutionary experience. A third characteristic may be the number killed as a result of the revolution. Given a high degree of commitment by the insurgents and the incumbents, the number of persons killed both during and after the revolution may be a measure of intensity. This measure will be discussed more fully at a later point. Finally, the intentions of the insurgents may be critical to the form of the revolution as well as to its eventual outcome. If the successful insurgents are ideologically committed to certain goals, then they may initiate changes in the societal structure to effect the realization of these goals. If, on the other hand, the insurgents have no particular ideological orientation, then they might intend to replace the incumbents in the structure of political authority without recourse to changes in the societal structure.

Table 1 contains a rank-order of the categories of revolution based on their position with respect to mass participation, duration, domestic violence, and the intentions of the

TABLE 2
FOUR TYPES OF REVOLUTION^a

Mass revolution	Revolutionary coup	Reform coup	Palace revolution
French (1789) ^b	Turkish (1919)	Argentinian (1955)	Venezuelan (1948)
American (1776)	Nazi (1933)	Syrian (1956)	Brazilian (1955)
Russian (1917)	Egyptian (1952)	Jordanian (1957)	Colombian (1953, 1957)
Chinese (1949)	Iraqi (1958)	Thai (1957, 1958)	Honduran (1956)
Viet Minh (1954)		Burmese (1958)	Guatemalan (1957)
Cuban (1959)		French (1958)	Haitian (1957)
Algerian (1962) ^c		Pakistani (1958)	El Salvador (1960)
		Sudanese (1958)	
		Venezuelan (1958)	
		Turkish (1960)	
		Dominican Republic (1963)	
.....			
French } German } (1848) Austrian }			
French (1871)			
Huk (1948)			
Malayan (1956)			
Hungarian (1956)			

^a Unsuccessful revolutions are indicated below the dotted line.

^b The date in parentheses refers to the year in which the insurgents were either defeated or seized the roles in the structure of political authority.

^c The Algerian revolution of 1962 refers to the anti-colonial revolt of the Algerian independence movement, whereas the French revolution of 1958 applies to the fall of the French Fourth Republic.

insurgents. We may now suggest a definition of revolution which would be designed to include the categories in Table 1, as well as to allow for the possibility of a continuum. A revolution may be said to exist when a group of insurgents illegally and/or forcefully challenges the governmental elite for the occupancy of roles in the structure of political authority. A successful revolution occurs when, as a result of a challenge to the governmental elite, insurgents are eventually able to occupy principal roles within the structure of the political authority. This is not to say that once the insurgents have occupied these roles, the structure of political authority will remain unchanged. As suggested above, changes in the personnel of the governmental elite often are the precondition for meaningful changes in the political and social structure. If the insurgents intend major political and social changes, they must first occupy these roles

within the political structure. This definition, then, sets a lower bound or minimum criterion for the existence of revolution.

Table 2 provides examples of the four types of revolution. This table is not meant to be exhaustive, but serves to provide a listing of those revolutions judged by the authors to be illustrative of the particular categories.³ The dotted line in Column 1 separates successful mass revolutions from those which were unsuccessful. In addition, instances of both successful and unsuccessful anti-colonial revolutions are included to indicate the possible similarity of this type to the general mass revolution. Having provided such illustrative material, a next step is to provide the operational referents for the examination of causes of revolution.

³ Other writers such as Gross (1958), Huntington (1962), and Silvert (1961) are in substantial agreement with this classification.

Empirical Referents

Two of the four measures—duration and domestic violence—may be interpreted as defining characteristics of revolution, and taken together may be seen as a measure of revolutionary intensity.⁴ Domestic violence, for example, is present in the majority of revolutions. If the population is indifferent to changes in the personnel of the governmental elite, then a palace revolution may be initiated by insurgents. They may encounter opposition only from the incumbent elite. Because of the lack of large-scale, organized conflict behavior, the number of deaths would be at a minimum, and the duration of such a revolution would be short. If, however, the insurgents proclaim their intention to initiate changes in the social structure, then large segments of the population may be alienated from the insurgent cause. The number of deaths, and possibly the duration of the revolution, may increase proportionally to the degree of societal change envisaged by the insurgents. Similarly, the duration of a revolution has been cited as a possible measure of revolutionary

⁴ The degree of mass participation as well as the intentions of the insurgents are less satisfactory as empirical referents. Mass participation might range from popular dissatisfaction without direct involvement, on the one hand, to overt complicity and active support of the insurgents, on the other. Thus, measurement of mass participation presents a great deal of difficulty unless the researcher is present at the site of the revolution and is able to measure public opinion at the time the revolution takes place. Similarly, the intentions of the insurgents, although important as a descriptive variable, nevertheless present important problems of measurement. Intentions and ideological directions are subject to changes during the process of revolution. Fidel Castro, for example, proclaimed his support for the goals of the Cuban middle class during the recent Cuban revolution, yet once in power he allied himself with the Communists.

TABLE 3
DEATHS AND DURATION FOR SUCCESSFUL
REVOLUTIONS, 1955-60

Revolution ^a	Deaths as a result of domestic group violence ^b	Duration ^c (in days)
Cuba (1959)	2900	2190
Iraq (1958)	344	3
Colombia (1957)	316	7
Argentina (1955)	217	86
Burma (1958)	152	1
Honduras (1956)	111	90
Venezuela (1958)	111	21
Guatemala (1957)	57	10
Syria (1956)	44	2
Haiti (1957)	16	36
Pakistan (1958)	9	19
Jordan (1957)	7	15
Thailand (1957)	3	1
Thailand (1958) ^d	3	1
El Salvador (1960)	2	50
Brazil (1955)	1	2
Turkey (1960)	0.9	33
France (1958)	0.3	19

^a The data sources for Column 1 are the raw data for Rummel (1963), Tanter (1965), and the *New York Times*. Two countries which experienced successful revolutions, Sudan (1958) and Laos (1960), were excluded because of missing data on deaths.

^b Per million population, 1950-62 (Russett *et al.*, 1964, pp. 97-100).

^c Data relevant to the duration of revolutions were drawn from the *New York Times*.

^d Both the 1957 and 1958 Thai revolts were initiated by the same individual, the commander-in-chief of the army, Sarit Thanarat. In addition, the 1958 coup took place with the express agreement of the "ousted" Kittikachorn government. For these reasons, this latter instance is omitted from the subsequent analysis although, for the sake of completeness, it is included in this listing.

intensity (Rosenau, 1964, pp. 76-77). Many Latin American palace revolutions are of short duration, and the number killed is relatively small. Indeed, bloodless coups often occur in which no one is killed, but a new set of elites assumes the major roles in the political authority structure. Revolutions such as the French and the Russian, however, are of longer duration and a greater number of persons are killed.

The two measures—duration and deaths from domestic violence—are presented in Table 3. The first column lists all successful revolutions which occurred between

1955 and 1960. The criterion for the inclusion of a revolution was that the revolt ended sometime within that period.⁵ Column 2 lists the number killed as a result of domestic group violence, per million population. These figures are for the period 1950-62. An alternative would be to construct an index on the basis of the number killed during the period of the revolution itself. However, the number killed during a revolutionary coup lasting a few days may not be indicative of the characteristics of that revolution. For example, thirty persons were killed during the Iraqi revolution of 1958. Two of these were the king, Faisal, and his prime minister, Nuri. The intensity of feeling against the government was manifested when the populace dragged the king's body through the streets of Baghdad. The death of thirty people would seem to be an inadequate reflection of this degree of intensity. However, if we examine the number of deaths *prior* to the revolution and *after* its occurrence, we find that Iraq experienced the second highest number of deaths per million population of any revolution during the period 1955-60. Similarly, Venezuela, which experienced the overthrow of the Jimenez dictatorship, also had one of the highest numbers of deaths as a result of domestic violence. The inclusion of the number of deaths prior to and after a revolution might be indicative of the frustration

built up after a long period of repression. A revolution generally occurs after a period of instability, and it is suggested in this paper that the form of a revolution is dependent on the degree of political instability which exists prior to its occurrence.

Two Correlates of Revolution

Having provided operational referents for the concept of revolution, we may now turn to an examination of possible correlates. The problem of identifying the preconditions of revolution has been of long concern to political theorists. For example, Plato (1951, p. 54) proposed that differences in economic interests led to factionalism in politics and contributed to the instability of the city-state. Poverty, according to Plato, produces revolution, meanness, and villainy, while riches produce luxury, idleness, and villainy. In substantial agreement with this position, Aristotle (1962, p. 59) also proposed that poverty may be a cause of political revolution. Tocqueville (1955, pp. 22-23), however, dissented from this emphasis on poverty. He suggested that the French peasant prior to 1789 enjoyed a considerably higher degree of economic independence than did the remainder of the European peasantry. Because of this independence and security, those aspects of feudalism still remaining in French society, such as the *corvée* (a form of periodic forced labor), appeared all the more odious and contemptible.

Indeed, *long-term* economic depressions were not present prior to the outbreaks of either the American or Russian revolutions. After an exhaustive study of four major revolutions, Crane Brinton (1952, p. 264) concluded that one uniformity in the occurrence of these revolutions was that the societies under investigation were all on the upgrade economically before the outbreak of revolution. Some statistics relevant to the

⁵ The duration of a revolution is bounded by two points in time: (1) when active hostilities first broke out against the regime in power, and (2) when the insurgents occupied the roles in the structure of political authority. A period of unrest prior to the victory of the insurgents was included in the determination of the values in Column 3. Riots and clashes between the police and populace are examples of these disturbances. In addition, if two or more changes in the personnel of the governmental elite took place within a three-month period of time, the period between changes was included in the duration.

French economy prior to 1789 may be instructive. In the *élection* of Melun from 1783–85, the amount of uncultivated land was reduced from 14,500 to 10,000 *arpents*. Rouen in 1787 produced cotton cloth worth 50,000 *livres*, which was double the production of a generation before. In the dozen years since the death of Louis XIV, French trade had increased nearly 100,000,000 *livres* (Brinton, 1952, p. 31).

The English Revolution of the 17th century and the American Revolution were preceded by similar economic experiences. According to Brinton, early Stuart England was notably prosperous, as were the American colonies prior to 1775 (1952, p. 32). Russia also was making significant economic progress prior to the outbreak of World War I. Table 4 illustrates this growth in the Russian economy.

The theories of Plato and Aristotle appear to contradict those of Tocqueville and Brinton. The first set asserts that poverty leads to revolution while the second set claims that revolutions are preceded by a significant increase in economic development. James C. Davies (1962, pp. 6–7) suggests that a partial synthesis of these approaches may provide a more comprehensive explanation than either of the two taken alone; major revolutions may be preceded by steady long-term increases in economic development, followed by a sharp reversal just before the outbreak of the revolution. In more general terms, economic development might be viewed as a single aspect of a society's achievement. That is, political, economic, and cultural development may together comprise a single concept which, for our purposes, may be called *achievement*. A second concept closely associated with achievement is termed *aspirations*. The results of political, economic, or cultural attainment ordinarily are visible to the general populace. Newly granted freedoms, as

TABLE 4
RUSSIAN EXPORTS AND IMPORTS PER CAPITA:
1895–1913^a

Period	Exports (in rubles)	Imports (in rubles)
1895–99	5.5	4.7
1900–04	6.3	4.6
1905–09	7.4	5.1
1910–13	9.1	7.1

^a Mazour, 1962, p. 323.

well as roads, factories, museums, and a higher standard of living, which generally accompany a high rate of achievement, also may tend to increase aspirations. It is posited that the *rates of change* of the achievements and aspirations are correlated. If achievement is increasing at a given rate, then the populace would most likely aspire to the acquisition of social commodities at the same rate as they had been previously acquired.

If we were to plot the increase in aspirations over time, the *slope* (rate of change) of this variable would approximate the rate of change of achievement. The similarities in the slope of the two plots is illustrated in Figure 1. Now if, instead of increasing, the rate of achievement were to decrease, we may posit a third concept, *expectations*. The rate of change of expectations would approximate that of the decrease in the rate of achievement. Rates of expectations may be affected more by immediate reality than are rates of aspirations. Expectations represent a change in outlook caused primarily by an *immediate* decrease in the production of social commodities. Aspirations are more in the nature of a hope and an optimism generated by *long-term* past performance.⁶ *The distance between the two concepts (revolu-*

⁶ The distinction between aspirations and expectations may be analogous to the Feierabend's' (1966, pp. 256–57) use of the terms "want formation" and "want satisfaction."

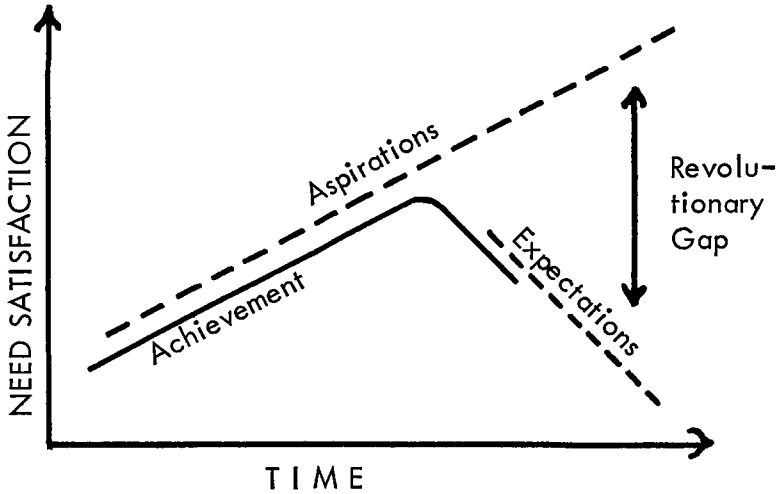


FIG. 1. Relationship between rate of achievement, aspirations, and expectations. (Adapted and modified from Davies, 1962, p. 6.)

tionary gap) may be seen as a measure of the potentiality for the occurrence of a violent revolution. The larger the revolutionary gap, the longer and the more violent the revolution may be. This hypothesis is represented in Figure 1.

As evidence for the low rate of expectations prior to major revolutions, Davies cites the poor agricultural harvests of 1788–89 in France which followed the economic advances of the prior decade. The English economy had suffered a reversal prior to 1688, while there was a tightening up of business conditions in America in 1774–75. Conditions in Tsarist Russia in 1917 provide a striking example of a breakdown in the economic machinery immediately prior to the outbreak of a revolution. Industrial production had declined rapidly. Coal mining had fallen to a level that threatened the nation's transportation. The peasants had grown sick of the war, and instead of transporting much-needed grain to Russia's urban centers, they were hoarding food in the expectation of future disasters. The economy was in a state of virtual collapse when the

revolution broke out (Mazour, 1962, pp. 553–55). Apparently, these four major revolutions provide evidence for Davies' hypothesis. But whether this hypothesis holds true in all such instances is a question to be investigated by means of a systematic analysis across a larger universe of revolutions.

A second correlate of revolution might be the level of educational attainment prior to the outbreak of the disturbance. Seymour M. Lipset (1959, pp. 73–80) has found that the occurrence of revolutions is associated negatively with the level of educational attainment. Lipset categorized nations according to their stability and degree of democratic or totalitarian control and found that Latin American dictatorships, which are notoriously amenable to the occurrence of palace revolutions, are also societies which rank lowest on his scale of educational attainment. Evidence supporting Lipset's finding is provided in the *Dimensions of Nations* (Rummel, Sawyer, Tanter, and Guetzkow, forthcoming, 1967). These writers find that three educational variables are correlated negatively with the occur-

rence of revolution. One of the three—the ratio of number enrolled in primary schools to the total population aged 5–14—gave the highest negative correlation ($r = -.84$, $N = 66$). It appears from the data of the mid-1950s that revolutions will occur more frequently in societies with the lowest levels of educational attainment.

Having stated the principal concepts and their measures, it may be useful to summarize the definitions prior to a presentation of the results:

(1) A revolution is operationally defined by domestic violence and duration.

(2) Achievement and aspirations are defined by the rate of change of GNP/CAP over time (gross national product divided by population).

(3) Expectations are defined by the drop or reversal in the rate of change of GNP/CAP.

(4) Educational level is defined by the primary school ratio—number enrolled in primary school divided by total population aged 5–14.

Given these definitions, the following hypotheses are suggested:

(1) The higher the rate of increase of GNP/CAP preceding the revolution and the sharper the reversal *immediately* prior to the revolution, the greater the duration and violence of the revolution.

(2) The lower the level of educational attainment prior to the revolution, the greater the duration and violence of the revolution.

These hypotheses were tested across seventeen cases of successful revolutions for 1955–60.

Data and Results

Data for the years 1955–60 are presented in Table 5. Unsuccessful and colonial revolutions are excluded. The variation over

TABLE 5
DOMESTIC VIOLENCE, TIME RATE OF CHANGE OF GNP/CAP, AND PRIMARY ENROLLMENT RATIO

Revolution	Domestic group violence ^a	Time rate of change ^b of GNP/capita	Primary enrollment ratio ^c
Cuba (1959)	2900	— ^d	43
Iraq (1958)	344	6.86 ^e	19
Colombia (1957)	316	2.79	30
Argentina (1955)	217	-1.64	68
Burma (1958)	152	4.36	16
Honduras (1956)	111	1.64	27
Venezuela (1958)	111	9.25	43
Guatemala (1957)	57	.64	23
Syria (1956)	44	1.60 ^f	37
Haiti (1957)	16	— ^g	20
Pakistan (1958)	9	.96	—
Jordan (1957)	7	—	42
Thailand (1957)	3	2.69	54
El Salvador (1960)	2	2.18	33
Brazil (1955)	1	2.89	34
Turkey (1960)	0.9	2.43	33
France (1958)	0.3	4.11	78

^a Same variable as in Table 3, Column 2.

^b The sources for this data column are the UN *Statistical Yearbooks*, 1955–1962. The data are presented in time-series form with base year 1953 = 100.

^c Primary enrollment divided by total population aged 5–14. These ratios were drawn from the *World Survey of Education II*, UNESCO, 1958, Table 15, pp. 58–60. The majority of these values are for the years 1950–1954, with Brazil, Cuba, and Iraq for 1950–1953, Haiti and Jordan for 1952–1954, and Turkey for 1950–1952.

^d The rate of change of GNP/CAP for Cuba can be seen in Figure 2.

^e The values for Iraq and El Salvador were not included in the standardized tabular form in the data sources, and were therefore calculated separately by means of net national product and population data.

^f The values for Syria and Thailand are based on four and six data points respectively, due to limited data availability.

^g The dashes in the columns indicate that the data were not available.

time in GNP/CAP is presented in Column 3. The figures in this column are regression coefficients which were calculated for the seven-year period preceding each revolution.⁷ Here, the regression coefficient is a

⁷ The period of seven years prior to the outbreak of the revolution is an arbitrary choice, determined chiefly by the availability of comparable data. It is possible that the investigation of longer periods might yield different results.

quantitative representation of a given variable's rate of change over time (slope).⁸ Gross national product per capita was plotted against time for each nation, and the slopes were approximately linear. The values of these coefficients are comparable, since the same base year (1953 = 100) was chosen for all cases.⁹ Column 4 lists the primary school ratios.

The product-moment correlation coefficients are presented in Table 6. These coefficients were calculated first for the total number of cases in Column 1, and then separately for the Asian and Latin American cases. The number of cases on which each coefficient is based is written in parentheses below the value of that coefficient. Before calculating the coefficients, curves were

TABLE 6
CORRELATION COEFFICIENTS BETWEEN CHANGES
IN WEALTH, LEVEL OF EDUCATION, AND
DOMESTIC VIOLENCE^a

	All cases	Latin America	Asia	Middle East
Time rate of GNP/CAP	.22 (14)	-.12 (7)	.94 (6)	.96 (4)
Primary enrollment ratio	-.31 (16)	.33 (9)	-.76 (6)	-.92 (4)

^a Domestic violence was logarithmically transformed for the first two values in the second row. No transformations were necessary for the calculation of the remaining values.

The dependent variable in the calculation of these coefficients was domestic violence.

plotted and, where necessary, domestic violence was logarithmically transformed to compensate for the effect of an outlier (Cuba).

Since these calculations are based on an entire population of revolutions in the given period, it must be noted that the sample of cases is not random. Although the conventional significance levels are thus not applicable, they are utilized to provide some criterion for the tenability of hypotheses. All correlation coefficients are considered significant at the .05 level of confidence; i.e., five times in 100 the coefficient could be due to chance. A second interpretation of the correlation coefficient is the percentage of variance explained—the square of the coefficient. This mode of presentation is also employed in the following discussion.

The values in the first two data columns of Table 6 are statistically nonsignificant. The figures in Column 3, however, are somewhat more indicative of the presence of relationships. As Hayward R. Alker (Russett *et al.*, 1964, pp. 322–23) has suggested, cultural differences between regions may account for an apparent lack of significant relationships. When the total number of cases is considered, domestic violence in Asian countries in general, and Middle Eastern

⁸ The data in Table 5 are presented with certain reservations. The regression coefficients in the second data column were calculated from UN statistical yearbooks, and in that source it is noted that gross national product data are indicative only of general trends. Indeed, different yearbooks reported varying values of GNP/CAP for the *same* country and the *same* year. In order to partially resolve these inconsistencies, the regression coefficients were calculated using a single time series (from one yearbook) for each coefficient. In addition, the criterion for choosing a time series was that it was reported in the yearbook published one year subsequent to the occurrence of the revolution (e.g., the 1959 *Yearbook* for Pakistan [1958]). For those cases in which the time series was incomplete, such as Syria or Thailand, a subsequent yearbook was chosen which contained the most complete time series.

⁹ The term "base year" refers to the basis of the UN *Statistical Yearbook's* calculation of the time-series figures. In all of the series, 1953 is set equal to 100 and the values for the other years are expressed relative to that year. This term does not refer to the starting point for the calculation of the regression coefficients. The choice of a starting year for the calculation of these coefficients is based solely on the fact that the chosen year is seven years prior to the outbreak of the revolution.

countries in particular, may have an entirely different political meaning from the same degree of violence in Latin American countries. This division of the countries in Table 5 into Latin American, Asian, and Middle Eastern is a first approximation to a control for cultural differences. Only France, of the countries included in Table 5, did not fall into any one of these categories.

When Asian revolutions are considered, we find that the degree of association between rate of change of GNP/CAP and domestic violence is significant at $p < .01$ and accounts for approximately 88 percent of the variance. The proportion of students enrolled in primary schools is correlated negatively with domestic violence, and the coefficient is nonsignificant at $p < .10$. Approximately 58 percent of the variance is accounted for by this relationship. For the Middle Eastern countries, the correlation between the rate of change of GNP/CAP and domestic violence is significant at $p < .05$ and accounts for approximately 92 percent of the variance. The rate of change of GNP/CAP prior to the revolution is almost perfectly associated with the level of domestic violence. The correlation between the primary enrollment ratio and domestic violence is nonsignificant at $p < .10$ and accounts for 85 percent of the variance.

The coefficients for the Asian and Middle Eastern revolutions appear to provide some of the explanation of variance for all the cases. However, because of the small number of cases, these results should be accepted with caution. Before we can assume that 92 percent of the variation of domestic violence in the Middle East is accounted for by the rate of change of economic development, we clearly must have further verification efforts based on a longer time-period.

Deaths from domestic violence is one measure of revolution; another is the number of days of the revolution. A set of cor-

relation coefficients was calculated for duration, the rate of change of GNP/CAP, and the level of the primary enrollment ratio; the results were not significant at $p < .05$. Perhaps one reason for this lack of a relationship is the extreme difficulty in measuring duration. As Brinton (1952, pp. 238-50) notes in his study of the Russian Revolution, the notion of duration may be better suited to the making of qualitative judgments rather than quantitative distinctions. For example, there is a large degree of uncertainty as to the duration of the Russian Revolution. On the one hand, the period in the early 1920s may be viewed as a "Thermidor," hence a denouement of the revolution. Later, on the other hand, the Soviet Union under Stalin experienced a reign of terror which rivalled the intensity of the French Revolution at its height. The Soviets may have undergone a "permanent revolution" throughout the Stalin period, and only after Khrushchev's condemnation of Stalin did the revolution subside into a period of normalcy. Thus there are at least two possible measures of the duration of the Russian Revolution. In his attempt to define the duration of the English Revolution, Brinton encountered similar difficulties. Because of the close-knit series of events prior to the outbreak of the Civil War in 1642, the duration of this revolution is essentially a matter of subjective determination (Brinton, 1952, p. 75).

Brinton's analysis and the results of this study suggest that the duration variable is difficult to measure. Moreover, when comparing durations we often commit the fallacy of employing different units of analysis in the same investigation. By recording durations we are, in effect, ignoring the events which occurred during these periods. A three-day revolutionary coup which is fought with bitter intensity should not be equated with a three-day palace revolution which is

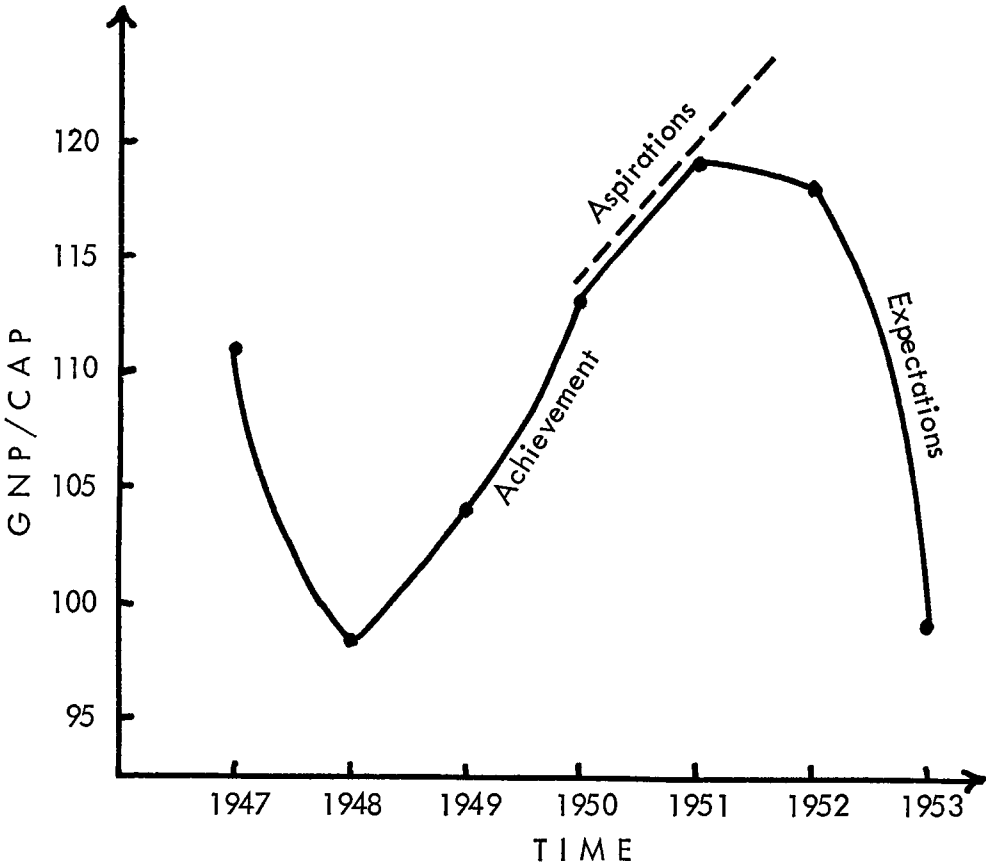


FIG. 2. Plot of gross national product per capita (GNP/CAP) versus time for Cuba, 1947-53. (In the construction of this figure, the inception of the Cuban revolution was taken to be Castro's first armed landing in 1953.)

bloodless and leads only to a change in the personnel of the governmental elite. A more adequate measure might be the number of events of a similar type compressed into a given time-interval. Rather than treating duration as a continuous variable, however, we may more profitably view it as discrete at a given threshold. Below a certain value of this variable, the duration of a revolution may be irrelevant to the explanation of either the antecedents or the consequences of its occurrence. Above that value, the duration of a revolution may be a meaningful characteristic.

The longer the revolution persists, the greater the polarization of the society around the warring factions. Traditional associations are broken. Factions which at the start of the conflict might have been able to settle their differences by negotiation now find that, with the passage of time, enmities have increased to the extent that only unconditional surrender by one of the factions can terminate the revolution. Reference to Table 3 reveals that the Cuban revolution, with a duration of six years, is at the same time the only instance of mass revolution in the chosen period. The duration of the

Cuban revolution is more than ten times greater than any of the other values in Column 3, and the "threshold" may be somewhere between one and five years. Future attempts at the determination of this value may be fruitful for a better explanation of the revolutionary process.

A Mass Revolution: The Case of Cuba

We may recall that Davies' hypothesis suggests that the higher the long-term rate of achievement and aspirations preceding the revolution, and the sharper the reversal (expectations) immediately prior to the revolution, the greater the intensity as measured by duration and domestic violence. Rate of achievement is defined as rate of change of GNP/CAP, whereas the reversal is equated with expectations. The rate of change of GNP/CAP for Cuba was not included in Table 5. Instead, Figure 2 plots GNP/CAP against time for the seven-year period preceding Castro's first armed incursion against Batista in 1953.

If we compare Figure 1 (p. 271) with Figure 2 we see a marked similarity. A high rate of achievement is followed by a reversal which, according to the theory, corresponds to the expectation of the society. In addition, the Cuban revolution, with 2,900 deaths per million and a duration of six years, falls into the mass revolution category—the only instance of such a revolution in the period 1955–60. Although Cuba is a single case, it compares favorably with Brinton's analysis, in that the four countries in his study experienced economic conditions similar to that of Cuba prior to the onset of revolution.

The Cuban revolution is the only instance in the period under consideration where a severe reversal actually occurred immediately prior to the revolution. We thus find a confirmation of the existence of a "revolutionary gap" in the Cuban example—our

one example of a mass revolution—but are left without an adequate test for the other instances of revolution. How do we measure expectations in cases of revolutionary coups, reform coups, and palace revolutions?

Differences in Expectations: The Gini Index

An operational definition of expectations might be the degree of inequality in income or land distribution.¹⁰ If the rate of achievement is high and unequally distributed, large sectors of the population might be aroused by this appearance of new wealth in a limited segment of the population. Aspirations, which are based on long-term achievements, may tend to be higher, whereas expectations—more a function of immediate reality—might be lower because of the prevailing economic inequalities. Where the "revolutionary gap" between aspirations and expectations is largely due to a high level of inequality in land distribution, we would expect an increase in the probability of revolution.

The Gini index is a measure of inequality. It measures the area between the Lorenz curve of any distribution and the line of perfect equality. For high inequality, the area between the Lorenz curve and the line of perfect equality would be correspondingly large; hence, the Gini index would also have a large value. For lower degrees of inequality, the reverse is true.

Table 7 presents the Gini indices for all nations included in the data source (Russett *et al.*, 1964 p., 239ff). Table 7(a) lists the values for nations which experienced successful revolutions in the period 1955–60, whereas Table 7(b) presents the values for

¹⁰ It should be noted that this treatment of "expectations" is cross-sectional in design, as opposed to the longitudinal nature of Davies' theory.

those nations which did *not* have successful revolutions. The indices are for land, whose distribution is probably correlated with income distribution. A one-tailed *t*-test of the significance of difference was performed and a *t* equal to 2.641 was calculated. With 48 degrees of freedom, this value is significant at $p < .05$. Thus degree of land inequality might be interpreted as an operational form of expectations; at any rate, revolutions occurred in those societies with a higher degree of land inequality. Russett (1964, p. 272) also reports a relationship between the Gini index of land inequality and domestic violence of $r = .44$ across 44 cases.

Conclusions

The analysis of inequalities of land distribution and the Cuban case study provide empirical support for the hypothesized relationship between the revolutionary gap and the domestic violence characteristic of revolutions. However, while the correlational analysis provides support for the hypothesis in the case of Asian revolutions, it was not substantiated for Latin American revolutions in this period.

The results suggest two alternatives: (1) If we assume that the level of domestic violence is indeed an indicator of the type of revolution in Latin America, then we are forced to conclude that in Latin America there is virtually no relationship between the rate of change of GNP/CAP and the form of revolution. This alternative leads to a reliance on an explanation based on regional differences. (2) If we assume that domestic violence bears little relationship to the palace revolution in Latin America (most of the Latin American revolutions in Table 5 are of the palace variety), then the relationship between the rate of change of GNP/CAP and the other forms of revolution is not invalidated. Those revolutions

TABLE 7
GINI INDICES OF LAND INEQUALITY^a

(a) Successful revolutions		
Venezuela	.909	Brazil .837
Iraq	.881	El Salvador .828
Argentina	.863	Cuba .792
Guatemala	.860	Honduras .757
Colombia	.849	France .583
(b) No successful revolutions		
Bolivia	.938	Surinam .709
Chile	.938	United States .705
Australia	.929	Libya .700
Costa Rica	.892	West Germany .674
Peru	.875	South Vietnam .671
Ecuador	.864	Norway .669
Jamaica	.820	Taiwan .652
Uruguay	.817	Luxembourg .638
Italy	.803	Netherlands .605
Dominican Republic	.795	Finland .599
Nicaragua	.757	Ireland .598
Spain	.780	Belgium .587
New Zealand	.773	Sweden .577
Greece	.747	Philippines .564
Austria	.740	India .522
Egypt	.740	Switzerland .498
Puerto Rico	.738	Canada .497
Panama	.737	Japan .470
United Kingdom	.710	Denmark .458
		Poland .450
		Yugoslavia .437

^a From Russett *et al.*, 1964, pp. 239-40.

occurring in Asia are either reform coups or revolutionary coups; thus we may suggest that the palace revolution is little affected by domestic group violence, whereas the other forms of revolution may indeed be so affected. The rate of change of GNP/CAP and level of education may then be theoretically significant for the study of revolutions other than the palace variety. Now we may ask why the palace revolution should be relatively unaffected by domestic violence.

George Blanksten (1958, p. 143) has suggested that one reason for the repeated "palace revolutions" in Latin America is that the class-oriented social structure provides the upper class with a virtual monopoly of participation in the political authority. Indians are almost entirely excluded from

participation in politics, and the *mestizos* (descendants of Spanish-Indian marriages) are also inactive in politics but emerge at times as followers of a particular political faction. Class distinctions in Latin America then act as a relatively impermeable barrier between the elite (the socioeconomic class from which holders of high political office are drawn) and the mass (all those who are excluded from this highest socioeconomic category). Because of this barrier, disturbances in the society may seldom affect the "normal" operations of government in most Latin American nations. Thus palace revolutions may frequently take place unconnected with violent changes within the society. We find that the rate of change of GNP/CAP bears little or no relationship to domestic violence in Latin America, but—at the same time—domestic violence bears little relationship to the palace revolution, which until now has been the most frequent form of revolution in this region.

The Asian countries included in this study may not experience the same degree of class rigidity as do the Latin American nations. Barriers between the mass and the elite might not be so rigid or impermeable. Therefore, economic changes which affect domestic violence also have an effect on the form of the revolution. A similar argument can be developed for the effect of education on the form of revolution. As a general proposition we suggest that the more impermeable the barriers between the mass and the elite, the less the effect of domestic violence on the form of revolution. The converse may be equally valid. The more permeable the barriers between the mass and the elite, the greater the effect of mass activity on the form of revolution.

The social structure of France prior to 1789 provides an example of these relationships. According to Tocqueville (1955, pp. 97–108) the seventeenth and eighteenth

centuries witnessed a hardening of class lines between the nobility, the small but growing bourgeoisie, and the peasantry. Before 1780, class lines had become so rigid that Tocqueville referred to the nobility as a caste within the general class structure of French society. We may also note that France during this period was free of revolutionary disturbances. At the same time, the English were thought of as politically unstable, whereas the French were considered to be fortunate in having a government which exemplified political stability.

In the decade prior to 1789, however, there was a significant decrease in the rigidity of barriers between classes. Local *parlements* were once again assigned a political function which they had virtually relinquished centuries before. The meetings of the *parlements* provided a social setting for this increasing fluidity across class lines. The case of the French Revolution may provide a comparison within a single country: during one period, barriers between the elite and the mass prevented social disturbances from disrupting the "normal" operations of government; later, according to Tocqueville, this barrier became increasingly permeable and mass revolution occurred.

Recent theories of mass society have also emphasized the importance of the relationship between the elite and the mass. LeBon (1947, pp. 214ff) and Ortega y Gasset (1940, pp. 97ff) stress that for the governmental elite to perform its proper function of judicious decision-making, it should be protected from the effects of mass persuasion, which frequently manifests itself in violent forms. On the other hand, Hannah Arendt's view (1958, pp. 315–24) is that the mass, if unprotected from the elite, may undergo a process of "atomization" in which individuals are dissociated from each other and become easy prey for the totalitarian designs of the elite.

William Kornhauser (1959, pp. 39ff) suggests that if organized group activity in a pluralistic society can act as an intermediary between the elite and the mass, then neither will be accessible to undue penetration by the other. The intermediary group associations can then be viewed as a second form of the social barrier between the elite and the mass.

Both notions, that of class distinctions and that of the pluralistic group process, may be amenable to future research as to their effect on the incidence and form of revolution. With the possible exception of France, none of the countries in Table 5 have strongly developed pluralistic societies. However, the *state* of their pluralistic development may be related to the form of revolution.

Finally, what do these results and our interpretation say for the scheme of classification of revolutions presented initially? That is, we suggested that revolutions may fall on a rank-order: mass revolution, revolutionary coup, reform coup, and palace revolution. In Asian societies, such an ordering was suggested by the relationship between changes in wealth, in educational level, and in domestic violence. Latin American societies, with a preponderance of palace revolutions, did not exhibit these relationships. The palace revolution appears, then, to be a breed apart from the others.

Our definition was predicated on the palace revolution as a lower bound above which lies a rank-order or continuum of more intense changes in both government and society. Since the data appear to exclude the palace revolution from the concept of a continuum, the definition might have to be revised so that the "lower bound" is raised and the palace revolution is excluded from the definition.

This would appear reasonable if we examine the insurgents' orientations. A continuum

of revolution is essentially one of commitment to change. Revolutions are not pieces of historical machinery, as the Hegelians or Marxists may contend, but are deeply associated with the ideological orientations of the participants. Indeed, this study suggests that domestic violence may vary with the degree of change intended by the insurgents. Therefore, the continuum we speak of is essentially a continuum of human desires for change, which—translated into a specific form of political action—make a revolution. The insurgents in a palace revolution, however, intend only to occupy roles in the existing authority structure. Changes in the social system or in the structure of political authority are not included in their program. Thus, if we are measuring a continuum of political and social change, the palace revolution may not contribute to these measurements.

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