DISCONTENT AND THE EXPECTED UTILITY OF REBELLION: THE CASE OF PERU

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Discontent theories of rebellion postulate that politicized discontent will have a strong independent effect on individuals' potential to participate in rebellious political action. Expected utility theories postulate that participation in rebellious action is motivated by expectation of reward and that discontent is relevant at most only insofar as individuals expect that collective action can be successful and that their participation is important to that end. We test these theories with data from a national sample and a sample of students at a protest-prone university in Peru, a country with significant objective conditions of discontent and a high incidence of rebellious political conflict. The results provide no evidence for the discontent models but strong support for the expected utility models. The potential for participation in rebellious political action proves to be a function primarily of discontent weighted *by the expectancy of the action's success and the perceived importance of personal participation. Private social and normative rewards and costs also are relevant—but to a lesser extent—for the individual's calculation of the expected utility of participation.*

The principal contending theoretical approaches to explaining why individuals participate in rebellious political action are those that emphasize deprivation, frustration, and grievances as the primary causes versus those that emphasize expected utility: cost-benefit calculations, resource mobilization, and power politics (Coleman 1990; Eckstein 1980; Lichbach 1989; Snyder 1978; Weede 1988). These approaches differ most fundamentally in their assumption about the role of discontent as a motivation for rebellion. The discontent approach, which Lichbach (1989) calls the *deprived actor* research program, assumes that discontent resulting from deprivation and frustration has a strong, direct, unconditional effect on the likelihood of an individual's participating in rebellious political action. The common denominator of the expected utility approach, which Lichbach (1989) calls the *rational actor* research program, is the assumption that expectation of reward is the primary motivation. The rational actor theory explicitly rejects the deprived actor theory's assumption that discontent is inherently a powerful motivation for participation in rebellious political action. From a rational

actor perspective, deprivation and frustration are either irrelevant or else relevant only conditionally, depending on the extent to which they generate an interest in public goods to be achieved through rebellion and are accompanied by belief that rebellion is likely to succeed.

An important requirement for a strong empirical test of these competing theoretical approaches is that individual persons be the unit of analysis. Macro level tests with countries as the unit of analysis can be designed (e.g., Muller and Weede 1990); and they afford an important advantage over micro level tests in that a large number of states varying in levels of rebellious political action and in conditions assumed to produce discontent and expectation of the utility of rebellion can be compared. But since tests at the macro level depend on the acceptance of untestable assumptions about relationships between aggregate properties of countries and states of mind of their inhabitants, micro level tests can provide more decisive evidence.

If individuals are the unit of analysis and if only one or a few countries can feasibly be selected as research sites, then the country or countries must be chosen with careful attention to characteristics that will maximize the power of the test. In the case of testing deprived actor versus rational actor theories of rebellion, the strongest possible single-country test will be one conducted in a country that is already an instance of a conjunction at the macro level between deprivation and rebellion, that is, where both the objective conditions of deprivation assumed to produce discontent and the incidence of rebellious political action are at relatively high levels. If deprived actor theory is correct, a strong relationship between subjective discontent and participation in rebellious political action certainly should be observed in such a setting. If the relationship is weak even in the context of a macro conjunction between deprivation and rebellion and if it is the expected utility of rebellion that motivates individuals to participate in rebellious political action, this would constitute compelling evidence in favor of rational actor theory.

Almost all of the major insurgencies and revolutions in the second half of the twentieth century have taken place in the less-developed countries of the Third World, where objective levels of deprivation are much higher than in advanced industrialized countries. For a critical test of the deprived actor and rational actor theories, we shall use data from surveys conducted in Peru, a less-developed country in which objective deprivation is extremely severe and is accompanied by a very high level of rebellious political conflict.

Research Design

Peru at the time of the surveys (the winter of 1987/88) ranked in the lower category of Third World middle-income countries with a 1986 gross national product per capita of $1,090. It was plagued by a host of serious economic difficulties: triple-digit inflation, severe devaluation, and high un- and underemployment, all of which exacerbated long-entrenched social and economic inequalities. During the 1980–86 period gross domestic product per capita had declined at an annual average rate of .4%; and an annual average decline of 1.9% in real earnings per employee in the manufacturing sector had been coupled with an increasing annual rate of inflation that had averaged 100.1%. Income inequality in Peru in 1985 was substantial, since the poorest 40% received only 12.9% of national income, while the richest 20% received 51.9% (World Bank 1990). With almost seven million inhabitants, Lima, Peru's capital, contained about a third of the nation's total population; Ministry of Housing estimates calculated that more than

half of the city lived either in squatter settlements or in central-city slum environments. Basic health care delivery in both urban and rural areas declined throughout the decade of the 1980s, with the result that the occurrence of preventable diseases rose, as did levels of infant mortality, especially among low-income groups (Instituto Nacional de Estadistica 1990).

With respect to political protest and rebellion, an insurgency initiated by Sendero Luminoso (Shining Path) had escalated since 1980 into a high-intensity rebellion of major proportion resulting in repeated declarations of states of emergency and martial law (see Dietz 1990). In 1982, when the first "emergency zones" (i.e., areas under military rule) were established, they included less than 3% of Peru's population. By 1987, these zones had expanded to include more than half of the country's inhabitants. The death rate from political violence during 1980–88 was almost nine hundred per million population (approximately nineteen thousand deaths relative to Peru's 1988 population of 21.3 million [DESCO 1989]). Revolutionary conflict, which originated in the south-central sierra area around Ayacucho, had spread by 1987 into Lima through bombings, blackouts, random assaults and assassinations. The case of Peru thus affords a natural setting for a strong test of hypotheses derived from the deprived actor and rational actor theories of rebellion.

The Peruvian data are from a national survey of 1,571 adults and a survey of 400 university students that were conducted for us by the market research firm APOYO during December 1987–March 1988. The respondents in the national survey are a representative sample of the adult population in the nine provinces of Peru with the greatest percentage of voting age population (at least 18 years of age). Amazonian jungle areas and other extremely remote rural districts were excluded.[1] The respondents in the student survey are from two universities in Lima: San Marcos and the National Educational University (La Cantuta, for teacher training). These universities had been raided by the police in 1986 as strongholds for the revolutionary Sendero Luminoso and Revolutionary Tupac Amaru movements (MRTA).[2] The interview schedule administered by APOYO included measures of (1) past participation and current intention to participate in legal and illegal collective political action (from working in electoral campaigns and petition drives to participating in confrontations with police or troops and destroying public property); (2) discontent with the provision of public goods, that is, dissatisfaction with the performance of the government in regard to specific areas of public policy, alienation from the political system in general, and politicized relative deprivation; (3) belief in the likelihood of success of collective political action and perceived importance of personal participation; and (4) measures of a variety of expected private benefits and costs of participating in collective political action, encompassing material, social network, and personal normative incentives.

We shall specify models for deprived actor and rational actor theories. Then we will describe the measure of participation in rebellious political action and report the results of our tests with Peruvian data of the deprived actor and rational actor models for explaining why people rebel.

Deprived Actor and Rational Actor Models

The most sophisticated contemporary statement of deprived actor theory is Gurr's (1970), which stipulates that relative deprivation, defined as perceived discrepancy between the goods and conditions of life to which people believe they are rightfully entitled and what they actu-

ally have, is the basic instigating condition for rebellious political action. The fundamental postulate of Gurr's relative deprivation version of deprived actor theory is that if people hold the political system responsible for their relative deprivation, then their likelihood of participating in rebellious political action will be a strong monotonic function of the intensity of their "politicized" relative deprivation (or discontent), regardless of the instrumentality of the behavior: "Discontent provides an innately nonrational (but widely rationalized) impetus to violence, empirically and analytically distinguishable from actors' estimates of the utilities of violence" (p. 326).

Rational actor theory, by contrast, is based on the assumption that participation in rebellious political action is a function solely of its expected utility for the individual. Politicized discontent, therefore, should *not* have a direct effect on behavior, independent of expected utility. Versions of rational actor theory differ, however, in predicting whether politicized discontent, which entails dissatisfaction with the provision of public goods by the state, is relevant to an individual's calculation of the expected utility of his participation in rebellion.

Private Interest

Tullock's (1974) *by-product* theory of revolution, which builds on Olson's (1965) general theory of collective action, assumes that demand for public goods to be achieved by revolution drops out of a rational actor's utility calculus because public goods are available to all if the rebellion should succeed, regardless of whether a person participates in it or not, and because the objective probability of a single person influencing the outcome of the rebellion is negligible unless he is one of the leaders of the rebellion. Consequently, the only kind of reward that can be a relevant motivation for ordinary citizens is private benefits that the individual expects to receive only if he participates—*selective incentives* in Olson's terminology.

The most important selective incentives in Tullock's theory are material rewards, such as financial gain or a position of power in a revolutionary government.[3] The problem with Tullock's by-product theory is that material selective incentives are typically in short supply and can reasonably be expected only by a few members of the group who are probably influential to the outcome (and could be motivated therefore by an interest in public goods as well). Ordinary citizens—the "footsoldiers" who make up the bulk of the participants in an insurgency—surely cannot have any expectation of being given high office in a revolutionary government. So apart from financial gain through relatively unusual circumstances such as looting or the payment of wages by a guerrilla army, expected material rewards cannot be assumed to have a large positive value in their utility calculus. And since the likelihood of suffering substantial personal costs may be relatively high, the negative weight of expected costs should typically cause the rational ordinary citizen to abstain rather than participate.

There is, however, a class of selective incentives that is in abundant supply even in groups with few material resources. If an individual's friends—or groups the individual belongs to or identifies with—believe that he or she *ought* to participate in collective action, then a social norm of participation exists. If a social norm of participation exists, then the individual actor will be subject to it in social relations with others. These others who adhere to the norm will express approval of those in the social network who conform to it and disapproval to those who do not conform. The individual who is part of the social network, whether it be family, friends, or an organized group,

will derive benefit in the form of social approval from conforming to the social norm. In addition to expected benefits of conforming to behavioral norms of significant others and more generally of conforming to behavioral norms of groups to which the individual belongs, the class of social network selective incentives includes affiliation rewards such as getting to know interesting people and making new friends through participation in collective action (Finkel and Opp 1991; Klandermans 1984; Muller and Opp 1986). We hypothesize that in the utility calculus of ordinary citizens, social network selective incentives for participation in rebellious political action are a more important kind of private interest reward than material selective incentives.

Material and social network selective incentives are rewards that gratify the private self-interest of the individual and are provided by an external source (usually a group) to those who participate, regardless of whether the action is successful. In addition to them, there is a third kind of private self-interest reward that can be obtained through participation, regardless of whether it is successful. This kind of reward is a result of conforming to an individual's own internalized norms of behavior and is therefore independent of external selective incentives. Coleman (1990, 494–95), for example, hypothesizes that in an expected utility model of rebellion

> internalized norms and the sanctions supporting them can exert a force of their own. If one has come to hold an ideology containing a utopian vision, then working toward the realization of that vision generates internal psychic rewards, independent of the surrounding social capital. . . . If this conjecture about the role of utopian ideology is correct, the importance of such ideology can be great because the benefits it generates depend only on participation, not on success of the revolt or on effectiveness of the individual's participation in bringing about that success.

Thus, the satisfaction (psychic reward) of conforming to internalized norms represents a third kind of private benefit in an expected utility model of rebellion.[4]

Social networks and internalized norms are not only sources of incentives for the individual to participate in collective action, they also can be sources of disincentives. Social norms and personal norms can proscribe behavior, as well as prescribe it. If they proscribe collective action, then participation would be a cost to the individual. Since rebellious political action is illegal and sometimes violent, social and personal norms proscribing participation are likely to be prevalent and the expected costs of deviating from such norms may exert substantial negative weight in an individual's utility calculus.

Our model of the private interest theory can be expressed by the following equations:

$$R = U_r$$
$$U_r = B_m + B_s + B_p - C_m - C_s - C_p \qquad (1)$$

where R is the extent to which the individual participates in *rebellious political action* and where, in respect to expected private costs and benefits, U_r is the expected *utility* of participation in rebellious political action; B_m is the *material benefits* of participating; B_s is the *social network benefits;* B_p is the *personal normative benefits;* C_m is the *material costs;* C_s is the *social network costs; and* C_p is the *personal normative costs* of participating.

Collective Interest

Material, social network, and personal normative rewards are goods that, unlike public goods, can be obtained only if the individual participates in collective action and can be consumed by the individual privately without others necessarily consuming them as well. Private interest versions of rational actor theory postulate

that expected utility is a function exclusively of an individual's expectation of receiving these rewards and of suffering the costs of participation. In these formulations, the participation of ordinary citizens in such behavior is independent of both interest in public goods and of the likelihood of success of rebellion. In an alternative version of rational actor theory, however, both interest in public goods and expectancy of success, as weighted by the importance of personal participation, are assumed to be relevant and potentially powerful determinants of the expected utility of rebellion for ordinary citizens (see Finkel, Muller, and Opp 1989; Muller and Opp 1986).

Because of differences in sociological characteristics such as socioeconomic status (a function of education, income, and occupation) and/or in personality characteristics such as self-confidence, we postulate that people who are not leaders of groups nevertheless may vary in the extent to which they think they can have an influence on the likelihood of success of collective action. Allowing for the possibility of variation in subjective resourcefulness means that some ordinary members of large groups may participate in collective action because they have an interest in the public good or goods to be obtained by collective action and believe that collective action is likely to be successful and that their participation will enhance the likelihood of success. Furthermore, even if many or most ordinary members of large groups are not subjectively resourceful, the logic of free-riding may be overcome by an interaction between expectancy of group success and two other beliefs about the importance of personal participation. One, which we call the unity principle, is a strategic belief quite familiar from the rhetoric of collective action, *United we stand, divided we fall.* The belief that group unity is necessary for success is based on the principle that social networks must be closed or unified in order for it to be rational for utility-maximizing actors not to free-ride (see Coleman 1990, chap. 11). A second belief that promotes personal participation is adherence to a Kantian norm of duty to do one's fair share, on the grounds that if others are cooperating to obtain a desired collective good, then each individual with an interest in the public good is morally bound to cooperate as well. We do not expect that either the unity or the duty principles can motivate people to participate in a lost cause; but when adherence to them is coupled with the perception that collective action is likely to succeed, then individuals who are dissatisfied with the provision of public goods will have an incentive to contribute to collective political action (see Finkel, Muller, and Opp 1989).

Interest in collective benefits (what we call *public goods motivation)* is thus the product of dissatisfaction with the provision of public goods, the likelihood of success of collective action, and the importance of personal participation in collective action. Its motivational force depends fundamentally on expectancy of success and the expected benefit of consuming the public good. A collective and private interest expected utility model of rebellion that includes an individual's interest in both public and private goods is

$$U_r = (E^*I)^*G + B_m + B_s + B_p - C_m - C_s - C_p, \quad (2)$$

where E is the *expected success* of rebellious political action; I is the *importance of personal participation,* a function of subjective resourcefulness and/or belief in the unity or duty principles; and G is demand for the provision of public *goods,* a function of discontent with the current provision of public goods. The difference between equations 2 and 1 is that the latter assumes I to be approximately zero. If I is approximately zero, then $(E^*I)^*G$ will be approximately zero, and the $(E^*I)^*G$

term becomes a component of U_r that is effectively irrelevant for behavior.

Political Discontent

The principal explanatory variable in Gurr's (1970) version of deprived actor theory is politicized relative deprivation. Since this concept refers to a discrepancy between deserved and actual enjoyment of goods or conditions of life that is blamed on the political system, relative deprivation that is politicized necessarily entails dissatisfaction with the provision of public *goods* and thus is subsumed under G in the collective and private interest model. We also may include under G demand for public goods that is not a result of relative deprivation. Additional sources of demand for public goods are dissatisfaction with the performance of the government in regard to issues of public policy in which one has a personal interest and dissatisfaction with the nature of the political system in general (Muller and Opp 1986; Opp 1989). The relative importance of politicized relative deprivation as compared with dissatisfaction with policy performance and alienation from the political system is a significant subsidiary question in regard to evaluating Gurr's version of deprived actor theory.[5] For the evaluation of deprived actor versus rational actor theory, however, the important questions are (1) whether the broadly defined set of G variables has an independent effect on participation in rebellious political action and, if so, (2) the relative causal weight of discontent variables separately as compared with the expected utility variables. The discontent model is

$$R = G_d + G_p + G_s + U_r \qquad (3)$$

where G_d is politicized relative *deprivation*, G_p is dissatisfaction with *policy performance*, G_s is alienation from the political *system*, and $*_r$ is the expected *utility* of participating as postulated by equation 2.

Illegal Political Protest in Peru

The dependent variable—potential for participation in illegal protest activity—includes (1) taking part in a demonstration that breaks the law, (2) seizing buildings (e.g., factories, government or university offices), (3) participating in confrontations with police or other governmental authorities, (4) participating in political activities that may result in property damage (e.g., breaking windows or damaging construction sites or vehicles), (5) participating in illegal protest activities at the workplace (e.g., wildcat strike, sabotage, slowdown, etc.), (6) participating in confrontations with other political groups or individuals, (7) seizing land, (8) taking part in public disorders (e.g., blocking streets, sit-ins). Respondents were asked to report their past performance of each behavior *(never, once, several times)* and their intention to perform it in the future (five response categories, ranging from *not at all* to *very likely)*. In order to ensure anonymity and enhance the validity of the answers, the questions about protest behavior were asked in the form of a self-administered questionnaire, which the respondent placed in a separate envelope that was sealed and given to the interviewer.

Each intention response, scored 1–5, was multiplied by past participation, scored 1–3. According to this weighting procedure, unrealized intentions retain their original value; intentions accompanied by participation only once in the past are given twice the value of unrealized intentions; and intentions accompanied by participation frequently in the past are given three times the value of unrealized intentions. Each product variable thus measures a person's potential for participating in illegal political

protest at the time of the interview (necessary in order to avoid the time sequence problem that arises if only past behavior were the dependent variable); and multiplying intention by behavior means that unrealized intentions receive a low weight relative to those that have been realized behaviorally in the past.

Since the *intention* × *behavior product* variables have a high scale reliability in both the national and student samples (alpha = .88 and .93, respectively), an illegal protest scale was constructed by computing the mean of the eight items. Among respondents in the national sample, the illegal protest scale correlates at $r = .85$ with an index of past participation in illegal protest;[6] the correlation for the student sample is .93. The range of the illegal protest scale in the national sample is from 1 to 11.13 with a mean score of 1.64; it ranges in the student sample from 1 to 15 with a mean of 3.09. Almost two-fifths of the 1,571 respondents in the national sample score 1 on the illegal protest scale, meaning that they would never do and have never done any of the illegal actions. A small proportion, 6.4%, scores in the high range (4 or more). These 101 respondents with high illegal protest scores either have participated in the past and at least might continue to do so in the future or else have not participated in the past but would do so in the future. In the student sample only 17.5% score very low on illegal protest, and fully 27.5% score in the high range.

Because of the skewed distribution of the illegal protest scale, the common logarithm of illegal protest scores is used in the statistical analysis. Descriptive statistics for the *intention* × *behavior product* variables and the illegal protest scale are reported in Table 1.[7]

Political Discontent

In specifying deprived actor and rational actor models of rebellion, we distinguished three kinds of dissatisfaction with the provision of public goods that might motivate individuals to participate in rebellious political action. One, denoted G_p, refers to specific policies of the government. We measured this kind of political discontent by asking respondents to report (1) how concerned they were about a series of issues (scored on a 0–4 scale ranging from *not at all concerned* to *extremely concerned)* and (2) (for those issues that they thought were a responsibility of the government) how they rated the government's performance (scored 0 for *not a concern of the government* and 1–5 for ratings from *excellent* to *very poor).* Policy dissatisfaction is the product of issue concern and poor government performance rating.

The second kind of political discontent, G_s, measures alienation from the political system. The system alienation scale for the national sample is the mean of the extent to which a respondent has respect for the political system, believes that the basic rights of citizens are well protected by it, feels that he or she should support it, and is proud to live under it (scored on a 1–7 scale ranging from *a great extent* to *not at all).* The system alienation scale for the student sample also includes an item measuring the extent to which the courts are thought to guarantee a fair trial.[8]

The third kind of political discontent is politicized relative deprivation, G_d, as defined by Gurr (1970). Although Gurr discusses the concept in relation to an individual's personal situation, it is also possible for an individual to be concerned about the relative deprivation of a *group* that he or she belongs to or identifies with, regardless of personal circumstances. The personal relative deprivation measures are in regard to a person's income and life in general. Politicized relative deprivation re income is the product of (1) the extent to which a person believes that his or her income is less than deserved in terms of level of education

Table 1. Descriptive Statistics: Illegal Protest Variables

Protest Activity	Observed Range	Mean	Standard Deviation	% Very Low[a]	% High[b]	Item-Total Correlation
National Sample (N = 1,571)						
Illegal demonstrations	1→15	1.89	1.92	61.7	10.6	.63
Seizing buildings	1→15	1.68	1.66	67.3	7.6	.65
Confrontations with police	1→15	1.63	1.54	68.9	7.9	.74
Destruction of property	1→12	1.39	1.11	74.2	3.9	.60
Illegal action at workplace	1→15	1.84	1.90	63.1	9.0	.62
Confrontations with groups	1→12	1.56	1.34	65.9	6.4	.67
Seizing land	1→15	1.60	1.47	65.3	6.9	.53
Public disorders	1→15	1.50	1.45	69.0	5.3	.75
Illegal protest scale[c]	1→11.13	1.64	1.15	38.9	6.4	alpha = .88
Log (illegal protest)	0→1.05	.15	.20	—	—	—
Student Sample (N = 400)						
Illegal demonstrations	1→15	4.30	4.32	36.8	40.0	.75
Seizing buildings	1→15	3.39	3.41	37.5	29.7	.78
Confrontations with police	1→15	3.29	3.52	43.8	27.0	.81
Destruction of property	1→15	2.24	2.72	60.0	13.0	.77
Illegal action at workplace	1→15	3.43	3.43	34.3	28.7	.79
Confrontations with groups	1→12	2.32	2.56	54.5	17.0	.73
Seizing land	1→15	2.37	2.47	50.8	17.5	.72
Public disorders	1→15	3.36	3.80	45.5	27.0	.85
Illegal protest scale[d]	1→15	3.09	2.74	17.5	27.5	alpha = .93
Log (illegal protest)	0→1.18	.36	.31	—	—	—

[a]Score of 1: *would not do and have not done.*

[b]Scores of 4 or more (rounded for illegal protest scale): at least *might do and have done* or *would do and have not done.*

[c]Correlation between illegal protest scale and index of past participation: r = .85.

[d]Correlation between illegal protest scale and index of past participation: r = .93.

(scored on a four-point scale ranging from 0 for *as good as what you deserve* to 3 for *very much worse)* and (2) the extent to which the government has responsibility for this (scored from 1 to 3 for *only a little, some,* and *a lot).* Politicized relative deprivation re life in general (overall welfare) is the product of (1) the extent to which a person believes that he or she is less well off than deserved in comparison with most people in Peru (on a scale of 0 for *as well off,* 1.5 for *less well off,* and 3 for *much less well off)* and (2) the extent of government responsibility for this. Relative deprivation in regard to a group was measured by presenting respondents with a list of groups (women, students, blue-collar workers, white-collar workers, intellectuals, poor people, businessmen, entrepreneurs, the elderly, rich people), and asking them to name which group they felt closest to, if any, and to rate the extent to which they thought the group was getting as much as it deserved. The measure of group relative deprivation is the product of closeness to the group (scored 0 for those who did not feel close to any group, 1 for those who felt *somewhat close,* and 2 for *very close)* and the extent to which the group is perceived as getting less than it deserves (scored on a 1–5 scale ranging from *a great extent* to *not at all).*

Descriptive statistics for the various measures of dissatisfaction with the provision of public goods and the correlations

Table 2. Descriptive Statistics and Correlations between Illegal Protest and Measures of Dissatisfaction with Provision of Public Goods

Public Goods Dissatisfaction	National Sample			Student Sample		
	Mean	Standard Deviation	r: log-illegal protest	Mean	Standard Deviation	r: log-illegal protest
Policy dissatisfaction (0→20):[a]						
What the government does to						
Reduce employment	11.58	5.41	−.04	13.63	5.20	.12*
Reduce cost of living	12.60	5.44	−.08	14.37	5.26	.16*
Reduce income inequality	9.35	5.72	−.01	13.07	6.25	.31*
Reduce external debt	7.93	5.41	−.01	10.85	5.91	.19*
Reduce population growth	9.52	5.71	−.04	11.65	6.23	−.02
Combat crime	11.34	5.74	−.06	12.33	5.90	.02
Combat terrorism	11.21	5.72	−.05	12.64	6.17	.03
Prevent corruption	11.38	5.66	−.02	13.43	5.76	.06
Solve problems in your community	8.36	6.57	.02	9.76	6.45	.08
System alienation (1→7)	4.31	1.25	.09*	5.30	1.10	.39*
Relative deprivation (RD):						
Politicized Personal RD (0→9)						
Re income	1.58	1.99	.11*	2.10	2.52	.22*
Re overall welfare	2.53	2.11	.07*	3.29	2.54	.13*
Group RD (0→10)	3.52	2.78	.13*	4.52	2.94	.23*
Number of cases		1,571			400	

[a]Possible range of variables in parentheses.

*$p < .01$, one-tailed.

between them and the illegal protest scale are shown in Table 2. For the national sample the correlations between the policy dissatisfaction variables and illegal protest are exceedingly small and, with a single exception, are in the wrong direction. One explanation for this is that the questions were confusing to many respondents in the national sample. An alternative explanation is that because the Peruvian state is exceedingly weak, the bulk of Peru's citizenry does not expect it to provide these public goods effectively. Thus, individuals may rate the performance of the government poorly; but policy dissatisfaction may not be correlated with political protest because individuals do not expect that the government could perform better. Students, by contrast, may have higher expectations for governmental performance; therefore, policy dissatisfaction might be more likely to be a source of political protest directed against the state.

The mean system alienation score for respondents in the national sample is 4.3. Since the system support end of the continuum could be considered as comprising scores in the range of 1.0–2.5, and the alienation end could be considered as comprising scores in the range of 5.5–7.0, the general public in Peru appears on the average to be ambivalent about the democratic political system that was reestablished in 1980 rather than supportive of it or alienated from it. Those who *are* alienated are more likely to participate in illegal protest than those who are ambivalent or supportive, since the correlation between system alienation and illegal protest is positive and statistically significant; but the magnitude of the correlation

Table 3. Regressions of Illegal Protest on Dissatisfaction with Provision of Public Goods

Variables	Log-Illegal Protest	
	National Sample (Equation A)	Student Sample (Equation B)
Intercept	.056	-.341
Policy dissatisfaction income inequality	—	.008* (.17)
Policy dissatisfaction external debt	—	.001 (.03)
System alienation	.011* (.07)	.083* (.29)
Politicized relative deprivation: income	.008* (.08)	.017* (.13)
Politicized relative deprivation: welfare	.003 (.03)	.004 (.04)
Group relative deprivation	.008* (.12)	.020* (.19)
Adjusted R^2	.029	.235
Number of cases	1,571	400

Note: Standardized coefficients are in parentheses.
*$p < .01$, one-tailed.

(.09) is exceedingly weak. This is also the case in regard to the measures of relative deprivation, where all correlations are significant but the highest (group RD) is only .13. By contrast, the students are on the average relatively alienated from the current democratic regime in Peru; and their level of alienation shows what is for survey data a rather strong correlation with illegal protest (.39). All the relative deprivation measures also correlate positively and significantly with illegal protest among respondents in the student sample, although their magnitudes are weaker than that of system alienation.

A baseline test of the political discontent version of deprived actor theory is reported in Table 3. Here, the test is simply the magnitude of R-squared for regression equations (ordinary least squares) of illegal protest on the measures of dissatisfaction with the provision of public goods that showed significant bivariate correlation with it.[9] The explained variance is exceedingly low for the national sample (3%) but relatively high for the student sample (24%). This difference is far too large to be a function solely of measurement error. Clearly, the strength of baseline support for the political discontent model is heavily dependent on the context of a "radicalized" community.

Public Goods Motivation

The collective and private interest model of rational actor theory as expressed by equation 2 stipulates that dissatisfaction with the provision of public goods will have no direct independent effect on the likelihood of an individual's participating in rebellious political action. We hypothesize that dissatisfied people will have a high likelihood of participating only if they think

Table 4. Regressions of Illegal Protest on Public Goods Discontent, Expectancy of Success, and Importance of Participation

	Log-Illegal Protest			
	National Sample		Student Sample	
Variables	Equation A	Equation B	Equation C	Equation D
Intercept	.010	-.117	-.548	-.542
Log (public goods discontent)	.226* (6.6)	.191* (6.1)	1.180* (9.9)	.782* (7.1)
Log (likelihood of group success)	—	1.203* (9.6)	—	1.215* (5.1)
Log (personal influence)	—	.563* (8.4)	—	1.145* (7.4)
Log (unity principle)	—	.282* (4.1)	—	.242 (1.2)
Log (duty to participate)	—	.028 (0.6)	—	.140 (1.0)
Adjusted R^2	.026	.183	.196	.387
Number of cases	1,571		400	

Note: *t*-ratios are in parentheses.

*$p < .01$, one-tailed.

that the group can succeed and that their own participation is important for the success of the action. Support for the hypothesis of a multiplicative interaction between public goods discontent, expectancy of success, and importance of personal participation was found in a previous study of political protest in West Germany (Finkel, Muller, and Opp 1989).

The expectancy-of-success measure, called *likelihood of group success,* is the product of the extent to which respondents (1) perceive that groups have helped their cause through rebellious political action in the past and (2) think that other people with political views similar to theirs are currently likely to participate. Importance of personal participation is a function of one or more of the following beliefs: (1) that personal participation will have an influence on the success of rebellious political action, (2) that the participation of all members of a group is necessary for success (the unity principle), and (3) that people who are dissatisfied with policies of the government have a duty to do something about it (duty to participate).

A test of whether the components of the $(E*I)*G$ term of equation 2 interact multiplicatively can be performed by estimating the parameters of a regression equation in which all variables are logged (see Finkel, Muller, and Opp 1989, 895–96). In equations A and B of Table 4, which reports tests for the national sample, G is represented by the common log of the average of the three relevant political discontent variables from equation A of Table 3: alienation from the political system, politicized personal relative deprivation in regard to income, and relative deprivation in regard to interests of groups with whom one identifies.[10] E is represented by the common log of likelihood of group success; and I is represented by the common logs of personal influence, the unity principle, and

duty to participate. Equation A of Table 4 estimates the effect of discontent only. Equation B of Table 4 estimates the multiplicative effect of discontent, expectancy of success, and importance of participation, or $(E*I)*G$.

The relationships hypothesized in our specification of the public goods motivation term are supported by Table 4, equation B, as the indicator of E (the likelihood of group success), two of the three indicators of I (personal influence and the unity principle), and the indicator of G (average public goods discontent) are estimated to have statistically significant positive multiplicative effects on illegal protest. Moreover, as the comparison of R-squared for Table 4, equations A and B, shows, the explanatory power of the $(E*I)*G$ expected utility term (B) is far superior to that of G, the discontent term, alone (A). In the national sample, people who are dissatisfied with the provision of public goods are not much more likely to participate in rebellious political action than those who are satisfied. But people who are dissatisfied with public goods, and expect that rebellious political action is likely to succeed, *and* believe that their participation is important are substantially more likely to participate in rebellion than those who are not dissatisfied, or do not think rebellion has much chance of succeeding, or do not think their participation will make any difference to the outcome.

For the student sample the summary index of discontent with the provision of public goods is the weighted sum of the four relevant variables from equation B of Table 3: dissatisfaction with the policies of the government for reducing income inequality, alienation from the political system, politicized personal relative deprivation in regard to income, and relative deprivation in regard to interests of groups with whom one identifies. Despite the fact that public goods discontent is related far more strongly to illegal protest in the student sample than in the national sample, the multiplicative interaction of discontent with expectancy of success and importance of personal participation shows much greater explanatory power than public goods discontent alone, as R-squared for Table 4, equation D (.387) is approximately twice as great as that for equation C (.196). Thus, even in a social context where a relatively strong relationship obtains between discontent and participation in illegal protest, the expected utility specification of the effect of discontent on illegal protest is superior.

In the student sample the set of I variables is dominated by one—personal influence on the success of illegal protest. Neither of the beliefs promoting cooperation is statistically significant. Objectively, students at elite universities have far greater resources than the average respondent in a national sample. These objective resources are translated into a much greater effect of subjective resourcefulness, since the coefficient for personal influence in Table 4, equation D (1.145) is approximately twice that for the national sample (.563).

Private Interest Motivation

In the private interest model as expressed by equation 1, interest in public goods is irrelevant for U_r because I is assumed to be approximately zero. Consequently, the individual's expected utility of participation is a function of the B terms (the private benefits that can be obtained only through participation) and the C terms (the personal costs of participation). We distinguish analytically between material, social network, and personal normative private benefits and costs.

Private Material Benefits and Costs

We operationalize the B_m term by the most obvious kind of material incentive,

financial gain. The C_m term is operationalized by the most obvious kind of material cost—suffering negative sanctions due to arrest or injury—and by the opportunity cost of spent time. Respondents' expectations of the likelihood of receiving these benefits and costs if they participate in illegal protest are measured on a scale scored 0 for *very unlikely*, .33 for *unlikely*, .67 for *likely*, and 1.0 for *very likely*. The negative sanctions variable is the mean of the probability estimates of suffering arrest and injury; the time constraints variable is the mean of the probability estimates of illegal protest's "taking too much of my time" and a general *agree/disagree* question asking whether "I am so busy that I have no time for political involvement" (scored on a 0/1 scale).

Private Social Network Benefits and Costs

The B_s term is operationalized by three social network incentives. First, we asked respondents about their perception of the extent to which people who are important to them (spouse, friends, colleagues, or others) would think positively or negatively of them for participating in illegal protest. Responses were given on a five-point scale ranging from *very negatively* (scored −2) to *very positively* (scored 2). Scores in the positive range represent expected benefits. In this instance, there is no separate measure of C_s because scores in the negative range represent expected costs. Second, we asked respondents whether any of the organized groups to which they belonged (e.g., religious groups, cooperatives, professional associations, unions) encouraged them to participate in illegal protest (scored 1 for *encourage*, 0 otherwise). Third, respondents were asked to estimate the likelihood (scored on a 0 to 1.0 scale) of "getting to know people with similar interests and points of view" if they participated in illegal protest.

Private Personal Normative Benefits and Costs

We measured the individual's expected benefits and costs from conforming to personal internalized norms of behavior in two ways. The B_p term is operationalized by asking individuals to estimate the likelihood (scored on a 0 to 1.0 scale) of "feeling good for standing up for what I believed in" if they participated in illegal protest activities. The C_p term is operationalized by the product of (1) the extent to which the respondent disagrees on a 1–5 scale with the statements "Violence against property in order to achieve political goals is morally justifiable" and "Violence against persons in order to achieve political goals is morally justifiable" and (2) the likelihood (on a 0 to 1.0 scale) that the respondent "would feel guilty" if he or she participated in illegal protest. The expected cost of deviating from internalized moral norms proscribing illegal protest thus ranges from 0 to 5 and is at a maximum value among individuals who believe that political violence is morally unjustifiable and expect to feel guilty if they participate.

Distributions and Correlations with Illegal Protest

Descriptive statistics for the private interest variables and their correlations with illegal protest are shown in Table 5. For the national sample the expected private benefits correlate significantly, but generally weakly, with illegal protest. For the student sample expected financial gain and negative sanctions correlate weakly or not at all with illegal protest; but the correlations otherwise are somewhat stronger than for the national sample. The private interest incentive that correlates most strongly with illegal protest in the national sample is conformity to the behavioral expectations of important others. This incentive and the disincentive

Table 5. Descriptive Statistics and Correlations between Illegal Protest and Private Benefits and Costs

Private Benefits and Costs	National Sample Mean	National Sample Standard Deviation	National Sample r: log-illegal protest	Student Sample Mean	Student Sample Standard Deviation	Student Sample r: log-illegal protest
Material						
Financial gain	.39	.29	.07*	.30	.27	-.07
Negative sanctions	.74	.24	-.12*	.71	.24	.00
Time constraints	.58	.23	-.13*	.51	.22	-.19*
Social network						
Expectations of others	-1.42	.92	.27*	-1.15	1.00	.35*
Group encouragement	.08	.27	.16*	.11	.31	.24*
Meet like-minded people	.62	.27	.10*	.65	.25	.18*
Personal normative						
Standing up for beliefs	.61	.29	.12*	.65	.29	.27*
Moral norms proscribing illegal protest	1.97	1.45	-.16*	1.47	1.26	-.34*
Number of cases		1,571			400	

*$p < .01$, one-tailed.

of personal moral norms proscribing illegal protest are the strongest correlates of participation among the students.

The Expected Utility Models and Discontent

We shall test the private interest model (equation 1), the collective and private interest model (equation 2), and the discontent model (equation 3). Our major hypotheses are, in regard to the private interest model, that social network and personal normative incentives (and disincentives) will be more important than material incentives, since the former are in more abundant supply than the latter; in regard to the collective and private interest model, that public goods motivation will be an important incentive independent of the expected private benefits and costs; and in regard to the discontent model, that indicators of political discontent will not have any direct additive effect on illegal protest independent of the expected utility variables.

The effects of the private interest incentives on illegal protest are estimated by the first equations of Tables 6 and 7. For the national sample, the private benefits and costs have significant effects in the expected direction with the exception of financial gain. The expected reward of conforming to the behavioral norms of important others shows a standardized effect of moderate magnitude; but the magnitude of the standardized effects for the other benefits and costs is small, and Table 6, equation A explains only 11% of the variance in illegal protest. The explained variance of the private interest equation (A, Table 7) for the student sample is more than twice that for the national sample. As in the national sample, all of the social network and personal normative incentives are significant. Two of these incentives stand out as most important among the students: the reward of conforming to expectations of others and the cost of deviating from personal norms that proscribe illegal protest. Otherwise, financial gain is irrelevant, and none of the material costs has a significant deter-

rent effect on illegal protest. These findings support our initial hypothesis that social network and personal normative benefits and costs will have the strongest effects in the private interest model.

The collective interest incentive is the multiplicative $(E*I)*G$ term from equation 2. This is operationalized by a composite variable, which we call *public goods motivation*, constructed from trimmed equations B and D of Table 4.[11] Public goods motivation is more closely correlated at the bivariate level with illegal protest than is any other expected utility variable in both the national sample and the student sample. These moderate-to-strong correlations (.43 and .62, respectively) reflect the R-squared values obtained for Table 4, equations B and D.

When the effect of the collective interest incentive is taken into account in equation B, Table 6, and equation B, Table 7, the explained variance increases to 21% for

Table 6. Regressions of Illegal Protest on Expected Utility and Public Goods Discontent for the National Sample

	Equations for log Illegal Protest				
Variables	A	B	C	D	E
Intercept	.230	.066	.059	.063	.055
Financial gain	.013 (.03)	−.009 (−.01)	−.008 (−.01)	−.007 (−.01)	—
Negative sanctions	−.042* (−.05)	−.024 (−.03)	−.026 (−.03)	−.027 (−.03)	—
Time constraints	−.056** (−.06)	−.040* (−.05)	−.042* (−.05)	−.042* (−.05)	−.046* (−.05)
Expectations of others	.045** (.21)	.021** (.09)	.021** (.09)	.021** (.10)	.021** (.10)
Group encouragement	.081** (.11)	.053** (.07)	.053** (.07)	.052** (.07)	.055** (.07)
Meet like-minded people	.054** (.07)	.039* (.05)	.038* (.05)	.038* (.05)	.032* (.04)
Standing up for beliefs	.048** (.07)	.038** (.05)	.038** (.06)	.037** (.05)	.035* (.05)
Moral norms proscribing illegal protest	−.011** (−.08)	−.008** (−.06)	−.008** (−.06)	−.008** (−.06)	−.009** (−.06)
Public goods motivation	—	.824** (.36)	.798** (.34)	.796** (.34)	.826** (.36)
Discontent	—	—	.004 (.03)	—	—
Politicized relative deprivation: income	—	—	—	.001 (.01)	—
Group relative deprivation	—	—	—	.003 (.04)	—
Adjusted R^2	.111	.214	.214	.214	.214

Note: Standardized coefficients are in parentheses. Number of cases = 1,571.

*$p < .05$, one-tailed.
**$p < .01$, one-tailed.

the national sample and to 44% for the student sample. The standardized effect of public goods motivation is quite high absolutely and is by far the most powerful relative effect in each sample.[12] We thus find very strong support for our second hypothesis that interest in collective or public goods, weighted by expectancy of success and importance of personal participation, is a central component of an expected utility model of participation in illegal protest.

In equation C, Table 6, and equation C, Table 7, the summary measure of discontent with the provision of public goods is introduced. These equations are the test of the discontent model as expressed by equation 3. Gurr's (1970) version of deprived actor theory, which postulates a strong positive independent effect, specifically of relative deprivation on rebellious behavior, is tested by equation D, Table 6, and equation D, Table 7. We find no evidence of any significant effect

Table 7. Regressions of Illegal Protest on Expected Utility and Public Goods Discontent for the Student Sample

	Equations for log Illegal Protest				
Variable	A	B	C	D	E
Intercept	.389	.156	.119	.143	.134
Financial gain	−.005 (.00)	−.030 (−.03)	−.029 (−.03)	−.027 (−.02)	—
Negative sanctions	−.007 (−.01)	−.076 (−.06)	−.077 (−.06)	−.084 (−.06)	—
Time constraints	−.100 (−.07)	−.058 (−.04)	−.059 (−.04)	−.060 (−.04)	—
Expectations of others	.074** (.24)	.037** (.12)	.038** (.12)	.038** (.12)	.040** (.13)
Group encouragement	.173** (.17)	.148** (.15)	.148** (.15)	.147** (.15)	.145** (.14)
Meet like-minded people	.187** (.15)	.113* (.09)	.112* (.09)	.113* (.09)	—
Standing up for beliefs	.087 (.08)	−.015 (−.01)	−.012 (−.01)	−.010 (−.01)	—
Moral norms proscribing illegal protest	−.054** (−.22)	−.025** (−.10)	−.025** (−.10)	−.025** (−.10)	−.030** (−.12)
Public goods motivation	—	.827** (.52)	.753** (.47)	.804** (.50)	.839** (.52)
Discontent	—	—	.013 (.06)	—	—
Politicized relative deprivation: income	—	—	—	−.001 (−.01)	—
Group relative deprivation	—	—	—	.006 (.06)	—
Adjusted R^2	.244	.444	.444	.444	.442

Note: Standardized coefficients are in parentheses. Number of cases = 400.

*$p < .05$, one-tailed.
**$p < .01$, one-tailed.

of political discontent on illegal protest independent of the expected utility variables. The summary measure of public goods discontent is nonsignificant in Table 6, equation C and Table 7, equation C, as are the effects of politicized relative deprivation in regard to income and group deprivation in Table 6, equation D and Table 7, equation D. These results clearly support our third hypothesis that discontent will have no direct impact on rebellious political action.

Finally, trimmed equations E of Table 6 and Table 7 show the effects of all the statistically significant variables in both samples.[13] The relevant variables for participation in rebellious collective action in both samples are quite similar, with public goods motivation being by far the most important factor, followed by the social network rewards of conforming to the behavioral expectations of others and group encouragement, and somewhat weaker effects of personal normative rewards and costs. Material incentives, except for the very weak effect of perceived time constraints in the national sample, are consistently irrelevant, as are the politicized discontent variables. The results indicate that the expected utility model of participation is generalizable across samples of individuals with very different social background characteristics. Individuals participate in rebellious political action when expectations of achieving desired public goods and of receiving social and personal normative rewards outweigh the behavior's expected costs.

Conclusion

This research addresses a fundamental point of controversy between theories of why people rebel: Does participation in rebellious political action result principally from conditions that produce discontent, frustration, and anger? Or is it a result of cost–benefit calculations that produce a high expected utility of rebellion?

The most decisive way to test discontent versus expected utility theories of rebellion is to measure discontent, expected utility, and participation in rebellious political action directly with data from surveys of individuals. Ideally, the surveys should be conducted in a country where there is a conjunction between objective deprivation and rebellion. If discontent hypotheses are supported in such a context, this would be evidence that deprived actor theory holds at least when structural deprivation is severe, which has been the premise of much cross-national research conducted at the macro level of analysis. If discontent hypotheses are not supported in such a context and expected utility hypotheses are supported, this would constitute strong evidence against deprived actor theory and in favor of rational actor theory.

We selected Peru as the site for a critical test of discontent versus expected utility theories of rebellion. Peru's economy currently is one of the worst in the world, characterized by negative economic growth and extraordinary levels of inflation and un- and underemployment; moreover, inequality, absolute poverty, and malnutrition among some population groups remain extreme despite efforts at reform in the 1970s. The Peruvian state is weak and is unable to deal effectively with Peru's multitude of economic and social problems. An insurgency of regime-threatening proportions has been accelerating since the early 1980s, and the scope and intensity of political protest and violence is substantial. If anger resulting from subjective feelings of discontent is a powerful motivation for participation in rebellious political action, this relationship should be evident in Peru.

Using data from a national sample and from a sample of students at universities that have been the site of confrontations between police and revolutionary groups, we found little support for deprived actor theory. Among the Peruvian general public, a variety of measures of discontent with the provision of public goods show at best weak bivariate association with an individual's potential for participating in illegal political protest as measured by a scale that weights current intention to participate by past participation. Measures of public goods discontent correlate more strongly with the illegal protest scale among respondents in the student sample; but in both samples the relationships between discontent and illegal protest are strongly conditioned by expected utility variables: expectancy of success and importance of personal participation.

We tested two variants of rational actor theory. One, a pure private interest model, is based on the assumption that interest in public goods is irrelevant for collective action and that the expected utility of rebellious political action is therefore a function only of interest in private goods discounted by private costs. The other, a collective and private interest model, is based on the assumption that in addition to private goods, interest in public goods can be an important conditional motivation for participation in rebellious political action by ordinary citizens who are not leaders of dissident groups. The collective and private interest model was strongly supported by the Peruvian data: the public goods motivation construct was estimated to have a standardized effect on illegal protest of .36 among the general public and .52 among students, while all private benefits and costs had standardized effects in the range of −.12 to .14. According to our results, then, the predominant reason for participation in illegal protest in Peru is that people are dissatisfied with the provision of public goods, expect that rebellious political action will be a successful means of obtaining them, and believe that their participation is important to the likelihood of success. Those who are *only* dissatisfied with the provision of public goods but otherwise do not expect that rebellion will be successful and/or do not believe that their participation is important, have little potential to participate in rebellious action. The strong support found here for the collective and private interest model suggests that rational action theories that focus exclusively on private rewards and costs ignore the critical contribution of public goods motivation in the individual's utility calculus.

Since discontent with the provision of public goods *is* relevant (although only conditionally), an important subsidiary question is, What kinds of public goods discontent are most relevant? Among university students in Peru, alienation from the political system is by far the most relevant. This finding replicates that of research conducted in advanced industrialized societies, where alienation from the political system has been found to be the kind of political discontent most relevant not only for students but also for the general public in New York City, for deprived groups such as blacks in a Midwestern city in the United States, and for residents of protest-prone communities in West Germany (see Muller 1980; Muller and Opp 1986). Among the Peruvian general public, alienation from the political system is relevant; but it is not the most relevant kind of political discontent. Thus, the question raised by Rule as to whether the importance of system alienation for protest in industrialized societies can be generalized to other historical contexts (1988, 221) is answered generally in the affirmative by the Peruvian data, although the comparative weakness of the relationship between system alienation and illegal protest among the general public indicates that

relationships can be conditioned by context.

What is new and especially interesting theoretically is that in the Peruvian context, where objective deprivation is extremely severe, relative deprivation measured according to Gurr's (1970) conceptualization (a discrepancy in regard to "just deserts") is found to be as relevant as system alienation among the general public. And relative deprivation is relevant (but much less so than system alienation) also among Peruvian university students. Moreover, the kind of personal relative deprivation that is relevant both among the general public and among university students is in regard to the distribution of income. And among university students, relative deprivation in regard to income is augmented by dissatisfaction with the performance of the government in reducing income inequality. Thus, while we find no evidence of any association between illegal protest and relative deprivation or policy dissatisfaction related to Peru's macroeconomic performance in terms of growth, inflation, and employment opportunities, we do find association between illegal protest and relative deprivation or policy dissatisfaction related to the inegalitarian distribution of income in Peru. This finding lends support to the macro cross-national relationship between income inequality and political violence found by Muller and Seligson (1987; Muller 1985). It must be emphasized, however, that at the micro level the nature of the relationship between dissatisfaction with income inequality and potential for participation in illegal protest is congruent with rational actor, not deprived actor, theory, since the motivational impetus of inequality-based discontent is conditional on the extent to which illegal protest is expected to succeed and the participation of the individual is perceived to be important.

Notes

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1. A truly representative sample of the entire national population is not feasible because the population has a low density and wide dispersion. Adequate sampling frames do not exist for isolated Andean peasant population groups and inhabitants of the Amazonian jungle region. The logistical problems of interviewing people are formidable, as many of these areas are accessible only by foot, canoe, or horseback. Consequently, we drew the national sample from the nine provinces with the largest voting age population, which are representative of approximately two-thirds of the total population: Lima, Callao, La Libertad, Piura, Junin, Arequipa, Cuzco, Lambayeque, and Loreto. Samples in each province were drawn through a multistage random sampling procedure.

2. Students from the two most politicized faculties (humanities and social sciences) were chosen at each university. The samples are not random, since there is no complete list of students registered at either university available. Rather, a set of 20 classrooms was chosen at each university, and 10 students from each class were interviewed.

3. Tullock also includes the *entertainment* value of participating in rebellious political action (1974, 39). Although this might be a relevant incentive for student protest actions carried out in the relative safety of the campus, entertainment is not considered to be an important variable in serious revolutionary activity.

4. Social norms and/or internalized norms have also been proposed as solutions to one of the vexing problems in the theory of rational choice: the question of why people vote (Coleman 1990; Riker and Ordeshook 1968). Positing the existence of such norms of participation can solve the "first-order" free-rider problem because rational actors can derive utility from conforming to them; but this still leaves open the "second-order" free-rider problem, namely, why norms of participation would ever emerge among rational actors. A verbal and mathematical exposition of the social-structural conditions that are sufficient for the rational emergence of social norms and thus solve the second-order free-rider problem has been developed by Coleman (1990, esp. chaps. 10–11, 30). We find Coleman's argument compelling but note that there is not yet a consensus among social scientists about either the rationality of the

emergence of norms or the appropriateness of including them in expected utility models. A forceful statement of the counterthesis that social norms and rationality are incompatible can be found in Elster 1989.

5. See Muller 1980 for a summary of prior research from surveys conducted in the United States and West Germany in which it has been consistently found that system alienation is a much stronger determinant of participation in rebellious political action than relative deprivation. See also Barnes and Kaase 1979, in which policy dissatisfaction is found to be a stronger determinant of political protest than relative deprivation in five advanced industrialized countries. The possibility that relative deprivation might be more important in less-developed countries has not been investigated.

6. This is the sum of the participation variables, where each is scored 0 for *never*, 1 for *once*, and 2 for *more than once*.

7. Missing data on the components of the illegal protest scale and for all other subsequent variables used in this analysis was replaced by the sample mean. This is necessary because although there are few missing responses to any single question, the number of cases would be drastically reduced if missing data on the multitude of variables used in the analysis was excluded.

8. The set of indicators of system alienation included a sixth item, the extent to which one believes that the system of government is the best possible system. This item had low item-total correlations in both the national sample (.39) and the student sample (.22). The "courts guarantee a fair trial" item had a low item-total correlation in the national sample (.36) but not in the student sample (.51). The four-item system alienation scale for the national sample has a reliability coefficient of .75, which is the same as the reliability coefficient if all six items were used; the mean inter-item correlation for the four-item scale is higher (.43), however, than that for a six-item scale (.34). The five-item system alienation scale for the student sample has a higher reliability coefficient (.80) than a six-item scale (.74), and the mean inter-item correlation is also higher (.45 vs. .35).

9. In regard to the student sample, the items with significant correlations less than .2 (unemployment and cost of living) were not significant in a first regression, so they were dropped from the analysis reported in Table 3.

10. In constructing the public goods discontent variable for the national and student samples, all components are first converted to the same scale, 0–10, before computing the mean.

11. For the national sample public goods motivation is computed by the equation

public goods motivation = −.113 + .192*log (public goods discontent) + 1.202*log (likelihood of group success) + .564*log (personal influence) + .288*log(unity principle).

For the student sample public goods motivation is computed by the equation

public goods motivation = −.467 + .799*log (public goods discontent) + 1.244*log (likelihood of group success) + 1.163*log (personal influence).

12. The stronger effect of public goods motivation compared with the private incentives also can be demonstrated by computing the predicted score from equation A in Table 6 and equation A in Table 7 to represent a summary measure of all the material, social, and personal normative incentives and entering that construct into a regression equation with the public goods construct. The standardized effect for the private incentives construct is .19 in the national sample and .27 in the student sample, compared to effects of .35 and .49 for the public goods construct. The summary measure of politicized discontent showed insignificant effects when added to these equations in both samples.

13. Although *meet like-minded people* was statistically significant in Table 7, equation D, its effect became irrelevant once other insignificant variables were omitted. This variable, therefore, was deleted from the final trimmed equation.

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