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6 Population Dynamics and Inter-State Conflict in Less Developed Countries:

Propositions and Queries

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Population Dynamics and Inter-State Conflict in Less Developed Countries:

Propositions and Queries

There are many uncertainties regarding the precise nature of the population problem and its political consequences, both national and international. Because the issue is generally defined in the context of other factors, such as space, food, resources, and technology, it is difficult to identify those implications of a distinctly political nature, or to associate particular mixes of intervening factors with particular kinds of political consequences. This paper examines the relationship of population dynamics to inter-state conflict in less developed countries, noting the (1) international implications of population dynamics, (2) existing evidence relating population to conflict and warfare, (3) linkages or causal pathways from population to war, (4) population dynamics and population policy in less developed societies, and, finally, outlining the (5) possible lines of investigation for further inquiry.¹

International Implications of Population Dynamics

The political implications of population dynamics--be they related to levels, rates of growth, distributions, compositions, densities, or movements--differ considerably from state to state. The basic Malthusian thesis that indefinite population growth will

bring about widespread poverty, pestilence, and war is applicable only under conditions of trade isolation, minimal standards of living, marginal flexibility in technology, and low energy output.² In such cases, fluctuations in food availability have direct effects on the number of people depending upon a given set of resources. Today, such conditions are most approximated by the close-to-subsistence levels of many Asian and African countries. However, if any one or more of these factors are absent, the Malthusian rationale is undercut by the possibility of modifying the underlying resource base, thereby shedding severe doubt on the simple increased-numbers/increased-strains hypothesis. War and pestilence do not come from size alone.

In negating the Malthusian premise, the Marxist perspective defines the population problem and its political implications in terms of distribution: If resources and technology were properly utilized and distributed, the entire population of the world could subsist on existing resources. By extension, the critical issues in the global political context do not pertain to population variables, but to social and political organization. The concept of overpopulation is, in principle, denied.

Yet both the Malthusian and Marxist perspectives fail to recognize the key variables linking population dynamics to social, economic, and political outcomes. The most critical of such intervening variables in all societies, whether developed or less

developed, involves existing levels of knowledge and skill and the available resource base.

It is the non-Malthusian view that considers explicitly the relationship between changes in levels of technology and wealth to changes in levels of population. The case is made for population control on exactly the inverse of the basic Malthusian premise: Controlling the number of the rich is deemed as far more critical than controlling the number of the poor. This perspective highlights a basic reality of our times, for the rich consume more, pollute more, and discharge greater amounts of waste in the atmosphere.³ In terms of global environmental concerns, population levels and rates of growth constitute a more critical problem in developed societies than in less developed societies, where technological deficiencies and low energy outputs do not occasion large scale, negative environmental outcomes. In terms of international political implications, however, levels and rates of growth in less developed countries occasion demands and related strains on the internal resource base, with consequences that often, if not always, transcend national boundaries.

A growing population and a developing technology--two common characteristics of less developed societies--place rapidly increasing demands on resources and result in internally-generated pressures. Although population size is generally considered an important factor for national power, the relationship is neither simple nor direct:

Only if sufficient capabilities are available and only if the resource base can sustain the existing population can size be considered an asset rather than a liability. Indeed the effective population amounts generally to a fraction of total population.⁴ This is especially true in less developed states where size imposes strains upon readily available national resources.

In the same fashion, compositions, movements, and distributions of population contribute to national power only if the resource constraints are not severe and if the overall effect is cohesive rather than disintegrative. For this reason, the pluralistic ethic, considered so critical to political stability in developed societies, does not have the same implications for less developed countries. Different societies cope with the diverse pressures occasioned by population dynamics in different ways, and the causal pathways from ecological to behavioral factors are as numerous as they are varied.

Therefore, we need to ask: Under what conditions do pressures generated by variable population dynamics--whether related to levels, rates, densities, movements, or compositions--assume violent proportions and warring characteristics? What evidence do we have that inter-state conflicts are related to, or occasioned by, varying population dynamics?

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Population Dynamics and Inter-State Conflict: Evidence and Assessment

Although the empirical evidence linking population and war is both scanty and somewhat contradictory, it is possible to start putting the pieces together by drawing upon recent empirical findings. Evidence pointing to an absence of relationships is often as important for clarifying misconceptions as that noting strong and positive linkages. Much of what we know on the basis of empirical analysis is of this nature.

There is no evidence that population density per se leads directly to inter-state war. Many high-density societies lack the capabilities for effective expansion or external aggression. And many low density states with high capability and high technology have been quite belligerent. In a systematic cross-national analysis of the relationship between density and war over a period of 150 years--1816-1965--it has been found that, in the European context at least, density does not lead to war. The linkages are neither strong nor significant. Furthermore, this absence of relationship persists even when controlling for the intervening effects of technology and culture.⁵

This absence of a direct link between population density and war has also been verified in a systematic analysis of the forty-five years prior to the outbreak of World War I. The population variable alone, measured in terms of density, did not contribute directly to inter-state conflict. Nor did a relationship emerge when measuring

population effects in terms of absolute levels or rates of change. Again, at least in a European Great Power conflict, the population density-leads-to-war thesis is not empirically supported.⁶

Yet the absence of direct links between population and war does not necessarily negate the role of population in contributing to warring outcomes. To date we know very little about the relationship between population composition, distribution, rapid change, or movements and inter-state conflict. There are no systematic, cross-national, studies of these linkages.⁷ However, individual case studies based upon qualitative and prima facie evidence do suggest that the dismissal of such relationships would be premature.

In contrast the empirical evidence, although incomplete, strongly indicates that the interactive effects of population growth, technological development, and resource constraints often do contribute to the extension of national activities outside of territorial boundaries. And it is in this outward thrust that the linkages between population dynamics and inter-state conflict are to be found.⁸

National propensities for expansion, conflict, and violence differ considerably, depending upon the nature of the population-resource-technology calculus. Nations rating high on population, resources, and technology are associated with modes of international behavior markedly different from those associated with low population, low technology, and low resources--or variants thereof. Cross-national

comparisons have made this apparent.

For example, the differences in modes of external behavior throughout the past century (1870-1970) between the Scandinavian countries and the major European powers are illustrative of these interrelationships. The Scandinavians were inclined to rely upon trade rather than upon colonial expansion for the satisfaction of needs and wants. There were many reasons for this, but notably the Scandinavians registered low on population, high on technology, and low on internal resources. By contrast, of the great powers, those states that expanded most widely were also those that were growing most rapidly in domestic population and/or technology and production. And large scale expansion--termed colonialism at the time--contributed to repeated violent contact with the colonized as well as with other powers engaged in similar activities.⁹

Between 1870 and 1900, the colonial population under British control more than doubled in size (accompanying a slightly larger increase in colonial territory), and 75 per cent of the variance in this expansion can be accounted for mainly by the differential between domestic population growth in relation to home territory, by technological advancement (measured by national income and iron and steel output), by the combined effects of population and technology, and by military preparedness. From a statistical perspective, the remainder of the variance--the unexplained 25 per cent--may well be accounted for by conscious decisions on the part of the

national leadership, policy calculations, and the like. A slight variation in this percentage arises as a function of methodological and technical considerations, but the same general patterns emerge in the case of Germany and other powers, except France, where the population variable essentially "washed out" and was superseded by the strength of the technology indicator variables.¹⁰

Longitudinal analysis of Germany and Japan during the inter-war period provided added evidence for the linkages between the population-resource-technology calculus and external expansion and conflict. So far, the evidence is associational and not causal, but we cannot dismiss the possibility of causal linkages between internal ecological factors and external expansion: Both of these states ranked high on population and technology and low on resources.¹¹

Changes in the population-resource-technology relationships over time further reveal the political implications of these dynamics. For example, in contrast with its current profile China in 1912 would be viewed as high on population, low on technology and low on resources, whereas today the balance is much more in high population, high technology, and possibly even the high resource end of the continuum. To note the differences in China's external orientation over the past century may be to point to the obvious, but a likely hypothesis is that the differences are occasioned by changes in attributes and capabilities, of which population, resources, and technology are the most crucial.

From these sketchy comparisons and supportive data, and in conjunction with qualitative historians, political analysts and diplomats,¹² several propositions emerge: (1) Population alone has no political implications, domestically or internationally; (2) A state's population must be viewed in conjunction with its resources and technological capabilities; (3) Different combinations of population and capability allow for different internal and external policies and behaviors--some ecological "mixes" have a greater propensity for inter-state conflict than others; and (5) Only through second-order effects do population variables--levels, rates, compositions, distributions, or densities--assume any political importance.

Causal Pathways to War: Long-Range Ecological Effects¹³

If we assume that no one cause ever determines international violence and that the over-all constellation of critical variables--psychological, sociological, demographic, economic, and political--are not randomly ordered, we can then begin to unravel causal pathways to war. To do this, we need to specify the longer-range "causes" as well as those that are intermediate and more short-range. In this context, the proposition emerges that inter-state conflicts often evolve via a two-step process: (1) in terms of internally-generated pressures toward expansion of interests and activity occasioned by growing needs and demands; and (2) in terms of reciprocal comparisons, rivalries, and conflicts over control of resources, valued goods,

territory, or spheres of influence. Each step is closely related to the other, and each is rooted in the demands and pressures generated by the population.

A society may be unable to satisfy its demands because (1) appropriate resources do not exist domestically; or (2) although present, they are too difficult to acquire economically; or (3) because rising and broadening demands outstrip availability; or (4) because supplies are being depleted. Whatever the sources of constraints on the satisfaction of perceived needs, a state has two obvious alternatives: Either to meet those needs internally or to seek external sources of relief.

The greater the unsatisfied demands and needs, and the greater the capabilities available to a state, the higher is the likelihood that national activities will be extended outside of territorial boundaries. Such activity may have many forms and be expressed in any one or more different modes--such as commerce, investments, exploration, extraction of resources, or stationing of troops. The type of behavior adopted will strongly condition eventual outcomes and relations between nations.

War-prone systems leading to inter-state conflicts develop when two or more states with high capabilities and unsatisfied demands extend their interests and psycho-political boundaries outward and develop the feeling that such interests ought to be protected. There is a strong probability that the two spheres of

interests will eventually intersect. The more conflictual the intersection, the greater is the likelihood that competition will assume military dimensions; when this happens, overt violence may occur. From a short-range, day-to-day perspective, the act of provocation may be considered the immediate stimulus for the ensuing violence. But an act will be considered a provocation only in a situation which has already been characterized by internal pressures, expansionist efforts or activities, intersections among spheres of influence, armament, and competition and increasing conflictual behavior.

The point here is that it is in the relationships of population to resources and to technology that sources of inter-state conflict are to be found. This proposition is especially relevant to less developed countries, where the process of development in itself generates associated demands, with the momentum of demands being further impelled by increasing population.

In the same fashion, rates of change, movements of population, or changes in compositions--when viewed in the context of resource constraints and differential levels of knowledge and skills--generate the same causal linkages which, if unchecked, might take on warring characteristics. The greater the differential in access to resources and capabilities, the higher will be the likelihood of overt conflict. And, the greater the convergence of intra-state and inter-state pressures generated by demands in a context of

resource scarcities and differential technology, the higher the probability that political interactions will assume violent proportions. The relationship of population dynamics to inter-state conflict in less developed societies is to be viewed against this general background of propositions and hypotheses.

Population Dynamics and Inter-State Conflict in Less Developed States

To date little is formally known about the relationship of population dynamics to inter-state conflict in less developed countries. Empirical investigations are few and, despite considerable prima facie evidence concerning causal linkages between population and conflict in lower income states, the record remains ambiguous.

It is frequently suggested that the continuing or widening gap between the affluent nations and the poverty-stricken nations will lead directly to global war--the implications being that the starving millions will be goaded into revolt by their misery. This is unlikely. In general, the threat emerges less from such possibilities than from continuing major power competitions and conflicts and those of smaller powers allied with and supplied by the major powers. The less developed states may--through their mere existence--contribute to large-scale conflicts and competitions, but their effect is more indirect. Many of the resources vital to continuing major powers growth are located in less-developed, low-technology areas. These territories and accompanying resources supply the arenas for major power competitions and struggles, and they themselves

are likely to be under great power influence and pressure to line up on one side or another. Major power rivalries, confrontations, and crises in low capability regions that are rich in primary energy and other critical resources run great risks of leading into major wars.

The key considerations in such instances pertain to the needs and demands of the greater powers in conjunction with their own capabilities and objectives. However, the implications of power politics must be viewed in the context of the needs, demands, and pressures generated by less developed states. In those terms, variable population dynamics in many lower income countries appear to be directly related to actual or potential inter-state conflicts. In the absence of systematic cross-national analysis, some examples provide illustrative evidence.

Perhaps the most obvious case of inter-state conflict associated with population dynamics is the recent Indian-Pakistani war. Few would deny that the flow of over 10 million persons into India featured prominently in the Indian decision for war. The implications of added population are clear: In a country with a close-to-subsistence economy and burgeoning indigenous population, any rapid increase in population undoubtedly places added, if not insurmountable strains on an already limited resource base. In this case, the critical variable tending toward conflict pertains to the movement of population in a context of severe resource constraints.

Statistical links between population variables and political outcomes are likely to be both strong and direct.

But this is an unambiguous case. What can be said about other situations in less developed countries? How do population variables relate to inter-state conflict in less obvious instances?

The complexities of the Arab-Israeli conflict, exacerbated as much by inter-Arab rivalries as by major power involvement, offer another example of the close connection between ecological and political variables. The strong ideological overtones of the Middle Eastern conflict have long tended to overshadow the salience of differentials in population, resources, and technology, and the implications of such differentials for the conflict and possibilities of further eruption.

The creation of Israel as an independent political entity in 1948 involved a large-scale population movement and the introduction of an alien population to the area. The comparatively higher levels of knowledge and skills of the entering population tended to accentuate demographic imbalances and have provided an almost invariant context for political, religious, and ethnic divisions.

From the Israeli perspective, the demographic characteristics of the main antagonist, Egypt, serves as a grim reminder of these differentials. Egypt's population is estimated today at 35 million, and doubling every twenty-one years. But the levels of literacy,

knowledge and skills, technological capability, and related military efficacy are low, thus illustrating the proposition that in the absence of a commensurate resource base and a low level of technological development, numbers alone serve as a liability rather than an asset.

From the Egyptian perspective, high levels of Israeli technology tend to overshadow the differentials in population. Three wars have made it unquestionably clear that the critical variables in determining political and military outcomes are technology and resources and not population.

All of this is not to suggest that the Arab-Israeli conflict can be reduced to differentials of population, technology, and access to resources and valued goods, but that these differentials have provided the background for ensuing political differences. Indeed the statistical relationship between armament expenditures on the one hand, and demographic factors, on the other, have provided some linkages from population to politics.

Adding the dimension of inter-Arab rivalries further highlights the role of differentials in population, technology, and resources. Egypt's high and growing population by far exceeds that of any of the other Arab states. In addition, Egyptian levels of knowledge and skills compare favorably when viewed in an inter-Arab context. But the country's limited resources do not meet increasing needs and demands. The configuration of population, resources and technology

differentials as between Egypt on the one hand and Libya or the Sudan on the other have clear political implications for the involvement of Egyptians in the economies of the two adjacent states. Again, such differentials do not cause political disagreements or potential conflicts, but provide an invariant context for politics in the Middle East.

The important query in this context, therefore, is whether any lasting political settlement of the Arab-Israeli conflict or of inter-Arab rivalries might be institutionalized, given the complexities of the underlying demographic, technological, and resource differentials. A cautious approach to this question has prompted the Lebanese leadership for years not to clarify the nature of the ethnic divisions in the country by taking a formal census. Where political balance and stability are closely dependent upon ethnic divisions, it is often deemed necessary not to inquire too closely into changes in basic demographic trends. In this case, the problem involves spill-over effects: In an area where Moslems are a majority, political composition in Lebanon cannot remain insulated from regional politics.

In many cases, the interdependence of internal and external politics makes it difficult to evaluate whether political consequences related to compositions occasion primarily internal conflicts or whether the repercussions are of an external nature. More on the internal end of the continuum would be Kenya, where differentials in

knowledge and skills of different tribal groups add a precarious element in the political equation of the country. The dominance of Kikuyu is largely safeguarded by the nature of the political process, but representation of the Luo, Samburu, Turkana, Kalinjin and other tribal groups is viewed as an important element for the stability of the country. To date, however, political repercussions have been mainly of an internal nature. Without drawing undue parallels, the same kinds of basic differentials among political groups had dominated the Nigerian scene before the civil war and the implications there were predominantly internal.

A case in which internal and external implications might be closely intertwined is the recent Nicaragua-Honduras war. Although this situation has not yet been fully examined, clearly the football match that triggered the war was only a minor factor in the conflict. Population movements in the context of resource differentials provided the background, if not the causal pathway, to inter-state conflict. But many uncertainties remain concerning the workings of this causal network.

A further example noting the interdependence of internal and external implications of population dynamics in less developed regions is the recent Sino-Soviet border conflict. While few would deny that the conflict itself was predominantly of a political nature, the composition of population along the Sinkiang border, differential densities and distributions were viewed as critical considerations

to the border dispute by both parties and, indeed, were the subject of respective population policies. But, in the absence of empirical analysis of regional politics, such inferences are purely conjectural, although clues are provided by aggregate quantitative investigations.¹⁴

Recent statistical analyses of Chinese and Soviet Russian reactions to each other's national capabilities and power over the past twenty years have revealed that Soviet conflict behavior toward the Chinese People's Republic is associated first and foremost with the size of the Chinese population rather than with indicators of Chinese technological growth and economic development. The correlation between the Soviet Union's behavior toward China and the size of the Chinese population is .71. At the same time, China's behavior toward the Soviet Union is strongly associated with the Chinese population size. The correlation in this case is .86. In each instance, therefore, the Chinese population appears to be strongly related to mutually directed conflict behavior.

On the basis of statistical analysis, it appears that the Chinese, in turn, have been responsive to increases in the population of the U.S.S.R., but the quantitative measures were not sensitive enough to capture more detailed nuances, such as mutual reactions to changes in population size, in population distribution, in labor force, industrial centers, or to draw inferences for regional conflict from national ecological trends. The correlation between China's conflict behavior toward the Soviet Union and the size of the latter's

population is .89, thus indicating, statistically at least, that the Chinese are as sensitive to the growth of the Soviet population as are the Soviets to the growth of the Chinese population.

Distinguishing between associational and causal effects involves parameter estimation rather than correlation. In a causal modeling effort based upon multiple regression analysis, 65 per cent of the variance in U.S.S.R. conflict behavior toward China is accounted for by the level of the Chinese population, China's gross national product, and China's steel production. Of these, the Chinese population appears to have the greatest impact on the U.S.S.R.'s conflict behavior toward China (the t statistic for the population coefficient being 2.86). The same explanatory variables account for 82 per cent of China's violence behavior toward the Soviet Union and, again, the single most important variable is the size of the Chinese population (the t statistic in this case being 4.86 and is highly significant statistically).¹⁵

Parallel analyses were conducted employing alternative estimates of Chinese and Soviet data (based on "high", "medium", and "low" series) in the attempt to determine whether differing assessments of levels and trends make any differences in the net statistical relationships. Because the alternative population and GNP series correlate very highly (over .85), the general statistical relationships persist regardless of the particular data series employed.

Statistical analyses such as these do not "prove" the linkages

between population dynamics and inter-state conflict, nor does qualitative, inferential, or illustrative evidence. All that is claimed here is that the uncertainties concerning such hypothesized relationships might be reduced by resorting to different types and methods of analysis.¹⁶ Clearly this is only a starting point. Furthermore, nothing that has been said so far "proves" the consolidation of government action and government policy in bringing about conflictual outcomes.

What is the role of government and official policy in this causal network? What are the linkages between population dynamics and policy perspectives? How and when does a population "problem" assume political dimensions?

Population Dynamics and Population Policy: Problems and Queries

That population becomes a political variable only when it is perceived as such by a government is obvious. But the importance attached to population is generally in terms of strains and stresses on the society's internal resource base and not in terms of external implications. Increasingly, in many developing states, population dynamics have been moved into the political arena and are considered an appropriate domain of government policy and control. This is in sharp contrast to developed societies in the West, where the ethic of individual freedom tends to mitigate against such a possibility.

In those developing societies where government has consciously moved into the area of population policy, motivations have been primarily of an economic nature, the linkages between demographic pressures and economic growth being an elementary factor in national development. It is in only a few isolated instances, however, that government policy has consciously moved in the area of population control. This has tended to happen only when the perceived costs of not adopting some measure of control have become apparent.

Control of population growth is only one type of policy. Directed population movement and changes in distributions or compositions provide additional possibilities along the policy dimension, but governments are generally reluctant to move in the manipulative direction and have, to date, tended to adopt a control perspective primarily in terms of family planning rather than directed movement or distribution. The major exceptions are China and the Soviet Union, where directed population movement has long been a matter of national policy.

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Aside from an inventory of population policies and government statements concerning population policies, there is almost no other work done in the area.¹⁷ We know very little concerning linkages between population policies and underlying demographic, economic, and political factors. Indeed, we do not know whether there are any patterns among types of policies and types of national profiles. We have not even begun to conceptualize the problem clearly enough to suggest ways in which we might begin to map out the linkages

between underlying demographic patterns and government policy and decisions.

It is necessary to approach the population, technology, and resource variables from the policy perspective so as to map out the reverberating effects of these variables from long-range factors to specific day-to-day, policy related considerations. At a minimum, we need look at less developed states in a comparative context and assess the issues of population manipulation, the costs involved, and the expected outcomes. Clearly, not all states have population policies or comparable objectives when evaluating the implications of their populations.

To gain a comparative perspective on the dual issue of population dynamics and population policy, the first question to raise is: Does nation A have an explicit or implicit population policy?

If the answer is no, then we need inquire into the underlying reasons.

It might be that no official policy is needed because (1) levels and rates have been consistently low; (2) external migrations assist in relieving excess population; (3) strong cultural traits mitigate against the development of population policy; or (4) a variety of other possibilities. If the answer is yes, then we need to ask:

(1) What is the nature of the policy: Is it to control population growth, movement, or distribution, or is it to encourage population growth? (2) What are the dimensions of the policy: Is it related to the society at large or is it directed toward particular groups?

The question may not be one of need at all!

(3) What are the policy instruments employed: Are they direct in terms of laws and sanctions, or are they indirect in terms of incentives and rewards? (4) What are the stated costs of employing selected policy instruments: Are stated costs congruent with what might appear to be actual costs? Do some benefits tend to be clearly associated with certain costs?

This first set of questions enables us to identify the extent to which the population variable in itself is viewed by national governments as subject to manipulation. We must not assume that population policy necessarily implies population control. There are many cases in which explicit government policy is to increase rather than decrease population, or to channel growth in a particular direction. Nor must we assume that governments are necessarily aware of the numerous political implications associated with variable population dynamics. This is another area of great unknowns. We know for example, that some governments are very sensitive to the political repercussions of their population growth or distributions, but we also know that in the rare cases specific linkages are made between underlying demographic characteristics and political outcomes.

What are they?

Cases in which the political implications of demographic distributions have been recognized by national governments, generating a policy response, include approaches to population growth and movements along the Sino-Soviet border, different policies adopted by the South African government in relation to blacks and whites, the

selective migrations in Israel, explicit non-policies in Lebanon, and official growth control policies in Egypt, to name a few examples. These cases illustrate a wide range of policies emanating from an equally varied range of underlying demographic characteristics.

The main point is that we must focus on decision-making processes in a comparative framework and examine how underlying demographic, economic, and sociological variables affect each process, and how decisions that are primarily political in nature emerge from considerations that are initially a-political. It is also important to recognize that decisions and policies are highly constrained by the distribution of critical variables--whether related to population dynamics, technological growth, or resource limitations--and to address ourselves specifically to the question of how decisions, policies, and national choices are constrained by the effects of underlying demographic variables.

Basic to this task is the isolation of those social, political, economic, or cultural variables that provide the context within which governmental policies (or non-policies) are undertaken. It is then possible to identify those factors that might be the subject of national policy--the manipulables--and those variables that mediate or intervene between aggregate, underlying factors and policy related, governmental variables. Moving one step closer to the policy perspective, but still retaining a firm handle on the demographic variables, one might then inquire into a series of distinctly political

variables associated with population variables. For example, (1) Which groups in society have a stake in supporting or preventing the manipulation of population? (2) What are the attributes of each group? (3) Is population policy viewed as related to internal considerations or is it viewed as a factor in relations with other states? (4) What are the key factors associated with internal versus external determinants of population policy? (5) What are the dimensions of the emergent policy (movement, control, distribution, or what?)

These amorphous and somewhat unrelated questions serve two purposes: (1) to assist in mapping out the dimensions of the problem, so as to trace the effects of population variables as they make themselves felt throughout the system, and as they may emerge as officially recognized issues by national leaderships, and (2) to assist in selecting the most appropriate research tools for examining various stages of this process.

The first of these tasks refers to data issues and critical information: We must know what the situation actually is. In this regard existing material compiled by the Population Council, by various organizations of the United Nations, by various national organizations, by A.I.D., and by other United States agencies concerning population problems in less developed countries are immeasurably useful. But we have not yet learned how to maximize our understanding or appreciation of the information they contain, or how

to make the best use of the existing range of analytical tools at our disposal. In many cases, we are not even aware of the extent to which such tools would assist our investigations into these problems and the conduct of sustained and sophisticated research.

The Computer Aided System for Handling Information on Local Conflicts (CASCON)--developed initially at M.I.T. and further extended at the University of Michigan--consists of a computerized retrieval system covering basic information on fifty-two conflicts involving less developed states from 1945 to the present. By drawing upon this list of conflicts and comparing cases in terms of the effects of population variables (if any) on the conduct and course of the conflict, it might at least serve as a starting point for investigations of the population/conflict problem in less developed states.¹⁸

But this is only a point of departure. We then need to raise the "how" and "why" questions. It is at this stage that other, more complex, analytical tools need be drawn upon to assist the investigator in examining the longer-range causes of a conflict, locating the role and effect of population variables, identifying and noting the effect of intervening factors, and finally, grappling with the immediate problems of policy making and decisions involving both population as well as other factors deemed critical to the conflict itself. In this regard, the capabilities of System Dynamics (a simulation language for analyzing the workings of social systems over

long periods of time), when used in conjunction with Decision Analysis (a mathematical tool for investigating the short-range implications of policies and decisions) appear most applicable. But no one has actually tested the usefulness of these tools for analysis of social and political problems. This needs to be done.

We must also address ourselves to the cost considerations of various policies and decisions. For this, Policy Analysis is a well tested procedure. This method is designed for the analysis of national expenditures and budget profiles based on alternative national preferences and priorities. What emerges is an estimate of the cost calculus attached to different policies, thus providing crucial information concerning the cost implications of proposed policies, or, alternatively, of setting up competing policies and observing their costs and feasibilities.

These are all bits and pieces of what needs to be done to enhance our understanding of the political implications of population dynamics. So far we have not done very well. It is imperative that we do considerably better in the future than we have in the past.

This final section needs to be expanded in discussion.

FOOTNOTES

¹These comments are prepared for the Conference on "Effects of Rapid Population Growth on Political Change in the Less Developed Countries," Washington, D.C., February 17, 1972. It is difficult to untangle the effects of rapid population growth from other aspects of population dynamics on international conflict. For this reason, we focus on the broader perspective.

²Edward A. Ackerman, "Population and Natural Resources," in Philip M. Hauser and Otis Dudley Duncan (eds.), The Study of Population (Chicago: The University of Chicago Press, 1959), pp. 637-638.

³See Jean Mayer, "Toward Non-Malthusian Population Policy," Hearings Before a Subcommittee of the Committee on Government Operations, House of Representatives, Ninety-first Congress, First Session, September 15-16. The Effects of Population Growth on National Resources and the Environment (Washington, Government Printing Office, 1969).

⁴A.F.K. Organski, et al., "The Effective Population in International Politics," paper prepared for the Commission on Population Growth and the American Future, November 1, 1971.

⁵Stuart Bremer, J. David Singer, and Urs Luterbacher, "Crowding and Combat in Animal and Human Societies: The European Nations, 1816-1965," unpublished paper, The University of Michigan, November 1971.

⁶Robert C. North and Naali Choucri, Nations in Conflict: Prelude to World War I [in preparation]; Naali Choucri and Robert C. North, "Dynamics of International Conflict: Some Policy Implications of Population, Resources and Technology," World Politics, Supplementary Issue [in press].

⁷In a quantitative cross-national analysis of 108 nations during the years 1955-65 it was found that the impact of changes in population on internal war and collective protest was insignificant when viewed in the context of a fully specified, block-recursive, multi-equation system capturing the causal effect of determinant variables. However, it may well be that the impact of population change on violence involves longer time lags than has been allowed for in the analysis. See Douglas Hibbs, Mass Political Violence: A Cross-National Causal Analysis (New York: John Wiley and Sons, forthcoming).

⁸North and Choucri, Nations in Conflict.

⁹Nazli Choucri (with the collaboration of Robert C. North), "In Search of Peace Systems: Scandinavia and the Netherlands," in Bruce M. Russett (ed.), War, Peace and Numbers [in press].

¹⁰Choucri and North, "Dynamics of International Conflict."

¹¹Richard P. Lagerstrom and Robert C. North, "Germany and Japan: A Comparative Application of a Model of Expansion," prepared for The Western Political Science Association Meeting, April 1971. Intensive analysis of the inter-war Japanese case are currently under way at M.I.T., pointing so far to the dependence of external expansion on economic and population growth.

¹²See, for example, Raymond Aron, Peace and War (New York: Frederick A. Praeger, 1968) or Pierre Renouvin and Jean-Baptiste Duroselle, Introduction to the History of International Relations (New York: Frederick A. Praeger, 1967).

¹³See Robert C. North and Nazli Choucri, "Population and the Future International System: Implications for United States Policy and Planning," prepared for the Commission on Population Growth and the American Future, August 1971, for a more extensive discussion of these processes.

¹⁴See James H. Barkas, "Sino-Soviet Policies in Central Asia," unpublished paper, The Fletcher School of Law and Diplomacy, Tufts University, for a survey of population policies and regional politics.

¹⁵These statistics are drawn from North and Choucri, "Population and the Future International System." See Richard K. Ashley, "Sino-Soviet-American Conflictual Relations: A Preliminary Analysis," unpublished paper, Department of Political Science, M.I.T., and Robert C. North, The Foreign Relations of China (second edition, in press), Chapter 8; "National Capabilities and Foreign Policy: Population, Resources, Technology and International Behavior," by Richard K. Ashley (with the assistance of Nazli Choucri), for a more extensive discussion of statistical analysis and accompanying empirical data.

¹⁶For an extensive treatment of the population issue see Rapid Population Growth, Consequences and Policy Implications (Baltimore: The Johns Hopkins Press, 1971) especially Myron Weiner, "Political Demography: An Inquiry Into the Political Consequences of Population Change," pp. 567-617.

¹⁷Country Profiles, issued by The Population Council and The International Institute for the Study of Human Reproduction, Columbia University, May 1969; and Reports on Population/Family Planning, "Governmental Policy Statements on Population: An Inventory," February, 1970.

¹⁸For example, in a survey of similarities and differences in the composition of population among the 52 conflict cases it was found that the Bay of Pigs Invasion (1961), the El Salvador-Honduras War (1969), the Indonesian-Malay Confrontation (1963-1965), and the Somalia-Ethiopia-Kenya conflict (1960-1964) all shared the same ethnic and population characteristics tending to war. Additionally, when including the India-Pakistan war of 1971 it was found that it resembled most closely the El Salvador-Honduras war. See Mark Gray, "Dynamic Conflict Control and Ethnic Factors in the India-Pakistan Conflict of 1971," unpublished paper, M.I.T., December 1971.