

Estimates of the Religious Composition of Northern Ireland Local Government Districts in 1981 and Change in the Geographical Pattern of Religious Composition between 1971 and 1981

PAUL A. COMPTON and JOHN P. POWER

The Queen's University of Belfast

Abstract: The religious composition recorded in the 1981 census of population is unreliable because of the non-enumeration of individuals and non-response to the census question on religion. Two methods are described in the paper to correct for these distorting effects — a simple bivariate regression technique and a technique based on homogeneous enumeration districts — which are then used to produce corrected population estimates by religion for local government districts for 1981. These figures are compared with similar estimates for 1971 to infer the broad regional pattern of change in religious composition between 1971 and 1981.

I INTRODUCTION

The aims of this paper are two-fold: first, to present a set of estimates of the religious composition for each of the 26 local government districts in Northern Ireland for 1981¹ and second, with the aid of these estimates to chart any broad changes that may have occurred in the geographical pattern of religious composition over the last intercensal period. It complements the discussion of the more general demographic aspects of the changing religious composition of the Northern Ireland population published recently in this journal (Compton, 1985b).

1. After this paper had been submitted for publication, the Northern Ireland Fair Employment Agency published a commissioned report on the number of Roman Catholics in Northern Ireland in 1981 prepared by D. Eversley and V. Herr, which also contains local government district estimates of the religious breakdown. The methodology is very different from that employed in this paper. Eversley and Herr used a grossing procedure based on the estimated numbers of 5-9 year olds attending Roman Catholic and State schools to provide the values of the respective total populations. A few of these estimates are quite close to those presented in this paper but in most cases the variation is quite marked, especially when expressed as a percentage of the amount added on to the populations actually enumerated. Readers can judge for themselves which methodology and which set of estimates appear more plausible.

During the 1950s, a clear trend towards the spatial equalisation of the two main denominations had emerged, whereby the Roman Catholic proportion of the population was advancing in the predominantly Protestant areas of the east but regressing in many of the majority Catholic areas of the west. The perception of more recent years, by contrast, is of a reversal of this trend, hinted at in the results from recent local and parliamentary elections, and of the emergence of a process of spatial polarisation that could eventually produce a "de facto repartition" of Northern Ireland. This process has already been documented at the micro-scale by Boal *et al.* (1976) for Belfast and by Poole (1982) for other towns, but a lack of data has so far hindered the extension of such enquiry to the regional level.

The Census of Population has traditionally provided the one reliable source of data for charting changes in the respective distributions of Protestants and Roman Catholics in Northern Ireland but the most recent censuses of 1971 and 1981 have proved most unsatisfactory in this respect due to a growing resistance within the population to state their religious affiliation. Suffice it to say that recent census data can only provide reliable information about religious persuasion after the not-stateds have been consigned to a denomination, and after allowance has been made for non-enumeration in 1981.²

However, assigning the not-stateds is not a straightforward task in that non-response rates have varied as between Roman Catholics and Other Denominations (ODs)³ and also by area. Moreover, local government district variation in non-response is not a simple function of their religious composition, and areas of high OD refusal rates are not necessarily areas of high Catholic refusal rates and vice versa. As for the problem of non-enumeration, this has been variously estimated to lie within the range 19,000 to 74,100 persons, and a value of 45,000 has been adopted here as being most consistent with the totality of the evidence.⁴ It is also assumed in line with the Policy Planning and Research

2. Over five times as many individuals refused to state their denomination in 1971 (142,500 persons) as in 1961 (26,400 persons) and this had again doubled to 274,000 persons in 1981. Setting these figures in context, the population enumerated in 1961 was 1,425,045, in 1971, 1,536,065 and in 1981, 1,488,077.

3. The category Other Denominations contains all persons who were not Roman Catholics.

4. Non-enumeration was examined by an inter-departmental working group of the Northern Ireland Civil Service who concluded that the best estimate of non-enumerated persons in 1981 was 74,100, whereas 45,000 is the authors' estimate. The various arguments supporting these two estimates are discussed by Morris and Compton (1985). In the present state of knowledge, the decisive evidence supporting non-enumeration of around 45,500 and a total Northern Ireland population in 1981 of some 1,534,000 is provided by recent new information about net migration between 1971 and 1981. The net outflow from Northern Ireland now appears to have been made up as follows: 63,000 to Great Britain and the Isle of Man estimated from the net transfer of National Health Service (NHS) cards (Inter-departmental Working Group on Census Revision, 1985); 19,000 to the Republic of Ireland (Garvey, 1985); and 30,000 to other places (International Passenger Survey quoted by Inter-departmental Working Group, 1985). These sum to total net outflow over the period of 112,000 persons. Given that natural increase over the same period is known from birth and death registrations to have been 107,554 (Registrar General, 1981), the indication therefore is that the Northern Ireland population was more or less the same in 1981 as in 1971.

Unit's (1985) findings that the bulk of non-enumerated persons were concentrated in the 8 local government districts, of Belfast, Cookstown, Derry, Dungannon, Magherafelt, Newry and Mourne, Omagh and Strabane, but advantage has been taken of subsequent, as yet unpublished PPRU estimates of non-enumeration in the remaining districts to correct their populations also.

II ESTIMATING THE NUMBER OF ODS AND ROMAN CATHOLICS IN 1981

With so many imponderables, it is not an easy task to produce a reliable estimate of the number of Roman Catholics and of ODS in Northern Ireland in 1981, let alone estimates for local government districts. Reliable estimates are dependent primarily upon the accuracy with which the not-stateds can be apportioned to the correct denomination and in this respect small area enumeration district data (there were approximately 2,800 separate enumeration districts in 1981) become of crucial importance. These provide detailed information about the way the level of non-statement varied with the changing religious composition of areas and can therefore offer an ecological solution to the problem of assigning not-stateds within the framework of local government districts. Once 1981 estimates have been derived comparison with the corresponding estimates for 1971 (Compton, 1978) may then be used as a basis for an evaluation of regional change in denominational composition between 1971 and 1981.

Two straightforward methods, that yield broadly consistent results for each local government district, have been used in the apportionment. The first method involves the use of enumeration district data and a bivariate regression procedure to determine the average relationships between the rate of non-statement and the respective proportions of Roman Catholics and ODS enumerated in each local government district. The method is based on the empirical observation that as the proportion of Roman Catholics in an enumeration district rises so the overall rate of non-statement also tends to rise (and conversely, as the proportion of ODS rises so the overall rate of non-statement tends to decline). Separate regressions, each based on an average of around 110 enumeration district observations, have been computed for individual local government districts. The parameters of the equations (non-statement against ODS and non-statement against Roman Catholics) may then

In this case, differencing the population enumerated in 1981, i.e., 1,488,077, from that expected from the components of population change between 1971 and 1981, i.e., 1,531,619 gives an estimated non-enumeration of 43,542, which we have rounded to 45,000. One would not wish to be more categorical because the net migration value is subject to error, particularly the component estimated from the International Passenger Survey.

be used for the apportionment in each district. The input data were weighted according to the population size of each enumeration district and logarithmic, exponential, square, and square root transformations undertaken to establish the best fit relationships.

The second method is based on homogeneous enumeration districts, defined as those enumeration districts which were either overwhelmingly Roman Catholic (less than 5 per cent ODs enumerated in 1981) or were overwhelmingly OD in complexion (less than 5 per cent Roman Catholics enumerated in 1981). In such cases, it is reasonable to infer that the overall rate of non-statement provides a very close approximation to the rate of non-statement of the dominant persuasion of the area. Homogeneous areas (all Roman Catholic or all OD) have been aggregated into local government districts and, after adjustment for the presence of any individuals of the non-dominant persuasion, the aggregate non-response rate may be accepted as a good approximation of the Roman Catholic or OD non-statement rate for the local government district in question. Armed with these rates, it is then a simple matter to apportion the non-stateds to the presumed denomination.

Both methods rely on the drawing of inferences about the characteristics of individuals from ecological data and are open to criticism on this ground. But whatever their drawbacks, they should still generate more reliable estimates than any pro-rata method of apportionment. Compared with pro-rata techniques, they are less arbitrary in nature and make much greater use of the totality of information available. They do, however, generate a range as opposed to a single estimate and the problem therefore arises of how the two sets of results are best combined. The method of homogeneous enumeration districts has clear advantages over the regression method for those local government districts containing a high proportion of homogeneous areas. As against that it offers no advantage over the regression method when homogeneous districts make up a small proportion of the total. On the other hand, when the goodness of fit is satisfactory, the regression method may be used with confidence but there were many local government districts where this was not the case. On balance, the method of homogeneous enumeration districts was judged to provide the most reliable estimates for 11 local government districts where at least a third part of the enumerated population was located in such homogeneous areas: for Ards; Ballymena; Belfast; Castlereagh; Craigavon; Lisburn; Derry; Magherafelt; Moyle; Newtownabbey; and North Down (Table 1). For the remaining 15 local government districts, the estimates have been based on an average apportionment arrived at by combining the results of the two methods. A worked example of each method is presented in the appendix.

While reliable estimates of religious composition are primarily dependent on the accurate apportionment of not-stateds, corrections must also be made for non-enumeration. The estimated population effect of non-enumeration is pre-

Table 1: *Percentage of the enumerated population residing in homogeneous enumeration districts (HEDS)*

	<i>Roman Catholics in RC HEDS</i>	<i>Other denominations in OD HEDS</i>	<i>All</i>
Antrim	5.0	22.0	17.0
Ards	9.1	66.0	60.1
Armagh	26.2	25.3	27.5
Ballymena	8.1	40.8	35.1
Ballymoney	21.1	11.6	25.6
Banbridge	0.0	8.9	6.8
Belfast	66.4	68.8	68.2
Carrickfergus	0.0	35.5	34.4
Castlereagh	0.0	70.6	66.0
Coleraine	2.7	12.5	10.5
Cookstown	18.5	6.8	13.3
Craigavon	36.6	55.7	48.7
Down	8.1	10.7	9.8
Dungannon	19.2	10.3	15.0
Fermanagh	8.5	2.3	6.3
Larne	0.0	24.7	18.7
Limavady	20.0	5.9	15.4
Lisburn	37.0	39.7	38.3
Derry	51.9	2.0	37.1
Magherafelt	14.5	10.2	13.2
Moyle	38.2	49.5	44.2
Newry & Mourne	42.1	6.3	34.1
Newtownabbey	0.0	59.0	52.4
North Down	0.0	45.1	42.6
Omagh	13.0	7.2	11.6
Strabane	28.2	8.0	21.2
All	32.2	41.1	38.8

sented in Table 2 for the 26 local government districts - and these quantities have been added to the respective enumerated populations. These adjustments accord with the latest PPRU, thinking and are scaled to the estimated total of 45,000 non-enumerated persons. Although the problem of non-enumeration was largely confined to certain predominantly Roman Catholic areas of Northern Ireland, it does not follow that all non-enumerated persons were Roman Catholics. There is no way of accurately gauging this breakdown although small area data hint at a ratio of three Roman Catholics for every one

OD. In the event the non-enumerated have been apportioned in this ratio across those districts where non-enumeration is estimated to have been in excess of 1,000 persons. Otherwise the apportionment is in the ratio of the religious breakdown of the population enumerated.

Table 2: *Estimated non-enumeration by local government districts 1981*

	<i>Non-enumerated persons</i>
Antrim	447
Ards	43
Armagh	1,446
Ballymena	159
Ballymoney	88
Banbridge	191
Belfast	17,126
Carrickfergus	41
Castlereagh	163
Coleraine	294
Cookstown	1,691
Craigavon	1,772
Down	194
Dungannon	2,617
Fermanagh	388
Larne	12
Limavady	686
Lisburn	1,722
Derry	5,380
Magherafelt	1,709
Moyle	59
Newry & Mourne	4,140
Newtownabbey	330
North Down	175
Omagh	2,980
Strabane	1,147
All districts	45,000

III THE ESTIMATES FOR 1981 AND CHANGE BETWEEN 1971 AND 1981

The best estimates of the number of Roman Catholics and ODs in each local government district in 1981 are presented in Table 3; the range within which these values could lie, that is the extreme values derived from the two methods of apportionment, is also shown together with the respective rates of non-statement. The reader should bear in mind that as the findings presented in the following discussion are based on these estimates and are therefore subject to error, they must not be interpreted as carrying the same authority as findings based on reliable census data.

The most salient feature about non-statement and non-enumeration is the suggested degree of variability among the districts. The Roman Catholic rate may have been as low as 14 per cent in Carrickfergus but probably exceeded 30 per cent in Antrim, Armagh, Belfast, Cookstown, Dungannon, Limavady, Magherafelt, Newry and Mourne, Newtownabbey and Omagh. Among ODs the estimates range from around 12.5 per cent in Omagh, Castlereagh and Strabane to over 17.5 per cent in north Down, Belfast, Derry and Newry and Mourne. Moreover, the respective patterns of non-statement were not necessarily congruent, with the highest Roman Catholic rates, Antrim and Newtownabbey notwithstanding, tending to be associated with majority Catholic districts, and many of the highest OD rates, Derry and Newry and Mourne notwithstanding, with majority OD districts. Accordingly, Catholic non-statement was more than twice the OD rate in Cookstown, Dungannon, Limavady, Magherafelt and Omagh, but was only marginally higher than the OD rate in Ards and North Down and possibly below the OD level in Carrickfergus.

Turning to the estimated numbers of Roman Catholics and ODs these indicate that the essential features of the respective geographical distributions were broadly the same in 1981 as in 1971 (Table 4). The most clear-cut change involved Cookstown and Moyle where small Protestant majorities in 1971 had been supplanted by small Roman Catholic majorities in 1981. While the resulting shift in population numbers in Moyle was small and is well within the error margin of the estimates, the change in Cookstown was more emphatic and was brought about by a substantial rise in Roman Catholic numbers; the OD population appears to have remained essentially static over the period. As a consequence, the number of districts with Protestant majorities dropped from 17 in 1971 to 15 in 1981, while the number with Catholic majorities rose from 9 to 11 (Figure 1). However, changes of equal or of even greater magnitude to those in Cookstown, although not affecting the majority/minority position, are also suggested for a number of other districts. In Down there was a surge in Roman Catholic numbers combined with a broadly static OD population in Derry, Fermanagh, Magherafelt, Newry and Mourne and Strabane moderate to high

Table 3: *Population estimates by denomination and percentage non-statement rates: 1981*

<i>Local government district</i>	<i>Roman Catholics</i>			<i>Other Denominations</i>		
	<i>Population estimate</i>	<i>Range</i>	<i>Non-statement and non- enumeration (per cent)</i>	<i>Population estimate</i>	<i>Range</i>	<i>Non-statement and non- enumeration (per cent)</i>
Antrim	14,800	14,100 - 15,800	32.7	30,000	28,900 - 30,700	16.2
Ards	7,500	7,200 - 7,700	19.4	50,200	50,000 - 50,500	16.2
Armagh	22,900	22,000 - 23,100	30.1	26,200	26,000 - 27,100	15.1
Ballymena	10,400	10,200 - 11,000	19.0	44,200	43,600 - 44,400	11.5
Ballymoney	6,700	6,100 - 7,000	17.2	16,300	16,000 - 16,900	14.5
Banbridge	8,600	7,400 - 9,800	20.3	21,500	20,300 - 22,700	11.9
Belfast	118,600	117,200 - 120,000	35.0	193,700	192,300 - 195,100	18.7
Carrickfergus	2,300	2,000 - 2,500	14.0	26,200	26,000 - 26,500	15.5
Castlereagh	4,800	4,200 - 6,100	27.7	56,100	54,800 - 56,700	12.7
Coleraine	11,100	10,600 - 11,500	24.4	35,500	35,100 - 36,000	13.3
Cookstown	14,900	14,400 - 15,200	36.9	13,400	13,100 - 13,900	15.1
Craigavon	30,800	30,600 - 31,000	27.1	42,200	42,000 - 42,400	14.3
Down	31,600	30,600 - 32,900	24.2	21,500	20,200 - 22,500	14.1
Dungannon	23,200	22,500 - 23,900	35.4	20,500	19,800 - 21,200	15.4
Fermanagh	28,400	27,100 - 28,700	21.9	23,300	22,700 - 24,300	13.2
Larne	7,100	6,800 - 7,300	19.8	21,800	21,600 - 22,100	14.5
Limavady	14,700	14,200 - 15,000	31.3	12,300	12,000 - 12,800	15.3
Lisburn	18,700	18,700 - 20,000	29.0	65,100	63,800 - 65,100	15.3
Derry	60,800	60,800 - 61,500	24.4	28,000	27,300 - 28,000	20.8
Magherafelt	18,400	17,900 - 18,900	35.6	14,100	13,600 - 14,600	16.0
Moyle	7,300	7,200 - 7,400	25.5	7,000	6,800 - 7,100	13.5
Newry & Mourne	56,500	55,300 - 57,100	30.1	19,900	19,300 - 21,100	21.7
Newbownabbey	9,800	9,300 - 10,800	36.8	62,200	61,200 - 62,700	14.0
North Down	6,100	6,100 - 9,200	21.4	59,900	56,800 - 59,900	17.9
Omagh	28,600	27,500 - 29,300	35.1	15,500	14,800 - 16,600	12.6
Strabane	22,100	21,800 - 22,500	21.7	14,100	13,700 - 14,400	12.5

Table 4: *Estimated change in religious composition by local government districts: 1971 to 1981*

Local government districts	Roman Catholics			Other Denominations			Denominational breakdown			
	Number		Per cent change 1971-81 ¹	Number		Per cent change 1971-81 ¹	Roman Catholics		Other Denominations	
	1971	1981		1971	1981		1971	1981 ¹	1971	1981 ¹
*Antrim	10,400	14,800	42.5	23,000	30,000	30.0	31.1	33.0	68.9	<u>67.0</u>
Ards	7,500	7,500	-0.0	39,200	50,200	28.0	16.0	<u>13.0</u>	84.0	87.0
Armagh	20,300	22,900	13.0	25,300	26,200	3.5	44.5	46.5	55.5	53.5
*Ballymena	8,600	10,400	21.0	40,100	44,200	10.0	17.7	19.0	82.3	<u>81.0</u>
Ballymoney	6,500	6,700	3.0	15,400	16,300	6.0	29.6	<u>29.0</u>	70.4	71.0
Banbridge	8,900	8,600	-3.5	19,700	21,500	9.0	31.2	<u>28.5</u>	68.8	71.5
*Belfast	140,200	118,600	-15.5	270,900	193,700	-28.5	34.1	38.0	65.9	<u>62.0</u>
Carrickfergus	4,400	2,300	-47.5	22,600	26,200	16.0	16.2	<u>8.0</u>	83.8	92.0
Castlereagh	6,500	4,800	-26.0	57,700	56,100	-3.0	10.1	<u>8.0</u>	89.9	92.0
Coleraine	10,600	11,100	4.5	33,600	35,500	5.5	23.9	<u>24.0</u>	76.1	76.0
Cookstown	12,800	14,900	16.5	13,200	13,400	1.5	49.2	52.5	50.8	<u>47.5</u>
Craigavon	26,100	30,800	18.0	41,300	42,200	2.0	38.7	42.0	61.3	<u>58.0</u>
*Down	25,100	31,600	26.0	21,300	21,500	1.0	54.1	59.5	45.9	<u>40.5</u>
Dungannon	22,200	23,200	4.5	20,300	20,500	1.0	52.3	53.0	47.7	<u>47.0</u>
Fermanagh	26,600	28,100	5.5	24,100	23,300	-3.5	52.5	54.5	47.5	<u>45.5</u>
Larne	8,000	7,100	-12.5	21,700	21,800	1.0	26.8	<u>24.5</u>	73.2	75.5
Limavady	12,100	14,700	21.5	11,000	12,300	12.0	52.4	54.5	47.6	<u>45.5</u>
*Lisburn	11,500	18,700	62.5	57,700	65,100	13.0	16.6	22.5	83.4	<u>78.5</u>
Derry	53,600	60,800	13.5	29,800	28,000	-6.0	64.3	68.5	35.7	<u>37.5</u>
Magherafelt	17,200	18,400	7.0	14,200	14,100	-0.5	54.7	56.5	45.3	<u>43.5</u>
Moyle	6,800	7,300	7.5	7,100	7,000	-1.5	48.7	51.0	51.3	<u>49.0</u>
Newry & Mourne	51,400	56,500	10.0	20,600	19,900	-3.5	71.4	74.0	28.6	<u>26.0</u>
Newtownabbey	11,900	9,800	-17.5	54,300	62,200	14.5	18.0	<u>13.5</u>	82.0	86.5
North Down	5,900	6,100	3.5	46,000	59,900	30.0	11.3	<u>9.0</u>	88.7	91.0
Omagh	25,200	28,600	13.5	15,400	15,500	1.0	62.1	65.0	37.9	<u>35.0</u>
Strabane	19,500	22,100	13.5	14,800	14,100	-4.5	56.9	61.0	43.1	<u>39.0</u>
All Districts	559,800	586,400 ²	5.0	960,300	940,700 ²	-2.0	36.8	38.5	63.2	61.5 ²

¹Rounded to the nearest 0.5 per cent.

²The marginal difference between these values and those given in Compton (1985b) are due to the use of homogeneous enumeration districts as opposed to homogeneous electoral wards in apportioning those refusing to state a denomination, and to the assumption of 45,000 non-enumerated persons as opposed to 46,000 non-enumerated persons.

*Partitioned districts (see Figures 2, 3 and 4 and Table 6).

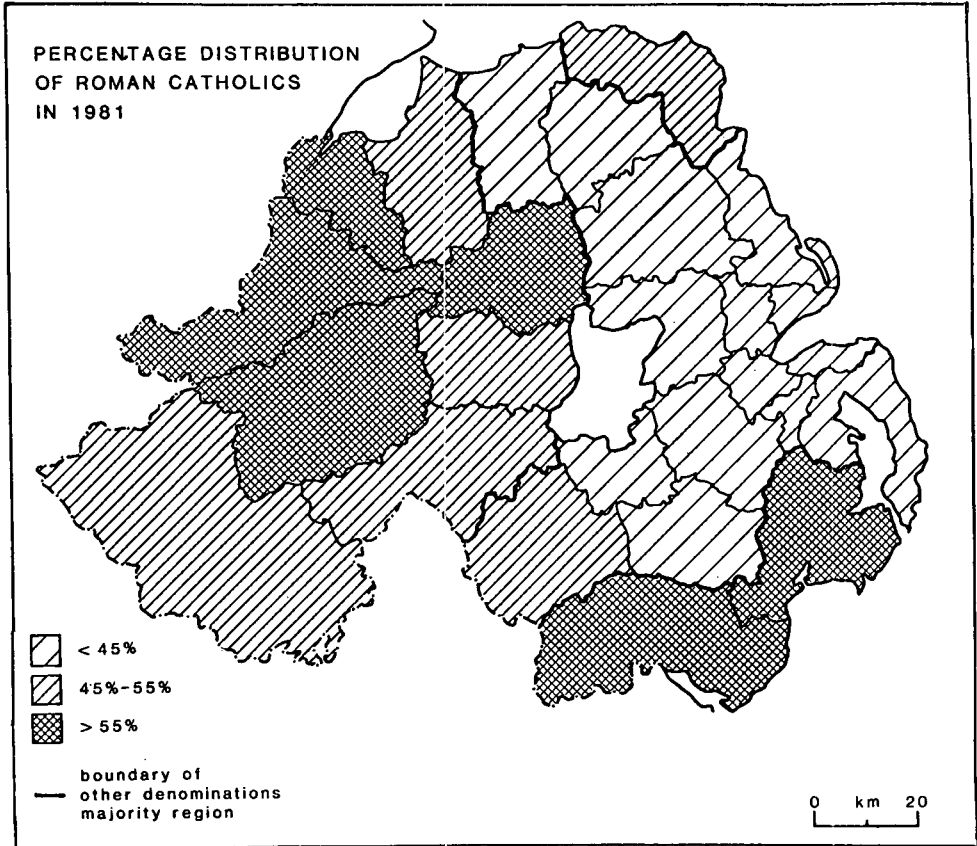


Figure 1

Catholic growth was accompanied by OD decline, while in Armagh, Dungannon, Limavady and Omagh moderate to high rates of Catholic increase combined with modest rises in OD numbers. Such population dynamics have, of course, brought about a marked increase in the Roman Catholic proportion in all of these districts which, with the exception of Armagh and Down, are also the Roman Catholic majority districts of the region west-of-the-Bann (Figure 2).

By contrast, between 1971 and 1981 the OD population increased most rapidly in the districts that fringe Belfast; growth in excess of 10 per cent was accompanied by a fall in Roman Catholic numbers in Banbridge, Carrickfergus and Newtownabbey, and by a static Catholic population in Ards and North Down. Accordingly, these were districts where the estimates suggest that the OD proportion also climbed sharply. To these may be added Larne, where a modest increase in OD numbers was accompanied by Catholic decline, Castlereagh, where a slight drop in the size of the OD population was accompanied by an

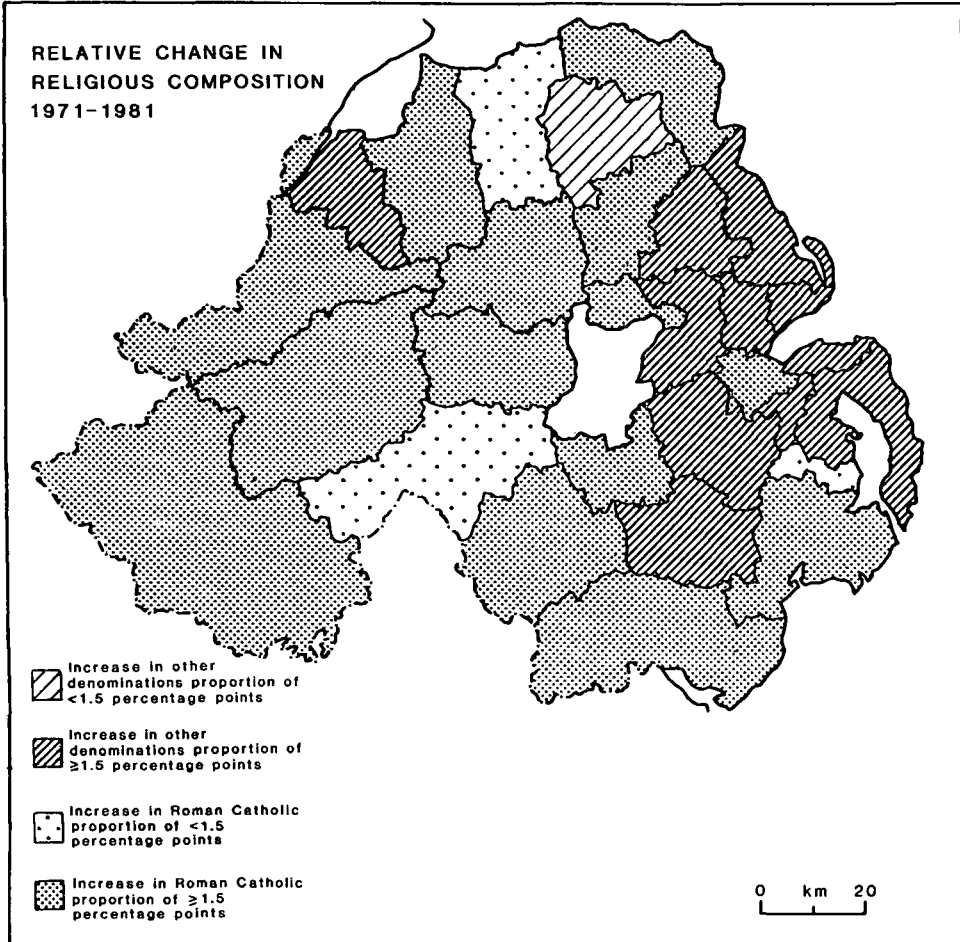


Figure 2

even larger decline in Roman Catholic numbers, and Ballymoney and Coleraine where modest growth in OD numbers combined with a somewhat lower rate of increase in the Roman Catholic population (Figure 2).

Belfast itself forms a special case; overall the population of the local government district (essentially the inner city and suburbs built between the First and Second World Wars) dropped by 22.5 per cent, but the estimates suggest that this was highly specific by denomination — the OD population declining by 27.5 per cent compared with a Catholic loss of around 13.0 per cent. As a result, the Roman Catholic proportion in the district jumped from an estimated 34 to 38 per cent over the intercensal period. Antrim, Ballymena, Craigavon and Lisburn were also exceptional; the population of each of these districts grew rapidly

between 1971 and 1981, Lisburn because of the extension of the West Belfast Catholic wedge into the district, and Antrim, Ballymena and Craigavon districts because of the earlier designation of Antrim, Ballymena and Craigavon towns as development poles. Although the OD population grew strongly in these districts, Craigavon excepted, Catholic numbers expanded at an even greater rate and as a result the Catholic component in each district increased quite substantially.

IV INTERPRETATION AND CONCLUSIONS

It remains to comment on whether these district changes have been consistent with the trend towards the greater spatial mixing of Roman Catholics and Protestants as observed between 1951 and 1961, whether they mark the emergence of greater spatial segregation between the two groups or whether they are consistent with no change of pattern. There can, of course, be no definitive answer to these questions as much depends on the scale of the analysis. However, a simple analysis based on a sub-division of Northern Ireland into two broad regional groupings of districts, the one comprising the 15 majority OD districts and the other the 11 majority Roman Catholic districts, points to the emergence of greater spatial segregation during the 1970s. Hence, although the estimates suggest no more than a marginal decline in the proportion of Roman Catholics in the OD majority region brought about by a somewhat faster drop in Roman Catholic than OD numbers, a much more differentiated pattern of evolution is suggested for the Roman Catholic majority region (Table 5). Not only did the OD population decline, while the Roman Catholic population was growing rapidly, but the proportion of ODs residing there also fell sharply from 41.3 to 38.2 per cent as a consequence. The outcome of these spatial trends left the distribution of ODs essentially unchanged, roughly 80 per cent residing in the majority OD region and 20 per cent in the majority Roman Catholic region in both 1971 and 1981. The increase in the degree of spatial segregation is therefore the outcome of the considerable changes that took place in the distribution of the Roman Catholic population, viz. whereas in 1971 most Catholics resided in the majority OD region (51.3 per cent of the total), by 1981 the plurality (52.2 per cent) had moved decisively to the majority Roman Catholic region.

How natural increase may have interacted with migration to bring about these changes must remain speculative. The estimates point to a small decline in the number of ODs residing in both majority OD and majority Roman Catholic regions which, in the unlikely event of the OD death rate exceeding the birth rate, must imply a net out-migration rate in excess of natural increase in both regions. Many combinations of internal and external patterns of movement would be consistent with this; the simplest explanatory model, however, would be to postulate a net OD flow from the Roman Catholic to the OD majority

Table 5: *Population change in majority OD and RC regions 1971-81*

	<i>Number</i>		<i>Distribution in per cent</i>		<i>Per cent change in Numbers</i>	<i>Per cent Roman Catholic</i>	
	<i>1971</i>	<i>1981</i>	<i>1971</i>	<i>1981</i>	<i>1971-81</i>	<i>1971</i>	<i>1981</i>
<i>OD Majority Region</i>							
Roman Catholics	287,300	280,200	18.9	18.3	-2.5	27.2	27.2
Other Denominations	768,500	751,100	50.6	49.2	-2.3		
<i>RC Majority Region</i>							
Roman Catholics	272,500	306,200	17.9	20.1	12.4	58.7	61.8
Other Denominations	191,800	189,600	12.6	12.4	-1.1		

region, this to account for the drop in OD numbers in the majority Roman Catholic region. The slight decline in OD population in the OD majority region then becomes the result of net out-migration from Northern Ireland.

The sharp increase of between 10 and 15 per cent in the Roman Catholic population of the Roman Catholic majority region would imply the cessation of the eastward drift of Catholics to the OD majority region, the dominant movement for the period 1951 to 1961. Moreover, since the rate of Catholic natural increase is unlikely to have exceeded 1.5 per cent per annum during the 1970s, the possibility of a reversal of this drift and a return flow of Catholics to the Catholic majority region cannot be discounted. But even so, most of the loss of Roman Catholics from the OD majority region would still appear to have been the result of a net out-movement of Catholics from Northern Ireland. However, migration patterns are invariably complex and highly selective in nature and the reality is unlikely to have been as simple as the model outlined here.

Within this broadly symmetrical framework of Catholic decline in the OD majority region and of OD decline in the Catholic majority region, there is a more detailed symmetry that further clarifies the process of increasing geographical separation. This is illustrated in Figures 3 and 4, which portray estimated percentage change in the number of Roman Catholics and ODs between 1971 and 1981, and also in Figure 2, which shows change in the proportion of Roman Catholics and ODs over the same period. Attention has already been drawn to the special circumstances existing in Antrim, Ballymena and Lisburn; in an attempt to provide a more faithful spatial representation of the process of change in Figures 2, 3 and 4, Ballymena and Antrim districts have each been subdivided into a western part, containing Antrim and Ballymena towns respectively, and an eastern part, while Collin Ward, essentially an extension of West Belfast, has been transferred from Lisburn to Belfast local government district. A minor amendment has also been made to the northern part of Down district. Similarly, the west Derry local government district has been split

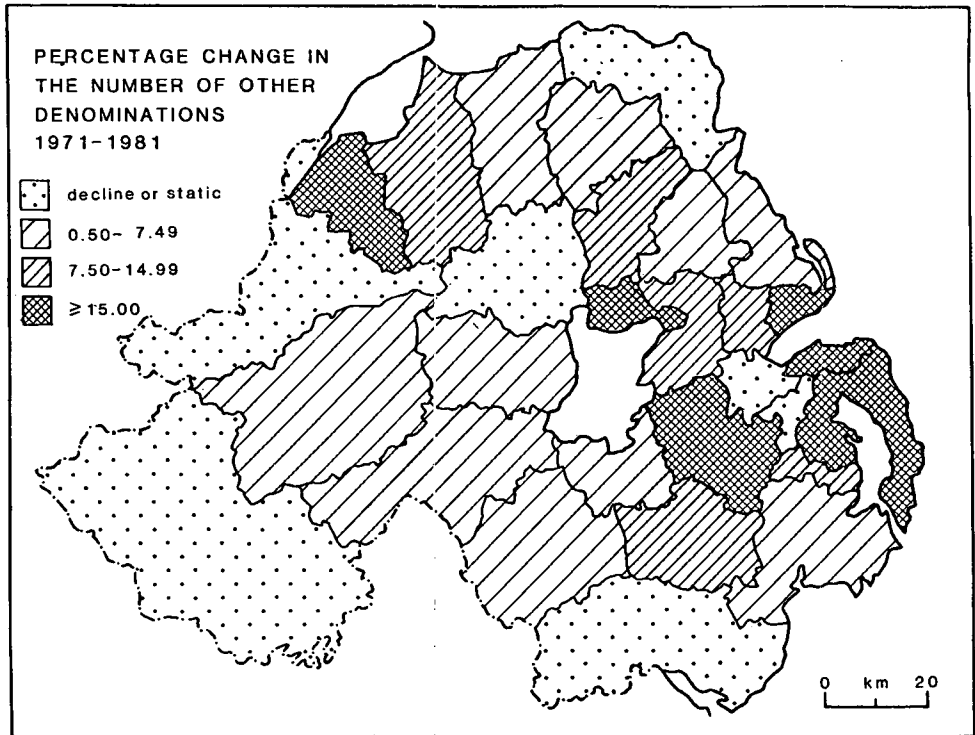


Figure 3

into the areas east and west of the Foyle.⁵ The corresponding population data are given in Table 6.

Figure 3 makes it clear that OD population decline in the majority Catholic area has been restricted to the districts of Derry (west of the Foyle), Fermanagh, Newry and Mourne and Strabane, with the clear implication that Protestants have been withdrawing from areas adjacent to the Irish Republic. Similarly, Figure 4 demonstrates that Catholic decline in the OD majority region has been largely confined to the Greater Belfast area. Of those districts that fall into neither of these two groups, the majority are districts where the number of Roman Catholics has been rising at a faster rate than the number of ODs, as in the remainder of the Roman Catholic majority region, and also in parts of the OD majority area, notably Craigavon and Armagh.

It must again be stressed that the analysis presented in this paper is based on estimated data. None the less, there is a pleasing consistency to the spatial

5. Similar sorts of adjustments can be suggested for other parts of Northern Ireland, e.g., in Fermanagh LGD, but have been restricted to the Belfast and Derry areas, where they are most significant, because they introduce another source of error into the estimates.

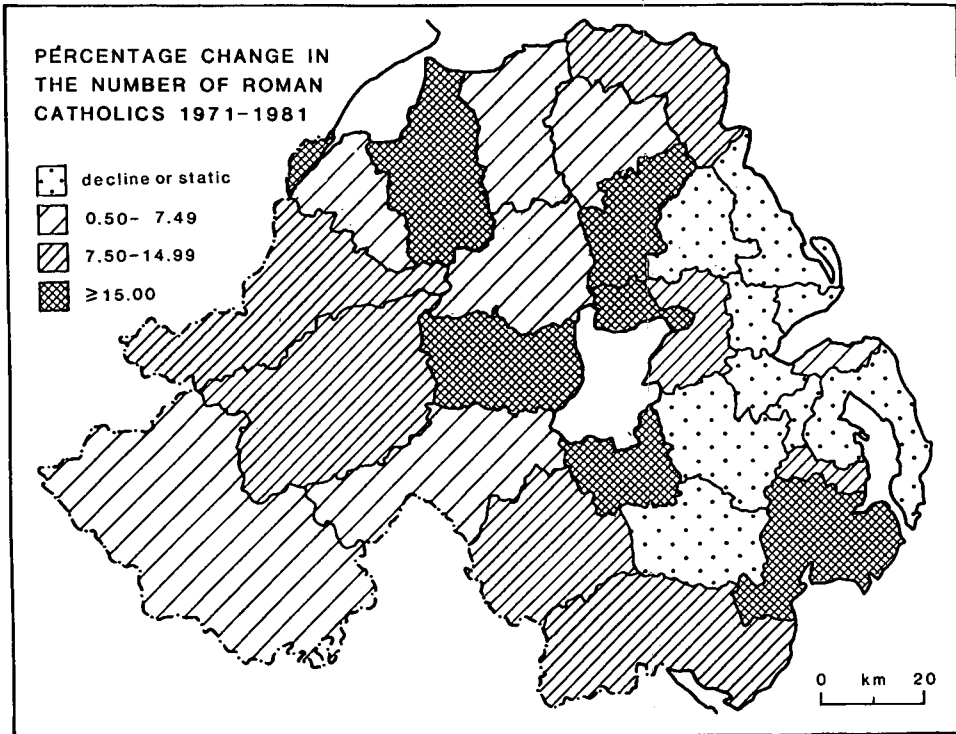


Figure 4

patterns and trends that have emerged which enhances one's confidence in the reliability of the findings. These clearly point to the development of a greater regional segregation of Roman Catholics from Protestants in Northern Ireland. Without exception, districts with Roman Catholic majorities became more Catholic between 1971 and 1981. The majority Protestant region similarly became more Protestant although this did not apply to all districts, Belfast, Craigavon and Armagh being the most notable exceptions. What may be termed the "solidly Protestant" area, that is districts with increasing Protestant majorities, has therefore been shrinking in extent. Apart from the evidence of the physical retreat of Protestants from border areas, however, this has largely been a relative process, brought about by the faster rate of growth of the Roman Catholic population overall, and the proportion of Protestants living roughly east and west of the Bann was about the same in 1981 as in 1971. The increase in the geographical polarisation of Protestants and Roman Catholics documented here is clearly a result of the political tensions existing in Northern Ireland since 1969. As long as these persist one may expect this polarisation to intensify.

Table 6: *Estimated change in religious composition of partitioned districts: 1971 to 1981*

	Roman Catholics			Other Denominations			Denominational Breakdown			
	Number		Per cent change ¹ 1971-81			Per cent change ¹ 1971-81	Roman Catholics		Other Denominations	
	1971	1981		1971	1981		1971	1981	1971	1981
Antrim East	2,100	2,300	9.5	9,300	10,000	7.5	18.5	18.5	81.5	81.5
Antrim West	8,300	12,500	50.5	13,700	20,000	46.0	37.5	38.5	62.5	61.5
Belfast with Collin Ward	141,300	127,100	-10.0	272,700	194,500	-28.5	34.0	39.5	66.0	60.5
Lisburn without Collin Ward	10,400	10,200	-2.0	55,900	64,300	15.0	15.5	13.7	84.5	86.3
Derry West of Foyle	39,900	45,000	13.0	11,000	4,300	-51.0	78.5	89.3	21.5	10.7
Derry East of Foyle	15,500	15,900	3.0	17,300	22,500	30.0	47.5	41.4	52.5	58.6
Ballymena East	800	600	-25.0	7,800	7,800	0.5	9.3	7.1	90.7	92.9
Ballymena West	7,800	9,800	25.5	32,300	36,400	12.5	19.5	21.2	80.5	78.8
Down North	700	800	14.0	3,300	3,500	6.0	17.5	18.5	82.5	81.5
Down South	24,400	30,800	26.0	18,000	18,000	0.5	57.5	63.0	42.5	37.0

¹Estimated to the nearest 0.5 per cent.

REFERENCES

- BOAL, F. W., R. C. MURRAY, and M. A. POOLE, 1976. "Belfast: the Urban Encapsulation of a National Conflict", in S. E. Clarke and J. L. Obler (eds.), *Urban Ethnic Conflict: a Comparative Perspective*. Comparative Urban Studies Monograph No. 3, Institute for Research in Social Science, Chapel Hill. University of North Carolina, pp. 77-131.
- COMPTON, P. A., 1978. *Northern Ireland: a Census Atlas*, Dublin: Gill and Macmillan.
- COMPTON, P. A., 1985a. The 1981 Northern Ireland Census of Population — Estimates of Non-enumerated Population, Policy Planning and Research Unit Occasional Paper No. 9, pp. 24-25.
- COMPTON, P. A., 1985b. "An Evaluation of the Changing Religious Composition of the Population of Northern Ireland", *The Economic and Social Review*, Vol. 16, No. 3, pp. 201-224.
- EVERSLEY, D. and V. HERR, 1985. *The Roman Catholic Population of Northern Ireland in 1981: a Revised Estimate*, Belfast: Fair Employment Agency, 13 pp.
- GARVEY, D. L., 1985. "The History of Migration Flows in the Republic of Ireland", *Population Trends*, Vol. 39, pp. 22-30.
- MORRIS, C. and P. A. COMPTON, 1985. "1981 Census of Population in Northern Ireland", *Population Trends*, Vol. 40, pp. 16-20.
- INTER-DEPARTMENTAL WORKING GROUP ON CENSUS REVISION, 1985. *The 1981 Northern Ireland Census of Population - Revision of Estimates of Non-enumeration*, Policy Planning and Research Unit, Occasional Paper No. 9, pp. 8-23.
- POOLE, M. A. 1982. "Religious Residential Segregation in Urban Northern Ireland", in F. W. Boal and J. N. H. Douglas (eds.), *Integration and Division*, London: Academic Press, pp. 281-308.

APPENDIX

The method of homogeneous enumeration districts is illustrated here for Belfast.

In 215 homogeneous OD enumeration districts the population breakdown was as follows:

ODs	108,381
RCs	1,437
Not Stated	19,740

Adding one-third to the RC total for estimated non-statement, i.e., 479, leaves 19,261 to be added to the OD total for assumed non-statement. The OD non-statement rate then becomes

$$\frac{19,261}{108,381 + 19,261} = .1509$$

A total of 157,514 ODs were enumerated in Belfast in 1981, which, applying the non-statement rate above, equates with a total OD population of 185,507. The presumed RC total then becomes

$$295,223 \text{ (total population enumerated)} - 185,507 = 109,716$$

In 96 homogeneous RC enumeration districts the population breakdown was as follows:

RCs	51,138
ODs	687
Not stated	19,999

Adding 17.6 per cent to the OD total (equivalent to 15 per cent OD non-statement), i.e., 121, leaves 19,878 to be added to the RC total for assumed non-statement. The RC non-statement rate then becomes

$$\frac{19,878}{51,138 + 19,878} = .2799$$

A total of 77,037 RCs were enumerated in Belfast in 1981 which, applying the non-statement rate above, equates with a total RC population of 106,981. The OD population then becomes 188,241.

Averaging the two estimates gives an OD population of 186,875 and an RC population of 108,348.

Further modification of these totals to allow for non-enumeration and minor amendment to the non-statement values for misallocation (see Compton, 1985a) yields the OD and RC estimates given in Table 3.

The combined regression and homogeneous enumeration district method is illustrated for Omagh LGD where the estimated range is quite large.

The simple regression of per cent not stated (Y) against per cent RC enumerated (X) gave the following relationship:

$$Y = 13.25048 + 0.19269X$$

where $r^2 = 0.135$

We are interested in the values of X and Y when $X + Y = 100$, i.e., when no ODs are present, termed the convergence point. The convergence occurs here when $Y = 27.265$ and $X = 72.735$.

Applying these values to the 18,550 RCs enumerated gives an estimated RC total of 25,504, and differencing this from the 41,159 persons enumerated gives an OD estimated total of 15,655.

Repeating this exercise for the per cent not stated (Y) against the per cent ODs (X) gave the relationship:

$$Y = 31.22115 - 0.28188X$$

where $r^2 = 0.48$

and the convergence point $Y = 4.223$ and $X = 95.777$.

Applying these values to the 13,541 ODs enumerated yields an estimated OD total of 14,138 and differencing this from the 41,159 enumerated gives an estimated RC total of 27,021.

Two further estimates can be made from the homogeneous enumeration districts in the LGD. From 3 homogeneous OD enumeration districts we obtain an estimated 26,417 RCs and 14,742 ODs and from 11 homogeneous RC enumeration districts we obtain an estimated 27,310 RCs and 13,849 ODs.

A simple averaging of the 4 separate estimates yields a corrected enumerated RC total of 26,563 and a corrected OD total of 14,596. The range is then obtained as the difference between these values and the highest and lowest individual estimates, i.e., ± 747 and $\pm 1,059$. Further modification for non-enumeration and for those of no religion among the not stated gives the estimates presented in Table 3.