

philippine studies

Ateneo de Manila University · Loyola Heights, Quezon City · 1108 Philippines

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Philippine Studies vol. 29, no. 2 (1981) 170–188

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Fri June 27 13:30:20 2008

**Residential Segregation and
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MICHAEL A. COSTELLO

One of the major trends in the contemporary social history of the Philippines has been the massive in-migration of lowland Christian groups from Luzon and the Visayas to Mindanao. Well over a million persons are estimated to have taken part in this process between 1948 and 1960.¹ Although migration to the region has abated somewhat in more recent years, Mindanao is still able to attract a good number of settlers from the more densely populated Visayan islands.² These population movements have set in motion processes of intercultural contact, and occasionally intercultural conflict, between diverse ethnic and religious groups in Mindanao, a problem which has received surprisingly little empirical attention from sociologists and demographers in the Philippines.³

The province of Lanao del Sur represents a useful starting point for such a much-needed analysis. The dominant ethnic group in this province has historically been the Maranao, the second largest of the ethnic groups in the Philippines which adhere to Islam. During the above-noted period of rapid in-migration to Mindanao, however, the number of persons living in the province belonging to different ethnic and religious groups increased fairly rapidly. Thus, while the 1939 Census of the Philippines showed approximately 8,000 Christians living in Lanao del Sur, this number had risen to 38,390 by 1970. Christians comprised 8.4 percent of the provin-

1. Frederick L. Weinsted and Paul D. Simkins, "Migrations and the Settlement of Mindanao," *Journal of Asian Studies* 25 (November 1965): 83-103.

2. Richard Ulack, "Migration to Mindanao: Population Growth in the Final Stage of a Pioneer Frontier," *Tijdschrift voor Economische en Sociale Geografie* 68 No. 3 (1977): 133-44.

3. The continued, and fruitful, concern shown about this issue by anthropologists working in the Mindanao setting provides a glaring contrast in this regard.

cial population in 1970, as compared to only 5.7 percent in 1939.⁴

It is to be expected that the influx of new groups to Lanao del Sur which took place during this period was accompanied by increasing contact, on a day-to-day level, between Muslims and Christians. All other factors being equal, growth in the size, both absolutely and relatively, of a minority populace must result in increasingly frequent majority-minority contact. This, in turn, will be of considerable importance for subsequent social and cultural change. For example, the processes of cultural diffusion and assimilation might well be accelerated by such contacts. On the other hand, heightened levels of intergroup conflict could also be the result.

In addition to the size factor, levels of intercultural contact in an area are substantially affected by the residential distribution of ethnic groups, i.e., the manner in which members of each ethnic community are distributed in space. Highly *segregated* residential patterns, which occur when members of an ethnic group live more or less in isolation from one another, are not conducive to frequent intergroup contact. Highly *integrated* living conditions, on the other hand, may be expected to increase contacts between the various ethnic populations.

The purpose of this essay will be to investigate changing patterns of residential segregation between ethnic groups in Lanao del Sur, during the period 1970-75. Ethnic residential segregation will be measured at the community level. That is, our concern will be with estimating the extent to which various ethnic groups live in the same or in different municipalities of the province. The 1970-75 time period was chosen for analysis because it was during this interval that the present violent conflict between Muslims and Christians in Mindanao first broke out. An indication of the severity of this problem is provided by the fact that fully 50,000 people are estimated to have died as a direct result of this con-

4. Commission of the Census, *Census of the Philippines: 1939. Reports by Province, Lanao* (Manila: Bureau of Printing, 1940), Table 8; National Census and Statistics Office, *Final Report of the 1970 Census of Population and Housing, Lanao del Sur* (Manila: National Census and Statistics Office, 1974), Table III-18. The 1939 figures are based upon the number of Christians and Muslims living in those municipalities of the province of "Lanao" which are now included in Lanao del Sur. Since some municipalities appear to have been divided between Lanao del Sur and Lanao del Norte when these two provinces were created, this estimate is only approximate.

flict,⁵ while untold others have been forced to become refugees from their homes. It will thus be of interest to see how ethnic groups in Lanao del Sur may have realigned themselves residentially during this period of severe interethnic tension and conflict.

THEORETICAL BACKGROUND

The classic sociological discussion of intergroup conflict is to be found in Georg Simmel's *Soziologie*, first published in 1908. An English translation has more recently been published along with a seminal work by Coser, which attempts to codify Simmel's provocative, but occasionally disconnected, thoughts on the matter.⁶ Following the leads provided by Simmel and Coser, we can advance two hypotheses about changes in the residential distribution of ethnic or religious groups during a period of protracted conflict. Stated formally, our first hypothesis is that *ethnic groups in Lanao del Sur should tend, over time, to become more residentially segregated from one another*. This hypothesis follows from Simmel's well-known proposition that conflict tends to increase the internal cohesion of the group.⁷ While Simmel was primarily concerned with social-psychological aspects of group cohesion, such as loyalty, consensus, and morale, it seems fair to extend his argument to include living arrangements. On the one hand, data on residential distribution can provide a useful demographic or ecological *indicator* of the more strictly social factors discussed by Simmel. This strategy has a long tradition within sociology, most typically being used by human ecologists. The logic of this approach was ably stated by Robert Park over fifty years ago, when he remarked that

it is because social relations are so frequently and inevitably correlated with spatial relations; because physical distances so frequently are, or seem to be, the indexes of social distances that [demographic/ecological] statistics have any significance for sociology.⁸

5. Peter G. Gowing, "Of Different Minds: Muslim and Christian Perceptions of the Mindanao Problem," *Philippine Quarterly of Culture and Society* 5 (December 1977): 243-52.

6. Georg Simmel, *Conflict*, trans. Kurt H. Wolff (New York: The Free Press, 1955); Lewis Coser, *The Functions of Social Conflict* (New York: The Free Press, 1956).

7. Simmel, *Conflict*, pp. 88-91 and 96-98; Coser, *The Functions*, pp. 87-95.

8. Robert E. Park, "The Urban Community as a Spatial Pattern and a Moral Order," in *The Urban Community*, ed. Ernest W. Burgess (Chicago: University of Chicago Press, 1926), p. 18.

On the other hand, even if we should feel that "spatial relations" are but a poor indicator of "social relations," it would still seem logical that increasing residential segregation should follow closely upon the outbreak of intergroup conflict, if only because the sheer drive for personal safety should lead many individuals to move to areas populated by persons with the same ethnic background.

A second proposition advanced by Simmel is that conflict can often unify two or more groups through its tendency to encourage groups to form coalitions with one another.⁹ Each party in the conflict situation tends to seek allies for its cause; thus, disunity can produce a togetherness of sorts within two opposing "camps," as larger scale groups are formed around some previously existing tie of cultural similarity or mutual interest. Applying this idea to the problem at hand, it would seem as though the most likely basis for coalition formation among *ethnic* groups in Lanao del Sur would be along *religious* lines. That is, various Christian ethnic groups (Cebuano, Tagalog, etc.) should come to identify more strongly with one another, as should the various ethnic groups adhering to Islam. One of the more astute observers of current events in Lanao del Sur, Peter Gowing, claims that such a process is indeed underway, at least among Muslims. According to Gowing,

Throughout their history, lack of unity has characterized the Moros — an inability of Maranaos, Maguindanaos, Tausugs and Samals to join together in a common cause. In the present warfare, too, the Moros have been badly factionalized. But for the first time in their history they have begun to think of themselves as Moros (*Moro* National Liberation Front, *Bangsa Moro* State, *Bangsa Moro* Army, etc.) rather than as Maranaos and Tausugs.¹⁰

Based on this logic, we now suggest a second hypothesis for empirical investigation: that *residential segregation between ethnic groups coming from the same religious tradition* (e.g., Maranao, Maguindanao, and Sulu-Moro of the Muslim Tradition; or Cebuano and Ilocano of the Christian) *should decrease between 1970 and 1975, while that between groups adhering to different religious perspectives* (e.g., the Muslim groups vs. Christian groups) *should increase*. As was the case with our previous hypothesis, then, we

9. Simmel, *Conflict*, pp. 98-99; Coser, *The Functions*, pp. 139-49.

10. Peter G. Gowing, "We Are Constantly Asked . . . ," *DRC Reports* (Dansalan Research Center) 2 No. 3 (1977): 8-10.

are here assuming that physical distances can serve as an index of changing "social distances" in Lanao del Sur.

In addition to serving as an indicator of the state of ethnic relations in Mindanao, the residential distribution of ethnic groups can also be viewed as a potentially significant causal factor in its own right. Lieberman, for example, has shown that ethnic assimilation in the United States is strongly correlated with patterns of residential segregation: the more highly segregated the group, the less assimilated it tends to be with regard to such variables as citizenship, intermarriage, and the ability to speak English.¹¹ The relevance of this finding should be apparent for the topic of this article insofar as concern has frequently been voiced about the extent to which Muslim groups are "integrated" into the national society.¹² Indeed, one of the reasons originally voiced by the American colonial regime for encouraging the in-migration of Christian groups to Mindanao was to accelerate "the amalgamation of the Mohammedan and Christian native population into a homogeneous Filipino people."¹³

A second important implication of patterns of residential distribution among ethnic groups relates to the problem of regional economic development. More specifically, the argument might be made that trends toward increasing segregation of Mindanao's Muslim population from the more prosperous and modernized Christian groups would tend to perpetuate the situation of economic inequality which now exists between these two entities. Stewart, for example, argues vigorously against any attempt to set aside special "reservations" for Muslim ethnic groups, noting that,

it is hard to conceive that anyone who has studied the record of American Indian reservations would propose such a plan. . . . Even at present there are major educational and economic disparities between most Muslims in Mindanao and their Christian neighbors. In all probability the reservations

11. Stanley Lieberman, "The Impact of Residential Segregation on Ethnic Assimilation," *Social Forces* 40 (October 1961): 52-57.

12. We are aware that Muslim leaders tend to be ambivalent about the policy of national integration and are herein using the term in a purely technical sense. No judgment as to the appropriateness of the goal of national integration, as it might be expressed by non-Muslim statesmen, is intended. For a discussion of this issue, see Gowing, "Of Different Minds," pp. 250-51.

13. Quoted in Peter Gordon Gowing, *Mandate in Moroland: The American Government of Muslim Filipinos, 1899-1920* (Quezon City: Philippine Center for Advanced Studies, University of the Philippines, 1977), p. 292.

would remove much of the pressure for modernization, would hinder improved education and economic development, and would ultimately increase the existing disparity in these areas. Once again this would mean an increasing lack of preparation among the Muslims to join the mainstream of Philippine life.¹⁴

While Stewart's argument is framed in terms of government-enforced (i.e., *de jure*) segregation between Muslims and lowland Christians, it is evident that it also would apply to the patterns of *de facto* segregation between groups with which this paper is concerned.

DATA AND METHODS

All data analyzed in this article have been taken from census tabulations on the distribution of ethnic groups, by municipality, in Lanao del Sur in 1970 and 1975.¹⁵ Ethnicity has been measured by the census question on "mother tongue," which in both cases was defined as the language or dialect spoken in the respondent's home in early childhood. Municipal boundaries in Lanao del Sur had not been changed during the period under observation, thus facilitating trend analysis.

The use of census data in the present study is not without its drawbacks. Doubt has occasionally been cast upon the reliability of population counts obtained in recent Philippine censuses, especially with regard to the more isolated sections of the country. Thus Madigan and others note that,

school teachers of the North Mindanao Region who carried out the barangay enumerations of the 1970 Census have confided to RIMCU personnel that barrio captains and municipal mayors at times exerted strong pressure upon them to increase the number of barangay residents beyond the

14. James C. Stewart, "Comment on the Baradas Paper," *Philippine Sociological Review* 20 (October 1972): 368-69. See also an empirical analysis, using Israeli data, of this issue by Chava Nachmias. This study found evidence to show that "the community [is] . . . a vital behavior-shaping force and a basis for individual change . . . The ethnically heterogeneous community may, under certain conditions, serve as an agent of rapid social change." Chava Nachmias, "Community and Individual Ethnicity: The Structural Context of Economic Performance," *American Journal of Sociology* 85 (November 1979): 650-51.

15. National Census and Statistics Office, *Final Report of the 1970 Census*, Table III-15; National Census and Statistics Office, *Final Report of the 1975 Integrated Census of the Population and Its Economic Activities, Lanao del Sur* (Manila: National Economic and Development Authority, 1975), Table 8.

total they had actually enumerated, even threatening not to endorse their work completion forms unless these enumerators should comply. The reason alleged for such pressure was the desire of municipalities and barangays to obtain a larger share in the . . . benefits distributed by the national government. . . .¹⁶

Unfortunately, the issue of over-enumeration may be particularly problematic for Lanao del Sur since at least one observer has argued that population overcounts are especially likely to be found for Muslims.¹⁷

Another problem with the census data used in the present study relates to the possibility that there may have been a change over time in ethnic identification among some of the inhabitants in Lanao del Sur. That is, it is possible that certain marginal groups or individuals may have, in effect, changed their stated ethnic allegiance between 1970 and 1975. The possibility that this may have happened seems especially likely in the case of persons reporting Maguindanao as their mother tongue. While there were 898 persons speaking Maguindanao in the province in 1970, this number had risen dramatically to 11,836 by 1975, a change which seems somewhat too large for the short time period involved. On the other hand, it is also possible that the Muslim-Christian conflict in the neighboring Cotabato area (the traditional home of the Maguindanao people) has resulted in a heavy outflow of Maguindanao refugees to Lanao del Sur. In any event, it seems clear that we should treat the results of our analysis with some caution, especially with regard to the Maguindanao group.

Two dimensions of residential segregation will be analyzed in the present paper. The first of these is based on our initial hypothesis and relates to the extent to which a given ethnic group is segregated residentially from *all other groups* in the province. This can be measured in terms of an "index of segregation."¹⁸ This

16. Francis C. Madigan and others, "Preliminary Report: The Area Fertility Studies, Surveys of 1977," mimeographed (Cagayan de Oro: Research Institute for Mindanao Culture, Xavier University, 1978), pp. 6-7.

17. Thomas J. O'Shaughnessy, "How Many Muslims Has the Philippines?," *Philippine Studies* 23 (Third Quarter 1975): 375-82.

18. This index, which was developed initially by Otis and Beverly Duncan, is given as follows:

$$IS_x = \frac{|X_1 - T_1|}{2(1-P_x)}$$

Where: IS_x = the index of segregation for ethnic group x ; X_1 = the percentage of all res-

index may be interpreted as a measure of "displacement," that is, it measures that percentage of each ethnic group which would have to move to a different municipality in order to make its residential distribution exactly the same as that found in the province as a whole. As such, it can take on values between 0 and 100: a score of 0 would represent a situation of complete integration between the group and all other groups, while a score of 100 indicates complete segregation.

A second dimension of ethnic residential segregation can also be noted. This is the extent to which *any two* ethnic groups may be segregated *from each other*. This can be measured by means of another index developed by the Duncans, the "index of dissimilarity."¹⁹ Like the index of segregation, the index of dissimilarity is a measure of displacement, taking values between 0 and 100. Illustrative computations of the index of segregation and the index of dissimilarity are available in the literature.²⁰

EMPIRICAL FINDINGS

Our analysis has been limited to the eight major ethnic groups found to be living in Lanao del Sur in 1970 and 1975. These are groups speaking the following mother tongues: Maranao, Maguindanao, Tausug, Cebuano, Hiligaynon, Iloko, Tagalog, and Waray. Persons belonging to the first three of these groups are almost universally Muslim, while the last five are considered as lowland Christian groups.

pondents in ethnic group X residing in subarea (i.e., municipality) *i* of the province; T_i = the percentage of respondents in all ethnic groups residing in subarea *i*; and P_x = the proportion of the total population (all municipalities of the province) represented by ethnic group X. Otis Dudley Duncan and Beverly Duncan, "Residential Distribution and Occupational Stratification," *American Journal of Sociology* 60 (March 1955): 493-503.

19. The formula for this index is:

$$ID_{xy} = \frac{|X_i - Y_i|}{2}$$

Where ID_{xy} = the index of dissimilarity between ethnic groups X and Y; X_i = the percentage of all respondents in ethnic group X residing in subarea (i.e., municipality) *i* of the province; and Y_i = the percentage of all respondents in ethnic group Y residing in subarea *i*.

20. See Michael A. Costello and Marilou Palabrica-Costello, *Residential Segregation and Centralization in Cagayan de Oro, 1972-1975*, Report submitted to the Reanalysis and Documentation Project of the Population Center Foundation of the Philippines (Cagayan de Oro: Research Institute for Mindanao Culture, Xavier University, 1980), Table 1.

The first concern of the present study is with patterns of residential segregation found between each of these eight groups as compared to all other residents of the province. Table 1, which

Table 1. Indexes of Segregation Among Eight Ethnic Groups in Lanao del Sur, 1970 and 1975

Ethnic Group (Mother Tongue)	1970	1975	Difference 1975-70
Maranao	67 (N=402,763)	57 (457,549)	-10
Maguindanao	74 (898)	42 (11,836)	-32
Sulu-Moro (Tausug)	12 (775)	35 (402)	+23
Cebuano	69 (34,425)	68 (13,508)	-1
Ilocano (Iloko)	79 (2,469)	80 (3,347)	+1
Tagalog	50 (2,558)	55 (1,939)	+5
Ilongo (Hiligaynon)	86 (7,088)	95 (8,032)	+9
Samar-Leyte (Waray)	57 (1,536)	57 (589)	0

shows the indexes of residential segregation for each group in 1970 and 1975, provides data on this topic. In general, the figures presented in this table show a fairly high level of segregation, at both periods of observation, among ethnic groups in Lanao del Sur. The two groups with the highest segregation index values are the Ilongos (i.e., persons speaking Hiligaynon) and the Ilocanos (i.e., those speaking Iloko), both of which are Christian groups. The high scores found for this group reflect their heavy concentration in the municipality of Wao, which is located in the southeastern corner of the province, and which is the only municipality in Lanao del Sur where a majority of the population is Christian. In 1970 fully 87.5 percent of all Ilongos and 79.4 percent of all Ilocanos in Lanao del Sur were living in this single community. In contrast, the Cebuano and Samar-Leyte groupings were more evenly scattered throughout the province, with only 5.8 percent

and 1.3 percent, respectively, of the members of these groups found to be living in Wao. Tagalogs appear to occupy a somewhat intermediate position among the five Christian groups with regard to this dimension: 29.1 percent of the persons speaking Tagalog were found to be residing in Wao.

The data shown in Table 1 do not provide much support for our first hypothesis. Among the minority Christian groups, where this proposition might be expected to hold with particular strength, three groups (Cebuanos, Ilocanos, and Samar-Leyte) showed virtually no change in their segregation levels. Two of the Muslim groups – the Maranao and the Maguindanao – also fail to conform to the hypothesis, with both of these groups tending to become less segregated from the general populace of the province over time. Thus, only the Tagalog, Ilongo, and Sulu-Moro groups appear to have experienced a change in their residential distributions characterized by increasing segregation from other groups in the province.

One plausible explanation for the lack of support accorded to our first hypothesis is that segregation between one group and all other groups represents a summary estimate of segregation levels between various pairs of specific groups, with some pairs possibly tending to become more highly integrated even as others become more segregated from one another. This would be the case, for example, if our second hypothesis were indeed found to be operating. That is, if a Christian ethnic group such as the Cebuanos or the Ilocanos was tending to residentially coalesce with other Christian groups even as it became more segregated from the various Muslim entities, the result might be little or no change in the *overall* index of segregation for this group. We thus turn our attention to our second hypothesis, the relevant data for which are to be found in Table 2. This table presents the indexes of dissimilarity in residential patterns between each pair of the eight ethnic groups under consideration. Figures shown above the diagonal are the indexes of dissimilarity as based on the 1970 data, while those below the diagonal represent the net change in the index of dissimilarity for each pair of groups between 1970 and 1975. For the convenience of the reader, the area below the diagonal of the table has been divided into italics and non-italics portions. The italics portion shows all comparisons *between* religious traditions; we

Table 2. Indexes of Dissimilarity Between Eight Ethnic Groups and Changes over Time in These Indexes: Lanao del Sur, 1970-75*

Ethnic Group	Ethnic Group							
	Maranao	Maguindanao	Sulu-Moro	Cebuano	Ilocano	Tagalog	Ilongo	Samar-Leyte
Maranao		76	16	72	83	55	86	59
Maguindanao	-33		72	65	93	63	93	23
Sulu-Moro	+22	-36		58	76	43	84	55
Cebuano	-1	-13	-10		76	44	90	59
Ilocano	-1	-9	+5	-2		50	15	89
Tagalog	+3	-4	+14	+8	-16		63	50
Ilongo	+10	+4	+11	-6	-1	-16		90
Samar-Leyte	-1	+30	+4	+3	-4	+20	+6	

*Figures above the diagonal are for 1970; those below the diagonal are the net changes in each index value between 1970 and 1975. Italicized figures indicate comparisons between religious traditions.

are hypothesizing that these values should be positive. Conversely, the non-italics portion shows all comparisons within large religious aggregates; these figures should be negative.

In general, the data shown in Table 2 provide only modest support for our second hypothesis. For the thirteen comparisons involving ethnic groups of the same religious persuasion, eight show the expected decline in segregation levels while five give evidence of increasing residential dissimilarity. When comparisons are made between groups of different faiths only a bare majority (eight out of fifteen) show the predicted increase. Thus, a total of sixteen out of the twenty-eight possible comparisons (or 57.1 percent) show the expected changes in intergroup segregation levels. On a purely chance basis we would expect 50 percent of our predictions to be in the correct direction, a figure which is only marginally lower than that found by our analysis. Using binomial probability theory, it is possible to test the hypothesis that there is no significant difference between the proportion of correct predictions

found in our data and that expected on the basis of chance.²¹ The result of such a test is not encouraging insofar as the foregoing null hypothesis cannot be statistically disproven even at a .10 level of probability.²²

A closer look at Table 2 shows that, of the five major Christian ethnic groups found in Lanao del Sur, two groups in particular – Cebuano and Samar-Leyte – failed most clearly to meet our expectations regarding changes over time in residential distribution. For these two groups only five out of thirteen predictions are found to be in the expected direction, as compared to fully nine out of twelve made for Ilocanos, Tagalogs, and Ilongos. It is of interest to speculate as to the reasons for this discrepancy. One useful hypothesis which presents itself at this stage is that minority groups in a conflict situation may be faced with other, and more radical, alternatives than mere coalition with like-minded neighbors. One such alternative could be to opt out of the conflict situation entirely by giving up one's land, business, or job and out-migrating to a more peaceful region. It may be that Cebuano and Samar-Leyte groups were so heavily represented in the stream of refugee Christians from the province that they showed relatively little change in their within-province residential distribution. That is, relatively few members of these groups may have moved to another (largely Christian) community in Lanao del Sur since most were leaving the conflict area altogether. It is thus of interest to investigate patterns of net migration found among the five Christian groups in Lanao del Sur during this period.

21. Hubert M. Blalock, Jr., *Social Statistics*, 2nd ed. (New York: McGraw-Hill, 1972), p. 170.

22. Another way of summarizing the data shown in Table 2 is to calculate the mean index value for the various types of comparisons involved. In 1970 the average residential dissimilarity score between each pair of the three Muslim groups was 54.7. In comparison, the mean index value for each pair of the five Christian groups was 62.6, while the average for each comparison involving both a Muslim and a Christian group was 67.2. These values, it might be noted, make theoretical sense insofar as groups from different religious backgrounds were more isolated residentially from one another than was the case for comparisons involving groups adhering to the same belief. The differences, however, are not strikingly large, especially insofar as the Christian groups were nearly as segregated from one another as they were from Muslims. By 1975 the average dissimilarity values were 39.0 for comparisons between each pair of Muslim groups, 61.8 for comparisons among Christian groups, and 70.0 for each Muslim vs. Christian pairing. Thus, the average dissimilarity value did, as expected, decline *within* religious groupings while at the same time increasing *between* religions. Again, however, the differences are not very large.

A rough, but generally effective, way of estimating migration rates is to compare the growth rates among each ethnic group in the province to that found for the nation as a whole. Using the growth rates of the Philippines between 1970 and 1975 as our standard, we can calculate the number of residents from each group expected to be living in the province by 1975, as based upon the 1970 census counts. When the expected population in 1975 is compared to the actual population obtained in that year, an estimate of the net number of persons who entered or left the province is obtained.²³ This procedure is illustrated in Table 3. As

Table 3. Estimates of Net Migration Among Five Christian Ethnic Groups: Lanao del Sur, 1970-75

Ethnic Group	1970 Population (1)	Expected Pop- ulation, 1975* (2)	Actual Pop- ulation, 1975 (3)	Net Migration (4)	Net Migration Rate (5)
Cebuano	34,425	39,485	13,506	-25,979	-75.5
Ilocano	2,468	2,831	3,345	+514	+20.8
Tagalog	2,558	2,934	1,938	-996	-38.9
Ilongo	7,086	8,128	8,033	-95	-1.3
Samar-Leyte	1,536	1,762	588	-1,174	-76.4
Total	48,073	55,140	27,410	-27,730	-57.7

*Estimated by multiplying the 1970 population by 1.147 (the ratio of the national population in 1975 to that of 1970).

the data in this table show, the Christian population of Lanao del Sur seems to have experienced rather heavy out-migration during the 1970-75 period. An estimated 27,000 Christians, representing more than one-half of the 1970 Christian population, appear to have left the province during these years. The magnitude of this figure, which is verified by other reports from the area, confirms the seriousness of the Muslim-Christian conflict in Mindanao and

23. See Henry S. Shryock, Jacob S. Siegel, and Associates, *The Methods and Materials of Demography*, Condensed ed. (New York: Academic Press, 1976), pp. 377-78.

gives a hint of the personal and financial losses accruing from this conflict.²⁴

Refugee movements in Mindanao are not, of course, limited to Christians. That a large number of Maguindanao refugees appear to have left Cotabato during this interval has already been noted. A similar phenomenon may also have taken place among other Muslim ethnic groups as well. For example, the 1970 Census returns in the province of Bukidnon, which is located adjacent to Lanao del Sur but which has few Muslim residents, showed 3,998 Maranaos to be living there. By 1975, though, this figure had fallen to 2,923, indicating a proportionate level of out-migration which is nearly as large as that experienced by Christians in Lanao del Sur.

Not all Christian groups, however, were equally likely to out-migrate from Lanao del Sur during this period. As the data in Table 3 show, Cebuano and Samar-Leyte groups were particularly likely to leave the province, thus lending some credence to our speculation about alternative modes of dealing with the conflict situation. Apparently, Simmel's comments about coalition formation during a period of intergroup conflict may apply most appropriately in a system which is closed to out-migration. When the option of flight is available, some groups may prefer this alternative rather than the choice of forming some sort of coalition with like-minded groups in the area. If we thus confine our attention to those groups which did not massively out-migrate from Lanao del Sur (i.e., all groups except Cebuano and Samar-Leyte) we now obtain a somewhat more successful record of predictions, as based on our second hypothesis. In this case, eleven out of the fifteen (73.3 percent) remaining comparisons shown in Table 2 are now found to be in the correct direction. Again testing for statistical significance, we find in this instance that this proportion of correct predictions is significantly higher ($p = .05$ for a two-tailed test) than would be expected to be obtained merely from the operation of chance factors. Among groups which did not heavily out-migrate then, our second hypothesis appears to hold some validity.

24. Between 1965 and 1975, for example, the proportion of college students in Marawi City who were Christian fell from 76 percent to 20 percent. The author of the study from which these figures are taken notes that "a considerable decrease in Christian enrolment occurred after the October 1972 rebellion in Marawi City, when Christian families migrated to other places." Dansalan Research Center, "Enrolment Trends in Marawi City Tertiary Schools For the Past Ten Years (1965-1975)," *Research Bulletin* (Dansalan Research Center) 1 (May 1976): 1-6.

These speculations raise a final question worthy of consideration; namely, what might be the possible factors which could account for the heavy out-migration of Cebuano and Samar-Leyte groups from Lanao del Sur? Tagalogs, in contrast, had a much lower rate of out-migration than these two groups while the Ilocano and Ilongo populations appear to have remained stable or to have even shown evidence of net in-migration. What could be the cause of these substantially different reactions to the conflict situation? One possible explanation might be cultural differences between the groups involved. Ilongos, for example, are commonly believed to be "proud" and somewhat "quarrelsome," character traits which might lead persons belonging to this group to disdain the option of fleeing from their homes. Cebuanos, in contrast, are supposed to be more easy-going and peace-loving, thus indicating that this group could be more willing to avoid trouble by out-migrating.²⁵ A more convincing causal variable, however, might be the very factor of residential segregation with which we have been concerned in this paper. It would seem plausible that the Christian ethnic groups in Lanao del Sur which were most separated residentially from the province's majority Muslim population would also be the ones which were least likely to leave their homes. Conversely, the groups which tend to live in communities with a large proportion of Muslim inhabitants might feel more exposed to danger and more willing to out-migrate. That some such process appears to have been operating in Lanao del Sur between 1970 and 1975 is shown in the regression line between the estimated rate of net migration for the five Christian groups and the percentage of each group living in the municipality of Wao in 1970. Wao, as noted earlier, is the only municipality in Lanao del Sur where the Christian populace is larger than the number of Muslims. In 1970 fully 70 percent of Wao's population was Christian. In contrast, all other twenty-nine municipalities in Lanao del Sur had Muslim majorities. The relationship between these two factors appears to be a close one; further evidence to this effect is shown by the very high correlation coefficient of +.96 between each ethnic community's net migration rate and the proportion of the

25. See Francis C. Madigan, S.J., *Mindanao's Inland Province: A Socio-Economic Survey*. Book II. *Life in Bukidnon Barrios, 1969, Kibawe and Maramag Municipalities* (Cagayan de Oro City: Research Institute for Mindanao Culture, Xavier University, 1970), pp. 148, 201, and 220.

group living in Wao. This coefficient is statistically significant at the .005 level of probability.

It thus seems clear that the residential segregation variable, in addition to acting as a fairly efficient indicator of the state of Muslim-Christian relations in Lanao del Sur, is also having a significant impact upon the dynamics of such relations. In a situation of intense majority-minority conflict, the pressures upon a minority group to out-migrate seem to be directly related to the extent to which its pattern of residential distribution brings it into close contact with the majority group. Thus, persons speaking Cebuano and Waray were particularly likely to leave Lanao del Sur between 1970 and 1975, not because of their "peace-loving" nature, but, somewhat ironically, because of their higher levels of residential integration with the province's majority Muslim population.²⁶

SUMMARY AND CONCLUSIONS

The purpose of this paper has been to examine recent trends in the residential distribution of Muslim and Christian ethnic groups in Lanao del Sur. The time span covered was between 1970 and 1975, a period of increasing, and occasionally violent, conflict between Muslim and Christian groups in the province. As a result of this conflict, some refugee-like population movements might be expected to occur, thus bringing about a realignment of ethnic population distributions in the area.

Following Simmel's suggestive ideas about the relationship between intergroup conflict and social structure, we formulated two hypotheses about the patterns likely to be taken by such population movements. In the first place, we posited a trend toward increasing segregation of ethnic groups from the overall provincial population, as persons seeking security in a time of tension and hostility gravitate to members of their own linguistic groupings. This proposition stems from Simmel's discussion of the tendency for intergroup conflict to increase intragroup cohesion. Our second

26. The analogy between this argument and the so-called problem of "white flight" from central cities to suburbs in the United States is worth noting. According to some observers, whites in urban areas of the United States are especially likely to out-migrate from central city neighborhoods in which the proportion of black residents has exceeded some crucial "tipping point." See for example, Harold M. Rose, "The Spatial Development of Black Residential Subsystems," *Economic Geography* 48 (January 1972): 43-65.

hypothesis was that there would be some trend toward coalition formation between ethnic groups adhering to the same religion. Operationally defined in terms of changing residential distributions, this meant that Muslim ethnic groups should draw closer to other Muslims, that Christians should residentially coalesce with other Christians, and that Muslim and Christian groups would come to exhibit increasingly dissimilar residential patterns from one another.

The first hypothesis was tested by examining indexes of residential segregation, as calculated from municipal-level census data on mother tongue, among the eight major ethnic groups in Lanao del Sur. Indexes of residential dissimilarity between each pair of ethnic groups were then analyzed in order to test the second hypothesis. In general, the data seemed to provide only weak support for our expectations. Only three of the eight ethnic groups became, as expected, more residentially segregated from the general populace of the province. Three others experienced little or no change in their level of segregation while two groups (the Maranao and Maguindanao groups) actually became more widely integrated with the overall population. Similarly, our expectation that segregation levels should drop between any pair of ethnic groups adhering to the same religion while at the same time that they increased in comparisons involving groups from different religions was confirmed in only sixteen out of twenty-eight cases, a proportion of correct predictions which was not significantly different from that which would be expected purely on the basis of chance.

At this point our attention shifted to a *post factum* attempt to explain why some groups behaved in accordance with our expectations while others (most notably groups speaking Cebuano and Waray) did not. The possibility was raised that threatened minority groups during a period of intergroup conflict may have at least one important option open to them other than to coalesce residentially with like-minded groups. This is the option represented by leaving the conflict-ridden milieu altogether through out-migration. The fact that it was the Cebuano and Samar-Leyte groups which out-migrated most heavily from Lanao del Sur between 1970 and 1975 thus seemed to demonstrate the existence of two separate demographic/ecological "strategies" for dealing with conflict: *either* the group (as expected) coalesced residentially with like-minded aggregates *or* it was subject to heavy rates of out-

migration. The possibility is thus raised that Simmel's observations about group cohesiveness and coalition formation apply most appropriately to social systems closed to out-migration. In a more open system in which the majority group is perceived as especially powerful and threatening, minority groups may prefer flight over a protracted and perhaps hopeless struggle.²⁷

Having identified the important role played by out-migration of minority groups from the conflict situation, we were prompted to raise a final issue. This was the problem of why some minority groups chose to migrate while others did not. Returning to the original interest of the paper, we argued that, during a period of intense intergroup conflict, the extent to which a minority group is integrated residentially with the population should be directly related to its propensity to out-migrate. Strong empirical support was found for this proposition.

Regarding the more practical and immediate problem of Muslim-Christian conflict in Mindanao, the study indicates a general deterioration of relations between these two groups. Christians were apparently leaving Muslim-dominated provinces such as Lanao del Sur in large numbers during this period, just as Muslims were fleeing those areas in which Christians made up a majority of the population. As for Christian groups in Lanao del Sur which did *not* out-migrate in large numbers, a clear trend toward increasing concentration in non-Muslim areas of the province was found. Thus, day-to-day contact between the two groups had clearly been reduced during the interval, either as a result of increasing residential dissimilarity between Muslims and Christians living in Lanao del Sur or due to the heavy out-migration of Christians from the province.

As a result of these trends it appears clear that the "amalgamation" of Muslim and Christian groups into a "homogeneous Filipino people" seems farther away than ever. Mindanao shows little sign of acting as a "melting pot" of cultures and we still have far to go before a real integration between these two groups can be said to have taken place. As Bulatao has observed,

27. Carneiro also notes the importance of the out-migration option in affecting the dynamics of intergroup conflict. See Robert Carneiro, "A Theory of the Origin of the State," in *Readings in Anthropology 77/78*, ed. the Dushkin Publishing Group (Guilford, Conn.: Dushkin Publishing, 1977), pp. 216-22.

the ethnic factor has, in the last two decades, confounded many social analysts by refusing to disappear. The "liberal expectancy" among social analysts used to be that modernization would blur ethnic distinctions, achievement would replace ascription and particularistic criteria, and wide ranging communication and education systems would homogenize populations. . . . Instead, ethnic divisions in many societies have become sharper, ethnic interest groups more insistent, ethnic oppositions more political and engulfing.²⁸

The data examined in this paper, and indeed the daily news reports from Mindanao, give us little reason to doubt the validity of Bulatao's observation.

A second implication of our findings relates to the possibility, raised earlier, that Muslims in Mindanao may be increasingly confined to "reservation-like" areas where they represent 90 percent or more of the area's population. We have cited Stewart's argument that such a trend would be detrimental to the continued socioeconomic development of Muslim groups in Mindanao. We feel that there is much truth in this position and, for this reason, have some forebodings about this trend. On the other hand, it could well be that the current trend toward more ethnically homogeneous areas in Mindanao may help to stabilize what is now a highly inflammable situation. Given the suspicions and hostilities that now exist on both sides, it may be for the best that intergroup contact be reduced rather than increased. As Eisenstadt has observed, social "breakdown" is particularly likely to occur in a "situation of growing interaction between different groups" which is characterized by a "lack of adequate mechanisms to deal with the problems attendant on such . . . interaction."²⁹ Thus, the problem for now may be primarily one of developing such integrative mechanisms, whether they be regionally-based and autonomous governmental units, institutionalized mechanisms for conflict resolution between Muslims and Christians or the development of a truly national set of goals and values that are not to be identified with any one single religious tradition. The larger goal of achieving peace and stability in Mindanao may demand that increases in intergroup contact has to follow such a series of changes rather than precede them.

28. Rodolfo A. Bulatao, "The Ethnic Factor in Fertility in Southeast Asia: A Preliminary Report from the Culture and Fertility in Southeast Asia Project," mimeographed (Honolulu: East-West Population Institute, 1978), pp. 46-47.

29. S.N. Eisenstadt, *Modernization: Protest and Change* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966), pp. 140-41.