

**THE POLITICAL AND ECONOMIC  
DETERMINANTS OF HEALTH OUTCOMES:  
A CROSS-NATIONAL ANALYSIS**

**Hugh F. Lena and Bruce London**

This article investigates the impact of selected political and economic processes on the well-being of domestic populations within samples of 50 to 84 peripheral and noncore nations. Existing research by Cereseto and Waitzkin on the relative merits of market versus socialist systems for the provision of health and welfare needs of their populations is extended by employing a more complex model than the original study. More specifically, the authors assess the impact on measures of population health and mortality rates of regime ideology, state strength, multinational corporate penetration, and position in the world economy. In general, high levels of democracy and strong left-wing regimes are associated with positive health outcomes, and strong right-wing regimes have populations with lower life expectancies and higher levels of various measures of mortality. These findings support the conclusion that political systems make a difference in health and well-being independent of national (gross national product per capita) and international (investment dependency) economic factors.

The cataclysmic changes recently experienced by planned economies revitalize interest in the relative merits of market versus socialist systems for the provision of the health and welfare needs of their populations. As elements of market economies are introduced to previously nonmarket systems, questions about the impact of political-economic reform on the quality of life for affected populations are timely. While interest in basic needs provision and health outcomes in capitalist and socialist economies is long-standing (1–6), the relative capacities of different political systems to produce favorable health outcomes are still debated. This article contributes to this important issue by revisiting several published studies and reconfiguring their quantitative analyses in order to shed additional light on the political and economic determinants of health-related quality of life indicators.

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### BASIC NEEDS IN CAPITALIST AND SOCIALIST SOCIETIES

A 1986 article on social systems and health by Cereseto and Waitzkin (7) attempted to assess the relationships among "Capitalism, Socialism, and the Physical Quality of Life." The study compared capitalist and socialist countries on measures of Morris's (8) Physical Quality of Life Index (PQL or PQLI), controlling for level of economic development. "In 30 of 36 comparisons between countries at similar levels of economic development, socialist countries showed more favorable PQL outcomes" (7, p. 643). These provocative results suggested that, at a given level of development, socialist countries do a better job of meeting the basic needs of their populations than do capitalist countries.

The evidence linking socioeconomic and political structures with the health system is substantial. Following early efforts by Elling (1, 2, 9) and others to link level of economic development (as measured by gross national product per capita, or GNP/c) to health outcomes (most often measured by infant mortality), researchers have continued to refine their models of the political economy of health. More complex models of levels of health development for cross-national analysis are emerging (10), and more comprehensive data sets are available to examine the capitalist world-system and international health. The Cereseto's and Waitzkin study reflects these refinements in cross-national health services research.

It is our contention that Cereseto's and Waitzkin's research was instructive, but that it represents only one possible approach to assessing patterns in the political economy of health that may be revealed by the available data. For example, the comparison of means on a range of quality of life measures between socialist and capitalist nations, within given levels of economic development, may be viewed as a promising, but limited, first step. Such comparisons across categories do lend insight into the overall pattern of differential effects of contrasting political systems on health outcomes. However, Cereseto's and Waitzkin's categorizations of level of economic development (GNP/c) and type of political-economic system (United Nations' classification as market or centrally planned economies) are potentially troublesome. They create a separate economic development category for "High-income oil-exporting countries" (all four countries of which are capitalist) because, while they are high in GNP/c, they are developing nations with traditionally poor quality of life indicators. The inclusion of these nations with other capitalist nations would present an inaccurately negative picture. In their political-economic categorization Cereseto and Waitzkin create a special category among low-income countries for ten nations that underwent market transformation in the last 20 years ("Recent postrevolutionary, low-income countries"; cf., 7, p. 646). And comparisons between socialist and capitalist countries in the low-income category remain tentative since there is only one socialist country, China, at that level of economic development.

Cereseto and Waitzkin recognize the limitations of their initial analyses, especially the “sacrifice of information” in their cross-tabulations. They augment them with analyses of variance and multiple regression analyses that control for level of economic development (GNP/c treated as a continuous variable) and political-economic system (treated as a dummy variable).

While the latter are clearly appropriate steps, the models are underspecified. Level of development and type of political-economic system are only two of the possible, plausible, measurable factors that might affect variation in the quality of life indicators from nation to nation. If the research goal is to assess the “pure effect” of political-economic system on quality of life outcomes, then it is incumbent upon the researcher to control for as many additional, theoretically relevant variables as possible. When, as was the case in the Cereseto and Waitzkin study, one or more plausible predictors of the dependent variable(s) are omitted from the regression equation, the regression coefficients on the included variables may or may not be reliable. In any case, more fully specified models are worthy of examination.

#### DEPENDENCY, DEVELOPMENT, AND BASIC NEEDS

A burgeoning literature on the quantitative, cross-national analysis of issues related to economic development (11–14) attests to the fact that properly specified multiple regression analyses are an appropriate available vehicle for addressing issues of this sort. And, worthwhile alternative tests of the interesting issues identified by Cereseto and Waitzkin are not only possible but relatively easy to conduct.

This ease stems in part from certain precedents in the existing literature. One study in particular, that of London and Williams (15), is most relevant in the present context. This study is a respecification of an earlier study by Moon and Dixon (16). The latter authors conducted a complex regression analysis of the effects of a number of intranational political variables (leftist versus rightist regime ideology, level of democracy, state strength as measured by government expenditures as a proportion of GNP) on cross-national variation in the same PQLI analyzed by Cereseto and Waitzkin. Moon and Dixon found a negative relationship between state strength and basic needs provision, controlling for level of economic development. However, this relationship masked an interaction between regime ideology and state strength: strong right-wing regimes tend to depress basic needs provision whereas strong left-wing states tend to enhance basic needs provision. Furthermore, level of democracy is a consistent positive predictor of basic needs provision. So it is ideology, as it affects the policies that governments pursue with public funds, that is of primary importance, and strong left-wing regimes are able to better allocate a nation’s resources, at least in terms of the PQL indicators.

In much the same vein as the present article, London and Williams (15) argued that the Moon and Dixon study was underspecified because it failed to take into account the potentially significant effect of an international economic factor: nations' levels of investment dependency. According to dependency theory, the dependence of less developed countries (LDCs) on transnational corporate investment has increased significantly and reflects a more contemporary measure of dependence than indicators of classical dependence such as export commodity production and indices of vertical trade (12, p. 51). As a measure of the penetration of an LDC's economy by multinational corporations, London's and Williams' measure of investment dependence estimates the shares of both a nation's capital and its labor controlled by core-based transnational corporations. They find that the simultaneous inclusion of both *intranational* and *international* political and economic variables provides a better model for the explanation of basic needs provision. Their research supports dependency theory and suggests the positive role of democratic institutions in the well-being of a nation's populace, regardless of regime type, position in the world economy, or level of investment dependence (15).

The London and Williams study, then, provides us with a much more fully specified, alternative model of basic needs provision that may be employed to assess the effect of political-economic system on quality of life outcomes. At this point, however, it is important to note a key difference between the approach to this general issue taken by Cereseto and Waitzkin and that taken by London and Williams. Cereseto's and Waitzkin's main goal was to assess the effects of different types of political systems on health outcomes. In this context, their comparisons across categories and analysis of variance approaches were quite proper. London and Williams, on the other hand, were more interested in testing theories (e.g., dependency theory) and developing full models (e.g., specifying both the intranational and international determinants) of basic needs provision. In this regard, the use of multiple regression analysis is proper.

It is our contention, however, that the two approaches are not incompatible. Indeed, the method and approach used by London and Williams may be employed to shed additional light on the important question posed by Cereseto and Waitzkin. This is the case because the regression coefficients for strong left and strong right regimes in the London and Williams model may be interpreted as estimates of the effects of these contrasting political systems on health outcomes, independent of controls for all the other variables in the model. In fact, London's and Williams' results for the PQL, despite being based upon a very different analytical test, are quite compatible with those produced by Cereseto and Waitzkin. Where Cereseto and Waitzkin found that socialist nations do a better job of providing for the basic PQL needs of their populations than do capitalist nations, London and Williams found that democracies, leftist regimes, and, especially, strong leftist regimes do a better job than do nondemocracies, rightist regimes, and, particularly, strong

right-wing regimes (even after controlling for the effects of level of development, investment dependence, and so on).

Note, however, that London and Williams analyzed only composite indices of basic needs: the Physical Quality of Life Index (PQLI) used by Moon and Dixon (16) and an Index of Net Social Progress (INSP) (15). A more comparable test, then, of the findings produced by Cereseto and Waitzkin would be provided if some of the medically most relevant of the many *specific* PQL outcomes examined by Cereseto and Waitzkin (i.e., mortality rates and life expectancy) were treated sequentially as dependent variables in the model developed by London and Williams (15). This additional set of analyses would be especially relevant because “there is serious debate about the reliability and validity of the PQLI . . . [and because] the etiology of any given component of a basic needs index may be different from that of any other component . . . [such that] it is possible that the use of composite indices masks complex, detailed, and potentially countervailing relations” (13, p. 753).

Consequently, the present study will address the issue raised by Cereseto and Waitzkin (i.e., the degree to which political-economic systems predict basic needs provision) by applying the model developed by London and Williams to the analysis of a number of dependent variables that Cereseto and Waitzkin examined, but that London and Williams neglected. Specifically, we will focus on the following health outcomes: infant mortality, child death rates, and life expectancy. These are among the most readily defined and often-used measures of health (cf., 3, 10, 17–21), and a comprehensive survey of earlier studies of cross-national health (22) attests to the value of these measures.

By inserting new dependent variables into the London and Williams model, we can assess the same sort of issue that Cereseto and Waitzkin raise by using different, but cognate definitions of regime political characteristics (LEFT = socialist; RIGHT = capitalist) in the context of a more fully specified multiple regression model. By doing this, we will (a) address this important issue using the most rigorous available methods, and (b) contribute to the *cumulative* development of this entire body of literature and research.

Indeed, we contend that, when conducting research of this sort, a concerted effort should be made to make the entire body of research cumulative. This implies that initial efforts, at the very least, should attempt to replicate existing studies as closely as possible. By retaining as many characteristics of the originally published models as possible and, then, introducing “dimensions of variation” to the analysis (by adding, for example, new dependent variables or new independent variables that, arguably, should not have been left out of the original study), the new research can be more meaningfully compared to the original research.

## DATA AND METHODS: THE LONDON–WILLIAMS MODEL

As noted above, considerable recent effort in cross-national analysis has been devoted to the refinement of empirical models in the analysis of development issues. The London–Williams model, for instance, added a measure of international investment dependency to Moon's and Dixon's strictly intranational model. This enabled a simultaneous examination of the internal and external determinants of basic needs provision (as measured by the PQLI). Both of these studies used ordinary least squares analysis to specify the complex economic and political predictors of basic needs. The present study will involve a similar refinement. The same set of independent variables used by London and Williams to predict variation in the PQLI will now be used to explain a series of health outcome measures that were the focus of the Cereseto and Waitzkin study. We will describe the previously used independent variables and the new set of dependent variables.

### *Independent Variables*

*Dependency.* Among the many measures of dependency used in quantitative, cross-national research (e.g., trade dependence, such as export partner concentration and export commodity concentration; foreign trade structure; debt dependence), investment dependence taps the most appropriate dimension of the complex process of dependency. It is a measure explicitly designed to assess a nation's level of transnational corporate penetration in the face of the changing nature of international economic exchanges of core-periphery relations that have taken place in the last two or three decades. Some researchers argue (23–25) that the tendency for transnational firms to invest in industrial production in the periphery makes it necessary to draw a distinction between classical dependency (characterized primarily by peripheral production of raw materials for core consumption) and a newly emergent form of “dependent industrialization” [termed “the new dependency” by dos Santos (26)]. Bornschier and Chase-Dunn (12, p. 51), for example, present evidence that, between the mid-1960s and the mid-1970s, peripheral countries became less dependent in terms of such indicators of classical dependence as export commodity concentration and an index of vertical trade (which measures the degree to which a country's trade is comprised of raw materials rather than manufactured goods). However, their data show that, for the same time period, “dependence on transnational corporate investment increased significantly . . . [thus] . . . transnational corporations and international financial agencies have been displacing traditional trade dependence as the main form of core-periphery domination” (12, pp. 51–52). Including an indicator of multinational penetration is therefore crucial for investigating the recent effects of international economic processes on basic needs provision since it is one of the

changes in the world economy most frequently mentioned by dependency theorists (27).

We measure "investment dependence" or the penetration of an LDC's economy by multinational corporations in 1967 or thereabouts (LPEN).<sup>1</sup> The measure is an indicator of "transnational corporate penetration" computed by taking the square root of the product of (a) the stock of capital controlled by foreign direct investment as a proportion of the total capital stock of the country and (b) the stock of capital controlled by foreign direct investment divided by the total population of a country. Thus, LPEN estimates the shares of both a nation's capital and its labor controlled by core-based transnational corporations. It is logged to correct for skewness.

If the logic of neoclassical economic theory is correct, we would expect to find a positive relationship between multinational penetration and our dependent variables. In this view, those countries best able to attract foreign capital should experience greater economic growth and, concomitantly, increased levels of basic needs provision. On the other hand, if dependency theorists are correct, multinational penetration should be associated with lower levels of basic needs provision: the distorted development argument.

*World-System Position.* In order to examine the possible effect of world-system position on the determinants of basic needs provision, we run each of our analyses on two separate samples of nations: all noncore nations, that is, all nations classified as peripheral or semiperipheral in Bollen's (29) revision of Snyder's and Kick's (30) measure of world-system position; and all nations classified by Bollen as peripheral.<sup>2</sup> (See the Appendix for the nations used in our analysis.)

A basic assumption of those working within the world-system framework is that different developmental dynamics operate in countries depending upon their position in the world economy. In contrast, neoclassical economics tends to place little emphasis on differing positions in the world economy.

<sup>1</sup> This measure is available for 103 nations in the study by Borschier and Chase-Dunn (12, pp. 59-61). They do not include eight socialist countries in their analysis: Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, North Korea, Poland, and the Soviet Union. However, we follow Borschier and Heintz (28) who, in their Zurich data set, list these eight nations with a penetration score of 0.

<sup>2</sup> Snyder and Kick (30, pp. 1110, 1114) examined four types of international networks: trade flows, treaty memberships, military intervention, and diplomatic relations. They then "block modelled" these networks and found nine "blocks" of nations. These, in turn, have been collapsed into the core, periphery, and semiperiphery categories typical of world-system theory. Bollen's (29, pp. 473-476) revision is based on a careful analysis of partial regression plots as residuals. He discovered six outliers, argued that they present a misclassification of countries by Snyder's and Kick's procedures, and supported this argument with historical data. As a result, Spain, Portugal, and South Africa are reclassified from the core to the semiperiphery, and Taiwan, Iraq, and Saudi Arabia are moved from the semiperiphery to the periphery.

From the former perspective, economic growth and basic needs provision would be expected to be much more adversely affected by the penetration of foreign capital in noncore than in core nations. Bornschieer and Chase-Dunn (12) relate position in the world economy to our measure of investment dependence and "the new dependency." "A particularly strategic aspect of the relationship of individual countries to the structure of the world-economy is whether or not a country takes part in the control of that economy by being an important headquarters location of transnational corporations" (12, p. 13). However, only a small number of core nations serve as headquarters to transnationals. While these nations are also penetrated by multinational investment, the impact of such investment is positively influenced by their core position and the control over investment derived from the presence of corporate headquarters within the boundaries of state authority. Other noncore nations, while penetrated by multinationals, do not exercise control over these firms and suffer the adverse consequences of this lack of control. Finally, socialist countries, while integrated into the world economy, have been little penetrated by transnationals.

Given disagreement in the literature about the effect of position in the world-system, it seems prudent to test any set of results by analyzing stability across peripheral and semiperipheral nations.

*State Strength.* As noted above, one of London's and Williams' primary purposes was to compare the impact of regime characteristics and international economic variables on basic needs provision. To ensure comparability with their work, we follow their lead by taking measures of regime characteristics from the analyses of Moon and Dixon.

While some conservative theorists argue that increasing the size and strength of government comes at the expense of the private sector, many other scholars view government spending as an important corrective to the undesirable effects of private market activity. In this latter view, increased state strength will be associated with greater levels of basic needs provision, and we further expect, in this present case, that it will be specifically associated positively with the health components of basic needs (16, pp. 665-668).

Following Moon and Dixon, we use as an indicator of state strength the percentage of the GNP accounted for by central government expenditures averaged over the three-year period 1969-1971 (31). We log this measure (LSTATSTR) to control for skewness.

*Democracy and Regime Ideology.* Moon and Dixon employ two additional indicators of regime characteristics. First, a measure of democracy in a nation is used to test the degree to which freely elected and open regimes respond to popular demands for the provision of basic needs. Second, in order to assess the effect of ideological orientations, independent of the way in which regimes are



selected, Moon and Dixon include a measure of ideological norms of the ruling regime.

We include in our analysis the same measures used by Moon and Dixon. First, Bollen's (29) index of political democracy is used to measure "degree of democracy." Varying between 0 and 100, this measure is a composite index based upon six indicators: freedom of the press, government sanctions, tolerance of political opposition groups, fairness of elections, methods of selecting executives, and methods of selecting legislators. To lessen the effects of sudden changes, this measure (DEM6065) averages observations from 1960 and 1965.<sup>3</sup> Second, to measure regime ideological norms, Blondel's (32) classification of regime ideologies into seven types is collapsed into three categories: leftist, rightist, and centrist regimes. In the actual analysis, an effects coding procedure is employed: left- and right-wing regimes are the two represented in the effect-coded variables (LEFT and RIGHT).<sup>4</sup>

*Level of Economic Development.* As is standard in such analyses, we control for the great variation among nations in existing levels of aggregate wealth. Following Moon and Dixon and others, we use Morris's (8) measure of 1970–1975 per capita GNP. This measure (LGNP7075) has been logged to correct for skewness.

*Interaction Terms.* One of the most important aspects of Moon's and Dixon's research, an aspect that was replicated by London and Williams, is the inclusion in their model of terms that measure the interaction between state strength and regime norms (LEFTGOV and RIGHTGOV). These two studies demonstrated that it is the interaction between regime norms and state strength, and not simply either the size of government or political ideology, that accounts for variation in basic needs provision. Strong left-wing regimes are associated with high levels of basic needs provision; strong right-wing regimes with lower levels. We have included these multiplicative interaction terms in our equations since they are different but highly cognate definitions/measures of regime political

<sup>3</sup> Because of London's and Williams' more conservative treatment of missing data, their sample differs somewhat from Moon's and Dixon's. Due to missing data, averaging Bollen's index for 1960 and 1965 produces a much smaller number of cases than the 116 reported by Moon and Dixon. Apparently, when one or the other measure was missing, they substituted the single available data point. London and Williams followed this practice only when the 1960 measure was missing and they could substitute the more recent 1965 measure for the average. In the case of Burma, however, where the 1965 measure of democracy was missing, they dropped the case entirely.

<sup>4</sup> According to Cohen and Cohen (33, p. 191), effect coding is "particularly appropriate with nominal scales when each group is most conveniently compared with the entire set of groups, rather than with a single reference group, as is facilitated by dummy variable coding." Note also that the standardized coefficients generated by this procedure are highly dependent on the relative size (n) of each subgroup. Consequently, in interpreting regime ideology effects, attention should be focused more on patterns of significance than on the magnitude of the coefficients.

characteristics. Specifically, Cereseto's and Waitzkin's categorization of socialist nations is paralleled by our measures of left, and especially strong leftist regimes. Similarly, their categorical measure of capitalist nations is elaborated on by our measures of right/strong rightist regimes.

Our measures converge to the extent that leftist/strong leftist regimes are equivalent to Cereseto's and Waitzkin's socialist nations. Also, our measure of rightist/strong rightist regimes is comparable to their capitalist nations. Moreover, incorporating a measure of the level of democracy is another means by which we can assess Cereseto's and Waitzkin's expectation "that different political-economic systems may lead to quite different outcomes" in basic needs provision (7, p. 644). This is the case because our measure of democracy taps the degree to which freely elected and open "political systems" respond to popular demands for the provision of basic needs.

When regression models include interaction terms, proper model specification requires that the components of the interaction terms be included in the equations. Parameter estimates for these components (in the present case, LEFT, RIGHT, LSTATSTR), though, may well be misleading. Each component, for example, may well be highly correlated with the interaction term. As a result of this collinearity, sometimes the signs of coefficients are reversed, sometimes parameter estimates are unusually high, and so on. Therefore, in interpreting results attention will be focused primarily on the parameter estimates for the interaction terms themselves.

The independent variables, then, are drawn from the earlier studies of London and Williams (15) and Moon and Dixon (16), who more fully consider the quality of their data and the problem of missing cases in the World Bank data set. The lagging procedures used in this article are typical for studies of this sort. Since the effects of dependency are known to act slowly (12), measures of the independent variables are clustered around the period 1965 to 1970 and the dependent variables are from 1983, the most recent data available when this study began. This lag period of roughly 15 years corresponds to the postcolonial period for many of the nations in the sample, when multinational corporate penetration was pervasive.

### *Dependent Variables*

As noted above, we will be examining some of the same health-related variables used by Cereseto and Waitzkin in the context of the London and Williams model. Specifically, we will look at a series of separate equations predicting infant mortality, life expectancy, and the child death rate. These are the traditional measures of population health and they are defined in the usual way in this article. All have been logged to correct for skewness. Following Wimberley (14), our preference in this research is for separate indicators of a country's basic needs rather than a composite index of the physical quality of life. With the PQLI, "there

is little theoretical basis for the choice of components and their weights in [this] index. Furthermore, when components are not very highly correlated their combination obscures important differences among countries" (14, p. 77).

*Measures of Mortality.* The infant mortality rate (IMORT83) is the number of infants who die before reaching the age of 1 year, per 1,000 live births in 1983 (34). This measure is logged to correct for skewness. The child death rate (LCHDR83) is the number of deaths of children aged 1 to 4 per 1,000 children in the same age group in 1983 (35). It, too, is logged to correct for skewness. Note also that the effects of some independent variables, especially investment dependency, may act more slowly than others, yielding differential impacts on different dependent variables.

*Life Expectancy.* Life expectancy at birth (LIFE83) indicates the number of years a newborn infant would live if patterns of mortality prevailing for all people at the time of its birth were to stay the same throughout its life (35).

### *Statistical Procedures*

Following the precedent set by London and Williams, the procedure employed is a lagged cross-sectional analysis in which the dependent variables measured at a recent point in time are regressed on the independent variables measured at an earlier point in time. This ordinary least squares procedure captures the effect of initial levels of the independent variables on subsequent levels of the dependent variables. This lagging procedure, common to studies of this sort, is used in an attempt to capture the processual nature of the relationships examined. It is highly unlikely, for example, that a given level of investment dependence or a given set of political characteristics would have an instantaneous impact on health outcomes. Quite simply, it takes time for economic forces and social/political policies to have a measurable impact on populations. In the event of missing data on any variable for any case, that case was deleted from the analysis.

In addition to this basic analysis, we used regression diagnostic procedures to assess the presence or absence of influential cases. Recent methodological discussions of quantitative cross-national analysis note that regression results may be highly sensitive to one or more influential cases (cf. 36, 37). Muller (37) notes that the presence of influential cases can be indicated by Cook's *D*, a summary measure of the extent to which a data point is influential. When regression diagnostic procedures show the presence of influential cases, the analysis may be rerun deleting those cases. If the basic pattern of results is not dramatically changed then confidence in the validity of the initial equations is enhanced. If however, as is sometimes the case, the pattern is dramatically changed, then the validity of the initial equations becomes suspect.

## FINDINGS

Recalling that the principal goal of this article is to reassess Cereseto's and Waitzkin's findings about the political economy of health outcomes, we now turn to an examination of this issue in the context of our more complex data analyses.

Equations 1 through 3 in Table 1 present the results of the regression of a series of dependent variables on the model developed by London and Williams for all noncore nations, while Equations 4 through 7 examine the very same patterns for peripheral nations only. The results regarding the political system variables that are at the heart of our analysis are quite revealing. With some exceptions (as noted below), it is clear that strong left regimes and democracies generate better health outcomes for their populations than do strong right-wing and less democratic nations. Thus, to the extent that our measures parallel Cereseto's and Waitzkin's, we reach the same basic conclusion that they do. This is the case because of the following specific findings. Strong left-wing regimes produce significantly higher life expectancies than do other types of regimes (see Equations 2 and 5). They also produce significantly lower child death rates (Equations, 3, 6, and 7) than do other regimes (although in the influential case analysis for peripheral nations, the negative relationship becomes nonsignificant when the one influential case, Czechoslovakia, is removed). In addition, strong left-wing regimes tend to produce lower, albeit nonsignificant, infant mortality rates than do other types of regimes (Equations 1 and 4).

The findings regarding strong left-wing regimes become even more meaningful when contrasted with the parameter estimates for strong right-wing regimes. The results are unequivocal. Regardless of world system position, strong right-wing regimes produce significantly higher infant mortality rates and child death rates and significantly lower life expectancies than do other types of regimes. Clearly, much in keeping with the findings of Cereseto and Waitzkin, strong left-wing regimes do a much better job of meeting the basic health care needs of their populations than do strong right-wing regimes.

Our findings on the effects of democracy provide additional support for the basic argument that political systems make a difference. Here we find, significantly and without exception, that the higher the level of democracy, the lower the infant mortality and child death rates and the higher the life expectancy.

A word or two is necessary on the other, less central, predictors in our model (keeping in mind our earlier observation that with interaction terms in regression analysis, the component variables must remain in the equations but their parameter estimates may be misleading). First, in each and every case, GNP/c or level of development is strongly related to beneficial health outcomes, that is, lower mortality rates and higher life expectancies. The effects of multinational penetration, however, are more cloudy. For example, multinational penetration is not a significant predictor of life expectancy. It is, however, significantly related to infant mortality and the child death rate. Moreover, multinational penetration is

Table 1

Regression of health outcomes measures on political and economic variables, including first-order interaction terms, for all noncore nations and for peripheral nations only<sup>a</sup>

	All noncore nations			Peripheral nations only			
	Infant mortality <sup>b</sup> (1)	Life expectancy (2)	Child death rate <sup>b</sup> (3)	Infant mortality <sup>b</sup> (4)	Life expectancy (5)	Child death rate <sup>b</sup> (6)	Child death rate <sup>b</sup> (7)
GNP/c <sup>b</sup>	-.67**	.79**	-.73**	-.75**	.80**	-.79**	-.85**
State strength <sup>b</sup>	.00	-.04	.12	.05	-.06	.14	.17*
Democracy	-.30**	.24**	-.26**	-.21**	.21**	-.23**	-.27**
Left regime norms	.20	-.21	.37*	.28	-.19	.38*	.24
Right regime norms	-.28	.27	-.52**	-.46*	.36	-.63**	-.54*
Left regime x strength	-.15	.38**	-.37*	-.26	.46**	-.42*	-.25
Right regime x strength	.35*	-.34*	.51**	.52**	-.48**	.64**	.56*
Investment dependency <sup>b</sup>	.41**	-.06	.33**	.37**	.01	.26*	.37*
R <sup>2</sup>	.75	.72	.68	.73	.71	.70	.67
Adj. R <sup>2</sup>	.72	.69	.64	.69	.66	.64	.61
N	81	84	75	52	54	51	50

<sup>a</sup>Reported coefficients are betas ( $\beta$ ).

<sup>b</sup>Logged to correct for skewness.

\* $\beta$  is at least 1.5 times its standard error.

\*\* $\beta$  is at least twice its standard error.

positively related to infant mortality rates and the child death rate as the distorted development perspective predicts. If, as previous research suggests (14, 15), high levels of investment dependence divert a nation's resources away from intranational uses, then resources available for child health care might be lower than could otherwise be expected. Consequently, dependency could affect such medium-term outcomes as infant and child deaths in ways that it does not affect longer-term outcomes such as life expectancy (note, again, penetration's nonsignificant effect on LIFE83).

## DISCUSSION AND CONCLUSIONS

Our goal was to conduct a more statistically rigorous, alternative test of an issue recently addressed by Cereseto and Waitzkin (7): the assessment of the differential effect of leftist versus rightist political-economic systems on basic needs provision and health outcomes. Our more fully specified models yield findings that are quite congruent with those of the earlier researchers. Cereseto and Waitzkin conclude that "the socialist countries generally have achieved more favorable PQL outcomes than have capitalist countries at equivalent levels of development" (7, p. 654). We conclude that, in general, nations with strong left-wing regimes have more favorable health outcomes (e.g., longer life expectancies and lower mortality rates) than do those with strong right-wing regimes. Moreover, this finding is independent of controls not only for level of development but also for several other theoretically significant political and economic phenomena such as level of democracy and level of investment dependency. In other words, our results complement and strengthen the conclusions presented by Cereseto and Waitzkin.

As those authors note, this strong and recurring pattern of differential basic needs provision and health outcomes by political-economic system is largely a function of conscious social policy (7, p. 654):

Historically, there is some evidence that the discrepancies between capitalist and socialist nations have emerged since World War II and have reflected varying social policies. All the socialist countries have initiated major public health efforts. These initiatives have aimed toward improved sanitation, immunization, maternal and child care, nutrition, and housing. In every case, the socialist countries also have reorganized their health care systems, to create national health services based on the principle of universal entitlement to care. These policies have led to greater accessibility of preventive and curative services for previously deprived groups.

Following Cereseto and Waitzkin, the focus of this research has been on "social systems and health." However, the present study also has implications for the very different bodies of theory and research that were the main concerns of London and Williams. For example, like those authors, we find considerable support for propositions derived from dependency theory: contrary to the predictions of

neoclassical economic theory, investment dependency does not promote the provision of basic needs resources to the populations of Third World nations. Rather, high levels of multinational corporate penetration are associated with high infant mortality rates and high child death rates, independent of controls for the other political and economic variables. Moreover, again following London and Williams, we find that a fully specified model must simultaneously include measures of both *intranational* political factors and *international* economic factors. And, we too, reaffirm one of their “more important and consistent results . . . the significant positive impact of democracy on basic needs provision. Democratic institutions seemingly do make a dramatic difference in the well-being of a nation’s populace, regardless of regime type, position in the world economy, or level of investment dependency” (15, p. 579).

The latter finding, of course, helps to tie all of these studies together because it, too, reaffirms Cereseto’s and Waitzkin’s most fundamental point that characteristics of the political system—be they socialist policy priorities, left-wing regime norms, or truly democratic institutions—can have a significant impact in terms of meeting basic human needs, even in the absence of extensive economic resources. As they conclude: “When much of the world’s population suffers from disease, early death, malnutrition, and illiteracy, these observations take on a meaning that goes beyond cold statistics” (7, p. 655). Indeed, the dramatic political changes recently experienced in Eastern Europe accentuate the significance of these observations. It seems reasonable to suggest that, at least in the short term, the dismantling of socialist health and social welfare infrastructures may well lead to a deterioration of health outcomes in the formerly socialist countries of Eastern Europe. Should relevant data become available over time, it would be appropriate for scholars interested in the relationships between political systems and health outcomes to pay special attention to trends in mortality, life expectancy, and general basic needs provision in those nations that have recently experienced abrupt political transformation.

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#### APPENDIX: NATIONS IN THE ANALYSIS

The following nations were included in the analysis (for largest sample in Table 1, Equation 2). The nations are classified (following Bollen’s classification) as *sp*, semiperipheral, and *p*, peripheral; *u* indicates nations unclassified by Bollen. The “unclassified” countries are included in equations for all noncore nations, but are excluded from equations for peripheral nations only because not enough information/data was available to Snyder and Kick/Bollen to empirically assign these countries to this category.

Afghanistan	p	Iran	sp	Poland	p
Algeria	p	Iraq	p	Portugal	sp
Argentina	sp	Ireland	sp	Romania	sp
Benin	p	Israel	sp	Rwanda	p
Bolivia	p	Ivory Coast	p	Saudi Arabia	p
Brazil	p	Jamaica	p	Senegal	p
Bulgaria	sp	Jordan	sp	Sierra Leone	p
Burundi	p	Kenya	sp	Singapore	u
Cameroon	p	Liberia	p	Somalia	p
Central African Republic	p	Libya	p	South Africa	sp
Chad	p	Madagascar	u	South Korea	sp
Chile	p	Malawi	u	Spain	sp
Colombia	p	Malaya	sp	Sri Lanka	sp
Costa Rica	p	Mali	p	Sudan	p
Czechoslovakia	p	Mauritania	p	Syria	p
Dominican Republic	p	Mexico	p	Tanzania	u
East Germany	sp	Morocco	p	Thailand	p
Ecuador	p	Nepal	p	Togo	p
Egypt	p	New Zealand	p	Trinidad	p
El Salvador	p	Nicaragua	p	Tunisia	p
Ethiopia	p	Niger	p	Turkey	sp
Finland	sp	Nigeria	p	Uganda	p
Ghana	p	North Korea	p	Uruguay	p
Guatemala	p	Pakistan	sp	USSR	sp
Haiti	p	Panama	p	Venezuela	sp
Honduras	p	Paraguay	p	Zaire	p
Hungary	sp	Peru	sp	Zambia	u
India	sp	Philippines	sp		
Indonesia	p				

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Direct reprint requests to:

Dr. Hugh F. Lena  
Department of Sociology  
Providence College  
Providence, RI 02918