

The Influence of Ethnic Segmentation on Development

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Ethnic fragmentation and arrested development are pervasive features of the post-colonial state. This study explores the thesis implicit to modernization theory that the relationship between ethnic segmentation—an integral feature of colonial space and of the post-colonial states that inherited them—and development is negligible.

A number of quantitative methods are used to test the null hypothesis that no relationship exists between development and ethnic fragmentation: cluster analysis is used to group countries with respect to development, and analyses of variance and regression analysis are used to test for statistically significant differences between country clusters with respect to degree of ethnic segmentation.

The statistical findings reported in this paper “falsify” the null hypothesis in a Popperian sense: evidence suggests that a relationship does exist between level of development and degree of ethnic fragmentation. While this study cannot establish the direction of causality between these phenomena, it does refute the view inherent to modernization approaches that ethnicity is inconsequential to development and nation-building in the post colonial state.

This paper reports on an aspect of ongoing research concerning the influence of society-nature relationships on development. The general thesis is that the post-colonial state is inadequate as a vehicle for development owing to the incongruence between jurisdictional boundaries and the cogent social formations they encompass. Such spatial incongruity is believed to distort society-nature relationships since post-colonial borders divide the habitats in which the culture, social organization, settlement patterns and production systems of social formations emerged.

Implicit to this thesis is the notion that the integrity of ethnic groups plays a key role in development: the less continuous a society is with respect to ethnicity, the more difficult it becomes to generate popular identification with, and participation in, the development process. Further, ethnic fragmen-

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tation or segmentation is symptomatic of the alienation of peoples from their environments. This has economic, environmental, political and social ramifications for development (Gottlieb 1991, 1992).

The objective of this study is to determine if there is any empirical basis to support the premise that ethnic fragmentation and arrested development are in any way related. The results of the statistical study are presented below and are followed by an interpretation. Empirical evidence of a correlation or the lack thereof between ethnic segmentation and underdevelopment is useful in adjudicating among rival theoretical and comparative perspectives on the issue. However, prior to statistically probing the available data an exposition of different perspectives on the subject is imperative.

ETHNICITY AS KEY OR ENCUMBRANCE TO DEVELOPMENT

The phenomena of impeded development and ethnic unrest have often been linked, if only implicitly, in the literatures pertaining to development, ethnic conflict and the state. While there appears to be a consensus that ethnicity plays a role in the development process, perspectives on the subject differ greatly on the question of whether ethnic identification is a vestigial hindrance, a sign of a more primitive order, or a fundamental human need which development must accommodate. A third position does not deal with the intrinsic worth or lack thereof of ethnicity but ponders its utility as an instrument for development mobilization.

One perspective argues that "[E]thnicity, as one type of primordial assumption about the nature of human identity, can be found in all types of societies, industrial as well as nonindustrial" (Keyes 1981:27). By primordial, Keyes refers to descent; however, what is referred to is social rather than genetic descent; it is an identity that is learned. It is culturally rather than biologically transmitted (Keyes 1981:5-8). On the other hand, modern social science on the whole seems to have been largely hostile or at least impervious to issues related to ethnicity, as will be shown below. This is all the more evident when a review is undertaken of modernization theory, perhaps the most common of development approaches.

Development qua Modernization

In the post-World War II period, development economics has been dominated by the modernization approach, particularly a market-oriented one (e.g., Hirschmann 1981; Rostow 1960; Kuznets 1965; Little 1982). Modernization models place emphasis on aggregate, i.e., state-level economic growth. Advocates of this approach presume that those modalities which led to the development of the market economies of the North could and should be adapted for use in the South.

Proponents of modernization paradigms argue that post-colonial nation-building (entailing, *inter alia*, industrialization, urbanization and secularization) tend to reduce the significance of the relationship between social formations in general and ethnic allegiances in particular with respect to development. As Seers (1983:12) pointed out, such views can be found both in the left- and right-wing ideological camps; regardless of the great divergence in state programs advocated by these camps, they share a common tendency to abstract the uniqueness of social formations out of their development and nation-building equations and obscure ethnicity; the social content of these formations and their relationship to the territory which they inhabit are seldom taken into account.

Market models of development are often attacked for presuming that economic growth unfolds everywhere through uniform processes (Rostow 1960). Accordingly, these growth models are criticized as being synonymous with westernization; they are seen as being intrinsically foreign to Third World contexts (Kedourie 1970; Friedmann and Douglass 1981; Cobbah 1988; Verhelst 1989; Amin 1990).

Social scientists trained in the group pluralist and cultural pluralist schools also stress the important role played by regimes in post-colonial nation-building and modernization. They explore "possibilities and conditions for integration of functionally and ethnically diverse societies" (Brass 1985:18) for the purpose of strengthening the new Third World states. Prominent within this perspective is the resource competition school which explains ethnic conflict as "part of the individual's or group's strategies for preserving or increasing control of resources, social status or other values" (Knutsson, 1969:99). The underlying premise is: Given an abundance of resources and/or greater equity achieved through economic growth, all incentive for sectarian identification and ethnic conflict will disappear. As Wriggins writes, "Economic stagnation sharpens conflict and intensifies competition and social antagonism. On the other hand, economic development broadens opportunities and draws men (*sic*) into the wider, national entity" (Wriggins 1966: 191). It is believed that diversity among social formations in modernized post-colonial societies will evaporate—assuming that national resources are appropriately divided.

Orthodox marxists tend to emphasize the importance of the state regime and the class relations it institutionalizes as the midwife to change in an age of historical turbulence. Ultimately, the transition from capitalism to socialism and then on to communism is dependent on the struggle between classes, which cut across national boundaries and unite workers of all nationalities against the international bourgeoisie. Class loyalties supersede all others. This thesis has its classical expression in Marx and Engel (1848), Marx (1844; 1845-46) and Lenin (1915).

Neo-Marxists and world-system theorists distinguish themselves from classical marxists by emphasizing the dependent, dualistic relations between the underdeveloped and developed worlds. They interpret social conflict in terms of the functional hierarchization of peoples and of space intrinsic to the capitalist world-economy. Nation-states fulfill core, semi-peripheral or peripheral roles in the capitalist World-System (Wallerstein 1982). The ethno-territorial composition of their societies is largely irrelevant to the function states perform in the global system:

...one by one and bit by bit, these states were constructed or reconstructed, honed to an ever finer edge to play their institutional role in the elaboration of an overall political framework that could contain the world market and its multiple state structure. This framework is the interstate system, which has been elaborated and rationalized since the sixteenth century.

...the fundamental principle of the interstate system is not national sovereignty...but the so-called balance of power [between the superpower blocs]...(Wallerstein 1982).

Similarly, Frank writes that "at best, nationalism now increasingly threatens...proletarian forces"; at worst, nationalist and religious sentiments threaten to be increasingly manipulated outright by reaction" (Frank 1981: 329). One would presume that this applies to ethno-nationalism as well as to larger scale nationalisms.

Nationalism and ethnic identification have also been regarded by social theorists in precisely the opposite way from historical materialists. Anderson (1983), for example, speaks of ethnic and national identification in terms of "imagined communities" which exercise profound effects on global affairs even when the historical continuity of such nationalism is shallow or non-existent.

Despite the discrepancies in the programs they advocate, neo-capitalist development economics, orthodox marxism, group pluralist theory, the dependency approach, the nation-building school and the world-system project all emphasize modernization and advocate state regimes capable of modernizing their societies.

Over the past two decades alternatives to the modernization approach, principally bottom-up approaches (Stohr and Taylor 1981) have renewed the focus on social formations as a key part of the development enterprise. There has been increasingly sharp criticism of the modernization approaches, particularly in their mechanistic treatment of social groups, for instance, ethnic groups.

In modernization theories this level is viewed as significant only in traditional or parochial societies and not in "modern" ones. ..."Dere-gionalization" and the declining significance of place are likewise

major themes in the political geography and sociological literatures on "nation building" and the effects of the mass media on political behavior...To insist on the continued importance of place, however, is not to deny that processes beyond the locality have become important determinants of what happens in places. But it is still in places that people's lives are lived, economic interests are defined, information from local and extra-local sources is interpreted and takes on meaning, and political discussions are carried on (Agnew 1982).

Recently, a "neutralist" perspective has emerged among political economists concerning the issue of ethnonational solidarity (Blaut 1986; J. Anderson 1986a, 1986b). These theorists view ethnic phenomena as inherently neutral and exploitable for a variety of purposes ranging from democratic to fascistic. Nationalism is seen as: "one kind of political struggle for state power," which "functions as a neutral tool or implement, one that has been put to use by a variety of classes and cultures for a variety of ends: democratic, autocratic and otherwise," accompanying "efforts to impose and to resist, external domination and external exploitation" (Blaut 1986). It is noteworthy that increasing numbers of political economy theorists have gone even further and now view social formations, including ethnic groups, as critical in shaping development (Friedmann and Douglass 1981; Knight 1982; Seers 1983; Agnew 1982; Peet 1986; Friedmann and Forest 1988; Amin 1990).

The Limits to Modernization

In describing the depth of ethnic attachment, Enloe argues that if modernization conflicts with tradition and social autonomy then perhaps it is modernization that should be sacrificed (Enloe 1973:274). Similarly, the number of ethnic and regional groups engaged in ethnonationalist struggles prompts Snyder to state:

The intensification of self-determination by mini-nationalisms throughout the world indicates the theories of modernization and nation-building have not worked out as well as has been supposed ...National self-determination was succeeded by mini-nationalisms moving away from integration (Snyder 1982:6).

In a recent book, *No Life Without Roots: Culture and Development*, Verhelst questions the very legitimacy of the post-colonial state based on the violence it inflicts on Third World peoples:

...Nowadays, it has become obvious that most Africans hardly recognize themselves in the states their colonizers have bequeathed to them. Since the state sees itself as the driving force of development, the latter consequently finds itself profoundly handicapped. The fre-

quency of coups d'état reveals not only the behind-the-scenes intrigues of neo-colonialism, but also the shallowness of the regimes' roots in society, the unsuitable nature of their methods of government and the very nature of their power.

[T]he post-colonial "state-idolatry" is equalled only by the profound absence of legitimacy of the authorities. An artificial entity, from the points of view of both its frontiers and its history, the African state, far from being the product of a long and spontaneous process of nation-building, exists in itself, and very often for itself and for the bourgeoisie which has taken control of it. The people are elsewhere and define themselves by a sub- or trans-state identity....The state imposes centralization and homogenization, ethnic groups demand the rights to their differences and autonomy (Verhelst 1990:38).

These and other theorists argue that efforts to treat social formations as content-less variables in an abstract calculus of development are difficult, if not impossible to successfully implement and new theories are being proposed to supplant traditional approaches. Theory, however, is often remote from reality. The purpose of the remainder of this study is to determine if there is any empirical evidence to bolster the claim that ethnic fragmentation and underdevelopment and, conversely, ethnic continuity and development are related.

Proof, Falsity and the Validity of the Thesis

Theoretical and qualitative accounts are believed to present sufficient support for the thesis that there is a correlation between ethnic solidarity and development progress. Nonetheless, empirical evidence can greatly support attempts to validate or repudiate the thesis. Accordingly, statistical analyses have been employed to determine if there is any quantitative support for the claims made here. In these studies, the null hypothesis is that no statistically significant relationship exists between level of development and degree of ethnic segmentation.

The analyses undertaken were aimed at testing the null hypothesis. The validity of the thesis is not, however, contingent on the statistical studies: At best, the latter can lend the thesis support, not verification. This speaks to the broader issue of theory adjudication in the social sciences, which is relevant to the present study since it is, in essence, a theoretical work. Consequently, it is important to set out epistemological constraints on "proving" the arguments. The scale of the phenomena under study here—social formations and their habitats—are not subject to the type of experimental control available in laboratory or tightly structured social settings. In this regard the author subscribes to Popper's critique of verification in hypothesis testing. Popper's (1956a; 1956b) notion of "falsification," i.e., that hypoth-

eses cannot be formally verified but only falsified is adopted here. Accordingly, the statistical studies reported here were not intended to "prove" the research hypothesis, which is, *inter alia*, that ethnic segmentation correlates with impeded development. Rather, if the null hypothesis is collaborated then the research hypothesis would be falsified and rejected. Conversely, the falsification of the null hypothesis does not "prove" the research hypothesis: Rejection of the null hypothesis, given its opposition to the research hypothesis would confer on the latter conditional credibility—unless and until it is falsified.

THE STATISTICAL STUDY

In order to test the null hypothesis, *i.e.*, that no meaningful correlation exists between ethnic segmentation and underdevelopment an attempt was made to statistically correlate numerous development indicators with measures of ethnonational fragmentation for 129 countries. Presumably, if development and ethnic segmentation are interrelated this relationship should find expression in statistical correlation, thereby falsifying the null hypothesis.

Expectations that significant statistical correlation could be demonstrated using existing data is strongly tempered by the fact that the governments with the most serious ethnic problems are precisely those least likely to permit the publication of data attesting to the problem. To cite one example, not only does the Turkish government use brute force to pacify its Kurdish minority but to identify oneself as a Kurd in Turkey is a criminal offense punishable by imprisonment. This is an extreme example of a pervasive tendency found throughout the South: to deny ethnonational discord and to silence all expressions of it. Since submerged nationalities are generally vulnerable and obscured from the public eye, there is little reliable data to document their persecution.

A more benign, but no less serious, problem in seeking statistical support for the hypothesis is the paucity and poor quality of data available from Third World countries; this in itself is symptomatic of underdevelopment as far as human resources are concerned. What data do exist tends to be aggregate, state level data only and does not distinguish between the relative status of regions or ethnic groups. Disaggregation of such data would be of great service in identifying whether or not the ethnic dimension does in fact influence the course of development. However, at present such data are rare indeed.

Statistical Corroboration

First among the statistical methodologies employed were cluster analysis and discriminant analysis, which divided states into distinct groups and showed how these groups differ from one another in terms of development indicators. Such analysis was undertaken in order to compensate for the widespread absence of systematic socioeconomic data for society over time. The clustering of countries into relatively more or less advanced groups constitutes an analog for longitudinal study (assuming that societies follow similar paths to development): More advanced countries can be assumed to have achieved that status with the passage of time; less developed countries are presumed to have had less time (i.e., they achieved independence later) with which to develop.

The clustering of countries utilized indicators selected to reflect inter-sectorial production and occupational structures, terms of trade, and measures of social welfare. Values for relevant indicators were taken from the 1988 World Development Tables (World Bank 1988). Accordingly, the initial data bank contained one-hundred and twenty-six variables for each of the 129 countries the World Bank covers comprehensively. Candidate variables for use in clustering were combined in various permutations until a conceptually cogent grouping of countries—from the point of view of development—was attained. Among the indicators used were those dealing with:

I. Gross Domestic and National Product

- Gross Domestic Product;
- Gross National Product/Capita;
- Average Annual Growth Rate of GNP/Capita from 1980-1986;
- Percentage of Agricultural Production in the Gross Domestic Product;
- Percentage of Industrial Production in the Gross Domestic Product;
- Gross Domestic Product per Capita;

II. Terms of Trade

- Terms of Trade;
- Growth of Exports from 1980-1986;
- Growth of Imports from 1980-1986;
- External Financial Aid Requirements;

III. Demographics/ Social Welfare/Health

- Life Expectancy in Years;
- Crude Birth Rate;
- Infant Mortality Rates;
- Average Annual Calories Per Day;
- Ratio of Population to Physician;
- Illiteracy Rate;
- Percentage of Cohorts in Primary School;

Percentage of Cohorts in Secondary School;
 Percent of the Urban Population found in the Largest City;
 Urban Population as a Percentage of the Total Population;

IV. Occupational Structures

Percentage of Labor Force in Agriculture;
 Percentage of the Labor Force involved in the Services;

When these variables were used as clustering criteria 74 cases were determined to be valid, i.e., 74 of the 129 countries had values for all of the clustering variables.

In designing the cluster analysis, five groupings were requested. As a result, the following cluster memberships were generated:

<i>Cluster I.</i>			
Bangladesh	Benin	Burkina Faso	Burma
Cen. Afr. Rep.	Haiti	Mali	Nepal
Nigeria	Pakistan	Senegal	Somalia
Sudan	Togo	Yemen, Arab Rep.	
<i>Cluster II.</i>			
Algeria	Brazil	Cameroon	China
Costa Rica	Dominican Rep.	Egypt	El Salvador
Ghana	Guatemala	Honduras	India
Indonesia	Jordan	Kenya	Malaysia
Madagascar	Mexico	Morocco	Nicaragua
Paraguay	Peru	Philippines	Sri Lanka
Syria	Thailand	Tunisia	Turkey
Zaire	Zambia	Zimbabwe	
<i>Cluster III.</i>			
Austria	Australia	Belgium	Canada
Chile	Denmark	Finland	France
Germany, F.R.	Greece	Ireland	Israel
Italy	Japan	Korea, Rep.	Kuwait
Norway	Netherlands	New Zealand	Portugal
Singapore	Spain	Sweden	United Kingdom
Uruguay	Yugoslavia		
<i>Cluster IV.</i>			
Saudi Arabia (Outlier)			
<i>Cluster V.</i>			
United States (Outlier)			

Table 1: Number of cases by cluster.

<i>Cluster</i>	<i>Number of Cases</i>	
1.	15	
2.	31	
3.	26	
Sub-Total	72	
4.	1	(Saudi Arabia, Outlier)
5.	1	(United States, Outlier)
Total	74	

In assessing the efficacy of our clustering variables we compared them as a single group to the GNP/Capita indicator, which is widely used as a rough gauge of development. The GNP/Capita is recognized as a limited indicator given that it is merely the mean of the gross national product of a country divided by its population. It does not give any indication of economic growth or productivity nor does it differentiate national income by sector, region, class or gender. Also, the GNP/Capital indicator does not illuminate consumption or distribution patterns. Nonetheless, given the broad application of the GNP/Capita measure, it is useful to compare our clustering variables with it through regression analysis. The results of this analysis are shown below:

Table 2: Multiple Regression of Clustering Variables and GNP per Capita.

<i>Analysis of Variance Dependent Variable=GNP/Cap\$86</i>				
	<i>DF</i>	<i>Sum of Squares</i>	<i>Mean Square</i>	
Regression	21	1515711266.67	72176726.98	
Residual	71	406084643.83	5719502.03	
<i>Summary Computations</i>				
MultR	Rsq	AdjRsq	F(Eqn)	SigF
.89	.79	.73	12.62	.000

As shown by the adjusted R square value ($\text{AdjRsq}=.73$) and the significance of the F-Test ($\text{SigF}=.000$) there is a strong degree of correlation between our clustering variables as a group and the GNP/Capita. Our clustering variables are preferred because of the far greater depth they collectively provide in showing production, trade, occupational and social welfare patterns.

Broadly speaking, Clusters I. and II. correspond to what are commonly referred to as the Underdeveloped (or Developing, or Less Developed) Countries while Cluster III. is constituted by advanced market economies, i.e. the Developed (or More Developed) Countries. The United States is not included in the latter cluster owing, at least in part, to terms of trade and the high level of foreign aid disbursed. Saudia Arabia is also excluded as an outlier as a result of the distortions in occupational structures.

Comparing Country Clusters on the Ethnic Question

Once the country clusters had been identified they could be compared with respect to ethnic segmentation. The index used to measure the degree of ethnic uniformity is taken from the Encyclopedia of the Third World (Kurian 1982). This volume employs a slightly modified version of the index (ethnic homogenization) of the ethnic segmentation indicator developed by Atlas Narodov Mira, published by the Department of Geodesy and Cartography of the State Geological Committee, USSR Academy of Sciences in Moscow. The Atlas was first published in 1964 and systematically classifies over 1,600 ethnic groups world-wide (Telberg 1965).

The Atlas' authors claim to rely on official statistics received from international sources concerning settlement, migration trends and language affiliations. The vernacular used by groups is a pivotal variable according to which ethnic groups are distinguished in the Atlas. The Atlas' ethnic fractionalization index is the most complete of the three measures employed in the World Handbook of Political and Social Indicators. It was cautiously selected, as modified by the Encyclopedia of the Third World, for use here as the best available measure of ethnic uniformity, though with full recognition of its limitations and possible biases.

The ethnolinguistic uniformity (or degree of homogeneity as termed in the Encyclopedia of the Third World) of the 74 countries included in this study is presented below. The gradient runs from 1.00 indicating maximum ethnic uniformity downward; the lower the value, the more discontinuous the society is with respect to ethnicity.

Table 3: Cluster number, country and ethnic homogenization index.

<i>Cluster I.</i>					
Bangladesh	.98	Benin	.38	Burkina Faso	.32
Burma	.53	Cen. Afr. Rep.	.31	Haiti	.99
Mali	.22	Nepal	.30	Nigeria	.13
Pakistan	.36	Senegal	.28	Somalia	.92
Sudan	.27	Togo	.29	Yemen, Arab Rep.	.99
<i>Cluster II.</i>					
Algeria	.57	Brazil	.93	Cameroon	.11
China	.88	Costa Rica	.97	Dominican Rep	.96
Egypt	.96	El Salvador	.83	Ghana	.29
Guatemala	.36	Honduras	.84	India	.11
Indonesia	.14	Jordan	.95	Kenya	.17
Malaysia	.18	Madagascar	.94	Mexico	.70
Morocco	.47	Nicaragua	.82	Paraguay	.86
Peru	.41	Philippines	.26	Sri Lanka	.53
Syria	.78	Thailand	.34	Tunisia	.84
Turkey	.75	Zaire	.10	Zambia	.18
Zimbabwe	.56				
<i>Cluster III.</i>					
Austria	.87	Australia	.68	Belgium	.44
Canada	.25	Chile	.86	Denmark	.95
Finland	.84	France	.76	Germany, F.R.	.97
Greece	.90	Ireland	.96	Israel	.80
Italy	.96	Japan	.99	Korea, Rep.	1.00
Kuwait	.72	Norway	.96	Netherlands.	.90
New Zealand	.67	Portugal	.99	Singapore	.58
Spain	.56	Sweden	.92	U.K.	.68
Uruguay	.20	Yugoslavia	.25		
<i>Cluster IV.</i>					
Saudi Arabia (Outlier)	.94				
<i>Cluster V.</i>					
United States (Outlier)	.50				

The averages with respect to ethnic uniformity within each of the three main clusters are shown in Table 4.

Table 4: Average percentage of ethnic homogenization (uniformity) by country cluster.

<i>Cluster</i>	<i>(N)</i>	<i>Mean</i>	<i>Standard Deviation</i>
I.	(15)	.48	.32
II.	(31)	.58	.32
III.	(26)	.78	.22
IV.	(1)	Not	Applicable
V.	(1)	Not	Applicable
Total	(74)	.64	.31

Cluster I., the lowest tier of countries on the development spectrum, has an average ethnic homogenization of 48 percent, i.e., these countries are highly segmented ethnolinguistically. The countries of Cluster II., at 58 percent homogeneity, are also highly ethnically diverse. The third tier of societies, at 78 percent ethnic homogenization, are far more ethnically uniform than the other two tiers. The fourth and fifth clusters represent the outliers, Saudi Arabia and the United States and are not relevant for our purposes since they consist of groups having only one case.

While there are important variations among the country means within each cluster (e.g., Bangladesh at 98 percent homogenization and Belgium at 44 percent), there is a clear tendency toward ethnic discontinuity at the lower end of the development spectrum and greater ethnolinguistic uniformity at the higher end. Stated differently, while there is considerable variance within each cluster, the differences between countries within each cluster is significantly smaller than the difference among the three clusters, with respect to the ethnic homogenization index. However, while there are differences among group means, it is not readily discernable whether there are statistically significant differences among them. A multivariate analysis of variance (MANOVA) was conducted to determine if the differences between groups are different than those within the clusters. The results are as follow:

Table 5: Multivariate analysis of variance tests of significance for ethnic homogeneity using unique sums of squares.

<i>Source of Variation</i>	<i>SS</i>	<i>DF</i>	<i>MS</i>
Within clusters	5.58	69	.08
Between clusters	0.99	2	.50
	F 6.14	Sig of F .004	

The significance of the F-Score indicates that the means of the three clusters are statistically distinct with 99.6 percent certainty. To determine which groups are statistically different from each other, one way analyses of variance were employed for each of the three combinations of clusters. The results are as follow:

Table 6: One-way analysis of variance, Clusters I. and II.

<i>Source of Variation</i>	<i>SS</i>	<i>DF</i>	<i>MS</i>	<i>F-test</i>
Between Groups	0.08	1	.08	.802
Within Groups	4.41	44	.10	p>.25
Total	4.49	45		

Table 7: One-way analysis of variance, Clusters I. and III.

<i>Source of Variation</i>	<i>SS</i>	<i>DF</i>	<i>MS</i>	<i>F-test</i>
Between Groups	0.82	1	.82	12.60
Within Groups	2.56	39	.07	.0001<p<.005
Total	3.38	40		

Table 8: One-way analysis of variance, Clusters II. and III.

<i>Source of Variation</i>	<i>SS</i>	<i>DF</i>	<i>MS</i>	<i>F-test</i>
Between Groups	0.60	1	.596	7.82
Within Groups	4.19	55	.076	.005<p<.01
Total	4.79	56		

The above results indicate that there are statistical differences that are highly significant with respect to ethnic uniformity values between the means for Clusters I. and III. (with a probability falling between 99.5 and 99.99 percent) and between Clusters II. and III. (with a probability falling between 99 to 99.5 percent). The differences in the means for the two developing clusters, I. and II. is less statistically significant. These means are statistically different only with 75 percent or less certainty.

DISCUSSION OF FINDINGS

According to these findings, the developing clusters have significantly different means with respect to ethnic homogeneity relative to advanced ones: in these cases they are especially significant, falling between 99 to 99.99 percent.

The implications for the null hypothesis are clear. Not only is there a relationship between level of development and ethnic segmentation, but socioeconomic development stands in inverse relationship to ethnic segmentation: the more developed a society is, the more ethnically continuous it is likely to be. Conversely, an ethnically segmented society is likely to be less developed. The null hypothesis is falsified. Consequently, the research hypothesis is accorded conditional credibility. The above conclusions are tentative and must be qualified: We are relying on a modification of the Atlas Narodov Mira's index which, though well-recommended, is not definitive or universally accepted as an indicator of ethnic segmentation. Additionally, while a broad and representative sample (56%) of the countries comprehensively documented by the World Development Indicators was employed in this study, this sample is restricted in its coverage of less-populated countries which are not comprehensively covered by the Indicators—as well as former Eastern Bloc countries which under their previous accounting systems did not utilize many of the variables used here. Further, as in any study, the selection of clustering variables is theory-bound to the extent that production, labor, trade and social welfare indicators were used rather than any single group of measures, such as for example, those exclusively concerned with economic growth.

Potentially most damaging to the research hypothesis is not whether it is correct or not but rather how one interprets the results. The question of causality comes into question; is ethnic fragmentation more evident in poorer states because these states are underdeveloped and their underdevelopment causes or exaggerates ethnic differences (as resource competition and other modernization theorists would argue) or, as is argued here, are ethnic fragmentation and underdevelopment twin symptoms of the same malaise, that is, of the socio-spatial inadequacies of the post-colonial state? The former interpretation is certainly a feasible one. However, the existence of ethnic unrest among groups that are neither underdeveloped and/or whom do not reside in underdeveloped countries (e.g, the Quebecois, the Basque) casts aspersions upon it. Similarly, underdevelopment is found in countries that do not have a problem of ethnic conflict.

Accordingly, it is argued here that the question of causal directionality between underdevelopment and ethnic unrest is inconsequential: both phenomena can (and do) exist independently of the other. What is of significance here is the pervasive coincidence of these phenomena throughout many of

the developing countries of the South. This is interpreted as reflecting a common cause, i.e., the socio-spatial malformations of the post-colonial state.

Additional evidence of the correlation between development and ethnic factionalism is found in the number and nature of conflicts that have involved post-colonial states. Inter-state and internecine (civil war and secessionist movements) conflicts that have taken place in the post-colonial period and which have at least an element of ethnic discord involved are mentioned in Table 9:

Table 9: Selected inter-state and internecine post-colonial conflicts involving ethnicity/ethno-nationalism.

India/Pakistan	Arab/Israeli
China/Vietnam	Iran/Iraq
China/Tibet	Indonesia/Malaysia
Turks/Greeks (Cyprus)	Chad/Libya
Indonesia/E.Timor	Somalia/Ethiopia
Vietnam/Cambodia	Gambia/Senegal
W. Sahara/Morocco	Azerbaijan/Iran
Kurds/Iran	Kurds/Iraq
Kurds/Syria	Kurds/Turkey
Turcomans/Iran	Baluch/Iran
Karens/Burma	Hill Tribes/Burma
Hyderabad/India	Shiites/Iraq
Molucca/Indonesia	Katanga/Zaire
Eritrea/Ethiopia	Biafra/Nigeria
S. Sudan/Sudan	Berbers/Maghreb
Baluch/Pakistan	Nagas/India
Kashmir/India	Sikh/India
Tamils/Sri Lanka	Ogaden/Ethiopia
Sumatra/Indonesia	Dhofaris/Oman
Belize/Honduras	Palestinian/Israel
Arabestan/Iran	Palestinian/Jordan
Meskitos/Nicaragua	S. Mindinao/Philippines
Lebanon: Inter-Sectarian	

Source: After Chaliand and Rageau (1985:47-50).

The question that begs to be asked in light of the above statistical findings and particularly in light of the inescapable limitations of a study of this type is: assuming that the above trends are true, why would there be a connection between arrested development and ethnic segmentation?

The Post-Colonial State and the Search for Explanation

In response to these and other problems Hughes declares that what are called nation-states in the Third World are nothing more than "colonial-states" (Hughes 1981). The system found in the South today is one wherein nations are divided by the borders of these colonial-states which are, in effect, states without nations or states with multinational societies so heterogeneous as to render them ungovernable. This dismemberment of Third World peoples from their habitats has effectively denied Third World people authentic self-determination (Cobbah 1988; Gotlieb 1991) and has impeded development (Seers 1983).

Throughout the Third World, the borders of the post-colonial state are generally those which existed at the time of the transfer of power from the metropolitan powers to indigenous elites. Consequently, the entities that had been imperial colonies and which subsequently became post-colonial states have been left largely unchanged in terms of their social and spatial attributes. These post-colonial states encompass social formations constituted of amalgamated ethnic groups that lack a collective history. Accordingly, the legitimacy of the Third World state does not rest on ethnic solidarity, since there is often little congruence between "nation" and "state" in today's constellation of states (Tivey 1981). This being the case, what, then, is the feature of state identification that unifies citizens of post-colonial states?

Given that the colonial state was the instrument of oppression employed against colonized peoples, Third World liberation movements have emphasized the struggle for state power. In effect, however, decolonization has been interpreted solely as entailing the transfer of power from imperial to indigenous regimes within imperialist/post-colonial boundaries. The post-colonial polity—despite its social-territorial malformation—was regarded as the vehicle for the modernization of Third World societies; the legitimacy of the regimes governing these states would be defined by their success in "modernizing" the people residing in formerly colonized space (Myrdal 1968; Mazrui 1972).

Since the boundaries of most post-colonial states divide social formations and their traditional territorial habitats, the relationship between land and people is, effectively, reforged and traditional society-nature relationships are eclipsed. The failure of most post-colonial states to develop, then, is no less a function of the territorial composition of these states than of the policies implemented within their borders. Modernization fails on two accounts: it abstracts people from their identities and it aims to achieve development within indigenized, albeit inadequate, territorial space isomorphic with the former colonial borders. It appears with increasingly clarity that such an endeavor will invariably fail: The strength of society-nature relations should not be underestimated.

CONCLUSION

Against this backdrop the importance of the statistical findings is not found in what they prove: nothing is "proved" by them save for the singular fact that further research concerning the potential impact of segmented human habitats on development is justified, if not imperative. In accepting the falsification test for theory adjudication it appears that the null hypothesis is repudiated while the thesis—that ethnicity and development are necessarily intertwined—is accorded conditional confirmation.

There are serious challenges to the validity of every statistical study of large scale social phenomenon. Nonetheless, what the foregoing study tells us is that the ethnic factor cannot be neglected in development. Quite to the contrary, while the statistical study is unavoidably limited in its heuristic value it shows quite clearly that the ethnic factor does come into play in development.

Against this backdrop the validity of modernization approaches is called into question. All modernization schools accept the post-colonial state—despite its imperialist origins—as a given fact. Little critical reflection has taken place concerning the structural implications for development engendered by territories that are ethnically, ecologically and economically fragmented. It is in this oversight that explanations for the coincidence of arrested development and ethnic fragmentation might fruitfully be sought. While development requires the adoption of an appropriate program and policy no less important is the rectification of persisting socio-spatial encumbrances inherited by the post-colonial state as part of the imperial legacy.

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