The Origins of Democracy
in Agrarian Society

LAND INEQUALITY AND POLITICAL RIGHTS

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Three models for the development of democracy in agrarian society during the period from 1973 to 1987 are examined empirically. Building on accounts of the development of democracy in ancient Athens and prior systematic studies, it is suggested that agricultural density is related to land inequality, which in turn leads to increased political rights in formerly tribal/hereditary polities. The second model centers on political violence as a consequence of this land inequality, which in turn leads to increased political rights after some violent political upheaval. The third model suggests urbanization and trade begin the process, and in turn economic development then leads to increased political rights. Support is found for the Athenian and economic development models, therefore emphasizing that political violence receives the least empirical confirmation. Most important for the origins of democracy in agrarian society is the robust influence of land inequality on political rights, discovered under a variety of analytic conditions.

Democracy has, once again, become a topic of major interest among scholars and the public at large. Events in Eastern Europe and the former Soviet Union, of course, have spurred this interest, as have recent publications by scholars who have recognized all along the unique, if not critical, importance of democracy as a phenomenon with ethical and pragmatic political imperatives (e.g., Dahl 1989; Lijphart 1984). Yet, with the exception of those who study American institutions, American political scientists have

largely ignored its origins. In one sense, this is understandable because the discipline is mostly concerned (correctly) with the substance of contemporaneous politics, not its history. But there may be much to be learned from an investigation of the roots of democracy, not only in its own right as a way of deepening our understanding of the ways in which a major political institution came into being, but as a means of assessing the prospects for democratic development in many of the world's nations.

In the following treatment, the origins of democracy in agrarian society will be informed, initially, by the Athenian experience. This instance is chosen not only because of the justly achieved fame of Athenian democracy as a prototype, but also because, referring to early Athens in comparison with other areas of the ancient Aegean, "here, and perhaps here alone, there was firm, unbroken continuity of existence which, while not spectacular in these Dark Ages, was never moribund either" (Warren 1989, 136). Thus there is opportunity here to observe the long-term societal processes that, in the end, may yield political democracy. The following account of early Athenian political development follows principally, although not exclusively, from some of the more recent writings of M. I. Finley, the eminent classicist. Although here he does not theorize directly on the reasons for the rise of democracy in Athens (Finley 1981), he does present a concise summary of the distinctive features of Athenian society.[1] He distinguishes especially between the pattern of societal development in Athens and those of other Greek city-states. In that comparison, he sets forth the salient features of Athenian society that will yield the outlines for a model of the early stages of democratic development in agrarian societies.

Beyond an investigation of the analytic origins of democracy per se, this study will yield several other dividends. First, in contrast to other studies that did not find significant associations with the *level* of democracy, this analysis will be able to specify variables most closely associated with the level of political rights as an operational form of democracy. Second, a form of inequality, land inequality, will demonstrate a robust positive relationship with political rights in a somewhat counterintuitive, but nevertheless straightforward theoretical development. This type of inequality will prove to be related positively to political rights, but in ways not foreshadowed by the hypothesized negative association between income inequality and political democracy (Muller 1988; Bollen and Jackman 1985; Rubinson and Quinlan, 1977). Indeed, in contrast to the prevailing wisdom concerning the require-

1. For broader treatments of Athenian democracy, including the later, classical period, see Finley (1983) and Stockton (1990).

ment of economic equality for democratic functioning, the broad assertion here is quite different. It states that the rise of democracy requires some differentials in observable wealth for the process to take hold. Although *maintenance* of the democratic polity when fully formed, may require a degree of economic equality, the *initiation* of democracy in agrarian society likely demands an inequality in land possession.

Essentially, this article is about the rise of nonascriptive elites whose influence is dependent on some form of material achievement in place of tribal, hereditary, or other closed systems of ascription. The successful transition from communism, as a form of ascriptive influence based on ideological (and in many cases familial) associations, to capitalism and democracy, as expressions and representations of material achievement, may require processes similar to those outlined here.

ANCIENT ATHENS

Ancient Athens can be identified by the following features. First and most important, Athens differed from the remaining Greek city states by not participating in the colonization process wherein the Greek city-states, largely as the result of overpopulation, generated colonies in the Mediterranean basin and even as far as the Black Sea. As Finley (1981, 117) observes, "Athens also took no part in the colonization movement. Though individual Athenians may have migrated, the city as such, unlike Sparta, had not even one Taras to her credit."[2] Yet we also know that population density must have been high because of the large number of indebted farmers who became the impetus for the Solonic reforms of the sixth century B.C. (ca. 594-3). Archaeological evidence for a rapid population growth during the prior two centuries is given in Snodgrass (1977) and in Morris (1987). Only through an emerging land scarcity as the result of a growing population (as in all of Greece during this period) could such a large number of farmers become indebted to their neighbors or other larger landowners. The heart of these reforms is the cancellation of debt or the "shaking off of burdens" (Finley 1981, 119). Later we shall see that another important element of the Solonic reforms will be critical to our understanding of the origins of democracy.

As a result of these arguments, the first variable to be introduced is that of density in relation to agricultural land. This choice is not only the

2. These colonies as offshoots of Greek city-state populations are to be distinguished from the later allies and political satellites to be found in quasi-imperial organizations such as the Delian League.

consequence of the critical importance of agrarian density already implicit in Finley's account, but also emerges from the nature of the Greek city-state itself. In contrast to our contemporary understanding of the firm distinctions between urban and rural environments, such differences were not found in ancient Greece. Again, we allow Finley (1982, 5) to speak.

> Plato and Aristotle did not write nonsense: they took city and hinterland, town and country, together as a unit, not as distinct variables in competition or conflict, actual or potential. Even those farmers who lived outside the town were integrally *in* the *polis*. . . . Discussions of property and property ownership are only about land.

At the same time, the political environment of Athens was clearly urban, if only that it was the location for much, if not all, of the political discourse. During this time, although "Athens was still a largely agrarian community," there was "a considerable growth in the urban sector of the economy, providing an outlet for landless and marginal peasants, among other things" (Finley 1981, 124). Thus the second distinctive feature of early Athenian political life and our second variable is urbanization, which has been linked with democracy in a number of prior studies such as those by Lipset (1959) and by Dahl and Tufte (1973).

The final distinctive feature of early Athens singled out by Finley is trade. He points to "the remarkable upsurge in Athenian fine painted pottery, which about the middle of the sixth century rapidly acquired a virtual monopoly among Greek pottery exports to the other cities of Greece, to the western colonies, and to the Etruscans" (Finley 1981, 124). Solon stands out once again, for it was he who drew the Athenian economy away from its reliance on the growth of grain in relatively poor Attican soil, to an emphasis on olive oil and wine for export that, in turn, would allow more than enough money to purchase high-quality grain abroad (Muller 1961, 179). Trade then is the last of the three variables suggested directly by Finley's analysis and will be measured by the ratio trade/GNP (gross national product) that controls for the overall size of the economy.

THEORETICAL DEVELOPMENT

Despite the preceding concern for elements of the Athenian model, the importance of agricultural density requires theoretical development. Why should agricultural density be related to democracy, or to political rights as we shall later operationalize it? There are three possible mechanisms for the impact of agricultural density.

The first of these is the most direct and stipulates the connection between agricultural density and land inequality. Increased density yields increased inequality as the result of the increased land scarcity attendant on population increase. Midlarsky (1982, 1988) showed the theoretical/mathematical connection between the two variables using a formal model.

In descriptive terms, this model may be understood in the following manner. One assumes a relatively equal distribution of land parcels at some early point in time. As population grows, there is a geometric subdivision of the land, so that at a later point in time, an exponential distribution describes the landholdings. The greater the scarcity of land either due to circumscription or to population growth (or both), the steeper the exponential curve and the greater the inequality in holdings.

Land inequality implies gradation in wealth that would make some persons more likely to influence the political process than others. In traditional or tribal societies of which ancient Athens was an example, the political division initially is based largely on tribal affiliation. It was a major element of the Solonic reforms to transform the tribal basis of Athenian politics to one based on wealth. Four categories of citizens were created with graded formal influence on the political process based on wealth (Finley 1973, 1981; Grant 1987). Each of these groups had various rights and responsibilities varying from eligibility for the highest offices for those in the most wealthy category, to election to a new council of state, the Boule, for members of the next two categories, and rights to attend and vote in the Assembly for those in the last category.

Two points are worthy of emphasis. First, as Finley (1981, 120) observes, "The citizen-body was divided into four classes according to wealth, measured, it is essential to stress, not in money but in agricultural yield." Thus land inequality (and its use, of course) are the sole bases for political participation. Second, without the emergence of this land inequality as the result of population density, there would have been no basis for the assignment of political rights other than the traditional tribal, hereditary, and/or clan affiliations.[3]

3. As Jeffery (1976, 41) remarks on this shift away from hereditary rule,

But always the original shift away from the monopoly of ruling power, once made, went on increasing, for peers in an aristocracy were apt to quarrel, and in these breaches *rich and ambitious men* whose families were outside the closed ring of government might make their resentment heard, and so the widening process continued. . . . Gradually through the seventh century the oligarchies became less exclusive, and below the heights of the high office-holders the ordinary citizens too could look for increased rights. (italics added)

Although the Solonic reforms clearly did not establish a democracy in the modern sense, they did lay the foundation for the later introduction of democracy per se by Cleisthenes. As Finley (1981, 125) comments, "Later Athenians looked back to Solon as the man who set them on the road to democracy." Evidence for this comes not only from the literary sources that are the basis of Finley's judgment, but from Attican grave sites that reveal a steady democratization (less regard to rank) in burial practices during the century after the Solonic reforms (Morris 1987). In this first model, then, agricultural density leads to land inequality that in turn leads to increased political rights.

In England and Sweden as two prototypical modern democracies; we see similar processes at work. As Athens was among the first to unite relatively heterogeneous elements under one governmental framework in Attica, so too were England and Sweden among the first to establish centralized, large-scale polities in the European context. Further, we can now concentrate on the stable institutional manifestations of democracy (Huntington 1968) — the English Parliament and the Swedish *Riksdag* — and their growth in relation to the landowning sector of society.

In England, for example, "by the mid-fifteenth century . . . only the peers of Parliament . . . were universally regarded as noble. . . . At these levels of late medieval society, the possession of landed wealth was a *sine qua non* of entry and of survival" (Harvey 1985, 132). By the end of the English Civil War,

> the abolition of institutions like the Court of Wards (founded in 1540), "that great bridle of feudality" . . . has been described as "probably the most important single even in the history of English landowning." Landowners were now free not only from the burdens of feudal service but from monetary substitutes for it and by the end of the century, *when all barriers to hereditary title* had disappeared, the claims of private property, and of the large estates in particular, were more firmly established than they had been at the beginning of it. (Briggs 1983, 136, italics added)

Now with the abolition of essential elements of feudalism and hereditary requirements for landowning nobility, English politics could take its fitful steps into an embedded institutional democracy. Just as Solon abolished exclusive hereditary entitlement to political influence in Athens, so too did the English abolish such exclusivity as the result of the Civil War and the Glorious Revolution of 1688, but still emphasized the role of landownership in relation to representation in Parliament. In the eighteenth century, the parliamentary system evolved into two parties. "The majority of both parties defended the rights of private property and sustained an hierarchical social order in which precedence was given to the great landowners" (Dickenson

1985, 207). The nineteenth century witnessed the continued dominance in Parliament of the landowning aristocracy, but now with an expanded franchise due to the pressure for reform (Matthew 1988, 546-47). It was in this fashion that British democracy evolved into its contemporary popular form.

In Sweden, the process was similar but with an interesting historical fillip that placed nonnoble landowning at the center of the evolution toward democracy. Whereas the removal of the requirement of hereditary entitlement took place only in late seventeenth-century England, in a sense it was always absent in Sweden. Only the actual requirement to own land was in place for membership in the Swedish *Riksdag*, not a hereditary nobility requirement. From its inception, commoners were represented in the *Riksdag*. Referring to the parliamentary consolidation of the fifteenth and early sixteenth centuries, Scott (1988, 112) remarks,

> The nobility [landowners], the clergy and the burghers (in that order) were the influential elements, but a full *Riksdag* also had to have representation from the commonality. . . . This was not yet democracy, but it was a step in the slow progress toward democracy.

In 1617, a *Riksdag* ordinance established six estates for representation (Scott 1988, 185). Two of these never really materialized (the princes and army officers) leaving the nobility, the clergy, burghers, and landowning farmers as the bases for *Riksdag* representation. As before, the landowning nobility was the dominant group and actually increased their power over time, as their landholdings increased and they mounted further challenges to royal power. By the early eighteenth century, however, the power of the nobility had been somewhat reduced and

> the unique body in the *Riksdag* was the farmer Estate, incorporating in the governmental machinery representatives of the large class of landholding farmers, the *bönder*. And this Estate grew in significance as the century advanced. . . . The *Riksdag* met once every three years. The council, composed entirely of nobles, had been the "king's council" under Karl XI; after 1719 it became the "council of the kingdom." (Scott 1988, 243)

Of course the combination of noble and farmer landholdings on the one hand, and growing dwarf holdings as well as a landless and tenant farmer class on the other, contributed to a substantial degree of land inequality as the eighteenth and nineteenth centuries progressed. Eventual large-scale emigration, primarily to the United States, was the result of this process (Samuelsson 1968). As of the late eighteenth century,

> commoners and nobility were given equal access to most governmental positions as well as to the ownership of any class of property except the most

highly privileged holdings, which were still reserved for the nobility. Further-
more, the peasants' unrestricted right to dispose of their holdings as they saw
fit was formally recognized. (Anderson 1958, 92)

The second model proceeds from a different premise: that political vio-
lence is the midwife of democracy. Certainly the English, French, and
American revolutions lend credence to this view. Moore (1966) is perhaps
the most prominent exponent of this nexus between political violence and
democracy. Since the time of Aristotle and through Marx, the connection
between inequalities of various sorts and political violence has been asserted
and confirmed in a variety of studies, although of course, not without con-
troversy. Some of the most recent are Muller and Seligson (1987), Midlarsky
(1988), Muller, Seligson, Fu, and Midlarsky (1989), and Midlarsky (forth-
coming). The seminal treatment of land inequality in relation to political
violence is that of Russett (1964), while that for relative deprivation generally
is found in Gurr (1970). Controversial aspects of these findings are high-
lighted in Weede (1986, 1987) and in the detailed argumentation found in
Lichbach (1989, 1990).

Thus, in this second model, land inequality results in political violence
which in turn leads to democratic reforms either directly as a response to the
violence or through a more complex revolutionary process and its aftermath
(e.g., the French Revolution).

Interestingly, the American Revolution may represent the thwarting of the
Athenian model and the emergence of political violence. With population
growth over time and a consequent increased agricultural density, land
inequality increased. As Wilkinson (1973, 149) observes concerning pre-
revolutionary New England, "Under the pressure of population growth, land
holdings were subdivided, and within a few generations there were signs of
a land shortage and a concomitant appearance of increasing numbers of
landless poor."

In this interpretation of the American Revolution, an affluent, expansion-
ist, landowning, and merchant elite (Egnal 1988) who had emerged at the
fortunate end of this land inequality sought to break through the hereditary
and, in many respects, "tribal" governance of the colonies by Crown and
Parliament. Essentially, a new colonial landowning hierarchy (e.g., Virginia)
had been established that was becoming increasingly assertive politically as
the eighteenth century progressed. Had the British government been respon-
sive to the desire for increased political rights by the affluent colonists (or at
least a formal voice in the making of tax and trade policy), then it is possible
that the American Revolution would not have occurred and the attainment of
democracy and independence would have had a far more evolutionary cast,

as in the Canadian instance, and that the process of increased political rights, or democracy, would have conformed to the Athenian model. Failing that responsiveness by Westminster, political violence did indeed erupt in the form of the American Revolution.

It is noteworthy that the threat of political violence, although not its actual occurrence, may facilitate the Athenian model. Referring to the time of Solon, Lintott (1982, 43) remarks that "the grievances of the Athenians in this period are important as evidence of incipient civil strife, which did not come immediately to fruition."

The third model is the most complex, yet is reasonably straightforward. High population density and the resultant land scarcity and inequality are sufficient to propel the landless or other rural poor to the cities, thus increasing urbanization. Both ancient Athens and England in the seventeenth-century preindustrial era experienced this process (Wrightson 1982; Morrill 1988). Technological developments in both the city and countryside increase trade and economic development in response to this ecological challenge (Wilkinson 1973), even as we saw in the Athenian illustration. In turn, economic development leads to political democracy by the arguments found in seminal works such as those of Lipset (1959), Lenski (1966), and Dahl (1971). Although, strictly speaking, both the first and third models are drawn from the Athenian experience, because the first appears to be unique to Athens and the Solonic reforms, I shall call it the "Athenian" model, the second, the "violence" model and the third, the "developmental" model. They are diagrammed as follows:

Athenian

Agricultural density------→land inequality------→political rights

Violence

Agricultural density------→land inequality------→political violence------→political rights

Developmental

Agricultural density------→land inequality------→urbanization------→trade------→
   economic development------→political rights

THE CONCEPT OF POLITICAL RIGHTS

To fix ideas now, democracy will *not* be understood as the multifaceted phenomenon that has freedom and representation included as in a modern developed polity (Dahl 1989; Lijphart 1984; Bollen 1980). Instead, I will focus on the basic element of "public contestation" that Dahl emphasizes as

the foundation of democracy. Indeed, he frames this discussion of public contestation within the contexts of the "transformation of a regime from a hegemony into a more competitive regime or a competitive oligarchy into a polyarchy" (Dahl 1971, 20). This, of course, is the fundamental shift that occurs in the earliest stage of democratic development.

The concept of right of participation as in the election of political officers is critical to the beginning stages of democracy. Later, of course, as Dahl (1971) indicates, participation can be broadened in a variety of ways to bring about the more variegated version now associated with political democracy. Clearly, it is the more basic, primitive notion of political rights that must be explored in an analysis of the origins of democracy. More complex indices such as that of Bollen (1980) would not be appropriate for an examination of the roots of democracy.

An appropriate index of political rights is that developed by Gastil (1988, 54-65). It is a direct measure of freedom of election. It is averaged over a fifteen-year period from 1973 to 1987, which allows (1) for the correction of errors if they crept in for an earlier year and (2) gives a fairly long "window" of measurement in contrast to virtually all other measures of this type which are given at one year only. For example, one of the best of these, Bollen (1980), is given only for 1960 and 1965. The mean scores on this political rights index also are for a later period than other measures. Given the changes that have occurred internationally, this is not a trivial advantage. The average scores are from 1 to 7 taken to one decimal place, thus effectively yielding a scale from 1 to 70 (1 = most political rights, 70 = least political rights). The scale criteria are given by Gastil (1988, 29-35).

THE INDEPENDENT VARIABLES AND DATA SOURCES

With the dependent variable now in place, the specification and oper-ationalization of the independent variables proceed in a straightforward manner. The basic strategy was to obtain as many cases as possible, consistent with the time span of the political rights index and a time lag between independent and dependent variables. This was understood to be necessary to allow some time for the socioeconomic variables to affect the political rights index, especially in the instance of more "remote" variables such as agricultural density and land inequality. Thus most of the data for these variables center on 1970, whereas those with perhaps some more immediate impact such as economic development, are circa 1975, hence allowing for an approximate five- to ten-year lag for most variables until the median year of 1980 for the dependent variable. The actual lag is not crucial, as these

variables do not change rapidly in time. Indeed, an earlier "pilot" analysis revealed all of the significant effects to be reported shortly, with a shorter or nonexistent lag among variables, but with a smaller impact of independent on dependent variables.

Agricultural density is reported for the year 1970 in Taylor and Jodice (1983, 1:102-4), whereas for the Gini index of *land inequality*, circa 1970, the data in Muller and Seligson (1987, 445-47) were used because this is perhaps the most comprehensive recent list of such data available. *Income inequality*, circa 1970, in the form of the percentage of total income going to the top 20% of the population is in Taylor and Jodice (1983, 1:134-36) and is supplemented for missing cases by values reported in Muller and Seligson (1987, 445-47). This variable was included in order to control for and examine the independent effect of income inequality on democracy as in Rubinson and Quinlan (1977), Bollen and Jackman (1985), and Muller (1988). *Age* of polity is introduced as the year of independence to control for maturation of democratic processes, and is found for most countries in Taylor and Hudson (1972, 26-28), and, where missing, is supplemented by values from Lye and Carpenter (1987).

Economic development is measured by *GDP/CAP* to allow for the impact of purely domestic processes and is found in Summers and Heston (1984) for the year 1975. This makes it consistent with *trade/GNP* for 1975 (Taylor and Jodice 1983, 1:226-28). Here, the entire economy, not only its domestic component, should be controlled in relation to the international variable, trade. *Urbanization* as measured by the percentage of urban population for the year 1975 is drawn from the United Nations' *Demographic Yearbook* (1982, 159-71), and is based on country reports of urban population, generally of towns of 2,000 inhabitants and up. This low threshold was allowed in order to capture the dynamics of the earlier urbanization processes that clearly are central to the Athenian experience. The variable *deaths due to political violence* was drawn from the numerical listing of the 1948 to 1977 series as found in Taylor and Jodice (1983, 2:48-51). Later years (1976 and 1977) were deemed to be part of the entire political violence process and so were included. The continuum on which the political rights index is to be examined, *percentage of the labor force in agriculture*, is for the year 1977, and is found in Taylor and Jodice (1983, 1:208-10).

RESEARCH STRATEGY AND FINDINGS

The approach to the testing of the hypotheses entails a search principally for the genesis of the political rights of societies at various levels of agrari-

anism. As such, these variables are to be examined along a continuum of percentage labor in agriculture. Theoretically, countries that are higher in agrarianism are expected to behave differently from those that are lower on this continuum. The theory itself demands such distinctions, for I am investigating the origins of democracy in agrarian societies. Industrial societies that place lower in their percentage of labor in agriculture will already demonstrate the impact on democracy of later processes such as extensive economic development. At the lowest level of industrial development (highest agrarianism), only land inequality or its theoretical surrogate, agricultural density, should matter, because these countries have not yet entered the stage where economic development or urbanization seriously affects the democratization process. As a consequence, it is necessary to control for the extent of agrarianism.

Initially, agricultural density with less missing data will be used in order to maximize the number of cases. Later, land inequality will be introduced, as will income inequality as a control variable.

As one proceeds through the various stages of agrarianism, the number of cases inevitably decreases. As a result, we require ways of knowing if the results are biased by the choice of a given cutoff along the agrarianism continuum, hence whether one or two cases are introducing a bias into the results. As a consequence, each cutoff will be examined along with the addition of three cases above that cutoff and three cases below that cutoff. This will ensure that an effective range is being examined and not simply one, essentially arbitrary, point. Cutoffs are chosen to maximize the number of cases as one proceeds along the continuum. Thus the full set of cases (all market economies for which data are available, shown in the appendix) along the entire range of 2%-93% is analyzed first, followed by cases that are at least 30% of the labor force in agriculture, and then 55% of the labor force in agriculture, with +3 and −3 cases for each cutoff.[4] The process was stopped at 55% because much lower than that yielded Ns less than 30, deemed to yield unreliable results.

Table 1 presents this initial set of findings. For the complete set of 97 cases, as expected, gross domestic product per capita (GDP/CAP) as a summary measure of economic development has the only significant relationship with the political rights index. This relationship in fact is significant at $p < .001$. The value of R^2 also is significant at this level. A more reliable measure, R_a^2, or the adjusted R^2, is given as a statistic that includes statistical compensations

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4. Because of missing data, countries initially selected to be among the +3 or −3 cases were excluded, thus yielding fewer than 3 cases in certain instances. It was decided to retain the initial choices because they were part of the initial research design based on the entire continuum of the percentage of the labor force in agriculture.

TABLE 1
Regression of the Political Rights Index on the Explanatory Variables

Explanatory Variables	Full Set N = 97	30%+3 N = 70	30% N = 68[a]	30%−3 N = 65	55%+3 N = 44	55% N = 41	55%−3 N = 38
Intercept	52.85	71.6	69.99	55.91	−5.88	−4.89	−8.45
	(1.76)	(1.96)	(1.88)	(1.54)	(−0.19)	(−0.16)	(−0.27)
GDP/CAP	.0008	.0009	.0009	.0009	.003	.003	.003
	(8.96)***	(3.51)***	(3.30)**	(3.29)**	(6.39)***	(6.27)***	(6.11)***
	.72	*.40*	*.39*	*.40*	*.65*	*.69*	*.68*
Agricultural density	−.00007	.002	.002	.002	.005	.004	.005
	(−1.07)	(2.66)**	(2.59)*	(2.72)**	(5.79)***	(4.82)***	(4.88)***
	−.09	*.27*	*.27*	*.29*	*.57*	*.51*	*.53*
Trade/GNP	.007	−.004	−.004	−.006	−.003	−.006	−.007
	(1.14)	(−.55)	(−.49)	(−.82)	(−.47)	(−.87)	(−1.02)
	.10	*−.06*	*−.06*	*−.10*	*−.05*	*−.10*	*−.12*
Log age	−7.83	−10.32	−10.10	−8.23	−.27	−.37	.09
	(−1.96)	(−2.13)*	(−.49)	(−1.71)	(−.07)	(−.09)	(.02)
	−.15	*−.25*	*−.25*	*−.21*	*−.007*	*−.01*	*.002*
Log deaths	.02	.03	.03	.03	.008	−.002	.01
	(.44)	(.50)	(.54)	(.63)	(.18)	(−.04)	(.28)
	.03	*.05*	*.06*	*.07*	*.02*	*−.01*	*.03*
R^2	.65***	.37***	.34***	.36***	.66***	.65***	.66***
R_a^2	.63	.32	.29	.30	.62	.60	.61

NOTE: The first number in each cell entry is the regression coefficient, the second (in parenthesis) is the t ratio, and the third (italicized) is the standardized regression coefficient.

a. Ns depart from the +3, −3 designation as the result of missing cases (see note 4).

*$p < .05$; **$p < .01$; ***$p < .001$; all are two tailed.

for sample size and number of explanatory variables. Higher numbers on the political-rights index imply a lower level of political rights. Therefore, to make the results apparent, negative signs in the calculations were reversed so that positive impacts on political rights in the table are denoted by positive signs.

What is important here is the extent to which agricultural density is associated with political rights beginning at the 30%+3 level and continuing with added impact into the last, highest percentage agrarianism category. Although urbanization was hypothesized initially to be part of the theoretical sequence, its precise contribution could not be assessed because of collinearity effects and especially sign reversals. This will be discussed more fully in the section on diagnostics. For now, it may be said that the overall level of explanation for the full set with urbanization included was about the same as with it excluded (R^2 = .64 [p < .001], R_a^2 = .60, N = 72; compare with Table 1) and with the same significant effects of independent variables throughout the agrarianism range. This variable did not have a very large number of cases at this lower, theoretically important threshold of urbanization, so that its exclusion led to an increase in the number of cases.

Both trade/GNP and the logarithm (to control for outliers) of age of polity are not significant with the exception of the 30%+3 category. In light of the potential importance of political violence as a variable in the logarithmic form,[5] it is interesting to note its nonsignificance throughout the entire range of agrarianism. I will have more to say on that later.

I have not, however, introduced land inequality, nor income inequality as control variables. Because of the large number of missing cases for land inequality and income inequality, taken together, only the full set for the former variable is presented initially. It is useful to examine the higher levels of agrarianism here, too, as in Table 1. The process here stops at 30%–3 because at 55%+3, the next level, the Ns diminish below 30.

5. The data are logged to control for outliers but are not divided by country population as is sometimes the case. To do so is to assume a proportional or linear relationship between the likelihood of deaths due to political violence and population size (Muller et al. 1989, 589). Following the reasoning of Moore (1966) and others who argue for the impact of political violence on later democratic development, it is not the routine sorts of political violence implied by the proportional relationship, but the larger processes that are often accelerating, confined only to particular regions of a country, and utterly disproportional to population size that require our attention. Revolutions such as the English, French, and American are cases in point.

Whatever the merits of this argument as a check on the findings reported here, the political violence data were divided by country population size (for 1975) and were uniformly consistent with the results found in Tables 1 and 2; they demonstrated no significant impact on the political rights index. As the logarithm of zero is undefined, a "1" was added to all of the deaths from political violence values prior to taking the logarithm to the base *e*.

TABLE 2

Regression of the Political Rights Index on the Explanatory Variables Plus Land Inequality and Income Inequality

Explanatory Variables	Full Set N = 72	30%+3 N = 46	30% N = 45	30%-3 N = 42	Full Set N = 55
Intercept	39.27	78.66	76.06	59.54	51.77
	(1.04)	(1.46)	(1.40)	(1.12)	(1.18)
GDP/CAP	.0007	.0003	.0004	.0003	.0005
	(7.84)**	(0.99)	(0.87)	(0.98)	(3.88)**
	.74	.14	.13	.14	.58
Agricultural density	-.00005	.001	.001	.001	.0005
	(-0.70)	(1.51)	(1.45)	(1.61)	(0.88)
	-.07	.18	.18	.20	.08
Land inequality (Gini index)	.02	.03	.03	.03	.03
	(2.31)*	(2.18)*	(2.14)*	(2.11)*	(2.23)*
	.19	.32	.33	.32	.22
Trade/GNP	.006	-.01	-.01	-.01	.01
	(0.89)	(-1.11)	(-1.06)	(-1.49)	(1.44)
	.10	-.14	-.14	-.20	.14
Log age	-6.17	-11.38	-11.03	-8.83	-7.46
	(-1.23)	(-1.61)	(-1.54)	(-1.26)	(-1.30)
	-.12	-.27	-.26	-.22	-.16
Log deaths	.03	.09	.10	.11	-.02
	(0.45)	(1.34)	(1.40)	(1.57)	(-0.24)
	.04	.17	.19	.21	-.03
Income inequality (Upper 20%)					-.04
					(-1.63)
					-.20
R^2		.67**	.47**	.45**	.49**	.67**
R_a^2		.64	.39	.36	.40	.62

NOTE: The first number in each cell entry is the regression coefficient, the second (in paren-thesis) is the t ratio, and the third (italicized) is the standardized regression coefficient.
$*p < .05;$ $**p < .001;$ both are two tailed.

The findings in Table 2 are striking. First, for this full set of $N = 72$, GDP/CAP is significant as one would expect given the results shown in the first column of Table 1. But the only other variable with a significant association with the political rights index is land inequality. This latter finding has several implications. First, as indicated in the models, land

inequality follows from agricultural density. Hence, controlling for this variable as in Table 2 should eliminate any impact of agricultural density per se. And this is precisely what we find. Proceeding now to the higher stages of agrarianism, we see that even GDP/CAP loses its significance, suggesting that for highly agrarian societies the only variable that seriously matters in the explanation of political rights is land inequality. In the last column, income inequality is included not only because of its prior prominence in the analysis of democracy cited earlier, but also because of its hypothesized association with political violence.[6] With income inequality included as a control in this last column, the structure and extent of explanation are virtually identical with the first, and with no significant effect of income inequality on political rights. Analyses along the entire agrarianism range could not be undertaken here because of the smaller *N*s with income inequality included. The remaining variables, Trade/GNP, Log Age, and Log Deaths have no significant impact on political rights.

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Because of the successive analyses along the agrarianism dimension demanded theoretically and the consistent results obtained, there may be less necessity to examine the effects of various potential biases than if these treatments were absent. This is especially true for the potential effects of outliers on different samplings along the percentage labor in agriculture continuum. As they yielded similar findings in the +3 through −3 cases, the effect of outliers is likely minimal, if not absent entirely. Nevertheless it is useful to consider certain diagnostic procedures.

In regard to linearity and heteroskedasticity, the standardized scatterplots of residuals revealed no trends in the distributions. There was no trend observable in any of the scatterplots of the residuals versus predicted values. Histograms of the residuals demonstrated normality, suggesting normality of the underlying error distributions. Cumulative distributions of standardized residuals followed a straight line in almost all instances, also suggesting normality of distribution.

As for the potential impact of outliers, only one country routinely appeared (but not always) in excess of three standard deviations from the mean of the standardized residuals. This was India. Countries that appeared between two and three standard deviations were Iraq, Sri Lanka, and Costa Rica. As expected, India, Sri Lanka, and Costa Rica had higher values on the

6. See, for example, Muller and Seligson (1987) and Muller et al., (1989).

political rights index than predicted, whereas Iraq had a lower value. Removal of these outliers, tended to increase the proportions of explained variance. For example, moving to 75% of the labor force in agriculture, with none of these countries represented (not reported in Table 1 because of $N <$ 30) yielded $R^2 = .81$ [$p < .001$], $R_a^2 = .75$, $N = 23$, with both GDP/CAP and agricultural density significant at $p < .001$.

The only serious statistical problem confronted was that of multicollinearity. The tolerances ($1 - R_i^2$ where R_i^2 is the maximum explained variance in an independent variable by all of the others) for urbanization were about .25, hence not especially low. Nevertheless, the correlation between urbanization and GDP/CAP was $r = .83$, $N = 72$. Worse still were serious instances of sign reversals with the dependent variable, the political rights index. Whereas the zero-order correlation between urbanization and political rights was strongly positive ($r = .64$, $N = 72$), in the multiple regression equation for the full set of Table 1, the regression coefficient and partial correlation were respectively –.004 and –.04. These sign reversals appeared fairly consistently throughout the analysis, necessitating removal of this variable. With urbanization removed, the tolerances for all variables in the equation were relatively higher, exceeding .30 in all cases, and there was no evidence of sign reversals.

CONCLUSION

The independent impact of land inequality on political rights has demonstrated a robustness under varying analytic conditions. In turn, this finding supports the Athenian model of the origins of democracy in agrarian societies. On the other side of the coin, the violence model has little basis in the empirical findings. The developmental model was partially supported in the impact of GDP/CAP.

It may be useful for the moment to dwell on reasons for the importance of land inequality beyond those immediately articulated in the Athenian and developmental models. The importance of land inequality does not likely reside in land scarcity alone or in its ecological imperatives for political rights, but more generally in its implications for the accumulation of wealth in society. It is the accumulated wealth that supports the political rights of certain persons beyond the hereditary or tribal entitlements of others. Accumulated wealth in the bourgeois period of eighteenth- and nineteenth-century England may have performed a role in the development of English democracy similar to that of land inequality in the Athenian. Any form of wealth, not just land per se, may have similar consequences in breaking down the

barriers of family or tribe in gaining access to the political process. As Huntington (1984, 212) put it, democracy "is as likely to be the product of oligarchy as of protest against oligarchy." Here the oligarchy exists in the form of a landed elite empowered to make political decisions in place of a traditional closed hereditary counterpart. In this fashion, the process of decision making is broadened somewhat, until the next widening of political participation.

Least supported empirically is the violence model. This is not to say that, in the long run, political violence in the form of social revolution has little impact on political rights. Whether in the short or long run it certainly increased the political rights of English and French populations, and, perhaps after a long time span, the Soviet population. One can argue that, aside from the granting of certain specific rights after their revolutions of the seventeenth and eighteenth centuries respectively (temporarily in both the English and French instances), the long-term consequence was the freeing of restrictive economic and political practices that then allowed the accumulation of wealth as a spur to later increased political rights.

Whatever the merits of these arguments, the present study cannot reflect on their validity. The time period from 1973 to 1987 for the political rights index and the overall post-World War II period of analysis simply do not include this type of revolution along with the extended time period after its occurrence needed to examine long-term consequences. All that could be done here was an analysis of the more "routine" sorts of political violence within a fairly short time frame, and discern their relative irrelevance to political rights. What are manifestly not irrelevant to the attainment of political rights are the processes of economic development and land inequality that emerged in a somewhat counterintuitive theoretical and empirical treatment.

There was no significant impact of income inequality on political rights,[7] a finding consistent with that of Bollen and Jackman (1985) and inconsistent with that of Muller (1988) and Rubinson and Quinlan (1977). However, the political rights index used here differs substantially from that of Bollen (1980; employed in the former two studies) both in purpose, substantive content, and time period of analysis, and so the findings here are incommensurate, at least in part, with these other studies. In any event, income and land inequality have certain fundamentally different properties. The former is far

7. A revealing comparison between the use of the Gini index of income inequality and the income share of the upper 20% indicated no major differences in the outcomes for each (Muller, 1988). If anything, use of the upper quintile gave uniformly better explanatory power, although not by a substantial margin.

more variable and dependent on changing economic circumstances, but, land inequality, although not immune from such conditions, is much more resistant, especially because wealth is held in relatively immutable form. Further, it is far less subject to redistribution (excepting revolutionary policies), in contrast to income that in many countries is constantly redistributed as the result of taxation. Finally, in traditional societies, land inequality constitutes an observable hierarchy of capital possession that, if steep enough in gradient, can be translated readily into political influence. Income inequality, especially after redistributive taxation and the leveling effects of salaried positions in Third World bureaucracies, cannot be placed in the same category.

In reflecting on the contemporary period, this study provides at least a partial answer to the seemingly complex problem of the failure of democracy to take hold in newly independent countries, especially in Africa. This is the failure to build an accumulation of wealth either in land, goods, or money during the economic parasitism of the colonial period that later, after independence, would serve to break through the tribal and hereditary political entitlements. Steep gradations in such hierarchies simply did not exist in sufficient numbers to open up the political process across tribal boundaries to the very wealthy and influential who could thereby command access. Even a cursory glance at African land distributions (Food and Agriculture Organization 1981) suggests a relatively egalitarian distribution when compared with other countries and their much steeper gradients. Put another way, the only substantial hierarchies existed *within* tribal or other hereditary groupings, and access to the larger political system would then be fought over between these groupings within the military or some other central government agency, thus limiting open and contested democratic development.

East European countries recently emerged from communism may be subject to similar processes. The absence of substantial wealth-based hierarchies — not allowed to develop during the long post-World War II period — may augur poorly for the ability of new democratic regimes to contain ethnic/ tribal animosities. Ghettoization of these ethnic communities and the lack of persons able routinely to command access to them by virtue of some non-ethnic demarcation such as wealth (Communist Party functionaries played such a role in recent years, albeit poorly legitimated), will likely compound the difficulties on the path to stable democracy. The serious question at this point in these countries' history is whether these societal characteristics will be sufficient to derail the democratic process entirely as, in fact, occurred after their emergence to independence subsequent to World War I. International loans and guarantees could at this point play a successful surrogate role for domestic wealth until such time as it develops.

APPENDIX
Countries Included in the Analysis

Country	Countries in the Full Set of Table 1 (N = 97)	Adding Land Inequality (Table 2, N = 72)	Adding Land and Income Inequality (Table 2, N = 55)
Afghanistan	X		
Algeria	X	X	
Angola	X		
Argentina	X	X	X
Australia	X	X	X
Austria	X	X	
Bangladesh	X		
Belgium	X	X	X
Benin	X		
Bolivia	X		
Brazil	X	X	X
Burma	X		
Burundi	X		
Cameroon	X	X	
Canada	X	X	X
Central African Republic	X	X	
Chad	X	X	X
Chile	X		
Colombia	X	X	X
Congo	X	X	
Costa Rica	X	X	X
Denmark	X	X	X
Dominican Republic	X	X	
Ecuador	X	X	X
Egypt	X	X	X
El Salvador	X	X	X
Ethiopia	X		
Finland	X	X	X
France	X	X	X
Germany, West	X	X	X
Ghana	X	X	X
Greece	X	X	
Guatemala	X	X	
Haiti	X	X	
Honduras	X	X	X
India	X	X	X
Indonesia	X	X	X
Iran	X	X	

APPENDIX Continued

Country	Countries in the Full Set of Table 1 (N = 97)	Adding Land Inequality (Table 2, N = 72)	Adding Land and Income Inequality (Table 2, N = 55)
Iraq	X	X	X
Ireland	X	X	X
Israel	X	X	
Italy	X	X	X
Ivory Coast	X	X	X
Jamaica	X	X	X
Japan	X	X	X
Jordan	X		
Kenya	X	X	X
Korea, South	X	X	X
Liberia	X	X	
Madagascar	X		
Malawi	X	X	X
Malaysia	X	X	X
Mali	X	X	
Mauritania	X		
Mexico	X	X	X
Morocco	X		
Mozambique	X		
Nepal	X	X	X
Netherlands	X	X	X
New Zealand	X	X	X
Nicaragua	X	X	X
Niger	X		
Nigeria	X		
Norway	X	X	X
Pakistan	X	X	X
Panama	X	X	X
Papua New Guinea	X		
Paraguay	X		
Peru	X	X	X
Philippines	X	X	X
Portugal	X	X	X
Rwanda	X		
Senegal	X		
Sierra Leone	X	X	X
Singapore	X	X	
Somalia	X		
South Africa	X	X	X
Spain	X	X	X
Sri Lanka	X	X	X

APPENDIX Continued

Country	Countries in the Full Set of Table 1 (N = 97)	Adding Land Inequality (Table 2, N = 72)	Adding Land and Income Inequality (Table 2, N = 55)
Sudan	X		
Sweden	X	X	X
Switzerland	X	X	X
Syria	X	X	
Tanzania	X	X	X
Thailand	X	X	X
Togo	X	X	
Trinidad and Tobago	X	X	X
Tunisia	X		
Turkey	X	X	X
Uganda	X		
United Kingdom	X	X	X
United States	X	X	X
Uruguay	X	X	X
Venezuela	X	X	X
Zaire	X	X	
Zambia	X	X	X
Zimbabwe	X		

NOTE: X denotes presence in this category.

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