

Phenotypical, Linguistic or Religious? On the Concept and Measurement of Ethnic Fragmentation

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Abstract: Existing studies on public policy and ethnicity either include only one of the three main non-class cleavages in society - racial (phenotypical), linguistic, religious – or considered them as separate variables. This paper suggests that they should be regarded as different manifestations of one single characteristic of ethnic differentiation. To treat these different ‘ethnic markers’ as separate variables or to employ one to the exclusion of the other regardless of the peculiarities of individual countries, forged especially by their specific historical geography and degree of ethnic intensity, inevitably leads to mismeasurement of the degree of fragmentation. Nevertheless, the inadequacy of such a measure of ethnic fragmentation needs to be recognised not only due to the cross-cutting or mutually reinforcing nature of cleavages, but also to the existence of other non-ethnic social variables that either contribute to the institutional complexity of the social environment in which the ethnic fragmentation functions or by themselves directly affect the degree of ethnic fractionalisation.

1. Introduction

The socio-economic implications of ethnic diversity has in recent years acquired an increasing global significance, due especially to the impact of re-ethnicisation and the widening of inequalities in Eastern Europe after the collapse of communism, or more appropriately, what Raiklin (1988) called “totalitarian state capitalism,” in the summer and autumn of 1989. There social tensions are increasingly “expressed and enacted ... as interethnic conflicts: conflicts among majority and minorities; or as conflicts among competing minorities.” (Gheorghe 1991: 842)

Although ethnic diversity is not an exclusive feature of today’s developing societies, it is nevertheless particularly relevant to them, since economic deprivation or desperate poverty “unduly heightens sensitivities and breeds a general atmosphere of unreasonableness and distrust, making it immensely more difficult to attain solutions to outstanding problems on the basis of a reasonable give and take” (Vasil 1984: 1-2). Indeed, the perceived gravity of impending ethnic conflicts led Aron (1969: 46) to predict that such conflicts “over social, racial, or political dominance – in turn or simultaneously – appear more likely than the continuation of the class struggle in the Marxist sense”.

With ethnicity becoming “a perplexing political issue overlapping with and sometimes displacing the issue of class” (Rex 1983: xxi), particularly in multi-ethnic developing countries, a study of the relationship between the demographically/politically dominant

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ethnic group and the State¹, and the role of ethnic diversity in the political economy of the states concerned, should be more than a theoretical exercise.

2. The Concept of Ethnic Diversity

The importance of ethnic diversity as outlined above means that a precise definition of the concept is much needed. Nevertheless, its measurement has always been problematic. This is complicated by the confusion between the related concepts of race and ethnicity. There is a tendency in academic circles to distinguish between socially defined and biologically defined races – ‘ethnie’ and ‘race’. An ethnie or ethnic group is said to exist when three conditions are present – “a segment of a larger society is seen by others to be different in some combination of the following characteristics – language, religion, race and ancestral homeland with its related culture; the members also perceive themselves in that way; and they participate in shared activities built around their (real or mythical) common origin and culture [and] a nation [is] an ethnic group that claims the right to, or at least a history of, statehood” (Yinger 1986: 22). In contrast with ‘racial groups’ which are biological categories based on immutable, physical attributes fixed at birth, ‘ethnic groups’ are defined by a much wider range of cultural, linguistic, religious and national characteristics, with a more flexible form of group differentiation. However, racial and ethnic characteristics thus defined often overlap in any one group while extremely deep divisions are often found between groups whose racial as well as ethnic differences are actually imperceptible, *e.g.* the Burakumin, the so-called “invisible race” of Japan. Moreover, as Yinger remarked, in practice, ethnicity has come to refer to anything from a sub-societal group that clearly shares a common descent and cultural background (*e.g.* the Kosovar Albanians), to persons who share a former citizenship although diverse culturally (Indonesians in the Netherlands), to pan-cultural groups of persons of widely different cultural and societal backgrounds who, however, can be identified as ‘similar’ on the basis of language, race or religion mixed with broadly similar statuses (Hispanics in the United States).

Barth (1969) noted that the ‘traditional proposition’ that race=culture=language(=nation) is far removed from empirical reality. Hoetink (1975 :18) abstained from the use of the term ‘ethnic’ – and preferred ‘socioracial’ instead – because ‘ethnic group’ suggested an absence of overlapping ascriptive loyalties. He noted that from the important ascriptive criteria of territoriality (ancestral homeland), notions of common descent (‘race’), language and religion, the presence of only one of the four is necessary to create an ‘ethnic group’ (Hoetink 1975 : 24). Since ethnicity may ambiguously subsume a variety of exclusive or overlapping loyalties, Hoetink preferred to analyse these in terms of their ascriptive content and their greater or lesser correlation. The term ‘ethnic’ as used in this paper should therefore be considered equivalent to Hoetink’s term ‘socioracial’.

¹ A note on nomenclature: The word “State” (with a capital “S”) is used here (except in quotations) to refer to the central body politic of a civil government – in contrast with the private citizenry or a rival authority such as the Church, whereas “state” (with a lower-case “s”) refers in general to other senses of the term, including a “country” or a political territory forming part of a country. The word “nation” in this sense is avoided here since it has the alternative connotation of a community of common ethnic identity, but not necessarily constituting a state.

The problem of defining ethnicity is reflected in the conflict in Northern Ireland. As Brewer (1992: 352) remarked, this conflict is “perhaps more difficult to understand, both for the analyst and the lay person, than that caused by racism”. The case of sectarianism is more nebulous in nature as the social marker (religion/sect) involved is less visible and deterministic, but more context-bound to the beliefs of those involved (in the sense that individuals are able to change their religion or deliberately conceal it by confounding the stereotypes that surround it, but unable to do so with their physical ‘racial’ features). Furthermore, unlike ‘race’, the saliency of religion/sect was long thought to have declined in the Western world.

Like Australia or the United States of America, Northern Ireland is basically a settler society. Nevertheless, unlike them, its indigenous population has not been exterminated or socially demoralised. As a result, two separate communities survive and perpetuate mainly through endogamy, residential exclusivity, distinct cultural associations and a segregated school system. The two communities differ in ethnic descent – the indigenous Gaelic community *vs.* descendants of the Scotch settlers - as well as in their feeling towards Irish nationalism. Both, however, share the same English language, since Irish Gaelic as a living language (in the sense of an ordinary everyday vernacular) has in general failed to survive into the twentieth century, other than a diminishing minority of speakers scattered along the Gaeltacht – on the west and south coasts of Ireland; and the result of the Irish Republic’s effort at ‘restoration’ – not ‘revival’ since it has never completely ceased to be spoken – of the language as a vernacular has not been particularly impressive. Nevertheless, what is most obvious as a boundary marker in Northern Ireland is religious denomination – Catholics *vs.* Protestants. From a doctrinal point of view, these two groups tend to view each other as heathen but, as Schmitt (1977 : 229) noted, such views have not been unusual among Catholics and Protestants in other countries where they coexist peacefully.

The confessional labels in Northern Ireland thus denote more than conflicting doctrines or minor cultural distrust. They refer to profound ethnic distinctions. With intermittent violence between the two groups, the labels ‘Catholic’ and ‘Protestant’ have stood as important symbols of ethnic solidarity in Ireland since the seventeenth century. They were subsequently reinforced by continuing economic grievances, cultural hostilities, political conflict and violence. The gravity of the conflict is reflected in de Paor’s statement that “in Northern Ireland Catholics are blacks who happen to have white skin” (de Paor 1970 : 13, cited by Smooha 1980 : 266).

While religion is the most visible source of conflict in Northern Ireland, the clash can hardly be called a ‘religious conflict’ since it is not one of rival theologies or doctrines. According to the ‘situational theories’ of ethnicity, a boundary marker is mobilised when actors develop identity investments due to their economic or political interests (Barth 1969). In the case of Northern Ireland, religion happens to be the most available, meaningful boundary marker which can be socially appropriated to define groups who conflict over other socio-economic and political interests. As Curran (1979: 148) noted:

“The real division stems from religion as a cultural force and a badge of ethnic identity ... For a Catholic, religion is an integral part of Irish nationalism, something inextricably joined with the history of a persecuted and oppressed people struggling for liberation. For a Protestant, religion is even more important because of a confusion over national identity

that leaves him unsure whether he is British, Irish, or Ulsterman ... In the “black North” of Ireland, as in the Middle East, religion is what distinguishes “us” from “them”, especially for Protestants.”

Thus sectarianism can be conceptualised as a sub-type of ethnic diversity, and religion as a source of ethnic differentiation. This reorientation in perspective is not only applicable to Northern Ireland, but also possesses important theoretical implications for other cases where religion is perceived to be a principal source of conflict, e.g. Lebanon, Bosnia-Herzegovina, Sri Lanka and Cyprus.

Therefore, the term ‘racial’ should more appropriately be used to describe group distinction on the basis of phenotypical (*i.e.* physical) characteristics, while ‘ethnic’ refers to those based solely or partly on cultural characteristics. The term ‘ethnic’ can also be generalised to be a blanket concept (Hoetink’s attribute ‘socioracial’) to cover both the above distinctions. The term ‘cultural’ here mainly covers the ascriptive attributes ‘ethno-linguistic’ and ‘ethno-religious’. The emphasis on language and religion in empirical research is due mainly to the fact that they are the relatively less vague factors in the fourfold categorisation of ascriptive loyalty (Hoetink 1975: 23-4). Despite examples such as the Jews and Judaism or the tendency to identify Arabs with Islam, the use of religion to define ethnicity is unsatisfactory. Turks, Kurds and Arabs have the Islamic faith in common but it is absurd to classify them as one ‘ethnic group’. Similarly, the Muslim Bengalis in East Pakistan (later Bangladesh) had failed to identify with the Muslims in West Pakistan, neither have the ethnolinguistically diverse co-religionists in (West) Pakistan itself ever identified with one another. While the sharing of a common language has been the most frequently attested attribute of ‘ethnicity’, there are flaws with this definition too. The cases of Hindustani (Hindi-Urdu) and Serbo-Croatian are examples where religion overcomes language in defining ethnic identity. Thus there is reason to regard these two ascriptive criteria as largely complementary. Karpát (1985 : 96) gave the following example:

“... today the Bulgarian government regards the Pomaks (Bulgarian-speaking Muslims) as ethnic Bulgarians but the Pomaks do not accept that view. They intermarry not with Christian Bulgarians but with Muslims. Turkey accepts as “Turks” the Bosnian Muslims and the Pomaks although these do not speak a word of Turkish and belong to the Slavic race. In other words, today, language and religion are assumed to go together, although they do not always do so in fact: Muslims attach more importance to religion while Balkan Christians emphasise language as the primary ethnic bond.”

Therefore, a measure of ethnic diversity must be based on phenotypical characteristics (race) or both cultural and racial ones (ethnicity). Since ethnicity is defined in terms of both ethno-linguistic as well as ethno-religious attributes (the other being racial), a distinction between ethnic and linguistic/religious diversity is ambiguous in nature. For instance, in constructing measures of ethnic and religious ‘variance’, McCarty (1993 : 231) commented that “the distinction between Catholic and Protestant may be very important in Ireland but meaningless in Egypt.” Nevertheless, as a religious distinction, it is as real in the latter as in the former. The difference can only be said to be ‘meaningless’ with respect to its role as an *ethnic boundary*, in Egypt *vis-à-vis* the case of Ireland.

Finally, even while attention is paid to all such dimensions of ethnicity, the definition problem would still not go away. While such a difficulty exists regarding language (the distinction between dialect, patois and language – it is often said that a language is but a dialect with an army), it is even more elusive in the case of religion. The distinction between Christianity, Islam and Buddhism is clear, but how comparable is it with that between Roman Catholicism and Protestantism? Are Lutheranism, Methodism, Jehovah's Witness, Mormonism and the Unification Church different religions, sects or cults? The respective identities of Sunni Islam, Shi'a, Ahmadism, Druzism and Baha'ism pose a similar question. By defining some as religion and others as sect/cult, one may fall prey to the prejudice of established orthodoxy. Shi'a Islam is as much a deviationist sect in the majority Sunni world as Baha'ism is in the dominant Shi'a society of Iran. Ahmadism is as much a Messianic cult as early Christianity or Nichiren Buddhism. The beliefs of the Druzes in the eyes of mainstream Islam are as heretical as those of the early Copts or Maronites in the medieval Christian world.

Similar problems do not arise when religion is treated as an ethnic marker. Such a definition of ethnicity is more context oriented. Roman Catholicism and Protestantism are ethnic markers in Northern Ireland but not in Malaysia, although the two exist there as separate religious communities. Karpat's observation (cited above) that Muslims attach more importance to religion as the primary ethnic bond than Christians is in general applicable even beyond its original Balkan context. Such attachment has been reinforced in the twentieth century by the persistent deprivation and economic backwardness of the masses, partly resulting from western (or in ethno-religious terms, Christian) colonialism. Religion thus serves as a boundary marker mobilised by the exploited, who developed identity investments due to their common politico-economic disadvantage, as suggested by the 'situation theories' of ethnicity (Barth 1969).

The Bosnian Muslims' ethnic ties with Christian Slavs were supplanted by religious solidarity with the Muslim world only after the collapse of Yugoslavia brought about their agonising defeat in the ensuing ethnic war. Similarly, the Pomaks' ethnic identification with Muslim Turks rather than Slavic Christian Bulgarians results mainly from the socio-economic discrimination they suffer. A similar situation can be observed in Northern Ireland where, "as in the Middle East, religion is what distinguishes 'us' from 'them'" and "inextricably joined with the history of a persecuted and oppressed people struggling for liberation" (Curran 1979:148). On the other hand, different Islamic sects also play a more important role as ethnic markers than contemporary Christian denominations, with the exception of Northern Ireland. As the youngest of the three major Semitic monotheistic religions, Islam is entering a stage where tolerance for heresy and secularism is minimal, reminiscent of the age of the Inquisition when sects like the Huguenot or Albigensian bore the hallmarks of ethnic divisions. To see the majority Muslim society of Lebanon or Iraq as a medley of ethno-religious segments rather than a monolithic entity, for instance, is important for an accurate assessment of the degree of its ethnic diversity. The effect of religious sectarianism on the "ethnic boundary process" (*à la* Barth 1969) varies in strength from country to country, but this is largely a matter of ethnic intensity which should be treated as a separate issue, closely related to the historical geography and numerical structure of ethnicity, as well as the degree of regional concentration.

An equally important point to note is that there are other socio-economic reasons behind ethno-linguistic and ethno-religious divides. This is especially the case in Brazil and Spanish-speaking America where social definition is relatively fluid, reflected in the Brazilian proverb: “A rich black man is a white and a poor white man is a black” (Mason 1970:122). It is probably in this light that Hoetink had chosen the attribute ‘socio-racial’, which reflects the concept of ‘social race’ (*vis-à-vis* ‘biological race’) expounded by Wagley (1959). Similar concerns are covered by Gordon’s concept of ‘ethclass’ as “the portion of social space created by the intersection of the ethnic group with the social class [which] is fast becoming the essential form of the sub-society in America” (Gordon 1978: 134), and by Bonacich’s ‘split labour market theory’ as a ‘class’ approach to race and ethnicity (Bonacich 1972; 1979). These are summarised in Rex’s comment that “the large communal quasi-groups which are called ethnic and racial are the collective entities which are brought together in systems of class, estate, status group domination, caste and individual status striving ... [and] what we call ‘race and ethnic relations situations’ is very often not the racial and ethnic factor as such but the injustice of elements in the class and status system” (Rex 1986: xiii). Although social classes may not be as precisely bounded as ethnic groups, both represent forms of demographic diversity which serve as a means of group identification, an arena for the confinement of group relations and a carrier of cultural patterns of behaviour (Gordon 1978).

3. An Index of Ethnic Fractionalisation

To measure the degree of ethnic diversity, this paper proposes the computation of an index of ethnic (or socio-racial) fractionalisation that takes into consideration three major types of non-class cleavages in society – racial (phenotypical), linguistic and religious. It is constructed through the computational procedure of Rae and Taylor’s index of fragmentation (F), defined as the probability that a randomly selected pair of individuals in a society will belong to different groups (Rae and Taylor 1970: 22-3). The index varies from 0 to 1. The value is zero for a completely homogeneous country (the probability of belonging to different groups is nil). The value 1 occurs in the hypothetical society where each individual belongs to a different group.

$$F = 1 - \sum_{i=1}^n \left(\frac{n_i}{N}\right)\left(\frac{n_i - 1}{N - 1}\right)$$

where n_i = the number of members of the i th group and N = the total number of people in the population. The fragmentation index is identical to Rae’s measure of party system fractionalization (Rae 1967 : 55-8) and Greenberg’s measure of linguistic diversity (A)² (Greenberg, 1956). It is the complement of the Herfindahl-Hirschman index (Hall and Tideman 1967).³

² $A = 1 - \sum_{i=1}^n (P_i)^2$ where P = the proportion of total population in the i th language group.

³ Discussions of F and similar indices are also found in Wildgen (1971), Taylor and Hudson (1972), Vayrynen (1972), Wilcox (1973), Milder (1974) and Lijphart (1977).

Data for computing the ethnic fractionalisation index (EFI) are drawn from various sources, including the individual studies of Katzner (1995), MRG (1990), Kurian (1990), Gunnemark and Kenrick (1985), Malherbe (1983), annuals such as the *EWYB*⁴, *RSW*⁵, *WABF*⁶, CIA's *World Factbooks*⁷, as well as many other references on individual countries/regions. The first two categories are mainly concerned with the numerical dimension. The last category is particularly important since it concerns the socio-political and historical background which directly affects the definitions of ethnicity.

The source of data for the computation of the EFI (Table 2) is broader than that of previous studies on public policy and ethnicity, e.g. Mueller and Murrell (1986) and McCarty (*op.cit.*). Mueller and Murrell relied on Taylor and Hudson (1972)⁸ which computed three different sets of indices based on data from Roberts (1962), Muller (1964) and the *Atlas Narodov Mira*⁹ respectively, none of which are employed here since they are relatively dated. McCarty's source of data for his ethnic and religious 'variance' is the *World Factbooks*. However, a close scrutiny of this source reveals its major weaknesses, *viz.* the tendency to employ broad categories such as 'Caucasian', 'African', 'white', 'black', 'Nilotic', 'Mongoloid', 'Indo-Aryan', 'Dravidian', 'Hamitic' and the like, as well as the focus on 'official' languages and commercial *linguae francae* rather than 'home' languages. Computation based on such broad categories would result in the gross underestimation of heterogeneity. Therefore it is necessary to broaden the source of data to achieve more detailed breakdowns of racial, ethno-linguistic and ethno-religious categories.

The EFIs for 240 countries/regions are computed and presented in Table 1. Some countries are included more than once to take into consideration major changes in political boundaries since 1990 or for some other reasons (e.g. Cyprus is included as a country but the Greek and Turkish sectors are also given separate entries). Tables 3 and 4 shows further the characteristics of EFI in four country sets, classified in accordance with the current categorisation made in World Bank's *World Development Reports (WDRs)*.¹⁰ As noted above, the EFI takes into consideration three major types of non-class cleavages in society – racial (phenotypical), linguistic and religious. Some examples will show the importance of covering all these three aspects. Linguistically Rwanda and Burundi are homogeneous societies. Kinyarwanda and Kirundi – two closely related Bantu languages – are spoken by virtually the entire populations of these two countries. A fragmentation index calculated from linguistic data alone would have a value approaching zero. However, the minor phenotypical differences among the Hutus, Tutsis and Twas (especially between the first two), reinforced by historical intergroup inequalities, have become an important ethnic

⁴ *The Europa World Year Books*. London: Europa Publications.

⁵ *Regional Surveys of the World*. London: Europa Publications.

⁶ *The World Almanac and Book of Facts*. New York: Pharos Books/Scripps Howard.

⁷ *The World Factbooks*. U.S. Central Intelligence Agency, New York: Maxwell Macmillan/Brassey's.

⁸ These indices are no more included in the subsequent edition of this work (Taylor and Jodice 1983).

⁹ *Atlas Narodov Mira*. Moscow: The N.N. Miklukho-Maklaya Institute of Ethnography of the Academy of Sciences, Department of Geodesy and Cartography of the State Geological Committee of the USSR, 1964.

¹⁰ Different sources and nature of data utilised, nevertheless, mean that the exact boundaries of income brackets used here may not always coincide with those in the *WDRs*. CV in Table 3 refers to the coefficient of variation derived by dividing the standard deviation by the mean. CV is generally taken to indicate substantial variation if it has a score of more than roughly 0.25 (see Lane and Ersson 1990: 58).

Table 1: Ethnic fractionalisation of 240 countries/regions

Rank	Country/Region	EFI	Rank	Country/Region	EFI
1	Congo, Democratic Republic of the (formerly Zaïre)	0.885	41	Belize	0.711
2	Uganda, Republic of	0.883	42	Guam (US)	0.705
3	Kenya, Republic of	0.877	43	Eritrea	0.699
4	India, Republic of	0.876	44	Malawi, Republic of	0.691
5	South Africa, Republic of	0.873	45	Togo, Republic of	0.689
6	Cameroon, Republic of	0.852	46	Virgin Islands (US)	0.688
7	Mali, Republic of	0.844	47	Congo, Republic of the	0.685
8	Philippines, Republic of the	0.838	48.5	Monaco, Principality of	0.684
9.5	Nigeria, Federal Republic of	0.827	48.5	Malaysia	0.684
9.5	Tanzania, United Republic of	0.827	50	Kazakhstan, Republic of	0.679
11	Côte d'Ivoire/Ivory Coast, Republic of	0.826	51.5	Kuwait, State of	0.675
12	Lebanon, Republic of	0.821	51.5	Bosnia and Herzegovina	0.675
13	Mauritius	0.814	53.5	New Caledonia (Fr.)	0.671
14	Zambia, Republic of	0.813	53.5	Niger, Republic of	0.671
15	Chad, Republic of	0.810	55	Union of Soviet Socialist Republics (former)	0.670
16.5	Guinea-Bissau, Republic of	0.806	56	Timor Leste/East Timor	0.667
16.5	Papua New Guinea, Independent State of	0.806	57	Laos/Lao People's Democratic Republic	0.665
18	Yugoslavia, Socialist Fed. Rep. of (pre-Jan 1992)	0.795	58	Kyrgyzstan, Republic of	0.664
19	Suriname, Republic of	0.789	59	Namibia, Republic of	0.663
20	Senegal, Republic of	0.788	60	Iran, Islamic Republic of	0.661
21	Madagascar, Democratic Republic of	0.776	61.5	Mauritania, Islamic Republic of	0.660
22.5	Sierra Leone, Republic of	0.771	61.5	Benin, Republic of	0.660
22.5	Angola, People's Republic of	0.771	63	French Polynesia (Fr.)	0.656
24	Gabonese Republic	0.765	64.5	Micronesia, Federated States of	0.655
25	Gambia, Republic of The	0.764	64.5	United Arab Emirates	0.655
26	Central African Republic	0.757	66	Andorra, Principality of	0.651
27	Ethiopia (pre-May 1993)	0.756	67	Pakistan, Islamic Republic of	0.648
28	Indonesia, Republic of	0.754	68	Guatemala, Republic of	0.645
29	Qatar, State of	0.746	69	Morocco, Kingdom of	0.643
30	Liberia, Republic of	0.745	70	Peru, Republic of	0.637
31	Guinea, Republic of	0.742	71	Trinidad and Tobago, Republic of	0.635
32	Ghana, Republic of	0.741	72	Nepal, Kingdom of	0.634
33	Afganistan, Republic of	0.739	97	Estonia, Republic of	0.528
34	Bolivia, Republic of	0.735	73	Guyana, Co-operative Republic of	0.628
35	Burkina Faso	0.734	74	Ecuador, Republic of	0.615
36	Mozambique, Republic of	0.727	75	Latvia, Republic of	0.612
37	Cayman Islands (UK)	0.720	76	Colombia, Republic of	0.601
38	Ethiopia (post-May 1993)	0.717	77	Cuba, Republic of	0.591
39	Sudan, Republic of the	0.715	78	Djibouti, Republic of	0.585
40	Canada	0.714	79.5	Tajikistan, Republic of	0.583
			79.5	Nauru, Republic of	0.583

Table 1: Continued

Rank	Country/Region	EFI	Rank	Country/Region	EFI
81	Fiji, Republic of	0.580	124.5	Northern Mariana Islands (US)	0.444
82	Belgium, Kingdom of	0.574	124.5	Norfolk Island (Australia)	0.444
83	Macedonia, Republic of	0.573	126	Spain	0.436
84	Bahrain, State of	0.566	127.5	Dominican Republic	0.429
85	Yugoslavia, Federal Rep. of (post-Jan 1992)	0.561	127.5	Sri Lanka, Democratic Socialist Republic of	0.429
86	Hawai'i (US)	0.560	129	São Tomé e Príncipe, Democratic Republic of	0.420
87	Bhutan, Kingdom of	0.555	130	Botswana, Republic of	0.418
88	Christmas Island (Australia)	0.552	131.5	Ukraine	0.417
89	Cape Verde, Republic of	0.551	131.5	Syrian Arab Republic	0.417
90	Liechtenstein, Principality of	0.550	133	Oman, Sultanate of	0.406
91	Brazil, Federative Republic of	0.549	134	Puerto Rico (US)	0.405
92	Moldova, Republic of	0.546	135	Northern Ireland (UK)	0.403
93	Georgia, Republic of	0.545	137	United States of America	0.395
94	Mexico/United Mexican States	0.542	137	Equatorial Guinea, Republic of	0.395
95	Thailand, Kingdom of	0.535	137	Jamaica	0.395
96	Switzerland/Swiss Confederation	0.531	139	Algeria, Democratic and Popular Republic of	0.375
97	Estonia, Republic of	0.528	140	Belarus, Republic of	0.373
98	French Guiana (Fr.)	0.526	141	Croatia	0.371
99	Brunei Darussalam, State of	0.525	142	Cyprus	0.358
100	Zimbabwe, Republic of	0.522	143	Lithuania, Republic of	0.345
101	Burma, Union of	0.520	144	Western Sahara	0.343
102	Gibraltar (UK)	0.517	145	West Bank (of the Jordan River)	0.339
103	Yemen, Republic of (post-May 1990)	0.507	146	Barbados	0.333
104	Iraq, Republic of	0.502	147	Turkey, Republic of	0.330
105	Tonga, Kingdom of	0.500	148	Cook Islands (NZ)	0.327
106.5	Man, Isle of (UK)	0.498	149	United Kingdom of Great Britain & N. Ireland	0.325
106.5	Chile, Republic of	0.498	150	Aruba (Neth.)	0.320
108	Venezuela, Republic of	0.497	151	Russian Federation	0.311
109	Yemen Arab Republic (pre-May 1990)	0.495	152.5	Grenada	0.308
110	Turks and Caicos Islands (UK)	0.493	152.5	Azerbaijan, Republic of	0.308
111	Cocos Islands (Australia)	0.487	154	Saint Vincent and the Grenadines	0.306
112.5	Nicaragua, Republic of	0.484	155	Israel, State of	0.303
112.5	Uzbekistan, Republic of	0.484	156	Bangladesh, People's Republic of	0.285
114	Jordan, Hashemite Kingdom of	0.481	157	Rwanda, Republic of	0.275
115	Palau Islands (US)	0.480	158	San Marino, Most Serene Republic of	0.272
116	Singapore, Republic of	0.479	159.5	Québec (Canada)	0.270
117	Panama, Republic of	0.477	159.5	Egypt, Arab Republic of	0.270
118	Bermuda (UK)	0.476	161	American Samoa (US)	0.269
119	Svalbard (Norway)	0.468	162	Bulgaria, Republic of	0.264
120	Czechoslovakia (former)	0.46			
121	Albania, Republic of	0.460			
122	Turkmenistan	0.455			
123	Luxembourg, Grand Duchy of	0.452			

Table 1 : Continued

Rank	Country/Region	EFI	Rank	Country/Region	EFI
163	Viêt-Nam, Socialist Republic of	0.262	201	Armenia, Republic of	0.128
164	Burundi, Republic of	0.258	221	Greece/Hellenic Republic	0.068
165	Somalia	0.256	202	China, People's Republic of	0.125
168	Bahamas, The Commonwealth of the	0.255	222.5	Denmark, Kingdom of	0.059
168	Saudi Arabia, Kingdom of	0.255	203	Finland, Republic of	0.122
168	Argentina/Argentine Republic	0.255	204	Libya/Socialist People's	0.117
168	Netherlands Antilles (Neth.)	0.255	205.5	Seychelles	0.115
168	Saint Helena (UK)	0.255	205.5	Saint Kitts and Nevis, Federation of	0.115
171	Slovakia	0.254	207.5	Czech Republic	0.114
172	Lesotho, Kingdom of	0.253	207.5	Vanuatu, Republic of	0.114
173.5	Greenland/Kalaallit Nunaat	0.241	209	Ireland, Republic of	0.113
173.5	Comoros, Federal Islamic	0.241	210	Cyprus (Greek sector)	0.097
175	Cambodia, State of	0.238	212.5	Macao (China)	0.096
176	Costa Rica, Republic of	0.237	212.5	Malta	0.096
177	France/French Republic	0.235	212.5	Paraguay, Republic of	0.096
178	Uruguay, Oriental Republic	0.218	212.5	Australia, Commonwealth of	0.096
179	New Zealand	0.217	215	Haiti, Republic of	0.095
180.5	România	0.202	216	Japan	0.079
180.5	El Salvador, Republic of	0.202	218.5	Montserrat (UK)	0.077
182.5	Italy/Italian Republic	0.196	218.5	Iceland, Republic of	0.077
182.5	Niue (NZ)	0.196	218.5	Netherlands, Kingdom of the	0.077
184	Mongolia	0.187	221	Tuvalu	0.077
185	Swaziland, Kingdom of	0.186	221	Greece/Hellenic Republic	0.068
187.5	Saint Lucia	0.185	222.5	Denmark, Kingdom of	0.059
187.5	Guadeloupe (Fr.)	0.185	222.5	Dominica	0.059
187.5	Martinique (Fr.)	0.185	224.5	Marshall Islands, Republic of the	0.058
187.5	Honduras, Republic of	0.185	224.5	Norway, Kingdom of	0.058
190	British Virgin Islands (UK)	0.180	226	Poland, Republic of	0.047
191	Slovenia	0.170	227	Cyprus (Turkish sector)	0.045
192	Hungary, Republic of	0.168	230	Tunisia, Republic of	0.039
193	Sweden, Kingdom of	0.164	230	Kiribati	0.039
194	Antigua and Barbuda	0.150	230	Taiwan (Republic of China)	0.039
195	Western Samoa, Independent State of	0.138	230	Hong Kong (China)	0.039
196.5	Germany, Federal Republic of (pre-Oct 1990)	0.134	230	Falkland Islands (UK)	0.039
196.5	Germany, Federal Republic of (post-Oct 1990)	0.134	234.5	Gaza Strip	0.020
199	Yemen, People's Democratic Republic of (former)	0.133	234.5	Saint-Pierre et Miquelon (Fr.)	0.020
199	Solomon Islands Republic of the	0.133	234.5	Mayotte (Fr.)	0.020
199	La Réunion (Fr.)	0.133	234.5	German Democratic Republic (former)	0.020
			237	Portugal, Republic of	0.019
			238	Austria, Republic of	0.012
			239	Korea, Democratic People's Republic of	0.004
			240	Korea, Republic of	0.002

Table 2: Ethnic fractionalisation: sources of data

Country/Region	Source	Country/Region	Source
Afganistan	WF, Katzner	Comoros	WF
Albania	WF	Congo, Democratic Republic of the (formerly Zaire)	WF
Algeria	CF, Katzner, WABF	Cook Islands (NZ)	WF
American Samoa	WiF, WF	Costa Rica	CF, WF
Andorra	CF, WF	Côte d'Ivoire/Ivory Coast	Gunnemark, WF
Angola	Katzner	Croatia	WF
Antigua and Barbuda	CF	Cuba	EWYB, RSW
Argentina	WF	Cyprus	WF
Armenia	WF	Cyprus (Greek sector)	WF
Aruba (Neth.)	WF	Cyprus (Turkish sector)	WF
Australia	WF	Czech Republic	CF, RSW
Austria	WF, Katzner	Czechoslovakia (former)	Gunnemark
Azerbaijan	WF, Katzner	Denmark	CF, EWYB, RSW
Bahamas	WF	Djibouti	CF, WF
Bahrain	WF	Dominica	CF
Bangladesh	WF	Dominican Republic	WF
Barbados	WF	Ecuador	WF
Belarus	WF, Katzner	Egypt	MRG
Belgium	WF, Katzner	El Salvador	CF, WF
Belize	WF	Equatorial Guinea	Katzner
Benin	Katzner, Gunnemark	Eritrea	Katzner
Bermuda (UK)	WF	Estonia	WF
Bhutan	WF, Gunnemark	Ethiopia (pre-May 1993)	Gunnemark
Bolivia	WF	Ethiopia (post-May 1993)	Katzner
Bosnia and Herzegovina	RSW	Falkland Islands (UK)	WiF
Botswana	CF, Gunnemark	Fiji	WF, Katzner
Brazil	WF	Finland	WF, Katzner
British Virgin Islands	WF	France	EWYB, Katzner
Brunei Darussalam	WF	French Guiana (Fr.)	WF, MRG
Bulgaria	WF	French Polynesia (Fr.)	Gunnemark, MRG
Burkina Faso	Katzner, Gunnemark	Gabon	CF, Gunnemark
Burundi	WF	Gambia	Katzner, WF
Burma	Katzner	Gaza Strip	WF
Cambodia	Katzner	Georgia	WF, Katzner
Cameroon	Gunnemark, WF	Germany, East (former)	WiF, MRG, Gunnemark
Canada	WF	Germany, West (pre-Oct1990)	WiF
Cape Verde	CF, WF	Germany (post-Oct 1990)	CF, WABF
Cayman Islands (UK)	WF	Ghana	Katzner, Gunnemark
Central African Republic	WF	Gibraltar (UK)	WiF
Chad	CF, Katzner, Gunnemark	Greece	Katzner
Chile	WABF	Greenland/Kalaallit Nunaat	WF, Katzner
China, People's Rep. of	WF, Katzner		
Christmas Isl. (Australia)	WF		

Table 2 : Continued

Country/Region	Source	Country/Region	Source
Guadeloupe (Fr.)	WF	Malawi	Katzner
Guam (US)	CF, WF	Malaysia	Katzner, Gunnemark
Guatemala	Gunnemark, WF	Mali	Katzner, Gunnemark
Guinea	CF, WF, Gunnemark	Malta	CF
Guinea-Bissau	WF, Gunnemark	Man, Isle of (UK)	WiF
Guyana	WF, WABF	Marshall Islands	WABF
Haiti	WF	Martinique (Fr.)	WF
Hawai'i (US)	WABF	Mauritania	WF
Honduras	WF	Mauritius	Katzner
Hong Kong (China)	EWYB, RSW, Katzner	Mayotte (Fr.)	WF
Hungary	WF	Mexico	WF, MRG
Iceland	CF	Micronesia	WABF, Gunnemark
India	Katzner, Gunnemark	Moldova	WF
Indonesia	Katzner, Gunnemark	Monaco	WF
Iran	WF, Katzner, MRG	Mongolia	WF
Iraq	WF	Montserrat (UK)	WiF
Irish Republic	CF, MRG, WABF Gunnemark	Morocco	Katzner, MRG
Israel	MRG, WF, Katzner	Mozambique	Gunnemark
Italy	CF, Williams, Katzner	Namibia	Katzner, WF, WABF
Jamaica	WF, MRG	Nauru	WF
Japan	MRG	Nepal	Gunnemark, Katzner
Jordan	MRG	Netherlands	WF, Katzner
Kazakhstan	WF, Katzner	Netherlands Antilles	WF
Kenya	Katzner, Gunnemark	New Caledonia (Fr.)	WF, MRG
Kiribati	WiF	New Zealand	WF
Korea, North	CF	Nicaragua	WF
Korea, South	CF, WF	Niger	Katzner, Gunnemark
Kuwait	WF	Nigeria	Katzner
Kyrgyzstan	Katzner	Niue (NZ)	WiF
Laos	WF, Gunnemark	Norfolk Island (Australia)	WiF
Latvia	WF, Katzner	Northern Ireland (UK)	MRG
Lebanon	MRG	Northern Mariana Islands(US)	Gunnemark, WF
Lesotho	Gunnemark	Norway	CF, Katzner, Gunnemark
Liberia	Gunnemark	Oman	WABF, WF
Liechtenstein	CF, WF	Pakistan	Katzner, Gunnemark
Lithuania	Katzner, WF	Palau Islands (US)	Gunnemark
Luxembourg	CF, EWYB, RSW	Panama	WF
Macao (China)	WF	Papua New Guinea	Katzner, MRG
Macedonia, Republic of	WF, MRG	Paraguay	WF, MRG
Madagascar	EWYB, RSW	Peru	WF

Table 2: Continued

Country/Region	Source	Country/Region	Source
Philippines	Katzner, Gunnemark	Taiwan (Rep. of China)	CF, Katzner
Poland	WF	Tajikistan	Katzner, WF, WABF
Portugal	WF	Tanzania	Katzner, Gunnemark
Puerto Rico (US)	WiF	Thailand	Katzner, Gunnemark, WF
Qatar	WF	Timor Leste/East Timor	Gunnemark
Québec (Canada)	Williams, Gunnemark	Togo	WABF, Gunnemark
Réunion, La (Fr.)	WiF	Tonga	Gunnemark
România	CF, WF, Katzner	Trinidad and Tobago	WF
Russian Federation	CF, Katzner, WABF	Tunisia	WF
Rwanda	CF, WF	Turkey	WF, Katzner
Saint Helena (UK)	WiF	Turkmenistan	WF
Saint Kitts and Nevis	CF, WABF	Turks & Caicos Islands (UK)	WiF
Saint Lucia	CF, WF	Tuvalu	WF
Saint-Pierre et Miquelon	WiF (Fr.)	Uganda	Katzner, Gunnemark
Saint Vincent & the Grenadines	CF	Ukraine	WF
San Marino	WABF	USSR (former)	Gunnemark
São Tomé e Príncipe	WBE	United Arab Emirates	WF
Saudi Arabia	CF, WF	United Kingdom of GB & NI	WF, MRG, Kurian
Senegal	WF, Katzner	United States of America	Katzner, EWYB
Seychelles	CF	Uruguay	WF, WABF
Sierra Leone	Gunnemark, WF	Uzbekistan	Katzner, WF
Singapore	Katzner, WF	Vanuatu	WF
Slovakia	RSW, Katzner	Venezuela	WF
Slovenia	WF, Katzner	Viêt-Nam	WF, Katzner
Solomon Islands	WF	Virgin Islands (US)	WF
Somalia	WF	West Bank (of Jordan Riv.)	WF
South Africa	Katzner, Gunnemark	Western Sahara	WiF
Spain	Katzner, WABF, WF	Western Samoa	WF
Sri Lanka	EWYB, WF	Yemen, North (pre-May 1990)	WF
Sudan	Katzner, MRG	Yemen, South (former)	WiF
Suriname	WF, Gunnemark	Yemen, (post-May 1990)	WABF, WF
Svalbard (Norway)	WF, Gunnemark	Yugoslavia (pre-Jan 1992)	CF
Swaziland	WABF	Yugoslavia (post-Jan 1992)	WF
Sweden	CF, WF, MRG	Zambia	Gunnemark, Katzner
Switzerland	WF	Zimbabwe	Gunnemark, WF
Syria	WF		

Note:

CF Crystal, David (ed.). 1993. *The Cambridge Factfinder*. Cambridge University Press.
 EWYB *The Europa World Year Book*. 1994. Vol. I & II. London: Europa.
 Gunnemark Gunnemark, Erik and Kenrick, Donald. 1985. *A Geolinguistic Handbook*, 2nd ed. Kungälv: Goterna (Printer).
 Katzner Katzner, Kenneth. 1995. *The Languages of the World*. New ed. London: Routledge.
 Kurian Kurian, George Thomas. 1990. *Encyclopedia of the First World*. Vol. I & II. New York: Facts on File.
 MRG Minority Rights Group (ed.) 1990. *World Directory of Minorities*. Harlow: Longman.
 RSW Regional Surveys of the World. 1993-94 Vols. London: Europa.
 WABF The World Almanac and Book of Facts. 1995. Mahwah, New Jersey: World Almanac/Funk & Wagnalls, 1994.
 WBE The World Book Encyclopedia (International). Chicago: World Book/Scott Fetzer, 1992/93.
 WF Central Intelligence Agency. The World Factbook 1993-94. 1995. New York: Maxwell Macmillan/Brassey's.
 WiF *The World in Figures*. 1987. 5th ed., compiled by *The Economist*. London: Hodder & Stoughton.
 Williams Williams, Colin H. (ed.). 1991. *Linguistic Minorities, Society and Territory*. Clevedon: Multilingual Matters.

Table 3: Ethnic fractionalisation: EF index

	Mean	Maximum	Minimum	Coefficient of Variation
All countries (N=119)	0.469	0.885	0.002	0.59
Advanced industrialised countries (N=23)	0.224	0.714	0.012	0.89
Upper-middle- and high-income developing countries (N=20)	0.372	0.873	0.002	0.67
Lower-middle-income countries (N=38)	0.496	0.852	0.039	0.48
Low-income countries (N=38)	0.640	0.885	0.020	0.37

boundary marker in these societies. By taking into consideration this racial element, the EFIs for these two countries rise to 0.18 and 0.26 respectively.

From both the racial and linguistic perspectives, the fragmentation index for Bosnia-Herzegovina also approaches 0 since its entire population consists essentially of Serbo-Croatian-speaking Slavs (albeit the language is written in two different scripts, Latin and Cyrillic). However, incorporating the religious element gives a value of 0.68. Similarly in Northern Ireland, the religious perspective raises its EFI from 0 to 0.40. Lebanon's index is almost zero from the linguistic angle, but rises towards the other extreme (0.82) after the ethno-religious element is considered. By contrast, the EFI for Iran is low from the religious point of view – more than 95 per cent of its population share the same faith. However, the racial and linguistic elements increase it to 0.66.

It is interesting to note that the characteristics of EF in the four country sets¹¹ shown in Table 3 indicate a steady increase in the average degree of ethnic fractionalisation from the advanced industrialised countries to the low-income countries. However, an exactly reverse pattern can be observed in the case of within-group variation, with CV declining from the advanced industrialised countries to the low-income countries. Details of individual country variations are given in Table 4.

¹¹ The four country sets, comprising a total of 119 countries, are established according to the level of affluence reflected in their gross domestic products (GDP) per capita. The definition of income groups follows closely the country categorisation in World Bank's *World Development Report*.

4. Beyond a Simple Measure of Ethnic Fragmentation

The measurement of ethnic fragmentation would, however, tend to be partial in term of applicability in the wider context of social fragmentation without taking into consideration the other non-ethnic social variables which either contributes to the institutional complexity of the social environment in which the ethnic fragmentation functions or by themselves directly affect the degree of ethnic fractionalisation. One of such variables is related to the effect of the economic environment on the relationship between public policy and ethnic conflict. That economic situations play an important role in interethnic conflict seems obvious. Collins (1975: 389-390) believed that the more severe a (political/economic) crisis, the greater the tendency for groups to coalesce along the lines of collective interests and the society to polarise into two-sided conflicts. Van Evera (1994 : 9) claimed that public become receptive to scapegoat myths (which are more widely believed) when economic conditions deteriorate. Rex (1970 : 45) noted that scapegoating is a means to restore social equilibrium, a mechanism whereby resentment may be expressed and the existing power structure maintained. It is “the social process *par excellence* that literally fulfils Parsons’ description of one of his functional subsystems as pattern maintenance and tension management.” Baimbridge *et al.* (1994 : 432) observed that the deflationary impact of the Maastricht Treaty may intensify nationalism, racism and anti-Semitism “as the economically insecure seek weaker scapegoats to blame for the economic problems confronting them.” Hauser and Hauser (1972: 230) stated that scapegoats occur when there is an imbalance between power and citizens’ rights and are “often an élite’s safeguard in its dealings with a dissatisfied and potentially dangerous majority.” In other words, the repressed, negative and hostile feelings of the majority *vis-à-vis* its own ruling élite are transferred on to the scapegoat. The anti-minority outbursts in the history of many Southeast Asian countries were in the main rooted in the lower-class masses’ resentment directed at their own ruling élite who were perceived to cooperate with and protecting rich minority interests. A similar phenomenon can be observed amidst the anti-Suharto campaigns in Indonesia in the late 1990s in which minority commercial institutions were attacked. In the extreme case, the scapegoat may seem to be totally unrelated to the initial cause of the feelings of hostility. The term ‘free-floating aggression’ has been used in this case while the more general concept of ‘scapegoating’ is reserved for the transfer of hostility towards any object (Turner and Killian 1957: 19). The pattern of ethnic conflict caused by scapegoating may not be solely a racial problem, but may partly result from social class differential and the economic environment.

Mauzy (1993) noted that rapid economic growth¹² could be the most important variable in explaining the absence of ethnic violence in Malaysia (as occurred in Lebanon and Sri Lanka) in response to preferential policies which led to growing ethnic polarisation. Every subject she interviewed between October and December 1990 “cited the continued

¹² Measured by the rate of expansion in gross domestic product per capita, economic growth used to be synonymous with economic development and economic progress in general (Sen 1988). However, it bypasses the problem of how national income is distributed. To grasp the true meaning of economic development, Lane and Ersson (1990:49) noted the importance of separating (i) the level or rate of growth in GDP total or per capita; (ii) the level or rate of change in a set of social indicators measuring average individual well-being; and (iii) the distribution of income and wealth.

Table 4 : Ethnic fractionalisation of four categories of countries: EF index

Advanced Industrialised Countries		Upper-middle- & high-income developing countries	
Canada	0.714	South Africa	0.873
Belgium	0.574	Gabon	0.765
Switzerland	0.531	Malaysia	0.684
Luxembourg	0.452	Trinidad and Tobago	0.635
Spain	0.436	Nauru	0.583
USA	0.395	Mexico	0.542
UK	0.325	Venezuela	0.497
France	0.235	Singapore	0.479
New Zealand	0.217	Barbados	0.333
Italy	0.196	Turkey	0.330
Sweden	0.164	Grenada	0.308
Federal Republic of Germany	0.134	Israel	0.303
Finland	0.122	Taiwan, Republic of China	0.274
Ireland	0.113	Bahamas	0.255
Australia	0.096	Antigua and Barbuda	0.150
Japan	0.079	Saint Kitts and Nevis	0.115
Iceland	0.077	Seychelles	0.115
Netherlands	0.077	Cyprus (Greek sector)	0.097
Greece	0.068	Malta	0.096
Denmark	0.059	Republic of Korea	0.002
Norway	0.058		
Portugal	0.019		
Austria	0.012		
<i>Mean</i>	0.224	<i>Mean</i>	0.372
Lower-middle-income countries		Low-income countries	
Cameroon	0.852	Congo, Dem. Rep. of the (Zaire)	0.885
Philippines	0.838	Uganda	0.883
Côte d'Ivoire/IvoryCoast	0.826	Kenya	0.877
Lebanon	0.821	India	0.876
Papua New Guinea	0.806	Mali	0.844
Angola	0.771	Nigeria	0.827
Indonesia	0.754	Tanzania	0.827
Bolivia	0.735	Zambia	0.813
Belize	0.711	Chad	0.810
Congo, Rep. of the	0.685	Guinea-Bissau	0.806
Iran	0.661	Senegal	0.788
Guatemala	0.645	Madagascar	0.776
Peru	0.637	Sierra Leone	0.771
Ecuador	0.615	Gambia	0.764
Colombia	0.601	Central African Republic	0.757

Table 4: Continued

Lower-middle-income countries		Low-income countries	
Djibouti	0.585	Liberia	0.745
Fiji	0.580	Guinea	0.742
Cape Verde	0.551	Ghana	0.741
Zimbabwe	0.522	Burkina Faso	0.734
Iraq	0.502	Mozambique	0.727
Tonga	0.500	Sudan	0.715
Chile	0.498	Malawi	0.691
Jordan	0.481	Togo	0.689
Panama	0.477	Niger	0.671
Syria	0.417	Benin	0.660
Thailand	0.406	Pakistan	0.648
Jamaica	0.395	Nepal	0.634
Saint Vincent & the Grenadines	0.306	Bhutan	0.555
Morocco	0.293	Burma	0.520
Egypt	0.270	Yemen Arab Republic	0.495
Costa Rica	0.237	Nicaragua	0.484
Swaziland	0.186	Sri Lanka	0.429
Honduras	0.185	Equatorial Guinea	0.395
Algeria	0.163	Mauritania	0.348
Western Samoa	0.138	Comoros	0.241
Vanuatu	0.114	Tuvalu	0.077
Dominica	0.059	Kiribati	0.039
Tunisia	0.039	Lesotho	0.020
<i>Mean</i>	0.496	<i>Mean</i>	0.640

Table 5 : Linguistic and religious fragmentation in Southeast Asia and Fiji

Country	Fractionalisation index	
	Linguistic	Religious
Brunei	0.515	0.555
Cambodia	0.238	0.095
Indonesia	0.754	0.238
Laos	0.562	0.255
Malaysia, Peninsular	0.684	0.541
Burma	0.520	0.205
The Philippines	0.838	0.300
Singapore	0.479	0.709
Thailand	0.535	0.096
Vietnam	0.177	0.201
Fiji	0.580	0.579

possibilities of making money as the chief reason why there has been no ethnic violence in Malaysia, despite more polarisation, less accommodation and more repression” (*ibid.*:127).¹³

An important element that is often overlooked in studies on ethnic diversity has been the numerical structure of the ‘multi-ethnic’ countries.¹⁴ Out of a sample of 132 states, Said and Simmons (1976: 10) noted that only 9.1 per cent can be considered ‘ethnic-free’. A total of 18.9 per cent contain an ethnic group which represents more than 90 per cent of the population, and another 18.9 per cent with the largest ethnic group constituting 75-89 per cent of the population. However, in 23.5 per cent of the countries, the largest ethnic group accounts for only 50-74 per cent of the population, and in 29.5 per cent of the states it does not constitute half the population. Moreover, in 40.2 per cent of the countries, the population consists of five or more significant ethnic groups. According to what he calls ‘nation-group attributes’, Nielsson (1985) classified the world’s population into ‘single nation-group states’, ‘one nation-group dominant states’, ‘one nation-group dominant states with fragmented minorities’, ‘bi-national states’, and ‘multinational states’, none of which, however, represents a total congruence of ‘nation-group’ and ‘state’. With the exception of rare cases like Iceland and the two Koreas, as well as some tiny island states (Table 1), there is no country in the world which can claim to be ethnically homogeneous; even Nielsson’s ‘single nation-group states’ are defined as those in which the nation-group accounts for between 95 and 99.9 per cent of the population.

More significantly, Nielsson’s taxonomy points out the importance of the numerical structure of multi-ethnic states. A distinction can be made between bi-ethnic states (with two major ethnic groups of significant proportions) and states with more than two major ethnic groups.¹⁵ Lijphart (1977: 56) remarked, “The notion of a multiple balance of power contains two separate elements: (i) a balance, or an approximate equilibrium, among the

¹³ However, it is interesting to note an opposite view posited by Harris (1964: 98) in his study of ethnicity in Latin America that “the price which the underdeveloped countries or regions ... have paid for relative racial tranquillity is economic stagnation”. Economic stagnation, he believed, may lead to less ethnic conflict than economic expansion “by virtue of the fact that there has not been too much to fight for” (*ibid.*:97). While not denying the possibility that ethnic conflict may increase with economic expansion, Hoetink (1973:111-2) argued that it is not the expanding economy *per se* that disturbs racial tranquillity but rather the presence of poorer members of the dominant ethnic group, “who are not objectively different from the other poor racial groups and hence tend to exploit their ascriptive distinctions *à outrance*”. In other words, economic expansion leads to a decline in economic differentiation and therefore results in an emphasis on other dimensions of social distinction, especially racial characteristics.

¹⁴ Based on the critical mass theory – advanced, among others, by Semyonov and Tyree (1981) – societies are considered multi-ethnic only if minorities constitute more than 10 per cent of their population.

¹⁵ The term multiethnic (or polyethnic) has been generally used in the literature to mean “consisting of more than one ethnic group”, *i.e.* including the bi-ethnic case, although occasionally it is also used in contradistinction to (and thus excluding) the bi-ethnic case. In this paper the term multi-ethnic is often used in the latter sense (*i.e.* in contradistinction to and excluding the bi-ethnic case). The context will serve to avoid any confusion between this narrower definition of the attribute multi-ethnic from the broader one. An option may be to reserve arbitrarily the term polyethnic for this narrower sense. This, however, risks creating more confusion as this word has always been used interchangeably in the literature with the term multi-ethnic.

segments, and (ii) the presence of at least three different segments.” However, cooperation among groups becomes more difficult, as the number participating in negotiations increases beyond three or four. On the other hand, a moderately multiple configuration is preferable to a dual segmentation as the latter entails a constant tension between “a [majority] hegemony or a precarious balance ... [and it leads] easily to an interpretation of politics as a zero-sum game” (*ibid.*). Bi-ethnic states are thus a special, problematic type of multi-ethnic state. In a bi-ethnic state, a gain for one ethnic group is easily perceived as a loss for the other. By contrast, in societies with more than two major ethnic groups it may not be apparent who loses when one ethnic group improves its position. This can lead to a logrolling situation, in which each group cares primarily about its own gains and nobody is conscious of the possible costs of a policy decision. The scenario is outlined in Steiner’s study on consociationalism in Switzerland (Steiner 1974). It also implies that ethnic tension could be more easily aroused by preferential policies in bi-ethnic states than in those with more than two ethnic groups. In addition, a related aspect of the numerical structure of ethnicity refers to the role played by the relative size of ethnic groups in the societal power structure (Stone 1985; van Amersfoort 1978; Schermerhorn 1970), which exerts a crucial bearing on the degree of ethnic conflict and pluralism.

Besides the numerical structure of ethnicity, other factors also act to influence ethnic intensity. Among them are whether the ethnic divisions are territorially based, the historical geography (homeland *vs* immigrant) of the ethnic groups, and whether the ethnic cleavages are crosscutting or mutually reinforcing. The variables of territoriality and historical geography of ethnicity, though basically also related to ethnic intensity, can be seen from a different angle. Territorial division along ethnic lines may put an upward pressure on public spending as central governments respond to ethnic demands via regional spending, which is not applicable in a country where ethnic groups are dispersed and intermingling in residence. A country where the population consists of both homeland and immigrant ethnic groups, due to the imbalance in ethnic intensity and legitimacy (claims to the land), is more conducive to the use of public spending to implement ethnic preferential policies, resulting in the expansion of the public sector. Examples of such countries are Malaysia, Fiji, Sri Lanka (where part of the Tamil population are immigrants from the Indian state of Tamil Nadu), various states of India, Indonesia, Uganda, Guyana, Trinidad, *etc.*

The last issue to be highlighted here, but probably the most important in the context of this paper, is the crosscutting or mutually reinforcing nature of cleavages that can actually be seen in the same light as the historical geography of ethnicity. In his analysis of Dutch politics, Lijphart (1968) proposed that if a society is too heterogeneous *or* too homogeneous over racial, linguistic and religious cleavages, democratic political organisation is not likely to be stable. A stable democracy must have both a minimum of ethnic homogeneity and a minimum of heterogeneity. Furthermore, the intensity of ethnic conflict depends on both the intensity of group membership (“ethnic intensity”) and the degree of cross-cutting (XC).¹⁶

¹⁶ Rae and Taylor (*op.cit.*) defined crosscutting”(XC) as the proportion of all pairs of individuals whose two members are in the same group of one cleavage but in different groups of the other cleavage:

$$XC = \frac{A+B}{N'(N'-1)/2}$$

The more the cleavages reinforce one another, the more intense the conflict will be (Rae and Taylor 1970:112). Conversely, the intensity of conflict declines with increasing degree of crosscutting.

As Lijphart (1977: 75) noted, perfectly cross-cutting and perfectly coinciding cleavages rarely occur in practice, but differences in the degree of cross-cutting (or the reverse, that of coinciding or reinforcing) can be critically important. The way in which different cleavages cut across each other can have crucial consequences for the intensity of feelings generated. It affects the sharpness of the ethnic boundary and consequently the overall degree of fragmentation of the society. According to the theory of cross-cutting or overlapping memberships, cross-cutting produces cross-pressures that result in moderate attitudes and actions (*ibid.*; Almond 1956; Almond and Powell 1966). The effect of cross-cutting or mutually reinforcing cleavages can be seen in Table 5 that shows the separate linguistic and religious fractionalisation indices for Southeast Asian countries. Fiji, which bears a close similarity to Malaysia in its historical geography of ethnicity and the political and economic impact of its deep interethnic problems is also included in the list for comparison. The other aspect of ethnic fractionalisation, the racial (phenotypical), is not shown in the table because for these countries it is mostly identical to or negligibly different from the linguistic fragmentation.

Rae and Taylor (1970: 96) had shown that the XC equation (see footnote 16) can be rewritten as

$$XC = 2FC - F1 - F2$$

where F1 is the fragmentation of cleavage X1, F2 is that of cleavage X2, and FC is the probability that any two individuals are in different groups in at least one of the cleavages. The derivation of F1 or F2 (following the computational procedure of Rae and Taylor's index of fragmentation described earlier) is relatively straightforward. However, to calculate FC, more detailed data will be required, for instance the proportion of members in each linguistic segment who belong to each religious category and *vice versa*.

This equation is important in showing how cross-cutting is in fact closely related to the fragmentation of the relevant cleavages. Since FC can take on several values for given fixed values of F1 and F2, the latter do not completely determine XC. However, F1 and F2 do constrain the possible values of XC. Rae and Taylor (1970) showed that if F1 and F2 are both very low (*i.e.* the cleavages are not very fragmented), FC must also be low. Conversely,

(continued footnote 16)

where A is the number of pairs whose members are in the same group of the cleavage X1 but in different groups of X2 (*i.e.* matched on X1 but mixed on X2), B is the number of pairs whose members are in different groups of X1 but in the same group of X2 (*i.e.*, mixed on X1 but matched on X2), and $N'(N' - 1) / 2$ is the total number of pairs (N' = the number of individuals in the overlap) (Rae and Taylor 1970:92). Examples of X1 and X2 most relevant to the present study are language and religion, race and religion, or language and race. Like the fragmentation index employed here, the measure XC also varies between limits of 0 and 1. XC is zero when cleavages are 'completely reinforcing' – all the matched pairs on X1 are matched on X2 and all the mixed pairs on X1 are mixed on X2. XC is equal to one in the hypothetical case of complete cross-cutting if all matched pairs on X1 were mixed on X2 and all mixed pairs on X1 were matched on X2.

FC is high if both F1 and F2 are very high. Hence, from the relation $XC = 2FC - F1 - F2$, the measure XC must be low in both of these cases. This means that there cannot be much crosscutting whenever F1 and F2 are both very low (near 0) or both very high (near 1). High values of XC can only occur when one of the cleavages has low fragmentation and the other has high fragmentation (*ibid.*: 99-103). It can be seen in Table 5 that ethnolinguistic-ethno-religious cross-cutting is prevalent in Laos, Cambodia, Thailand, the Philippines, Indonesia and probably Burma while such ethnic cleavages are obviously mutually reinforcing in countries like Malaysia, Brunei, Fiji and probably Singapore. The predominant Roman Catholic/animist East Timor, which is not included in the list, is another country exhibiting cross-cutting characteristics, with its high degree of linguistic fragmentation (0.667) assuaged by the lack of sharp religious differentiations.

The above shows that, Malaysia, which is characterised by its reinforcing racial, linguistic and religious cleavages, should be considered more fragmented in terms of overall ethnic structure, than another country that happens to have similar degrees of racial, linguistic and religious differentiations but where such cleavages are cross-cutting. The same can be said of Fiji. Therefore, to reveal the true picture of ethnic fragmentation, the levels of EFIs should ideally take into consideration the effects of cross-cutting.

5. Concluding Remarks

This paper proposes an index of ethnic fractionalisation that comprises all three major types of non-class cleavages in society – racial (phenotypical), linguistic and religious. Whereas the existing studies on public policy and ethnicity either included only one of these components (Mueller and Murrell's work (1986) which employed linguistic groups as the units of measurement) or considered them as separate variables (McCarty's 'ethnic variance' and 'religious variance')¹⁷, this paper regards these components as different manifestations of one single characteristic. In other words, racial (phenotypical), linguistic and religious characteristics represent different markers of ethnic (or socioracial) distinction (often more loosely termed ethnic markers). To treat them as separate variables or to employ one to the exclusion of the others inevitably leads to the mismeasurement of the degree of fragmentation. There are two ways to encompass all these three ethnic markers. The first option is to construct a composite index based on three separate indices measuring racial, linguistic and religious diversities respectively. Although technically simple, this option is not adopted in this paper due to the high risk of mismeasurement, as there is no way to accurately gauge the relative weight of the three separate types of fragmentation, especially in the light of the possible cross-cutting or reinforcing link between them. On the contrary, the approach followed here is to employ solely the most significant ethnic marker of a country as the unit of measurement, for instance, race (phenotype) in Rwanda, language in India and religion in Bosnia-Herzegovina. Such an approach can of course be said to be as arbitrary as the first option as it disregards the other 'less significant' ethnic cleavages. However, on close

¹⁷ Language is the marker used in constructing the ELF (ethno-linguistic fractionalisation) in a recent paper by Kuijs (2000), and race (phenotype) that employed in another by Alesina *et al.* (1998), both following similar computation procedure as in this paper. The former covers a population of 54 to 79 countries while the latter focusses on U.S. cities, metropolitan areas and counties.

scrutiny it emerges as the most accurate way to measure ethnic diversity since in reality it is the most prominent cleavage that counts in the polarisation of society, though it is in itself often a symbol for social mobilisation finding its root in some politico-economic differentiation. It also has the advantage of not having to rely on arbitrary weighting of different indices as required by the first option and avoiding excessive assumptions (Occam's razor). Therefore, while the index of ethnic fractionalisation (EFI) proposed in this paper represents the degree of fragmentation in terms of one of the following cleavages: racial, linguistic and religious (with the possibility of some conceptual overlapping among them), exactly which type of cleavage is selected depends on the particular context of the country concerned. For instance, ethno-religious cleavages provide a more accurate picture of the situation in Bosnia-Herzegovina – so do racial differences in Rwanda and Burundi – than linguistic ones, since linguistic homogeneity of these countries is far from reflecting the true degree of their ethnic fragmentation. Ideally, the effect of cross-cutting and reinforcing influences between the different markers should also be taken into consideration but again it is practically impossible to accurately measure such complex links (quantitative measurements of the degree of crosscutting or reinforcing such as Rae and Taylor's XC index would require detailed field survey in each country (which is beyond the scope of this paper) to determine the proportion of the members of a type of ethnic group who also belong to some other types of ethnic groups). Instead of arbitrarily assigning values for such influences, it serves to provide a more accurate measurement of the overall ethnic diversity and demographic heterogeneity, for practical purposes, by not taking them into consideration. While the existence of such influences cannot be denied, a comparison of individual countries' social histories easily reveals that such influences are not as significant as to alter the relative degree of fragmentation between countries.

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