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SOME SOCIO-MEDICAL AND PSYCHOLOGICAL PROBLEMS OF RETIREMENT

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MARCH 1958

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CHAPTER ONE

GENERAL INTRODUCTION

To the interested observer the field of ageing presents a paradox. It is a field in which there is at once the greatest and least certainty shown by those concerned in it. At one extreme, more or less unsubstantiated statements, based on "common sense" and "personal experience" are made with great emphasis and form the basis of social action of all kinds, from social work to retirement practices. That this does not lead to greater confusion is due to the fact that in our culture there is a body of attitudes and stereotypes which are rather widely held. At the other extreme, all is uncertainty and confusion. The connotation of the term "ageing" itself is called into question, and when a sufficiently agreed formula is found for this phenomenon, a new and perhaps more violent dispute ensues as to whether ageing, at any rate as viewed from the social aspect, presents a "problem". This is the field of empirical investigation.

In view of this state of affairs, when once the decision to pursue an empirical research in some aspects of ageing, has been taken, the investigator may perhaps be excused a desire to avoid the areas of argument, and plunge straight into his particular problem, clearing the ground there as well as he can. For the scientist in his laboratory this would seem to be an acceptable, indeed the only solution. But the social scientist is in a different position. For one thing, his material must be collected from the very members of society among whom these views exist.

For another, in a field where his results are likely to be seized upon as ammunition by the protagonists of different views, and where scientific truth is not the only goal, it behoves him to set his study in perspective. So it is with retirement. As will be shown later, retirement is not something which can be discussed in isolation from the prevailing climate of opinion and therefore the general topic of ageing as our society knows it, will be discussed in this first chapter.

Viewed in relation to the history of mankind, ageing has become a major consideration only very recently. For example, life expectancy in Ancient Greece at age one, was probably about 30 years (ANGEL 1947), and the corresponding figure for England during the Middle Ages was probably not much different (RUSSELL 1948). More systematic estimates are available as we come nearer the present day, and some data derived from Swedish figures since 1750 (PELLER 1948) indicates that mortality among 50-69 years old persons in the general population has been considerably reduced.

The important changes in relatively recent years are shown in Table 1 (overleaf). The same pattern is apparent for both the period 1891-1900 and for 1941-1950, though the figures for the latter period are lower as a whole. For 1891-1900, the death rates range from 47.9% of the 1841-1850 rates for age groups 0-4 to 90% of the 1841-1850 rates for 85 and over, with peaks at 55-64 and 65-74 where the rates are actually higher than in the earlier period. For 1941-1950, the range is more regular and proceeds from 12-5% at the lower end of the scale to about 73% at the top end. It is apparent, then, that the fall in death rates has been much more marked at younger ages than at older ones. In other words the ageing of the population is due not so much to the fact that old people are living longer but rather to the fact that more people are living to become old.

TABLE 1 - Death Rates per 1000 Living in Age Groups, England and Wales - showing also 1891-1900 and 1941-1950 expressed as % of 1841-1850

(from Registrar General's Statistical Review of England and Wales 1953, tables part 1 (medical) p6)

PERSONS

Period		0-	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	85- and over
1 841-1850		66.0	9.05	5.29	7.48	9.29	10.3	12.9	17.0	29.9	63.6	141.5	301.0
	%	100	100	100	100	100	100	100	100	100	100	100	100
1891-1900		57.7	4.34	2.51	3.73	4.74	6.40	10.5	16.8	31.5	65.0	137.2	270.8
	%	87.5	47.9	47.5	49.8	51.0	62.2	81.5	98.9	105.2	102.1	97.0	90.0
1941-1950		11.4	1.13	0.85	1.58	2.24	2.37	3.38	7.44	17.6	42.4	104.0	216.5
	%	17.3	12.5	16.1	21.1	24.2	23.0	26.2	43.7	59.0	66.6	73.5	72.0

The Royal Commission on Population Report 1949 discussed the various aspects of the changing age distribution of the population at some length. It is pointed out that ".... between 1871 and 1949 the number of people over 65 in Great Britain increased fourfold. Total numbers increased much less, and the proportion of people over 65 to the whole rose from 4.8 per cent to 10.4 per cent". (p 113) But the major concern is that this trend will continue into the future imposing a greater strain upon our economy. It is necessary here to consider the various demographic and economic aspects of this ageing trend in the future because upon the solution of the problems involved depends the programme to be adopted with regard to retirement. It will be suggested later that a relation is discernible between the number of unemployed and the doctrines propounded as to whether ageing workers should retire or carry on working. If the burden of supporting a large aged population becomes beyond the productive capacity of the country, then it is less immediately important to speculate upon whether it is better for his own well-being that a man should continue to work. Economic necessity will demand that he should do so if he is at all able. It will naturally still be important to consider whether continuation at work is, from the man's point of view, desirable, and if it is not, to create the conditions for his support during retirement as speedily as possible. On the other hand, should the dangers which are at present foreseen prove to be if not spurious at least soluble within our present potential then the problem of the relation between cessation or continuance at work and the well being of the ageing worker, itself assumes more immediate importance.

Consequently it would be worth while to consider the proportions which have been found in different broad age groups, and the proportions likely to be found there in the future. In this way it will be possible to see what will be the size of the working population as compared with the population which it has to support. In Table 2 below, the part of the population in the age group 15-64 is used as an approximation to the working population.

TABLE 2 - Age Distribution of the Population of Great Britain, 1851-1947

(from Royal Commission on Population Report, p88, table XLIII)

Proportion per 1000 of the total population in each age group

Date	0-14	15-64	over 65
1851	355	598	47
1891	351	601	48
1911	308	639	53
1939	214	697	89
1947	215	681	105

From this table it can be seen that, although the proportion over 65 has increased extremely rapidly in recent years, the proportion in the age group 15-64, and by implication the working population, has also become larger, as the proportion under 14 has declined. Taking over 65's and under 14's together the proportion of the population constituted jointly by this age group shrank from 402 per thousand in 1851 to 320 per thousand in 1947. Thus the "burden of dependency" as it is called, would in total appear to have decreased. Of course, there are economic and financial considerations which are not clarified by these figures, and the present writer is not qualified to judge upon them. For example, patterns of consumption, especially as related to the older age groups, may alter. Again, a lessened consumption of goods and services by children would not necessarily counteract an increase in those for a corresponding number of old people. To the social psychologist perhaps the most important point can be expressed in terms of actual families. There is no guarantee that those families which show an increase in the number of old dependants, will also be those where the number of children decreases. These are reservations which, having been noted, must be left to the experts, and expert opinion appears to vary quite widely as to the conclusions to be drawn. For the present we shall proceed to a discussion of the future trends in the size of dependant and productive groups.

For projections from 1954 onwards, we may draw upon evidence supplied by the Government Actuary to the Committee on the Economic and Financial Problems of the Provision for Old Age (the "Phillips" Committee 1954), and presented by it in its discussion of changes in population, since this evidence is more detailed and based upon later information than that used by the Royal Commission on Population. The figures are given in Table 3.(overleaf).

The age breakdown here is more detailed than that in Table 2. As an approximation to the working population to be expected in the future let us for the moment accept that this will be roughly equal to the numbers of people to be found in the age groups 15-64 for men, and 15-59 for women. Then from the table we see that the proportion of the population to be found in this age band will be lowest in 2029 at 61.5%, compared with 63.6% in 1954. In other words, the greatest decline in the proportion of the total population represented by those age groups from which the working population is mainly drawn should not be more than 2.1% at any time in the next 75 years. There are other considerations, however, which make this picture not strictly accurate. Chief among these is, perhaps, the employment behaviour of women. By no means all of the women in the age groups 15-59 will undertake paid employment, although there is a tendency for more women than previously to do so. The Ministry of Labour and National Service provided the Phillips Committee with estimates of the changes in the actual working population to be expected in the next 25 years "if the proportion of persons who are gainfully occupied in each quinquennial age group bears the same relationship as at present to the total population in each age group" (Report p23). From this data Table 4 is calculated.

TABLE 3 - Projection of Population of Great Britain 1954-2029
(Assuming that fertility rates fall steadily to the equivalent of a net reproduction rate of 0.95 in 1979 and are constant thereafter; and that mortality rates fall at the same rate as in the past 50 years until 1979 and are constant thereafter)

(From Committee on the Economic and Financial Problems of the Provision for Old Age Report, table V11, p 21)

Age Group	Year									
	1954			1964			1979		2004			2029		
	No.+	Rate	%	No.+	Rate	%	No.+	Rate	%	No.+	Rate	%	No.+	Rate	%
0-14	11.16	22.4		10.73	21.2		10.51	20.2		10.00	19.3		9.60	19.0	
15-44	20.76	41.6		20.97	41.2		20.98	40.1		20.49	39.6		19.67	39.0	
Men 45-64	5.73	11.5		6.25	12.3		6.22	11.9		6.72	13.0		6.43	12.8	
Women 45-59	5.09	10.4		5.15	10.1		5.02	9.6		5.29	10.2		4.89	9.7	
Men 65 and over	2.23	4.5		2.43	4.8		3.33	6.4		3.31	6.4		3.61	7.2	
Women 60 and over	4.66	9.5		5.33	10.5		6.17	11.8		6.02	11.6		6.28	12.5	
Total	49.63	100		50.86	100		52.23	100		51.83	100		50.48	100	

+ All numbers are millions.

Comparison with the Table in the Committee's report will show that we have left out of account that part of the working population from age groups over the statutory retiring age. This is because it has been made abundantly clear in various Government statements and publications that there is no intention of compelling people to continue at work over retiring age, though various incentives may be offered to persuade them to do so. Hence the numbers of people working in these age groups will depend on a number of factors such as the nature of the incentives offered, the prevailing "climate of opinion" regarding retirement, and so on. Some evidence will later be presented to suggest that should an improved technology create a labour surplus, the climate of opinion would rapidly change, and pressure to retire would then be put upon older workers.

TABLE 4 - Estimated Working Population of Great Britain 1954-79

(From Committee on the Economic and Financial Problems of the Provision for Old Age Report, table VIII , p23)

Age Group	Year					
	1954		1964		1979	
	No.+	%	No.+	%	No.+	%
15.44	15.01	64.5	15.28	63.2	15.29	62.7
Men 45-64	7.23	31.0	7.70	31.9	7.63	31.3
Women 45-59	1.07	4.6	1.18	4.9	1.47	6.0
Total	23.31	100	24.16	100	24.39	100

The estimated size of the labour force between now and 1979 varies from 23.31 million to 24.39 million, corresponding to percentages of the total population of 46.9% and 46.6%, so that the proportion which the labour force is of the total population may be expected to remain virtually constant, at any rate up to 1979.

This is not the whole story, however, since it is of some importance to know more about the age distribution within the working population. It may be shown from Table 4 that the proportion of the total labour force which will be formed by the over 45's will rise from 55.2% to 59.5%, i.e. a rise of 4.3%. This is not great but it must be taken into account. The Royal Commission on Population, in forming their own estimates of the probable proportions in the various age-groups, did so on three different assumptions of expected family size. Under their most "unfavourable" assumptions, the proportion of people between 45 and 64 would be expected to increase by about 9% of the total labour force. The general picture, then, is one of a fairly stable labour force as a whole with some tendency towards an age shift within it. The proportion of "older" (i.e.over 45) workers is important on two counts: firstly, because the nature of jobs within industry may change, and change in ways which set the older worker at a disadvantage; secondly, because industries themselves may change in response to changing patterns of demand, expanding here, contracting there. Therefore, we need to consider the flexibility likely to be demanded of the older worker, and his corresponding ability to adapt to new job situations.

This is an area in which the psychologist, along with the physiologist, and the sociologist, could make a considerable contribution. But it cannot be said that there is as yet sufficient information to throw a great deal of light on these problems. For example, rejection of applicants for employment on the grounds of age has come in for heavy criticism, though the present writer found it a reasonable yardstick for many jobs, in lieu of some more sensitive selection technique. The National Advisory Committee on the Employment of Older Men and Women (1953) has been among the more vigourous of the critics, and has suggested that the criterion for acceptance for employment is "suitability not age". If the specialists could develop some test battery which would enable one to determine accurately the suitability of the older worker for some job in terms of reaction times, ability with displays, physiological performance, etc, then the achievement of the goal would be in sight. To some extent the relevant procedures are already in existence, though considerable standardisation programmes would be needed. There is some empirical

data to indicate that engagement in middle age may not be a bad thing. MURRELL, GRIEW and TUCKER (1957) found for various engineering firms that "the best age for engagement seems to be between 37 and 44 years and the worst 21 to 18 years". This was an assessment made on the basis of how long the men concerned actually remained on the job.

In the case of employees actually in jobs, the situation is rather different. In interviews conducted by the present writer in the course of another project, employers were almost unanimous in extolling the virtues of the older worker in general, while making some reservations as regards health or suitability for certain sorts of job; the older worker, they said, may not be so speedy or adaptable, but he is more conscientious, more settled, and a better craftsman.

The available evidence would tend in the main to support these statements. From the psycho-physiological aspect the effect of ageing has been investigated by WELFORD and his associates (1951). Their work is very much of the laboratory type and the tasks used in the experiments involved the acquisition of rather abstract skills such as tracking and chain throwing, but their results have relevance for the assessment of the efficiency at work of older persons. The main effect of age in experimental tasks was in the receptor side of the central mechanisms. "If it is legitimate to generalize our findings, it would appear that, as a person gets older, he finds it increasingly difficult to *comprehend*+ verbal or visual data especially when these are in any way new or unfamiliar. The breakdown seem to be more in the process of *organizing* the incoming data and relating it to the *relevant* material that he brings to the situation from his past experience, than in the availability of past experience itself" (p146). Another finding was that these changes in the "receptor" central

+ Italics are Welford's own.

mechanisms may be responsible for many changes of performance which might at first sight appear to be due to breakdown of effector mechanisms, and they also begin early on, being well in evidence by the thirties. However, such changes may not lead to substantial changes in achievement until a much later age, because the subjects make adequate compensation for their difficulties by changes of method, especially where the task does not entail the subject's working near the limit of his capacity. Finally, the drop in speed may be more than offset by gains in quality of performance and accuracy, while there is a substantial number of individuals who maintain performances comparable with younger subjects.

Some years earlier, THORNDIKE and his associates (1928) had investigated the change of learning ability with age, using a range of tasks, such as learning to write with the wrong hand, to typewrite, and learning a logical system (Esperanto). Various groups of subjects were used, from schoolchildren, to postgraduate students, and prisoners in Sing-Sing prison. The final conclusion of these authors is summed up as follows:-

> "The general tendency from all our experiments is for an inferiority of about 15 per cent as a result of 20 years from twenty two on. Learning representing an approximation of sheer modificability unaided by past learning shows considerably more inferiority than this. Actual learning of such things as adults commonly have to learn shows considerably less".

This conclusion would also appear to be consistent with the results of experiments to determine the effect of age on intelligence (MILES and MILES 1943, MILES 1939, WECHSLER 1944, OWENS 1953) where the general inference seems to be that tests involving speed showed a marked decline with age, as do tests involving reasoning in its purer forms, the so-called "not hold tests", but that tests involving verbal ability and general information

the so called "hold" tests, show much less decline or even a gain. This, of course, is the basis of the test devised by BABCOCK and LEVY (1942).

The Thorndike experiments, even more than Welford's, were carried out with tasks not necessarily related to those found in industry at large, but the implication that new learning within at least partially familiar contexts does not show as great a loss with age as might be thought, merits further examination in the industrial situation.

However, BELBIN (1953), one of Welford's associates, carried out investigations in industry, examining the kind of difficulty experienced by the older worker. He found two main types of difficulty, difficulty in acquiring skill, and difficulty in continued performance. There were 28 operations in which age difficulties in training were found to occur before the age of 40. Of these, 27 were women's operations and it would seem that the reason for the high proportion of women's jobs found, is due to the light nature of the work on which women are usually employed, rather than to any difference between the capabilities of older men and women. In 25 of these 28 operations, "time stress" was present. (Chi square = 11.6, P is less than .001). By "time stress" Belbin means that the work was either paced by the machine, so preventing the worker from making his own speed, or the work was subject to time pressure, and the worker experienced a pressure for speed as a result of a piece-rate system.

Belbin found 12 operations carried out by men from which moves were made with age, and seven carried out by women. We shall only be concerned with the men's job. All but one of the men's jobs involved "time stress". From a curve which Belbin gives, the main fall away with age appears to be in the middle fifties.

An interesting subsidiary finding is that where there was evidence of age difficulties discrimination always operated at a lower age than for other operations in the same department or factory. "This discrimination", says Belbin, "was not therefore due to any general policy of age discrimination on the part of management. Rather it represented a policy originating and being operated at a local level and based on the results of experience in the allocation of labour between various operations". This suggests that discrimination against the older worker may not always be arbitrarily based. MURRELL et al (op cit) found that older men did find it difficult to keep working on some more highly skilled job, and that these jobs tended to be avoided by older men. Further, within the occupations of fitter and machinist, there was evidence to suggest that, contrary to the widely received opinion, the older mend tended to remain on production work rather than on higher grade, e.g. toolroom work.

A study reported by JEFFREYS (1954) supports the view that older workers are more steady in their job than younger ones and this differential is also maintained between various grades of skill. Taking means of the figures for the two areas she investigated, we find that for "Skilled, clerical and supervisory workers", and for "Semi-skilled workers and labourers", the percentages having no change were as follow:-

TABLE 5 - Analysis of job changes by age and grade (percentages)

Age Group	No Change	3+ Job Changes	Total in Group = 100%
Skilled, clerical, and supervisory workers			
20-24	56	12	91
25-34	72	3	177
35-44	73	2	275
45+	81	1	298
Semi-skilled workers and labourers			
20-24	20	37	157
25-34	22	20	353
35-44	48	15	387
45+	57	5	460

Men of 45 and over had different reasons from those of younger men for staying in one job or changing to another. Older men were doubtful of their own ability to take on different work in different surroundings, and, partly as a result of apprehensions about employment possibilities in the labour market for the older men, they clung to what was familiar. Though many of the older men were critical of their own job, few of them were prepared to make a voluntary change. Very few moved because they intended to better their financial position or improve their future prospects. On the other hand, "the single most important factor influencing the extent and direction of movement among younger men in the labour market was the desire to maximize current earnings" (JEFFREYS 1954, p140). On the basis of this reluctance to change his job on the part of the older worker, this author suggests that the increasing proportion of older workers in the labour force will bring a decreased flexibility in response to the demands of a changing industry.

The sum of this psychological and sociological work appears to be that the older worker is more stable in all senses of that term. He does not change his job so much for other reasons than inability to do the job, but he is also less adaptable than the younger man, and his performance

both in terms of physical output and in the exercise of skills undergoes some decrement. Clearly, then, much will depend upon changes in the nature of industry and the jobs it provides over the coming years. If appreciably more tasks become broken down into semi-skilled processes entailing time stress and piece-work, older workers may be put at an increasing disadvantage. But should the introduction of increased mechanisation be in the direction of assisting the effort of the worker, without increasing the time stress of his job, then this may enable the older worker even to improve on his present performance by making sheer physical effort less important. In so far as "payment by results" may be assumed to give a rough indication of time stress, figures published by the Ministry of Labour (1956) throw some light upon the increase of time stressed jobs.

TABLE 6 - Percentage of Wage Earners paid under System of Payment by Results - all manufacturing industries

Date	Men	Women	All Workers
1955 October	38	45	40
1953 October	38	46	40
1951 October	38	48	40
1949 October	36	45	38
1947 October	36	43	37
1938 October	29	48	33

In this table, the classification "payment by results systems" refers only to arrangements where payment varied according to the output of individuals, groups, or departments. Hence the incidence of genuine time stressed jobs as defined by Belbin (vide supra) is probably rather less than would appear purely on the basis of the above figures. The estimates for all industries, as distinct from all manufacturing industries, are not different in form, though somewhat different in level, from those given above.

From these figures it would appear that while over the total time span considered, the percentage employed on payment by results conditions has risen

by 9 points for men, and 7 points for all workers, the increase took place mainly in the earlier part of this span, and has been relatively steady for the past few years. Moreover, the increase in payment by results for mens' jobs may be due to the application of new payments methods to jobs which remain fundamentally the same as previously. It will be remembered that what is important for the older worker is not so much whether he has to work to a time schedule (provided this is not too circumscribed) but whether he is able to compensate for decreasing speed by the ability to modify his methods of carrying out the task. Some evidence for this view that the nature of the job may not be changing at least as much as the increase of payment by results schemes would suggest, is provided by the corresponding figures for women's jobs, since women are very frequently employed on semi-skilled, circumscribed, high-speed jobs in the manufacturing industries. The women's figures show hardly any real change, indeed a slight drop, over the time span under consideration.

The assumption running through the above discussion has been that, although the nature of the job available may change, the industries, and their products, will remain constant. This assumption has been questioned by the Royal Commission on Population, and REDDAWAY (1946). The arguments here discussed will be those of Reddaway. Those of the Royal Commission, on which indeed Reddaway sat, are not different but are substantially less detailed.

Reddaway considers that, for two main reasons, our industrial system will be required to carry out adjustments to changing requirements and with a minimum of loss. The first of these is that changes in demand patterns and the attendant relative decline in certain industries may be blanketed by the increase in total demand of a rising population. Thus the relative decline may take place without an absolute decline in demand for the product of the industry concerned. However, with

stationary or declining total demand as a result of a declining population, this blanketing effect will not be present, and an absolute decline in the level of demand will result. The second of these reasons is that not only will any given shift in demand cause a greater disturbance but such shifts are likely to be more numerous as a result of the changing basis of demand patterns. With an ageing population, of course, there will be obvious changes in the kind of consumer goods needed - bath-chairs instead of cradles - but Reddaway points to a more general consideration. He suggests that the average person will in future enjoy a rather larger real income, and this will have the consequence that a larger proportion of this income will be spent on other things than necessities. "Almost by definition this implies that a larger proportion of his expenditure is liable to be switched from one commodity to another in accordance with the dictates of fashion or passing whims. Hence industry will be confronted with the need for frequent, and possibly rapid, readjustments of a more or less unpredictable kind".

Thus Reddaway comes to a consideration of the effect of population changes on the ability of the system to carry out adjustments smoothly and with a minimum of loss. The main point, he says, is that it is easier for a young man to change his job than for an old one. This, as we have seen above, is broadly true, especially when we consider the influence of the older man's family responsibilities, and his neighbourhood connections which tend to decrease his mobility. But the ability of the older worker to undertake new tasks is not perhaps as limited as Reddaway appears to suppose. However, this comment does not invalidate his general argument.

As far as expansion of an industry is concerned, argues Reddaway, a high proportion of new entrants to established workers is desirable because then the process of adjustment may be carried out by simply directing the new entrants into the expanding industries. This is not the case in our own population, where the proportion of

over 65's to under 15's is rapidly increasing. But where industries are contracting, a high proportion of older men is actually advantageous because contraction may be effected simply by allowing the labour force to retire without replacement. Reddaway points out, however, that there are practical difficulties in the way of using this method for contracting an industry.

Firstly, workers are usually taken on initially as juniors to do "boys' work", such as messenger boy, and so on, at lower wages than adults would accept. Hence it may be necessary to pay some of the adults to do boys' work. Secondly, the industry concerned may be the only one in the district, and then the boys leaving school must either enter the industry or move away from home. Therefore, Reddaway concludes, the higher proportion of retirements is no compensation for the reduced ability of workers to change their job.

To sum up the discussion thus far, then, we have seen that the proportion of old people to younger ones in the population is increasing and that the ratio of dependants to workers will remain roughly the same, at least until the middle of next century. Within the body of workers, the higher age groups will tend to achieve a slight preponderance, and this will at the individual level present problems of adjustment which have been in some respects over-rated. At the level of whole industries a certain rigidity is likely to arise, as a result of the growing proportions of older workers, in the ability of industries to expand or contract in response to changing demand patterns.

The terms in which the Phillips Committee sums up its consideration of the demographic aspects of the problem are these, "To anyone viewing the matter exclusively in terms of the balance between

producers and consumers, workers and dependants, there might seem little cause for uneasiness. So far, however, we have taken no account of the financial consequences of the changes in progress, and to these we must now turn". (p26, paragraph 104). It is when the problem is expressed in financial terms that the state of affairs which has been outlined so far gives rise to a good deal of alarm and despondency, for the economic and financial considerations are rather more formidable than the demographic data given above might lead one to suppose.

The original estimates of the Beveridge Report (BEVERIDGE 1942) estimated that the level of retirement pensions would rise to £M300 in 1965. However, from figures published by the Phillips Committee, it is clear that Lord Beveridge's maximum estimates were well outstripped in 1953 when old age and retirement pensions of various sorts accounted for £M354. The maximum estimated by the Committee, £M666, is more than twice as great as that estimated by Beveridge. Furthermore, this estimate for 1979 does not take account of any future increases in the rate of pension. The size of the burden appears formidable and it is necessary to consider the means by which it could be borne. Two ways of meeting the situation have been widely discussed. There is the possibility of increasing the size of the labour force by persuading people to remain at work longer. This is the major proposal of the Phillips Committee, and it has been the theme of this general discussion. Alternatively, there is the possibility of increasing productivity. This has been considered independently in two publications (HOPKIN 1953; INSTITUTE OF ACTUARIES 1953).

Of these two papers, that of Hopkin is based on a straightforward demographic analysis, while that of the Institute of Actuaries undertakes a more sophisticated financial approach. As was suggested above, the magnitude of the burden, derived

by the financial approach, is larger than that derived purely from demographic considerations. But the conclusions are in both cases very similar. Both reports suggest a national annual increase in productivity of rather more than 1½%, based on available productivity figures, and both therefore show an increase over the next 30 years in the national product of about 50%, or sufficient to cope adequately with the expected pension bill, and still allow a rise in the standard of living. Thus, the reduction in living standards due to the changes in age distribution,, though as Hopkin says, "not entirely insignificant, cannot be called catastrophic". It seems to the present writer that the widespread concern with the problem of ageing and provision for old age may in itself indirectly help to maintain the annual increase in productivity by encouraging saving and the undertaking of insurance and superannuation commitments by workers, and thus making available increased capital for investment. But again, this is the affair of the economist.

So far, it has been the concern of this chapter to take the "ageing problem" as defined from various points of view, and to bring to bear what evidence is available, so as to see whether the situation is as critical as is usually suggested. The conclusion seems warranted that from the demographic point of view; in terms of the potentialities of the older worker; and in terms of the productive potential of the nation, it is not critical. Or, to relate this to the problem as originally posed, the degree of economic necessity with which the nation is faced does not seem to warrant a drive to keep men at work after retirement age. This latter course of action has, however, by now become part of official policy.

At this point it is worth drawing attention to the variations in the official and semi-official attitudes towards retirement. This has fluctuated between two extremes from time to time.

The examination of these expressed attitudes, as they have varied in time, would be worth a full-scale study in their own right. Here, we shall only single out four landmarks as examples of the kind of fluctuations to be found.

The first landmark is the Superannuation Commission of 1856 (COHEN 1941). In the Civil Service, some form of superannuation had been in existence for more than 70 years, but in general the qualifications for retirement were ill-health and old age. There was apparently no fixed age at which these factors were deemed to take effect. But the Commissioners gave it as their opinion that if no pension provision existed "the hardship of removing an estimable public servant without provision would be avoided by retaining him in the Service after he had become incompetent to perform his duties. This is, perhaps, the strongest argument in favour of a system of superannuation".

As a result of the Commissioners' report, the Superannuation Act of 1859 was passed. However, a clause to make retirement compulsory at age 65 was defeated. No pension was payable to those who retired below the age of 60 for reasons other than those of ill-health. Thus the retirement age was left as a permissive one set at 60. An Order in Council of 1890, however, laid down that the Head of the Department might call upon any Civil Servant to retire when he had reached age 60 and that at age 65 retirement should be compulsory for all. In exceptional cases an extension not exceeding five years might be allowed (Cohen, p160).

For the Civil Servant, then, retirement came to be regarded as better for all concerned. For the large mass of the manual and routine clerical working groups, it appears that no organised provision was made other than the Poor Law. A person either worked or starved until eventually he found his way into the Poor House. Ultimately,

after many years of argument, non-contributory old age pensions were granted at age 70. In 1909 when, interestingly enough, one of the problems facing the Government was how to draw a balance between the cost of armaments and the social services, Lloyd George, the then Chancellor of the Exchequer, had this to say,

> "We are pledged .... to supplementing our old age pension proposals. How is this to be done? It has been suggested that we should reduce the age limit .... A reduction of the age limit to 65 would cost an additional 15 to 20 millions a year to the Exchequer .... (and this) .... is much the most wasteful way of dealing with the question for whilst it would afford relief to many thousands .... probably who neither need nor desire it, and whose strength is <u>probably more happily and profitably employed in labour</u>,+ it would leave out of account altogether far and away the most distressing and the most deserving cases of poverty. What are the dominating causes of poverty among the industrial classes? Old age, premature breakdown in health and strength, the death of the breadwinner and unemployment .... The distress caused by any or either of these causes is much more deserving of immediate attention than the case of a healthy and vigorous man of 65 years of age who is able to pursue his daily avocation, and to earn without undue strain an income which is quite considerable enough to provide him and his wife with a comfortable subsistence".

This quotation is important because it provides an early example of a practice which is very common today - the bolstering of an opinion that financial considerations require that old people work, with the value judgement that also it is better for them to do so.

+ Italics mine

Next there is a P.E.P. pamphlet called "The Exit from Industry" (1935). It should be remembered that this was a period of unemployment and financial instability. The writers say, "Today a man's expectation of life may be longer, but his expectation of working life, is and should be, shorter. Today the anomaly is, not that men of 65 should so often be unemployed, but that they should be employed as often as they are when so many men in the prime of life are in desperate need of work and wages".

Retirement ages of 55 and 60 are considered and are not acceptable only on the grounds of cost. For the writers of the report, an increase in the amount of "beneficial and desired leisure" will be ".... in the clear interest of the older workers and the nation".

Finally, there is the statement of the NATIONAL ADVISORY COMMITTEE on the EMPLOYMENT of OLDER MEN and WOMEN (1953) that "there is support for the view that the emotional content of work - the continuance in the rhythm and routine in which the majority of people are engaged and the feeling of continued usefulness - may hold at bay the effect of ageing, and that a sudden severance, not compensated by some other absorbing occupation or interest, may quicken it".

At least the Committee have tried to find evidence in support of their opinion. But I do not think that the evidence which they obtained provides support in a scientific sense. The Committee may well be right and on the face of it their statement seems reasonable enough but the hypothesis involved still has to be tested. "Does or does not retirement lead to a decrease in adjustment"?

It appears originally to have been official policy to provide incentives to remain at work rather than actual coercion (see for example the First Report of the Natioanl Advisory Committee on the Employment of Older Men and Women, 1953), and it was with this intention that the scheme was instituted whereby increments to the national pension could be earned in return for postponement of retirement. It is perhaps remarkable that no psychological survey was undertaken to examine the possible effects of these incentives, and in view of their apparent lack of success, quite a considerable saving of money could probably have been effected. The Phillips Committee, however (op cit) has recommended that the retiring age be raised to 68 for men and 63 for women, and this, in effect, would force people to remain at work longer. The difficulty in this approach is that many people might not be fit to carry on beyond the age of 65 and it is by no means uncommon at present for a man of 63 or so to be hanging on somehow so as to provide himself with an income until the minimum pensionable age. This sta e of affairs would be made more common by raising the retiring age. It is true that it is also proposed by the Phillips Committee that people who cannot work and who are below minimum pensionable age, should receive sickness benefit, or if they are fit for work but cannot find it, unemployment benefit, but from the psychological standpoint there would seem to be a great deal of difference between an honourable retirement and relegation to the ranks of the sick or unemployed. The assumption underlying the proposals regarding increased pension age is that people are in any case capable of working longer nowadays. As has been discussed above, the improvement in death rates and expectation of life has been much more marked in the younger age groups than in the older ones. The National Advisory Committee on the Employment of Older Men and Women (op cit) take note of this fact, but argue that "we still know too little about general standards of fitness and capacity for work among older people ....". The Committee suggests that,

since work "now begins at a later age and with a healthier start, and the progressive improvements in working and living conditions and the social and medical services, it does not seem unreasonable to suppose that within the longer total span there should be, for many, a longer period of capacity for working life". One difficulty of this position is that, for many of the people at present to be found in the age groups of about retiring age, the later age of beginning employment and having a healthier start can have made no difference, since these people were already fully employed before such improvements began to be felt.

At all events we can obtain a very rough estimate of the order of magnitude of the possible increase in the labour force to be obtained by bringing older workers back from retirement. MATHIASEN (1953) commenting upon the widely held view that if retirement were not required at 65, a tremendous number of older persons could be transferred from the pension rolls to the labour force, says that the best estimate of the increase in the labour force in the U.S.A. if all males over the age of 65 who are able to meet job requirements were put to work, is 2½%. This estimate was based on the assumption that half the male population over 65 and not now in the labour force would be willing and able to work. For Great Britain, working from the 1% sample tables of the 1951 Census, and making the same assumption, the corresponding figure comes out at about 1.4%.

Is it reasonable to take one half for the fraction of the male population not in the labour force who would be fit and willing to come back to work? Information here is supplied by the Report of an enquiry by the MINISTRY of PENSIONS and NATIONAL INSURANCE (1954). From a sample of men taking pensions on retirement at age 65, and within the next five years, the following breakdown was derived:-

TABLE 7 - Comparisons of reasons given by men taking pensions on retirement (a) at age 65 and (b) within the next five years

(From "Report of an Enquiry by the Ministry of Pensions and National Insurance", op cit, p9).

	Men taking pensions on retirement	
	At age 65	Within the next five years
	(4,384)	(4,798)
	%	%
Chronic illness	25.2	8.9
Ill-health	24.8	38.1
Heaviness or strain of work	3.6	7.3
Retirement by employer or discharge	28.4	23.5
Wish for rest or leisure	6.7	8.4
Other reasons	8.4	11.1
Reasons not known	2.8	2.7
All reasons	100.0	100.0

From this table it will be seen that at age 65, 50% of the men retired through "chronic illness" or "ill-health". It is possible that some of these men would be able to undertake very light work again, but we do not know how many. Men retiring because of a wish for rest or leisure will be unlikely to go back to the labour force, though some may do so after experience of retirement. Possibly many of the men retired through heaviness of work or strain of work could carry on if suitably light employment could be found. The only major group of men likely to contain a large number who would carry on if they had the chance seem to be those who are retired or discharged by the employer, i.e. about 30%. Therefore, on this basis, the figure of 50% as an estimate of the fraction of the retiring male population who would be willing and able to come back to work appears to err somewhat towards the generous side, but it is

probably acceptable as a rough estimate.

The conclusions which are to be drawn from all the preceding considerations appear to the present writer to be as follows:-

a) The difficulties concomitant with the ageing of the population have been overstressed.

b) In particular it does not seem likely that the pronounced financial difficulties due to the increased numbers of old people who will have to be supported are more than our present economic system can bear.

c) It seems that even were this not the case, the number of men who could be re-employed after retirement is sufficiently small to make only a marginal contribution to the size of the labour force.

d) Since the problem appears to be mainly one of using a labour force of approximately the present size with increased efficiency, and since the proportion of workers over the age of 45 will tend to increase, the crucial area in dealing with this problem is the adjustment to work with age of older workers.

This chapter has been concerned to set the problem of retirement in perspective. In the light of what has gone before, along what lines should psychological research proceed in relation to this problem? Clearly, if the intention is to utilise the services of people relatively advanced in age, then the psychologist must assist in finding out in what ways work can be made more attractive, what incentives may be employed, and in what ways jobs may be modified to bring them within the capabilities of the older worker. If on the other hand the burden of the increased number of old people

is countered by an increase in productivity or if, in fact, the burden does not prove to be as great as it at first sight seemed, then psychological research should be directed towards the facilitation of adjustment to retirement. If need be, attempts must be made to find out how closely the routine and satisfactions of the work environment may be simulated in the retired state.

There is a third point of view. It may be argued that, since however long men continue at work, for the majority at least retirement must eventually occur. In this case the investigation of adjustment to retirement is equally important under all circumstances. However, if men are expected to work until physically incapable of doing so - which is what the present official view amounts to - then the problem is different from one where retirement does take place at some fixed and relatively early age. In the first case, men are invalided out of the labour force with no implied loss of status. In the second, they may be "men who could be doing their bit, and are not". In the first case also, invalidism will probably restrict activities, whereas in the second, the men will be relatively active and need to seek a mode of adjustment to the unfamiliar situation of absence from work through other causes than sickness.

It is not for the scientist to decide on legislation; he can only investigate the various problems, and lay evidence before the relevant authorities. In accordance with this view, such a research as is here proposed should perhaps deal with both eventualities. However, such a project would demand far more in the way of labour and facilities than are at present available. In so far as any stand is taken upon what is the correct course of action with regard to the employment of the old, and in the light of the evidence presented above, it has been decided to pursue an investigation which is concerned with adaptation to retirement in the belief that this is still the more pressing of the two alternatives.

CHAPTER TWO

RETIREMENT - A GENERAL DISCUSSION

Having given, in the previous chapter, the context of the retirement problem, we may now begin to consider retirement as a phenomenon in greater detail. It might be supposed that the concept of retirement is itself clear cut. But when one comes to examine what is involved in the retirement situation, it is discovered that the situation is very much more complex than it at first seemed. In this chapter, then, some problems of definition will first be discussed; then the prevalence of various retirement practices will be considered; some data on reasons for retirement will be presented; and finally, the "retirement impact" hypothesis will be introduced.

1. Some Definitions

A suitable starting point for a consideration of the difficulties involved in the definition of retirement is the material provided by the Census, because the figures given in this source are used as the basis for estimates of working and retired population projections as though these were clearly defined categories. However, this is not the case, as the Registrar General explicitly recognised in his discussion of the 1931 Census data for England and Wales (REGISTRAR GENERAL 1950). The figures are derived from a comparison of the 1921 with the 1931 Census figures for retired men, and are reproduced below.

TABLE 8 - Comparison of Percentages Retired For the years 1921 and 1931 by Age Groups

	Total 14 and over	Under 25	25-34	35-44	45-54
1931	5.2	0.1	0.3	0.7	1.8
1921	3.0	0.1	0.6	0.6	1.4

	55-59	60-64	65-69	70-74	75-
1931	4.1	10.3	30.4	50.2	64.0
1921	3.3	7.4	14.3	31.9	45.5

The points which the Registrar General makes are three. Firstly, that the large increases in percentage retired between 1921 and 1931 are located at the higher ages "from which it may be inferred that the general increase and range in pension allowances and other amenities for the aged have been responsible for considerable increases in the numbers able and willing to take advantage of them". (p155). Secondly, that the increases in proportions are not confined to the high ages "and it is difficult to avoid the conclusion that the proportions at all ages might have been lower in 1931 but for the intense industrial depression and that many who would have been prepared to work, preferred to return themselves as "retired" rather than as seeking work of which there was no prospect". Thirdly, that since some men are shown as retired even at early ages, these must "be ascribed almost exclusively to the inevitable element of premature invalidity which will always be present even at the youngest ages". (p154).

If we consider each of these points in turn, we find that the implied concept of retirement varies as we proceed from one point to the next. Under the first point the Registrar General is dealing with a concept of retirement which

would be widely accepted, and which would probably constitute the hard core of a retired group in any discussion. Under the second point, the retired group may also include some unemployed; this proportion will vary from time to time but is apparently determined by the employment conditions prevailing at the time of any particular census; and any investigation which fails to take this into account will be suspect. Under the third point, retirement comes to be equated to the concept of "invalidity". The implications here are that retirement consists substantially in an inability to work, rather than the positive action of leaving the labour force; and in addition it would seem possible that the content of this "invalidity" would be different in the earlier age groups from what it would be among the older, the former involving presumably more specific disabilities, the latter involving the more diffuse syndromes of old age such as frailty shading into a feeling of a need for a change from work. The conclusion to be drawn from this seems to be that in view of the lack of definition attaching to the various categories, the census material at any rate as regards the less well defined social phenomena, such as retirement, gives only general indications of the trends involved. When we come to consider attempts to use the Census data for more sophisticated analyses, these difficulties are underlined. It can be seen from the material presented in the last chapter, that the investigation of retirement practices must necessarily be crude so long as only existent sources of information are used. A current example of these difficulties is given in the work of LE GROS CLARK and DUNNE (1955).

TABLE 9 - Comparison of Occupied Populations 1931 and 1951 (from Le Gros Clark and Dunne op cit p2)

	Great Britain 1931	1951
Total male population aged 65+	1,424,805	2,174,800
Total occupied males aged 65+	682,754	695,300
Occupied males 65+ as percentage of total males 65+	47.9%	32.0%
Total males 65+ as percentage of total male population	6.6%	9.3%
Occupied males 65+ as percentage of total male population	3.2%	3.0%

Now these figures show a decrease of 15.9% from 1931 to 1951 in the percentage which the occupied males of 65 and over forms of the total males 65 and over. But the percentage of the male population formed by males of 65 and over rose by 2.7% in the same period. There thus appears to have been a real increase in the prevalence of losses from the labour force from all causes (e.g. retirement, illness, etc), and the deduction from this might be that men are now retiring from the labour force in increasing numbers, because they are now enabled to do so by improved pension provisions. Therefore, on the assumption that economic necessity requires the use of all available labour, this 16% represents an important source of labour which could be brought back into service. (This assumption is being accepted for the sake of argument here, though in the light of the last chapter it does not seem tenable).

The Registrar-General uses the term "occupied" to include not only those people actually working, but also those "out of work".

Thus the term "occupied" provides an estimate of those who could be working if work were available. Opposed to this are the "unoccupied and retired". Fortunately, for the 1951 and 1931 Censuses, figures are available for those people "out of work" (i.e. included in the "occupied" but unemployed) and for those retired.

TABLE 10 - Percentages of Total Males Aged 65 and over in Various Occupational Statuses, Great Britain

		Working	Out of Work	Retired
Census "Occupied"	65+	47.9%		
1931		38.5%	9.4%	45.5%
Census "Occupied"	65+	32.0%		
1951		31.4%	0.6%	60.7%

Note:- Figures across do not sum to 100% since some statuses are not included such as "not gainfully occupied".

In the above table, the percentages falling into the different occupational statuses have been brought together and compared with the percentage aged 65 and over who were occupied. If we now consider the percentage working at the two Census dates, we find that the shrinkage has not been 15.9% in people actually working but only 7.1% or less than half this figure. Where have the other 8.8% gone? It appears from the table that the unemployed at the 1931 Census, accounted for 9.4% of the "occupied" men, while at the 1951 Census the percentage unemployed of 65 years and over had shrunk to 0.6%. The retired on the other hand had risen by 15.2%.

At this point assumptions begin to enter in. One such assumption would be that in 1931, due to the economic stringencies of the

time, men over the age of 65 were seeking work in order to try to provide the means of existence, in default of a sufficient old age pension, and that many of these men would be the unemployables - men who through physical or other shortcomings were not suitable for employment but who nevertheless continued to look for work and thus provided a group of chronic unemployed. By 1951 on these assumptions, the pension provisions would at least provide a means of subsistence, and hence this type of man, once qualified by age for a retirement pension, would lapse into the retired group. Therefore, again on these assumptions, the larger part of the 8.8% would be constituted by a chronically unemployable group whose counterparts in 1951 could reasonably classify themselves as retired. Thus, in considering the increase in percentage retired shown in the last column of the table, the rise of 15.2% should not be regarded as a sound indication of the tendency on the part of fit men to withdraw their labour, since about 8% of the rise could be accounted for by the removal of economic stringency which would then allow the men concerned to recognise the physiological facts of ageing and invalidism.

To some extent the argument here contradicts the views of the Registrar General in 1931, quoted above, since there it was argued that because of the shortage of work, many men would be prompted to admit defeat and classify themselves as "retired", while the argument above suggests that men would be inclined to look for work even with little hope of finding it, and to indicate this in the Census return by classifying themselves as "unemployed". Perhaps both tendencies were at work, and it might be that much more fluidity between the categories should be assumed. Thus by 1951, with fuller employment, men hitherto considered unemployable might be able to find jobs if they continued to look for them, which would involve a loss of the unemployed to the employed group. In this case, the lower end of the unemployable group could still go into the retired group. The research material with which this thesis will later be concerned shows that

financial pressures to keep working are very considerable, and hence these suggestions are not unreasonable.

But no attempt will be made here to resolve these contradictions in full. The argument has been developed to indicate the ways in which figures and estimates may be influenced by the instability of the concepts, and by the various assumptions involved. Furthermore, it would seem that any attempt to derive more than general tendencies from Census material and vital statistics is doomed to failure because of the impossibility of determining the superiority of one set of interpretative assumptions over another except in the light of empirical material.

When we turn to consider the relation between retirement and morbidity, the difficulties become even greater. Here we are dealing not with categories in which numbers of cases can be counted provided that the categories can be defined without too much error but with psychological concepts, and while the important aspect of the situation is again whether or not a man regards himself as retired, the distinctions now need to be finer.

Let us assume that there is in fact a connection between retirement and morbidity. Now suppose we have a case where a man has ceased to be "gainfully occupied" but has taken up full time voluntary work. He will be classed as retired from one point of view, yet if the relation between retirement and morbidity depends, for example, on the lack of a means of organising one's time, then this subject may be expected to show less morbidity than one who retires and does nothing. On the other hand, on the same assumption, we may consider

a man who is not working and who may be drawing a Retirement Pension, yet who does not regard himself as retired. If he continues to look for work but does not find it, his consequent frustration may lead to a higher maladjustment score on whatever indicators are chosen, than a man who is retired and is reconciled to that situation.

Hence one needs to be very careful when talking of "retired" and "non retired" subjects, and some attention ought to be paid to

(i) how many hours of the day are taken up by some systematic occupation

and

(ii) whether or not a man regards himself as retired.

Interestingly enough, in the light of what has been said above, regarding the conditions under which a man may assign himself the "retired" or "working" categories, it appears from the research which has been carried out as the main part of this thesis, that a man may not know whether he is retired or not. This is the case when a man leaves his job, usually because of a fixed retirement age, but wants to continue in some employment. He is unable to get such employment and ceases to carry on a systematic search for it, but he is prepared for something suitable to turn up, and if it did so, he would go to work again. This outlook is characterised by a repressed expectancy, and is manifested in the man's difficulty in classifying himself occupationally.

As a final comment, then, upon these various considerations, it may be said that in what follows, we shall try to make explicit at any point in the argument, what concept of retirement

is being used. Fortunately, in the commonsense statements about retirement and its relation to morbidity, the concepts involved are clear enough. When the statement is made that "Retired men pass away like snow off a wall", what is meant is that "men who are no longer gainfully employed under full time conditions of work become sick and die more rapidly than those who continue in such employment". This definition of retirement represents the core of the concept, and we shall always have this in mind, even when it becomes necessary to consider marginal cases where "retirement" takes on different shades of meaning.

2. An Analysis of Retirement Practices

In the discussion above, we saw that the prevalence of retirement is increasing. In 1931, 46% of men over 65 were retired, whereas in 1951 61% were retired. It was further seen that it is difficult to estimate what this implies, since men may classify themselves different at different times without their actual employment status having changed. A further aspect of the matter is that to achieve the single end-result of "retirement", various types of retirement practice may be used, and the type of retirement practice involved in a man's giving up work may have a marked effect upon his subsequent adjustment to retirement. Reasoning from first principles, one would suppose that a man who had been forced against his will to retire under a fixed age scheme would experience more frustration than one who had elected to do so under a permissive scheme, even though the other factors in the situation were the same in both cases.

The types of retirement practice are extremely varied and include all possible kinds of scheme. The major distinction is, of course, between "voluntary" and "enforced" retirement.

Voluntary retirement may be further subdivided. Firstly, there is retirement prior to some fixed age. What the age is may vary, but it is usually some modal age such as 65. It would be interesting to investigate the feelings of men who retire voluntarily before the modal (or "culturally approved") retiring age, since impressionistic evidence gathered in the course of the present work suggests that such men may not be impervious to social pressures and that they do experience some guilt feelings about this. Secondly, voluntary retirement may take place at the age at which this becomes possible. The exact determinants of a man's decision to take his retirement when he becomes eligible to do so, are difficult to ascertain, but some light will be thrown on this problem by the present work. Finally, there is voluntary retirement at some time after the man becomes eligible to retire. Again the actual determinants are very often complex. It often happens that a man sets himself a further fixed age after which he will retire. Thus many men who become eligible to retire at 65 will set themselves a further target - usually 70 - at which they intend to give up work.

Enforced retirement also takes several different forms. It is usually anchored to some definite age, again usually age 65, and occurs as a result of regulations prescribed by employers, Trade Union agreement, or Superannuation Schemes. Very often men retired under such regulations will look for other work. There are, however, two major categories of enforced retirement which do not involve any fixed age. These are retirement enforced by illness or loss of ability to keep working, and that enforced by the inability of older workers to find employment. Among others, Beveridge (1944) has drawn attention to the large age differential in duration of unemployment. This latter consideration has been touched upon above.

The numbers of different types of retirement schemes in operation, is easy to investigate and some figures are available; but the actual reasons for particular men retiring are considerably more difficult to examine and require investigation of sample groups of men. Even then, unless the investigation is very painstaking, it is unlikely to reveal a true picture of the pressures ultimately determining retirement.

The age of compulsory retirement from work was the subject of an article in the Ministry of Labour Gazette (1949), together with some figures for the number of schemes where compulsory retirement was the practice. The sample of employers asked for the information included manufacturing firms, banks, insurance companies, building and friendly societies, and retail distributive trades. In the manufacturing industries, all firms employing 2,000 or more people, and a sample of those employing 100 to 2,000 were asked to make a return. In the other groups a selection of the very large number available was made. The results should be fairly representative, except in the retail distributive group where all the firms of whom enquiry was made were large concerns. The writers of the article are careful to point out that the figures do not do more than "give a general indication of the position in certain types of employment". The figures show the age of 65 to be the modal age of compulsory retirement, both in terms of number of employers using this age in connection with their schemes, and in terms of numbers of employees affected; but they also show a frequent use of 60 as the compulsory age, especially in the case of clerical staffs at banks and similar undertakings. Indeed in this case the number of employees retiring at 60 is nearly as large as that for those retiring at 65 (34,400 as against 38,000). On the whole, the tendency is for administrative and technical people to retire at 65 or younger under compulsory schemes, and in the manual grades other than in distributive trades to retire at 65 or older. Quite a substantial number of manual workers covered by compulsory retirement schemes especially in the group

of manufacturing industries retire at 70. But in terms of numbers of employers having the compulsory schemes, 65 is overwhelmingly chosen as the appropriate age.

These figures relate to practices under compulsory retirement schemes, but how many of these schemes are there relative to other retirement practices? Relevant data on this point is also available in this article.

It appears that the manufacturing industries differ from the commercial and distributive undertakings in adhering less to a fixed retiring age, especially in the case of manual workers. In the commercial and distributive sections, compulsory retirement is more common among "other" employees than among clerical and technical staff, though more employers make provision for the compulsory retirement of clerical and technical workers. This is interesting because compulsory retirement is often regarded as a "staff" rather than a "works" phenomenon. Another interesting point is that between 12 and 15 per cent of employers operating compulsory retirement schemes were holding them in abeyance at the time the article was written. This is presumably the result of full employment.

3. Reasons for Retirement

The above data refers to employees of all ages covered by schemes of different kinds, and the number of schemes in operation. But it is possible to consider the operation of the various schemes at retirement age by referring to Table 7 (Chapter 1). The data there are derived from the Ministry of Pensions Report on "Reasons for Retiring or Continuing at Work" (op cit). It can be seen that in the sample investigated at age 65, 1,374 men out of 4,834 (28.4%) gave as their reason for retirement, compulsory retirement by employer,

or discharge. This was the largest single cause of retirement. Of those who took retirement within the five years after age 65, 23.5% (of 4,798) gave this reason. In this age period, retirement under this head took second place to ill-health, but it was still considerably larger than any other reason for discontinuing work. We cannot accept these figures at their face value since clearly the reason for retiring as given by an interviewee may not be as clear cut as its categorisation for a statistical table. We do not know, for example, the proportion of men who were retired by their employer upon health grounds. Moreover, under some retirement schemes, whether or not a man is required to retire is determined by a review of his physical capacity in general, rather than any specific ailment he may have. It was found in this investigation that about 60% of the men compulsorily retired by their employers were covered by pension schemes and this may represent an approximation to the proportion retired compulsorily <u>solely</u> because of the requirements of a pension scheme. On the other hand, more than 80% of the men who gave ill-health or strain as the reason for retirement also said they had to leave because of an age limit, and employers' information in general confirmed this. Thus it seems that there is considerable interaction between the categories of retirement on the grounds of ill-health or strain, and of compulsory retirement by an employer. On the one hand there is the possibility that some of the men classified as "retired by the employer or discharged" may really have been discharged as a result of ill-health, while on the other hand there is the possibility that some of the men classified as retired on grounds of ill-health might equally well have been entitled to be classified as retired compulsorily by employer. Perhaps these two categories cancel each other out. On the evidence it would seem fair to conclude that probably about one quarter of the men retiring at age 65 did so as a result of action taken by the employer.

Additional light on the factors affecting the decision to work or retire was provided by an

investigation by THOMAS (1950). The primary aim of this investigation was to discover the proportion of old persons who were employed either for profit or gain in mid 1945. Altogether 53% of men and 9% of women aged 60 and over were in employment, a total of 28% of all persons aged 60 and over. Thirty nine per cent of men over the age of 65 were employed. The subjects were asked directly whether they were working because they had to do so for economic reasons or because they preferred work to retirement. There were no significant differences between men and women. Of 744 men over the age of 60, 53% said they "must work", 25% that they "must and also preferred it", and 20% simply that they "preferred it". When asked why they had answered as they did, the majority of subjects gave financial reasons, for example, that their ability to pay their way depended on their ability to keep working.

Men over 70 more frequently preferred to work than those below 70 (28% as against about 20%) but this would in any case be expected since the passage of years after a pension became available would have removed from the group of employed men the ailing, and those who wished to retire and found themselves able to do so. Consistent with this view, the results of the investigation show that 66% of old persons said they intended to go on working as long as they could, and 16% expressed a definite intention to retire. Most of this 16% were found among those aged 60-69. Thus, says Thomas, "it would appear that the majority of those who wished to retire had done so before reaching 70 years of age".

In the light of this evidence it would appear that of the 60% of men found by the "Reasons for Retirement" Report (op cit) to carry on working, many must do so on grounds of economic pressure, and not necessarily because they wish to do so, or think it is necessarily better for them.

Further information on the interaction of the various factors at about retirement age is available to show the influence of health, or its decline, in producing either a decision to retire, or an apprehension about ability to carry on working. The present research indicates that all premature (i.e. prior to statutory age) retirements are the result of poor health in the working class groups, though men in higher income groups usually had the opportunity to retire earlier than 65, and many of them took it. In the light of the influence of economic pressure, this is not unexpected. PEMBERTON and SMITH (1949) followed up a group of 302 men aged between 50 and 64 between three and 18 months after discharge from hospital; 202 were medical cases, and 100 were surgical. Of the medical cases, 38.1% died, 14.9% failed to return to work, 8.4% returned to lighter work, and 33.1% returned to their old, or similar work. Among the surgical cases, 13% failed to return to work, 6% returned to light work, and 59% returned to their former, or similar job. Thus, of the total sample, of 302, 14.2% were removed from the labour force before the statutory age of retirement. With regard to age, the authors comment, "As might be expected, there was a falling off with increasing age in the proportion of patients returning to their previous employment. In the medical cases there was a sharp drop between the 50-54 and 55-59 age groups: in the surgical cases the drop did not occur until the 60-64 period".

This, of course, was a sample of men who had actually fallen ill. MOSS (1955) reports a survey in which enquiries were made about health and work strain. This utilised a fully representative sample of 1,950 men and 482 women between the ages of 55 and 74 selected from the National Register. Abouth two-thirds of those over 55 who were still working said they did their work with no sense of strain, and those between the ages of 60 and 64 did not appear to feel strain in larger numbers than those aged between 55-59. But there was a sharp rise in the

figures in the 65-69 age group. An interesting finding was that, "Whereas the majority of those engaged in heavy duties attributed the strain to the nature of the work, the majority of those engaged in relatively light duties attributed strain to their own physical condition. It seems as if those engaged in different types of work set their own standards of the kind of effort required for the job and then assess their own activities against this standard". On the point of apprehension about the ability to keep working, it was found in this survey that the majority of people over the age of 55 feel uncertain about the possibilities of their going on, and by far the major part of this uncertainty is determined by doubts about health. Thus 70% of the men and 61% of women gave the possibility of ill-health as being the reason for their doubts about being able to continue working indefinitely. The results of the present work on this point are in general agreement.

Some indication of the difficulty of assessing the exact meaning of a man's retiral through ill-health may be obtained from WENTWORTH'S (1945) comment upon some of her results. She found what she regarded as evidence that "not only the old person's desire to work but his very belief in his ability to work depends on the opportunities for employment. For example, there are the findings of a study of 2,380 Old Age and Survivors' Insurance primary beneficiaries who were contacted at various times during 1941-42 to determine why they had returned to work. One third to one sixth (depending on the city) of the men who in a previous survey said they had stopped working because of "ill-health" were now employed. Further, in those cities surveyed in May 1941, a larger proportion stated that they were unable to work than those in cities surveyed a year later when there were more employment opportunities. This difference may, of course, merely reflect the beneficial effects of a protracted rest from work. Or again, it may reflect a different assessment by

society - as represented by employers - of what constitutes a suitable working level of health. Moreover, when labour is scarce, more attention is given to the possibilities of adjusting jobs to suit older workers, rather than rejecting those who do not suit the job. Any, or all, of these considerations may be true, but the fact remains that "ill-health" is an unstable category to use in a statistical investigation of retirement by direct questioning.

But while "ill-health" is an unstable category to the extent that it is used with varied connotations by respondents in the survey situation, it does refer to something of major importance in the retirement situation. Firstly, men do phrase their self-assessments of ability to carry on in terms of health, and secondly, their possible inability through poor health to remain at work gives rise to some anxieties. These anxieties are doubtless less due to a fear of losing work as such than to a fear of poverty through loss of income, since the major motivation for continuing to work amongst older people is the financial one.

In view of the financial pressures to stay at work, and the anxieties of workers that they may not be able to do so, it may seem hardhearted and even shortsighted of employers not to be more flexible in allowing their older employees to remain at work. But it is easy to be too condemnatory in this regard. The National Advisory Committee (op cit) seems to take this sort of view, and it suggests a campaign to bring employers to make more use of older workers. The employers, for their part, are under Trade Union pressure to provide pension schemes for operatives and these are becoming more widespread. These schemes are as yet by no means universal, and during the course of the present research, many cases were met where older workers had received short shrift from their

employers - though usually in cases where there was some kind of physical breakdown, and not usually on grounds of age alone - but clerical grades and operatives of the larger firms appear to be quite well served.

The Committee think that the real villain of the piece is the superannuation scheme, which implies a pension payable at some fixed age. But, though this is a widely held view, it is, in the opinion of the present writer, in the main unjustified. Many employers who have these schemes have, at the same time, clauses embodied in them which enable employees to suspend payment of pension until actual retiral if they decide to carry on after retirement age. This was the practice both in a large steel firm where the writer was employed, and also in two of a small sample of firms whose managements were interviewed by him. It is also noticeable that the existence of a superannuation scheme is apparently no bar to the employment of teachers beyond retirement age.

However, it cannot be denied that all the trends are towards an increasing "institutionalisation" of retirement schemes, and, apparently subscribing to a version of the "retirement impact" theory, many employers, especially in America, have instituted courses to educate their workers for retirement. Perhaps the best organised is that run by the (ESSO undated) Standard Oil Company of New Jersey. In this country the Shell Oil Company, a collaborator of the Standard Company, has run in the columns of its house magazine, a retirement advisory service giving advice to employees about to retire, and keeping those who already have retired in touch with their former colleagues. The danger of the notion of education for retirement seems to lie in that the building up of retirement as something one has to be educated for may lead to a preoccupation with its problems, and an exaggeration of its stresses.

4. An Introduction to the "Retirement-Impact" Hypothesis

Though, as has been suggested above, the prevailing views of retirement and its effect have varied greatly from time to time, today the notion is almost universal that retirement is detrimental at least, and often catastrophic, to the health of the person involved. This is the retirement impact hypothesis (McMAHAN and FORD 1955) at its most general. In the section of the Corning Conference devoted to "Leisure", for example, we find several examples of this view of retirement (STALY 1952).

> 'Mr. Starr referred to the situation in the coat and suit industry where, thanks to enlightened management and progressive unions, a man can retire at 65. "It is not made compulsory. If it were made compulsory, we would kill a lot of old men, because they know how to do nothing but work".' (p63).

Or again,

> 'Mr. Higgins: "I have known many, many people who have gone to seed when they retired, simply because of the absence of ideas about the employment of their time. My own company leans over backward to keep men as long as we can, because we have had too many like that. They have not committed suicide, but they have died quickly".' (p65).

The view inherent in these statements is thrust at the man approaching retirement age from all quarters; not least from his newspapers (ANON 1955).

> 'What do you look forward to when you retire from you job? Spending your days in slippered ease and letting the busy world go by? That way danger lies. So warns Eleanor Brockett in her stimulating book "How to Retire - and Start Living".
>
> "The process of senescence" as the experts put it "is accelerated by the cessation of activity".* Therefore it is important that

* Emphasis mine.

> the retired person should straight away get moving and keep moving in new directions and into new experiences'.

The emphasised words in the above quotation are an example of the familiar process of dressing up a simple opinion as a ponderous pronouncement in order to carry more conviction than it would otherwise merit.

What, in fact, do the experts say? There is no doubt that more or less informed opinion does support the view that retirement is detrimental to health, even if, retirement is not, in the graphic American phrase, "a ticket to death". An editorial in the LANCET (ANON 1949) pointed out that it is generally accepted, though difficult to prove, that the increased expectation of life has been accompanied by an extended enjoyment of health and vigour and that "Among those of pensionable age and over there is a large reservoir of men and women, who could still contribute substantially to the nation's wealth", and "Those who have worked among elderly patients mostly agree that occupation, provided it is not in excess of their mental or physical prowess, is good for the elderly".

It has already been suggested in Chapter 1 that the "reservoir of men and women" is by no means so large as might be supposed. In support of the second statement an investigation into the effects of employment on hospitalised patients in Basle is quoted. It seems reasonable to suggest that, were the beneficial effects of employment as marked as has been supposed, more direct evidence than that from an atypical group of old people could be provided.

The opinion that the cessation of work has detrimental effects on mental and physical health is not only to be found in generalised statements however. In the reports of investigations which have some bearing on the problem of retirement and its effects, the same assumption has been introduced.

Thus LEWIS and GOLDSCHMIDT (1943) say, in discussing their results (p90):

> "Although it can be assumed that the termination of active work often leads to impaired mental and physical function, it was difficult to trace an obvious connection between cessation of work and onset of mental illness except in three cases (of a total of 25). In these the patients yielded to a sense of frustration at having to make room for younger people and became very upset....".

This report, then, does give some slight evidence of some detrimental effect of retirement. But what is directly relevant here, is that the hypothesis of the "retirement impact" theory is introduced as an assumption, and this assumption was apparently maintained despite the difficulty of "tracing an obvious connection" between cessation of work and one of its postulated effects. That this difficulty should be so great, on the assumption of a relation between cessation of work and morbidity is the more surprising since the cases reported on were not a random sample of the population. If 12% (three out of 25) of a random sample of the population has shown evidence of the postulated relationship, this would have been fair evidence of degree of correlation between the variables, but this sample consisted of people admitted to a mental hospital; hence one would expect any relationship between cessation of work and mental illness to be emphasised. Finally, the fact that the patients in question "yielded to a sense of frustration at having to make room for younger people" does not necessarily argue for an effect of cessation of work, since one of the common suggestions for keeping older people at work, while making allowance for their lessening capacities and the promotion requirements of their younger colleagues, is that the older men should continue working but take a step down in pay or status or both. It is possible, therefore, that the same distress at having to make way for younger people might arise without a cessation of work. This is an assumption just as the statement made in the investigation in

question is an assumption and much research is needed before a conclusion can be reached on the point.

Another example in the same vein is provided by the investigation into attempted suicide in old age reported by BATCHELOR and NAPIER (1953). The main considerations are similar to those discussed above. Again we have a sample where one would expect the effect of retirement to be manifested to a greater degree than in the general population, whereas in only two cases out of 16, 12% of a small sample, did retirement from work contribute directly to the suicidal attempts. Again, in spite of a paucity of evidence, we find the assumption of the effect of retirement still maintained, for, although the evidence for direct effects of retirement is small, "its more indirect and insidious effects are difficult to gauge".

To comment generally upon the situation as expressed in these two examples, then, it seems as though the experts do in fact subscribe to the "retirement impact" theory with some tenacity. Both the examples given above show this adherence in spite of only slight evidence to support it as an interpretative principle. (It is probably only coincidence that they both show a figure of 12% in the relevant category). Nevertheless, some indications have been provided in these investigations and the criticism of the results as evidence of the influence of retirement does not lend support to the view that there is no effect of retirement. Rather it encourages one to examine further data for an answer to the problem. With these general notions about retirement in mind, we can now proceed to a review of the literature relating to the retirement impact hypothesis.

CHAPTER THREE

A REVIEW OF THE LITERATURE RELEVANT TO THE "RETIREMENT IMPACT" HYPOTHESIS

The literature relevant to the topic consists of a large number of studies scattered throughout journals, and as a body it is somewhat unwieldy. Several methodological criticisms which need to be made recur in many of the studies, and there is inevitably some repetitiousness in the discussion of these. Hence it has been felt desirable to summarise the results of this review and the criticisms to be made at the beginning of the chapter. Reference may then be made to individual studies at the appropriate point in the following pages.

1. Summary of the review of the literature

In summarising the literature, one must distinguish two major aspects, firstly, the actual results obtained and secondly, the methods used to obtain them, with a discussion of the shortcomings. Obviously this distinction is partly unjustified since the extent to which the results are valid and useful depends on whether they have been obtained by methods which are free from suspicion. But it is felt that it is valuable to make such a distinction because the problem of methodology in Social Science in general, and in the field of ageing in particular is so important. Provided that one bears in mind that the results summarised are only tentative and indicative, because of the difficulties of method, little violence is done to the data.

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(a) The results in general

In this discussion two main categories will be used. In the first place, there is the category into which we may place all the investigations which show either positive or negative retirement impact, that is, where the effect of retirement or the absence of this effect may be considered to have been directly tested. In the second place there is the category into which we may place all the investigations which show either positive or negative "retirement association", that is, where retirement appears to be associated in some way with other variables such as health, adjustment, happiness, etc, but where the experimental design, or the equivocality of the results do not allow us to say what the nature of this association is. A further problem is that in several cases it is difficult to see exactly what the results of the investigation are.

As regards retirement impact proper, the following investigations have indicated a definite detrimental effect of retirement:- SHELDON (1948), FRIED (1949), GRAYICK (1950), BLAZE (1952), TOWNSEND (1955), TAIETZ, STREIB and BARRON (1956), and STREIB (1956), a total of seven investigations (though Streib qualifies his results).

The following have indicated no detrimental effect of retirement:- GRAYICK (1952), HOYT (1953), PAYNE (1953), KINLER (1955), and PEARSON (1957), a total of five investigations. In addition three examinations of available statistical material all fall in this category. NATIONAL INDUSTRIAL CONFERENCE BOARD (1950), MYERS and SHUDDE (unpublished), and McMAHAN and FORD (1955). This brings the total up to eight.

The following investigations indicate that retirement is positively associated with detrimental effects:- MORGAN (1957), GARDNER (1949), DUNZEL

and GARE (1953), BARRON (1955), LANDIS (1940), ALBRECHT (1951), BRITTON and BRITTON (1951), KLEEMIER (1951), BRITTON (1951), SHANAS and HAVIGHURST (1953), HAVIGHURST and ALBRECHT (1953), MOORE and HAMMER (1947), PRESSEY and SIMCOE (1950), and SAINSBURY (1955), a total of 14 investigations.

"Some" or "slight" retirement association has been indicated by HIBBARD and LEE (1954), FANSHEL, KUTNER and LANGNER (1954), and BUSSE et al (1954 b), a total of three investigations.

Finally, the following investigations indicate that retirement is not associated with detrimental effects:- BRITTON and BRITTON (1954), MOORE (1947), and PEMBERTON (1955), a total of three investigations.

Aside from the more direct relationship of retirement in giving rise to poor health or some form of difficulty or dissatisfaction, it seems that an indirect effect may be mediated through economic insecurity (MORGAN, GARDNER, BUNZEL and GARE; HIBBARD and LEE; GRANICK; SHANAS and HAVIGHURST; SHELDON; TOWNSEND; HIMLER; TAIETZ, STREIB, and BARRON; and STREIB).

Continued activity of some sort after retirement appears to be important (MOORE, BUSSE et al), though there is some disagreement about this (PAYNE).

Sudden retirement is supposed to be traumatic, though there is evidence that there may be no advantage in gradual retirement (TAIETZ, STREIB, and BARRON).

Some investigations find that retirement or unemployment accepted by the man is less likely to give rise to stress than retirement or unemployment not accepted (FANSHEL, KUTNER and LANGNER; and BARRON). But STREIB suggests that this is not the case.

Several studies indicate or imply the importance of social pressures in forming a man's evaluation of his retirement (KLEEMIER; HAVIGHURST and ALBRECHT; GRANICK; and HOYT).

The method of dealing with the problem of retirement, or the failure to deal with it, may be a function of previous life experience, and personality (BUSSE et al; and MOORE).

At all events, whatever the impact of retirement it is clear that this must be much more varied from group to group than the protagonists of the theory usually allow.

Part of the apparent inconsistency of these findings may be explained by the different relationships examined. Some studies have been concerned with the more severe supposed effects of retirement, with morbidity and maladjustment, while others have been concerned simply with feelings of discontent. Thus a research which reports no effect of retirement on mortality rates is not necessarily inconsistent with one which reports a marked effect of retirement on adjustment score. Another part of the inconsistency is probably due to the different samples investigated, since these ranged from groups of high socio-economic status to groups of indigent aged. A further and major part of the inconsistency is almost certainly explained by the poor

experimental method of most of the investigations, and to this we will now turn.

(b) The methodology

Detailed comments upon the methodology of the various studies reviewed are made in the body of the text. For summary purposes, these comments fall under seven heads.

1 The samples used are in the main atypical, being drawn from special groups such as relatively prosperous annuitants (PAYNE), Y.M.C.A. secretaries (BRITTON and BRITTON), or institutionalised aged (KLEEMIER), etc. It is not suggested that no good can come of investigating these groups, but only that such studies cannot be expected to throw light on other than these groups.

2 The samples used are collected by suspect methods, such as the use of postal questionnaires (BRITTON and BRITTON; BRITTON, SHANAS and HAVIGHURST; MOORE and HAMMER; BUNZEL and GARE, etc) or collection by getting students to write up people they knew (GARDNER, PRESSEY and SIMCOE, etc).

3 Few controls are provided for in the experimental design. Thus age (PRESSEY and SIMCOE; BUSSE, et al; STREIB; BRITTON; SHANAS and HAVIGHURST, etc), number of years retired (BRITTON and BRITTON; MOORE; TOWNSEND; STREIB, etc), and health (SHANAS and HAVIGHURST; BUSSE et al) are subject to wide variations within the samples examined, in ways which may influence the results.

4 No control groups are used for comparison in many cases where these appear peculiarly necessary, for example, to compare retired with non-retired subjects, or those of high with those of low socio-economic status (FRIED; GRANICK; MORGAN; MOORE, etc).

5 The concepts of "work" and "retirement" are

used very loosely, and frequently no account is taken of whether the subjects became re-employed after being retired from a job which they had had for some years (MYERS and SHUDDE; McMAHAN and FORD; BUNZEL and GARE; PAYNE; SHANAS and HAVIGHURST; BRITTON; etc).

6 There is often a lack of precision in recording results and an attempt to explore too many variables at once. This leads to a situation where it is sometimes difficult to assess just what were the results of a particular study. This criticism applies to nearly all the studies mentioned except that by STREIB.

7 Although not directly a point of methodology, an important consideration in discussing the applicability of the results is that nearly all of the studies are American. Thirty of those reviewed are American as against five British. HAVIGHURST and ALBRECHT (1953), p112, have drawn attention to probable national differences in attitudes towards work and retirement as between the U.S.A. on the one hand and Britain and France on the other, the workers in the latter countries apparently being much more favourable to retirement.

Many of these shortcomings arise from the use of the cross-sectional survey method. This method is useful mainly in the exploratory stages of research when one needs, literally, a survey of the ground, or in the later stages of research where one knows a great deal about the dynamics of a particular sort of case, and wants to see how frequent are cases of this kind. Some of the studies discussed are admittedly exploratory (BARRON, STREIB) but others appear to attempt to be definitive. Purely cross-sectional studies are bound to lead to difficulties in handling the data derived, since factors such as "time since retirement" cannot be controlled, simply because this varies greatly in any random sample drawn at any particular time.

Thus one is forced into the position where one cannot say whether or not the difference in health one can show between the working and retired groups is due to a concealed difference in age between the two groups, rather than to the differences in their occupational status.

Another problem which arises in the attempt to examine the effect of retirement is that some sort of measurement is called for. The difficulties of measurement in Social Science are great and cannot be discussed further here. The specific problem of measurement in the field of retirement is discussed in a further chapter. Suffice it here to say that the type of questions asked in these studies was such as to lead to dichotomous answers, which tend to conceal differences in intensity or degree of different factors, and it is the way in which the strengths of the dependent variables alter concomitantly with those of the independent ones which we need to know. The group of researches which has been called above the "Chicago School" has attempted to provide a metric in the form of an adjustment score, derived from the CAVAN-BURGESS inventory, but no attempt has been made in the course of these researches to refine what seems to be a rather coarse tool.

Altogether then, the methodology of these studies leaves much to be desired, and makes it impossible to place much reliance on most of their results. It is appropriate to sum up these remarks in the words of ANDERSON (1955):

> "In contrast to many well-designed studies at earlier age levels, we find (in ageing research) masses of anecdotes, case studies, and surveys, often presented without specific age reference. We find many studies in which individuals from 60 to 85 are grouped together without any age break-up of the data, yet no good basis exists

for this grouping since we know that the change that occurs from 60 to 85 is tremendous.

We find much neglect of sampling. Some of the studies of the late 1920's set up better sampling controls than do more recent studies. To a much greater extent than in any other area, investigators on ageing take whatever subjects are at hand. Often, even when available subjects are used, no attempt is made to define the sample in terms of such standard categories as education, socio-economic status and occupation".

2. The individual studies

The literature which is relevant to the topic of the relation between retirement and mental and physical morbidity falls roughly into five categories.

(i) These are first the attempts which have been made to examine the problem statistically by utilising records in the possession of agencies such as insurance companies.

(ii) There are the various surveys which have been carried out concerning the problems of old people, though these have not usually been concerned directly and solely with the problems of retirement.

(iii) There are the several researches carried out using what may be called the "adjustment approach". These are investigations mainly initiated by the members of a group centred round CAVAN, BURGESS and HAVIGHURST, who employ the concept of "adjustment" as an explanatory variable.

(iv) There are researches which have been carried out by individual investigators who range in their adherence from a thorough-going

empiricism to a psycho-analytic bent.

(v) There is a body of literature which deals with the general problem of work and well-being, or the meaning of work for the worker, which may help to explain the nexus which has been found between ceasing to work, and decline in health or "adjustment".

(i)

If one wishes to examine the validity of the retirement impact theory, it would seem reasonable to begin by examining whatever statistical material is available. However, it seems more logical to present this material in conjunction with the second part of this thesis which itself involves a statistical analysis of some available data. Hence section (ii) will now be dealt with.

(ii)

The first group of studies involving contact with actual subjects in the research situation, as distinct from the statistical approach, is composed of those where either the survey method was employed, or where an investigation primarily concerned with other, or more general problems of ageing, yet provided data on the problem of retirement.

One of the first of these studies was that of MORGAN (1937). Morgan investigated the complex of factors affecting the "attitudes and adjustments" of 377 people receiving old age assistance benefit in New York State and New York itself. She investigated among other things the problems of employment and retirement. In reply to the question, "Were you happier when you were busy all day?", 91.1% said "Yes", though it is interesting that there were regional differences, implying perhaps variation in evaluation of work as socially

desirable. 78.5% of the respondents replied "Yes" to the question, "Would you like to work now?" The majority of the respondents made some supplementary remarks about the value of work in filling in time, and as an aid in overcoming the tendency to brood. Comments on the uselessness and boredom arising from the cessation of work were frequent. However, Morgan also found that men who were rated by her as high on adjustment score, had stopped work earlier, and seemed often to have retired voluntarily. They also often denied that they would want to go back to work. Again there were regional differences between the "Upstate" and the "Metropolitan" men.

It appears from an examination of Morgan's results that a strong factor running through the attitudes to work of her sample was economic hardship. Thus in reply to the question, "What has worried you most in your old age?", 48.4% referred to financial worries and dependence whereas only 6% referred to an inability to work. A further indication of economic stringency is probably to be found in the fact that the modal age of retirement for the men was 70-74 years of age. No doubt this is a reflection of the composition of this sample for the old age assistance recipients had experienced a low economic level throughout life. Thus it is unsafe to generalise from this sample.

BUNZEL and GARE (1953) investigated retirement satisfactions systematically by using a postal questionnaire. The usual objections to the use of this method are that a very high refusal rate is usually obtained, and that respondents are not truly representative of the original sample (SUCHMAN and McCANDLESS 1940). But they may be less forceful in this case since these authors were acting for a committee set up by the Mayor of New York, and the subjects were either retired teachers from New York State or retired employees of the New York City administration. This probably

explains the high level of completed returns achieved. About 1,500 usable returns were obtained, though how this respondent group compares with the original sample is not clear. The findings of this research were that income and satisfaction in retirement were positively related; that inadequate income of itself does not necessarily constitute the main cause for dissatisfaction with retirement; that the two basic needs in retirement are for an adequate income, and satisfactory use of leisure time; and that on every income level satisfaction with retirement is positively related to social participation. The variable used in this research, "satisfaction with retirement", is, from the point of view of the retirement impact theory, somewhat crude. It is a global term, and may include within it many different dimensions of retirement (the authors remark upon the need for research to specify these various dimensions). Moreover, it also conceals what may be large variations in intensity of feeling-tone. "Dissatisfaction" with retirement may cover all grades of intensity from a mild feeling of irritation to a neurotic state. Moreover, these results were based upon responses to a postal questionnaire and validation of the results by means of personal interviews would be required as a next stage. It is only fair to mention that these authors draw attention to this point themselves.

PAYNE (1953) reports a survey of 483 annuitants of six industrial companies in Cleveland. The men were interviewed between one and five years after retirement. Two thirds of the total number of subjects were supplied by one large company. Of the total sample, 94% were interviewed. On the basis of their answers to a series of questions, the subjects were divided into three groups:-

(1) 36% who were rated positive about retirement. These were men who

preferred being retired to working, were used to being retired, and who had been as happy or happier since retiring as before.

(2) 17% who were rated negative about retirement. These were men who would rather be working, who found it hard to get used to being retired and were happier before they retired.

(3) 47% forming the remainder of the group who were regarded as "intermediate". These men did not express themselves definitely or consistently one way or the other.

The first group of 36% of the men was used as the basic group for comparisons with the other groups to see what factors were associated with positive attitudes about retirement. The general import of the results was to cast serious doubt upon some commonly held views about retirement. Retirement was not a difficult adjustment to make, according to 46% of the men, though 39% found it hard. The men seemed on the whole to settle down to retirement quite quickly, since 32% said it took "no time" to get used to retirement. The median length of time to get used to retirement was reported as "less than six months", although 17% of the men who had been retired four or five years said they were still not accustomed to it.

Among the items which in this survey did not appear to contribute much to positive attitudes about retirement were the presence of hobbies (whether strictly or loosely defined); planning, "except for the fortunate ones who can carry out their plans"; time since retiring whether one or five years; and "keeping busy" as compared with "taking it easy". Two groups of results give a glimpse of the psychological elements underlying the problem of retirement, though the survey method as employed here is not well suited for such

purposes. Firstly, 12% of the men complained of not having enough to do (3% of these have positive attitudes about retirement), and 25% of the men said they had been "taking it easy" (38% of these had positive attitudes to being retired). But it was difficult to distinguish any real differences in the way these men spent their time; some of the men who claimed to be keeping busy were not so busy as the majority of those who said they had not had enough to do. Thus it would seem that the usual view of the relation between the filling-in of time, and adjustment may be an over-simplification. Secondly, there were interesting indications of the importance of group pressures in the determination of attitudes and behaviour in relation to retirement. For example, in giving their opinion about the ease of getting used to retirement, about 15% of the men gave indefinite responses, and appeared "to vacillate between their own experience and the typical reports they have heard about most other pensioned people. This type of answer recurs frequently with some people who are impressed with what they have heard or read about retirement "problems", even though their own experiences run counter to traditions. They think of themselves as exceptions and hesitate to mention their own supposed peculiarities".

Methodologically, this survey is open to many criticisms and these are concerned mainly with problems of sampling. It is refreshing, however, that in contrast with many examples of survey work the author considers these at some length, and attempts not to over-generalise. He draws attention to possible biasses on the grounds that his sample does not cover all industry since it is drawn from six firms. It does, however, cover all grades except top management. More importantly, these men are, economically, to some extent an elite group among retired men since they have not only their Social Security benefits but also their company pensions. The effect of this would probably be to decrease difficulties in adjustment in view of the other evidence of the strength of

economic factors in the situation. Moreover, although the attempt was to provide data on "normal" retirement, 20% of the subjects said they retired because of illness.

So much is discussed by the author, but other criticisms are also called for. These men comprise a sample, all of whom have to some extent made a successful adjustment to retirement, in that it has not killed them - we have no data on the incidence of sickness in the sample. But we do not know about the men who did not survive between one and five years of retirement, as the subjects of this survey had done. The concept of retirement is somewhat loosely used here, since we know that 10% of the subjects had taken up further full time work, and 16% part time work. Moreover, these subjects were being asked to recall events and attitudes concerned with retirement which had occurred, on the average, three years before (the mean age of the sample was 68). It is possible that men who had got through some years of retirement tended to minimise the difficulties they had in fact encountered in the earlier years. Finally, the survey method when it uses a schedule of the usual type, where the questions are relatively circumscribed and not scalable, tends to dichotomise the responses to questions. That is, the results are presented in an "all or nothing" way so that the concomitant variation in factors, which would give greater insight into their inter-relations, is concealed.

When all these criticisms are made, this reseach still shows that the commonly accepted views on the effects of retirement may not be capable of generalisation to all cases. The results are interesting in that they are in opposition to findings of most other researches in this field.

BARRON (1955) carried out a survey of

1,000 men aged 60 and over, and 200 females of the same age. This was a random sample obtained by interviewing random blocks in 34 cities in the U.S.A. The subjects were divided into employed as against unemployed, and the latter group was subdivided on the basis of whether or not the subjects considered themselves retired. "In attitudes toward life, the self-image, and feelings of suggestion, inferiority and prejudice by younger people, the unemployed aged (especially those who did not consider themselves retired) were the most negative of all occupational status categories. This was found to be true even when chronological age was held constant". The unemployed had fewer close friends than the employed, and were more passive about the future; they also showed more signs of decline in activity than did their employed counterparts. Fewer of the employed aged than of the unemployed reported physical health problems, though when compared with employed men of similar age, the men in the 60-64 age group who did not consider themselves retired, showed no difference in reported health status. The men in this age group who did consider themselves retired reported a considerable number of health problems, which indicates that poor physical health was the outstanding reason in most cases for their retirement at a comparitively early age.

Mental health was examined by asking the subjects to report the frequency with which they experienced certain presumed psycho-somatic symptoms. The employed group in most cases reported fewer and less frequent psycho-somatic symptoms than did the less active aged. The group of unemployed men who did not consider themselves retired were on the basis of this comparison relatively more disturbed (in terms of a greater reporting of symptoms) than the unemployed who considered themselves retired.

In another report of this survey, BARRON (1954) reports further differences between the

unemployed and employed groups. The unemployed aged, and particularly those who did not consider themselves retired, significantly more often reported distrustfulness of other people. When matched for age, the employed aged thought of themselves as more youthful than the unemployed aged.

In these findings it is possible that we are seeing more the effects of community attitudes than any effect of retirement as such. The unemployed subjects' suspicions and self-deprecation may be, not an emotional effect of unemployment or retirement, but an accurate reflection of the judgement of a work-oriented society upon men who cannot work. We do not know, and this lack of control over the possibly relevant variables is one of the shortcomings of the survey method in this context.

(iii)

A large number of researches have been carried out, mainly by a group of investigators at the University of Chicago, which employ the concept of "adjustment" as a variable. The core of this concept seems to be of the nature of homeostasis, and when a state of balance, presumably marked by absence of stress, is achieved after the person has been presented with some stimulus, the adjustment is said to be "successful" or "good". It will be seen from this statement that the concept of adjustment is not a rigorous one, and in fact it is used loosely by many writers with no attempt at definition.

However, the Chicago writers have defined adjustment and have designed an inventory which yields an "adjustment score". CAVAN and her co-authors (1949) say that "personal adjustment to ageing, or to other changes in one's self or one's

one's environment may be defined as the individual's restructuring of his attitudes and behaviour in response to a new situation in such a way as to integrate the expression of his aspirations with the expectation and demands of society. This definition stresses the fact that adjustment represents an integrated reaction of the person as a member of society to a new situation".

Thus adjustment as defined includes not only the notion of personal homeostasis but also of conformity to group norms. Hence even as defined, "adjustment" is not a clear cut concept and this detracts from its usefulness. However, since the major instrument for determining level of adjustment as defined by Cavan et al (op cit) is the inventory, "Your Activities and Attitudes" which consists of a series of structured questions for gathering data, and since in practice the measure of adjustment is a score based on answers to these questions, the problems of definition of of the concept do not prevent a large amount of research being done. "Adjustment" in fact may be regarded simply as a shorthand for discussing a series of different factors simultaneously in a global way.

The "Chicago School" - if for the sake of brevity they may be so called - were not the first to use the concept of adjustment in the field of ageing, though they gave it definition. They quote a research by LANDIS (1940) who had measured adjustment by weighting material obtained about amount of daily activities, desire to visit more often, greatest worries and pleasures, enjoyment of life, and number of enjoyable activities. No details of this weighting are given in this reference. Among various factors associated with "poor adjustment" was unemployment in the case of males. Insufficient information is available about this research to form an adequate opinion,

though one suspects a certain circularity in the arguments since "amount of daily activities" was one of the weighted items in the original adjustment score. One would therefore expect that loss of employment would contribute largely to this score.

The volume produced by Cavan and her associates (op cit) is devoted mainly to the development of the self-administered inventory, "Your Activities and Attitudes", which has previously been referred to, and as remarked, this inventory forms the basis of most of the subsequent investigations using the concept of personal adjustment to age. Hence it is worth considering the report on the characteristics of the instrument. Test-retest reliability was assessed on 110 cases who completed a duplicate questionnaire from two weeks to four months after the first, and $r = 0.72$. Split-half reliability corrected by the SPEARMAN-BROWN prophecy formula was 0.66 in the case of the Activity inventory and 0.95 in the case of the Attitude section. There were, however, difficulties in the computation of the reliability in the case of the Activity inventory, due to the much smaller number of items than in the Attitude section, and the difficulty of matching the questions. The authors therefore conclude that this reliability is really much higher than is indicated by the coefficient.

Validity of the scale was assessed by various different methods. In the first place, 168 subjects who had completed the inventory during a personal interview were used. The adjustment of these subjects was rated independently by some person who knew the subject "personally or professionally". Ratings were made by means of a check-list to describe the old person's activities, a set of word-portraits to describe the person's characteristics, and a list of symptoms which

indicate senility. The highest correlation achieved was r = 0.53 ± .04 between the total Attitude score and a combination of the check-list and word-portraits (the number of subjects in this case was 149), though check-list and word-portraits independently gave product-moment coefficients of 0.50 ± 0.04, and 0.49 ± 0.04 respectively. These correlations seem very low, though the authors estimate that on certain assumptions, and applying certain corrections, the true coefficient might be "0.60 to 0.70". It is important to note in the present connection that a comparison of the "Attitudes to Work" section of the inventory and the corresponding section of the check-list yielded an r of only 0.34. The correlation coefficient between ratings by observers who had seen the subject's self-reports of activities, and reports, made by the interviewers, of the interviews during which the schedules were completed, but who had not seen the corresponding Attitude Inventories, was r = 0.74, and the correlation between the Attitude score and Activity score was 0.78. In all this it is important to bear in mind that a product moment coefficient of 0.75 corresponds to a coefficient of alienation of 0.66 (GUILFORD 1936). Hence, these relationships do not seem very close, and the uncritical use of the inventory would appear to be unjustified. However, since compared with the majority of instruments of a similar type, these various characteristics are of the usual order, one must avoid undue condemnation. For example, ELLIS (1946) would regard such a correlation between questionnaire score and some criterion as indicating "mainly positive validity". But it is important that continued attempts should be made to improve such an inventory and the continued wide use of this particular one would appear to be particularly advantageous in this regard. The judgement of the writers on their inventory is that in its present form it is useful for the study of groups of old people. "It should be treated as a battery of scales representing various categories or aspects of adjustment. In many cases the total score may be useful. In other cases a profile of scores in the separate categories may be of greater value".

Thie judgement seems very reasonable.

A detailed analysis of the content of the inventory will not be attempted, but some comments on that section of the Attitude inventory which deals with work are called for. The reason for this is the consistent results which have been obtained by the use of this inventory, which repeatedly show a common pattern of the relation between attitudes - or adjustment - and retirement. The section in question consists of seven statements, and the respondent has to state whether in the case of each one he "agrees", "disagrees", or "doesn't know". The criticisms which it is proposed to make relate to two considerations which may seriously bias the results of an investigation purporting to deal with the problem of work and retirement by the use of this inventory.

The seven statements in this section (Section C) of the inventory are:

1 I am happy only when I have definite work to do.
2 I can no longer do any kind of useful work.
3 I am satisfied with the work I now do.
4 I have no work to look forward to.
5 I get badly flustered when I have to hurry with my work.
6 I do better work now than ever before.
7 I have more free time than I know how to use.

Agreement with statements 1,3 and 6 indicates "good adjustment"; agreement with statements 2,4 and 7 indicates "poor adjustment"; and statement 5 is neutral.

Two major criticisms may be made of this section. The first relates to the content of the statements and the second to the method of scoring.

The problem in the first case is whether the statements are in fact attitude statements, or at any rate statements of attitudes which relevantly measure "adjustment". One is at some disadvantage here because, as has been mentioned, the concept of adjustment is not an easy one to delimit. However, in the context of employment as against unemployment, statement 1 appears to be ambigious, the subject's response being determined by the interpretation of the word "work". This is the other side of the coin from the discussion of the concept of "retirement" which was undertaken above. Does "work" refer to paid employment, hobbies, voluntary work, or what? Statement 3 could be agreed to, both by someone who is now working and someone who is not. Statement 6 appears unexceptionable in this context except that it too depends upon the interpretation of "work". Statement 2 is really just a statement of fact, and need carry no attitudinal implications whatever. To agree that one can no longer do any useful work is not to indicate poor adjustment, unless one also accepts certain cultural stereotypes about the value of work. This is precisely the point on which we have no information. Some subjects do accept these values, some pay them lip service, and some do not accept them. Statement 4, although to the present writer somewhat less neutral, is again not necessarily indicative of poor (or good) adjustment. Statement 7 would not appear to discriminate between occupied and non-occupied subjects, especially in view of Payne's (op cit) finding that assessment of the amount of free time available is essentially subjective.

The second criticism, the question of the scoring of the statements, is clearly connected closely with the first. Considering statement 1, we find that if the respondent signifies agreement he gets a point towards his total for good adjustment. But to score the statement in this way seems again to show the influence of cultural value-systems, for agreement with this statement may imply obsessional traits, or an overdependence on work as a means of

orientating one's time. Presumably under these circumstances, agreement with the statement should indicate maladjustment. Statement 3 also does not appear to warrant a negative score in the case of agreement, since the subject may read the statement with an implied subordinate clause, thus:-

"I am satisfied with the work I now do (and I don't do any) - AGREE".

This would mean that the scoring as given would not admit of discrimination between occupied and non-occupied subjects.

Altogether then, one feels that the uncritical use of this inventory as it now stands is unwarranted. The main difficulty appear to be that the compilers of the inventory have derived their statements and their scoring in accordance with cultural value-systems. This implied equation of the requirements of these value-systems with good adjustment, while perhaps required by their definition of adjustment, is frequently to be found in social-psychological work, and leads to circularity in research insofar as obtained results are to some extent, at least, predetermined by the content and scoring of the techniques used. On the other hand, it is realised that logical, a priori, criticism of the content and scoring of an inventory is only a starting-point. The main requirement seems to be much more rigorous attempts at validation of the inventory by scaling techniques (e.g. GUTTMAN 1950) and administration to criterion-groups. Since this inventory has been so widely used, one might have hoped for some revision of it in the light of subsequent results, but it appears that this has not been done. The discussion of the characteristics of this inventory has been somewhat protracted because, as has been pointed out above, it has been used in a number of subsequent researches, the results of which, in relation to age and employment or retirement at least, have shown a marked degree of consistency. In reviewing this literature, the foregoing discussion implies the possibility that the results have been somewhat influenced by the method of

collecting the data.

We may now turn to some of the results which have been obtained with this inventory. Cavan et al (op cit) report some findings on the relation between score on the Attitude inventory to answers to certain questions on the Activities section. For example, there appeared to be differences in adjustment between various occupation groups. The mean attitude score for the skilled and semi-skilled group of men as compared with that for "other professional groups" was significantly lower (C.R. = 5.5). Women showed no significant differences. On the question of income, men whose chief source of income was Old Age Assistance showed a significantly lower score than other groups (C.R. = 7.5). It is interesting that a feeling of economic security was more frequently professed by the older subjects, and the proportion of people professing economic security was about 10% greater than the proportion who felt that their economic position was comfortable or better. The authors regard this discrepancy as an indication of a decrease in the felt need for money, and of increasing dependency on younger members of the family. Economic insecurity appeared to be most prevalent in the 60's when "adjustment to loss of employment is necessary. In each succeeding decade economic condition of the person becomes more stabilised". One must, of course, remember that this is a "cross-sectional" research, and that therefore the data for the inferences are drawn from different groups of subjects and not the same cohort passing through time.

ALBRECHT (1951) administered a role activity scale, covering 12 role-areas, to 100 old people living in a town in the Mid West of the U.S.A. She also used the Cavan Scale of Adjustment Ratings for Later Maturity. She found that the "best personality patterns" were found in the group which was sufficiently secure economically to meet its needs comfortably. Using WARNER'S INDEX OF STATUS CHARACTERISTICS (1941), she examined the

influence of social class on personality scores as measured on the rating scale. Upper, upper middle, and lower middle class men had similar personality scores, but scores for the two former groups were significantly higher than those for upper-lower and lower-lower class men. Correlation between job activity and personality score came out at 0.44, and this relatively low value may have been influenced by the effect of economic security, that is, job activity may have had its maximum effect as a means of providing the money to live. "Continued work" was a factor in "non-senile patterns of activity".

BRITTON and BRITTON (1951) sent out by post copies of the inventory discussed above to 328 retired Y.M.C.S. secretaries selected from the listing of the Retirement Fund. Replies were received from 161 or 49.7%. The non-respondents contained a disproportionate number of men who had been associated with the organisation less than 25 years, and who retired before the age of 60. It was found that "present employment status" correlated 0.29 with Total Attitude Score (p is between 0.05 and 0.01). "Attitudes towards Work" correlated 0.56 with Total Attitude Score (of which it formed a part) (p = .01). "Economic security" correlated 0.20 with Total Attitude Score and this was not significant. Aside from the difficulties inherent in administering questionnaires by post and which have been discussed above, as the authors point out, there may be a stereotype of a retired Y.M.C.A. secretary and the respondents may have had such a man in mind when they replied. This is a possible source of bias in the answers. In any case, the correlations, though in some cases significant, are very low and not very helpful. The same criticisms apply here as in the case of BRITTON'S (1953) study discussed below.

KLEMMER (1951) administered the same inventory to 171 males in the Moosehaven Home. Of

these subjects, 104 participated in the voluntary work programme which was concerned with assisting in the running of the Home, and 67 did not. The sample slightly over-represented the proportion of men in the Home who worked, the figures for the whole Home being 56% working and 44% not working as against sample figures of 61% and 39% respectively. The results were analysed by the Analysis of Variance technique and it was found that "workers obtained higher adjustment attitude scores than non-workers of comparable status"; that "both workers and non-workers who rated their health good or fair obtained higher adjustment attitude scores than those who rated their health as being poor"; and that "workers earned higher scores than non-workers on sub-scales of the adjustment inventory dealing with the areas of health, work, feelings of usefulness, and happiness". Thus results are in the expected direction, but an important factor which must not be overlooked is the social pressures towards conformity with certain norms of behaviour in this closed community. We learn, for instance, that

> "It has been estimated that the part-time work of the residents ... if taken over by outside help (would) require the addition of more than 70 full-time employees to the staff of the institution. .....Participation in the work program is strongly encouraged but it is voluntary..... While both workers and non-workers receive allowances, those for the workers are higher and vary with the type of work and the amount spent".

This paper, then, seems to present a very good instance of the effect of a clearly perceived norm on behaviour and adjustment. The subjects were being looked after in a home run by an Order of which they were members, and this would presumably give rise to strong in-group feeling. Secondly, they had an obligation to the Home which could be discharged in part by working. The work was voluntary but social pressures would conduce "sociable" people to work while the "anti-social" possibly would not. (This may possibly be reflected also in the differential refusal rate). Thus the

relation discovered between attitudes to work, feelings of usefulness and the working or non-working categories would seem to be partially entailed by the predisposing conditions of work. Hence we cannot generalise from this work in a closed community to the open society where norms of behaviour may not be so clearly perceived. But this discussion does raise a new consideration in the use of populations for studying problems which have a markedly social content, that is, problems where norms of behaviour may be clear and widely recognised. If the population in question is, for example, a small town or village community, then pressures to conformity may bias results and render generalisation dangerous. Much work on ageing is done on these relatively closed communities, for example, clubs, institutions, small towns, villages, or employees of organisations such as the Y.M.C.A. (above).

BRITTON (1953) sent out by post the inventory to 1,502 compulsorily retired teachers, of whom 253 were men and 1,249 were women. Of the men, 120 or 47.5% replied, and of the women 373 or 29.9%. We shall consider only the men. Only one significant bias in the responding sample was discovered when respondents and non-respondents were checked against information obtained from other sources. The respondents tended to be those who had held administrative or college teaching positions before retirement rather than those who had held elementary or high school positions. "Employment status" correlated 0.45 with total attitude score ($p = .01$). "Permanent Security" correlated 0.30 with Total Attitude Score (p is between 0.05 and 0.02). "Total Activities Score" correlated 0.63 with Total Attitude Score ($p = .01$). "Attitudes towards Work" gave a coefficient of 0.63 with Total Attitude Score ($p = .01$), but, of course, itself forms a considerable part of this total score. "Leisure Activities" showed no significant correlations. The coefficients, though significant, are low even for corrected C. About half the coefficients examined were significant either at the 0.05 level or higher. The author draws attention to the difference between the correlation obtained for

employment status and Total Attitude Score for men as compared with women. The mens' correlation (0.45 p = .01) compares with a womens' correlation of 0.13 p = 0.90. It is thought that this is because "On retirement ... the man loses his former useful role as breadwinner who was pre-eminently occupied with his profession; the woman who is retired still have the useful function in the keeping of the home". This is a plausible hypothesis but to the present writer the study appears inadequate methodologically. The defects of the postal method of administering questionnaires have already been discussed, and Britton seems to have recognised these, since he did make some comparisons between his respondents and non-respondents. But this can never be a really satisfactory check in the case of a postal questionnaire since refusal may take place for reasons which may be unrelated to major characteristics of the sample such as length of time connected with the organisation, but strongly related to the results of the investigation. What, for example, is the distribution of attitudes among non-respondents? These may, or may not, be related to decision to co-operate. There are, moreover, several uncontrolled variables. No age distribution of the subjects is given and we do not know whether the subjects of one employment status (e.g. "working") are younger than those of another (e.g. "retired"). We do not know what reasons prompted those men who were working after retirement from their profession to take up further work. These reservations must devalue the contribution of such research as this, but some positive relationship between work and Total Attitude Score is suggested by the data.

SHANAS and HAVIGHURST (1953) investigated various problems of retirement in four professional groups - Y.M.C.A. secretaries, teachers, Methodist ministers, and physicians. Again, the same questionnaires were sent out by post. Samples were drawn from various official records. Response rates were 77% for the Y.M.C.A. secretaries, 60% for the teachers, 39% for ministers and 38% for the physicians. It appeared that the non-respondents

tended to be men who had got other jobs since retirement from their main profession. "The biases which exist in our sample .... are those which would bring into the study men who might be expected to feel retirement most keenly and directly". It was found that very few of those men who were in good health were not working at something. Some of the study group were working primarily to supplement their retirement incomes, but this was not the only factor. The subjects had "highly favourable attitudes to work". Of the teachers, 47% made the highest possible scores on favourable attitudes towards work, and the corresponding figures for Y.M.C.A. secretaries and physicians were 46% and 62% respectively. Mean attitude scores on the inventory ranged from 43.6 for Y.M.C.A. secretaries (who were also the youngest group), through 40.2 for the teachers and 40.1 for the physicians to 38.1 for ministers (who were the oldest group). It appears, therefore, that there was some effect of age in the questionnaire scores. For the sake of comparison, the mean score for a cross-section of the male Louisville population was 37.7, and for a sample of old men in a small town 38.0. These attitudes among this group of professional men are contrasted with "studies of non-professional men, both young and old (who) often express the wish to retire and take life easy". In commenting upon this research, one must bear in mind the bias of the sample stated by the authors, and the method of administration of the questionnaires. Moreover, one would like to know more about the accuracy of the answers given. Consider, for example, the large number of doctors who achieved the maximum score on the "Attitudes to Work" section of the inventory. It is at least possible that this arose from a group of high social status making answers which would carry high social value. Even if this were the case, it would not necessarily invalidate the conclusions drawn about "adjustment to retirement" since these statements might represent a norm to which the subjects aspired, and failure to reach it might lead to "poor adjustment", but we do not know, and this is yet another source of possible error of which we must take account.

HAVIGHURST and ALBRECHT (1953) published a compendious account of research emanating from the University of Chicago. The information came from a variety of sources, but principally from a study that was made in a small mid-Western town called Prairie City. Additional data from a series of studies of old people in Chicago was also reported. The Prairie City sample was of 100 old people. On the whole they appeared to be secure economically and to be biassed heavily towards the lower and upper middle class (90% of them fell into this category). These are important considerations in examining the results since they probably represent powerful biassing factors.

A comparison was made between employed and retired older people, roughly equated for health, and the differences on certain measures obtained. The employed group was composed of 20 men and three women, and the retired group of 15 men and three women. Mean adjustment rating for the two groups was 5.7 and 4.8 respectively, and mean adjustment score on the inventory 38.1 and 31.8 respectively. The retired group was slightly more handicapped by poor health than the employed group (a score of 2.2 as against 1.3), though they appeared to be of rather higher economic status. One cannot make a great deal of these results, since the sample was so small, and the inter-relationships between the variables so complex and unstable, but all the indices calculated appear to be in the expected direction. Both in viewing these results, and from general considerations, some comments of the authors on the attitudes towards retirement prevalent in this small town are noteworthy.

> "The general attitudeof Prairie City is that a man should work as long as he is able. The few men who have retired at 65 or thereabouts, while still in good health, are viewed with a degree of tolerance if they are economically self-supporting, as is in the case of several retired professional men and civil servants; or as "no-good loafers" if

if they are on old age assistance".

Further information on this point is forthcoming from additional data reported in the same volume, based on a study of "Public Opinion Concerning the Roles of Older People". Two similar groups of subjects were taken, one in 1949 and one in 1951, though these were not samples in the statistical sense. Examination of the degree of approval with the various statements of the questionnaires indicates that, though retirement was regarded favourably if sufficient means were available, a fair degree of activity, especially in the case of older men, was favoured. It is also interesting that when the second set of data was taken in 1951, "there was a considerable change toward greater approval by the public at all ages of roles for older people involving activity and independence". Thus, for example, the statement "Retires from work between the ages of 65 and 70" received an approval score of 1.55 in 1949 and 1.34 in 1951.

It thus appears that, at any rate in America, and especially in a small town such as Prairie City, there are very strong social pressures towards conformity to the norm of active, self-supporting old age, and it is possible that this may account for some of the low "adjustment" scores achieved by non-working groups and especially groups dependent on Old Age and Survivors Benefit. On this view, it may be that failure to conform to these social pressures by working or being self-supporting may lead to poor adjustment rather than the fact of retirement itself.

BRITTON and BRITTON (1954) sent the CAVAN inventory by post to 1,757 University Alumni. Replies were received from 627 or 36.6%, and these respondents appeared to be over-representative of those who were especially interested in the topic or loyal to the institution sponsoring the survey.

Of the respondents 65.4% were not retired and 34.6% were retired; the median ages for the two groups were 63.6 and 69.1 respectively. The retired group were somewhat less healthy, as a group, than the working group, and were slightly better off financially, though neither of these differences was significant. In the retired group, 18.3% were physically unable to work and 67.1% were not interested in employment. Many of the comparisons between the two groups were not significant, but all the following comparisons gave significant differences at, at least, the 5% level of confidence.

Opinions about retirement	Retired N=217 %	Non-retired N=410 %
It is a welcome relief from the responsibilities and obligations of younger days	42.0	32.0
It is a reward for a lifetime of work	44.7	38.4
It is only for people who are physically unable to do their job	15.7	47.5
It gives younger men a chance to get a job	38.1	30.4
It takes the meaning out of life	11.9	20.4
Feelings about retirement		
A well earned rest	32.0	21.2
The worst thing that can happen to a person	13.3	31.0

On the categories of the Attitude Inventory of "Your Activities and Attitudes", which is designed to measure feelings of usefulness, significantly fewer of the retirees were in the uppermost score categories on usefulness as compared with the non-retired men (C corr = 0.56 p = 0.01). There was a slight tendency (C corr = 0.20) for those not yet retired to be happier than the retirees.

The inference one draws from this study

is that there was very little, if any, effect of retirement in this group. The methodological criticisms are similar to those made in regard to the researches quoted above. Nothing further will therefore be added here.

The final comments on the Chicago School must be that its contribution can only be regarded as an adumbration of possible relationships. It can be said that the work of the School does not throw much light on the general problems of ageing, and even less on specific problems such as that of retirement. Partly this is due to a very poor experimental method involving procedures which many social scientists would now reject as entailing the possibility of large errors, and at least to wide areas of uncertainty; partly it is due to the use of the global concept of adjustment which as an experimental variable appears to the present writer to be virtually unusable in its present form. In the period covered by the reported researches and in spite of its wide use as a unifying concept, there appears to have been no advance in its definition. This is borne out by a recent report by HAVIGHURST (1955). In his introductory paper to the Bethesda Conference, he reviews the status of the concept in terms which make it fairly clear that the definitions of adjustment are a priori, many, and varied. In an attempt to unify the various views, he says

> "The papers on personality agree in using concepts which mean that a person who is well adjusted is able to cope with a complex world. These concepts are: affective complexity (complexity of emotional reaction to a complex world), tolerance of ambiguity, flexibility, expansion. Indicative of poor adjustment are the concepts of rigidity, simplicity, constriction. None of these papers attempts to get out explicit criteria for good adjustment or successful ageing, yet each one offers some implicit criteria of success".

There is little in the subsequent remarks to

elucidate the problem further.

In the opinion of the present writer, most of the proposed indicators of adjustment, affective complexity, flexibility, expansion, and the rest present several further problems of definition which do not advance us much further. Moreover, when explicit criteria for the concept of adjustment cannot be, or at least, are not, set out, and when the fact that each of several studies offers "implicit criteria" for its definition seems a cause for satisfaction, it is submitted that it would be more productive to approach the problems discussed from a new angle.

(iv)

We come now to the group of studies which is very heterogeneous, since workers of all shades of psychological opinion have contributed, but which is characterised by being devoted entirely or partly to the specific study of retirement.

Mention should first be made of SHELDON'S (1948) by now classic study of the aged in Wolverhampton. One of the findings of this survey was that while 90% of the subjects who were graded "fully normal" in mental health were fully occupied, the percentage occupied declined rapidly with progression through the various degrees of mental health from normal to demented. This, of course, does not indicate that loss of occupation causes mental ill-health; indeed, the relationship is probably the other way round. On the basis of his finding, the men, especially very old men, tended to be either "very good physical specimens or obviously on their last legs", whereas the women appeared to be mainly suffering from various defects. This is regarded as an indication that men tend to die off unless very fit, whereas women tend to have a power of survival. In Sheldon's view this may

be partly due to genetic constitution but "this is certainly only part of the truth", and another important factor, it is suggested, is "the importance of an adequate mental urge for the maintenance of physical health". Women tend to carry on housework, while men experience the shock of retirement. This view will later be used as an hypothesis in a consideration of certain statistical data, but in the meantime it may be pointed out that it is an interpretation only and does not necessarily follow from the data. Some evidence is also given that economic difficulty may be a cause of morbid anxiety among the aged.

MOORE (1947) reports a study of 63 retirements from a variety of industries, and a variety of positions. The number of years since retirement varied greatly among the cases. Fourteen of the group were in their first year of retirement, and one had been retired 20 years. "Only a few had experienced retirement for more than seven years". Comparisons are reported on 47 cases. These were graded on a four-point scale, on the basis of degrees of satisfaction with retirement, viz.

Excellently adjusted	9	(7 of these were voluntarily retired)
Satisfied	24	
Uncertain	5	
Dissatisfied	9	(None of these were voluntarily retired)

The basis of this grading is not made very clear but was apparently done on the basis of an inspection of the schedules. The dissatisfied had retired because of health or institutional reasons. None had retired willingly. The factors influencing voluntary retirement cover a wide range, the most frequent being ill-health. The attitude towards retirement was found to be important. Of those classified as "excellent", 8 out of 9 had looked forward eagerly to the experience. Only one had anticipated it with dread. But in the "dissatisfied" group, eight had approached it with an attitude of

resignation or dread and only one had viewed it with eagerness. The main source of dissatisfaction was economic need. The nine "excellently adjusted" indicated no economic problems. Of the nine "dissatisfied", eight claimed deficient income. The economic factor was also important in regard to the wife's reaction to retirement, and this reaction generally agreed with that of the husband. Whether either reaction was influenced or partly determined by the other is not stated. Activity was a significant factor in "good adjustment". Twenty five of the group were active in unpaid occupations, and eight were regularly employed. All nine of the "excellent" group and 22 of the 24 in the "satisfied" group were active. Most of those idle were found in the "uncertain" and "dissatisfied" groups. There was a general indication of strict economising and budgeting among the subjects, but little indication that they had taken up new hobbies or greatly altered their outlook.

This study makes no comparisons with a similar group of non-retirants. In general the control of the variables is very loose, and in addition, the sample is heterogeneous when one considers its small size. It cannot be regarded as more than a rough indication of the possible influences in retirement of various factors such as economic insecurity, but the major impression one gets from it is of a preservation of the status quo. It seems as though the feelings of dissatisfactions or satisfactions are general and not specific to retirement itself.

MOORE and HAMMER (1947) sent out questionnaires by post to 90 ministers of the Protestant Church. Seventy three were returned completed. Questions asked related to satisfactions in retirement, and the most frequently reported satisfaction was "more freedom and time to do as one wished", with accompanying release from responsibility. The authors note the frequent

stressing of the "freedom" aspects of retirement throughout their subjects' comments. Only four of the ministers suggested positive satisfactions unrelated to their previous professional life. The least satisfying experiences of retirement were "being on the side-lines", "out of the game" and similar feelings. Classifying the respondents on the same basis as in the previous report, it was found that 60 could be classified as "satisfied", and of these 58 were active and busy at something; more than half of the uncertain group were active, while both the ministers in the dissatisfied group were inactive, one because of illness. It thus seems that this professional group kept relatively active in their retirement, and that satisfaction or dissatisfaction was not related to activity in retirement.

A study reported by FRIED (1949) of the attitudes of a group of subjects towards inactivity is noteworthy chiefly because the emphasis is upon the crisis which arises from loss of work, and all the results tend to show a much greater morbid effect of this crisis than do any of the other researches reviewed. This may be because whereas the other researches dealt in terms of metrics, that is scale scores, or percentages, Fried's method is mainly to use case histories and the analysis of these histories is in terms of verbal interpretation. Fried took 36 men and 39 women so selected that there were 39 persons between 50 and 64 years, and 36 persons between 65 and 80 years. No information is given as to the population from which the subjects were drawn but it seems likely from the context that they were patients at the Allen Memorial Institute of Psychiatry (McGill University). If so, this would account for the rather drastic effects of unemployment which she found. In any case, the failure to give information on this point is a serious omission in a research report. All subjects were given intensive interviews and Rorschach records were obtained. All economic groups were represented in the approximate proportions as found in the American population - though in view of the small

size of the sample this does not appear to carry much weight. Of Fried's subjects, 24 were already retired and of these 30.3% (N=10) had reacted to retirement with satisfaction, 15.2% (N=5) had made an ambivalent reaction, 36.3% (N=12) had reacted with depression, and 18.2% (N=6) with serious illness. The discrepancy between number of subjects retired, and number of effects is, of course, because more than one effect was mentioned by some subjects. There is some doubt whether these "effects" of retirement really were effects or whether they simply occurred at about the time of retirement, and may possibly have contributed to it, but a close reading of Fried's results inclines one to give her the benefit of the doubt. For example, she reports that detrimental effects were more frequently noted among the unprepared group - though satisfaction with retirement was reported by 35% of the unprepared group. A greater difficulty is that one would like to know much more about her judgements of "depression", and "serious illness", since it appears that on the face of it, retirement was a much more catastrophic event for her subjects than for nearly all the subjects of other researches.

Fried attempts to give some dynamic basis to the data. She says that, apart from people who were physically exhausted by their work, unoccupied individuals in the lower class category did not like to be inactive and several were so acutely disturbed by the enforced inactivity that the desire to work again attained the nature of an obsession. She says that the urge to engage again in some regular activity did not appear to be motivated primarily by economic necessity. Only three subjects in the lower class bracket wished primarily for work because of economic considerations. The majority who sought occupation had a measure of self-earned security, while on the other hand all of those who were satisfied with their inactivity lived rather scantily on outside support. The case histories "made it clear that the chief motivation for the frequently obsessive demand for work is the need to

maintain self-esteem, to escape from morbid self-preoccupation, and to cope with inner restlessness". These findings certainly appear to be contrary to a good deal of the evidence regarding the financial incentive to remain at work, though the repeated variation between the relative desire for work among those who were more secure financially, as against among those who were content to live on meagre outside support, may indicate a difference in social class attitudes adumbrated in the research on the various professional groups reviewed above. Fried maintains that, although economic compensation appears frequently not to be the chief motivating force in the search for work, it is important to the lower income groups for psychological reasons to be paid for their activities. In order to promote self-esteem "an occupation according to the mores of their class, should bring in monetary reward".

This investigation of Fried's indicates various important effects of retirement, but the sample was small, and several methodological defects are to be noted. Thus no proper comparisons are made with any kind of control group, and the evaluation throughout appears to be subjective. The counter-argument that this form of interpretation is more meaningful than allotting points of some supposed scale of measurement leads into an argument on scientific method and will not be dealt with here.

PRESSEY and SIMCOE (1950) got students to write up case studies of "successful" and "problem" old people on a basis of one of each kind per student. Only the data for male subjects will be discussed. Two hundred and fifteen cases of successful old men were obtained, and 109 problem cases. The median age was 70; no further details of age breakdown are given. The distribution of cases by occupational status was as follows:-

	Successful	Problem
	Percentage	
Gainfully Occupied	41	28
Doing Useful Work	53	18
Idle	4	51

In addition, the successful people were much more likely to have active social relationships, had many more abilities such as music, gardening, etc, and many and diverse interests. In each of these cases "many more" refers to a difference between successful and problem old people of 40% or more.

In assessing this study one needs to draw attention to three considerations. Firstly, each pair of case studies was written up by a different interviewer and differences in reportage would arise. Secondly, the definition of "problem" and "successful" old people does not seem to have been accurate. For example, in the definition of a "successful" old person, it was "essential that this person be generally regarded and indeed admired as a fine old person by those who knew him". This brings in group stereotypes, and an admired old person may be one who keeps working, regardless of his own feelings. Finally, we do not know whether the working people were younger than the idle ones. This is important because problem cases are more likely to arise among older people. Altogether this method of collecting data does not seem very successful, and much more rigour is to be desired.

The available literature on investigations of psycho-pathological cases in old age has been reviewed by GRANICK (1950). On the basis of this literature, he came to the conclusion that the outstanding factor in personality breakdown appeared to be insecurity. Further, personality disorganisation in the involutional period and old age seem to be related in large measure to previous poor social and emotional adjustment. Problems of adjustment to old age which may precipitate emotional breakdowns "include particularly inability to support one's family, failure to meet communal and social obligations, lack of economic security, and inadequate biologic functioning". Several studies of admittedly pathological patients, which were reviewed, though not critically, by GRANICK came to the conclusion that retirement was a predisposing factor in mental illness in old age.

In a survey in two communities in Florida (GRANICK 1952), a sampling of every fifth house was carried out and all persons aged 60 and over in these houses asked to co-operate. Refusals were at about the usual level for this kind of research with 9.8% refusals in one community and 17.4% in the other. Only about 5% of the respondents were still carrying on their regular occupations, though a good many more had had some full or part-time employment since retirement. When the unemployed subjects were asked whether they would like to find some suitable kind of work, 65% replied "No". On the other hand, in response to the question, "Do you think it is best for older people to continue working at least part-time even after retirement age?", more than 75% replied "Yes". It seems, therefore, in Granick's words "that the subjects believed that work was good for the other fellow's soul". Subjects were asked what they considered was a suitable age for retirement, and 45% of one community sample, and 35% of the other (of slightly higher socio-economic group) replied that one should never retire. The other subjects suggested 60 or 65 as a suitable age. It thus appears that there was a lack of social pressure towards continued employment in these communities, and this is in accordance with the apparent lack of tensions in these groups. Although about half of the subjects thought that later life was not entirely free from worry, the great majority gave indications of positive attitudes to life. Thus more than 75% thought their lives had been moderately happy or very happy while only about 2% thought their lives had been unhappy. Unfortunately, we do not have any control group for this study to compare retired with non-retired subjects. It also appears that these two communities were two of the "retirement communities" apparently very common in Florida, and almost certainly the groups investigated represent a sampling of an already highly selected population. This presumably accounts to a large extent for the absence of tensions regarding retirement.

Some residents in a home for the aged were investigated by BLAKE (1952). The subjects were 20 males ranging in age from 70 to 93 and 20 females aged between 60 and 85. The physical health of these subjects was "above average considering their age". Personal interviews were carried out over a period of seven months and each person was interviewed several times. The three factors which seemed to be important for successful adjustment to age were (1) hard work over long hours, (2) not more than two or three social activities, (3) a religion-oriented life involving organised religion. These findings are in general agreement with those of several other investigations, although the amount of work required to produce beneficial effects is not usually found to be so extreme. However, the report of the investigation is very brief, and one cannot suggest anything in the method which might account for this difference.

Although not concerned directly with retirement, a research reported by RICHARDSON (1953) is interesting because it examines the factors involved in the decision of older workers in heavy industry to change their job to lighter work. It seems reasonable to suppose that much the same factors will be at work in the decision of men to leave work altogether. Indeed, Dr. Richardson found that the proportion of men in good health declines to the early 60's and thereafter rises in the 65-69 age group. This appears to be due to the departure of the less fit men from the labour force when they reach pension age. Material to support this view was obtained from the interviews since men in less good health who had not yet reached retiring age said they would keep at work if possible until qualifying for pension at age 65.

The subjects in this investigation were men aged 50 or more and included 66 men who worked in a small foundry, 223 in a large foundry and 200 in a coal mine. Moves to less heavy work were

frequent, and it seemed that the move actually took place as a result of a "trigger-factor", such as illness, injury, redundancy, or a suggestion from doctor, family, or even workmates. Prior to the occurrence of this trigger-factor, there was a period of mounting awareness of the demands of heavy work. The implication of this for adjustment to retirement seems to be that some apparently sudden retirement are not so sudden as might appear, and that some informal preparation for it may already have taken place.

The influence of social norms of conduct in retirement is well shown in a small research by HOYT (1953). This author surveyed one of the "trailer parks" so popular with American retirees. Of 177 persons asked, 155 (87.6%) said they preferred to "live in a community such as this where everyone is retired", rather than in some other where most people are working. Living in a working community was preferred by seven people (3.9%) and 15 (8.5%) were undecided. The chief reasons given by those who preferred the retired community were:-

Association (sociability, more and better activities, not so lonesome)	74	(48.4%)
Mutuality (don't feel out of place, all same age, same status and interests, mutual aid)	65	(42.5%)
Less disturbance (absence of children and people going to work)	14	(9.2%)

Over 82% of the residents interviewed said they got all or most of their recreation within the park. The author points out that "since all residents are greatly interested in recreation and leisure pursuits, these activities tend to be more highly sanctioned than would be likely to be the case in a community in which the predominant interest centred around economic activity. To a certain extent, however,

preoccupation with leisure activities such as bingo and dancing may be regarded by outsiders as adolescent and unbecoming to persons in this age group. It reflects the different code of conduct which develops in such a self contained community, the needs and interests of whose residents are not shared with the outside community". Although not a very penetrating study, this research does indicate the way in which social norms may affect the behaviour and feelings of subjects, a factor which we have seen may indirectly affect the results of researches which have not take this into account.

Using the usual method of postal questionnaires, HIBBARD and LEE (1954) obtained replies from 920 retired Presbyterian ministers and 1,290 widows of former pensioners of the Church. This represented a respondent rate of 57.3% and 80.4% respectively. No information is given about the ways in which the respondents may differ from the non-respondents. Although retirement on pension was possible at age 65, the average retiring age of these ministers was 68.3 years. Asked how they approached retirement, 64% replied "with mixed feelings", 20% "with happiness", 13% "with misgivings", and 3% "with indifference". There appeared to have been little planning for retirement in most cases. Of the total reasons given for retirement, the largest category was "declining strength", which accounted for 42% of the cases. Twenty six per cent felt their work at the Church was finished.

The best-liked aspects of retirement, as measured by the percentage of the total aspects mentioned, were those involving "freedom from ...." which had been remarked on by MOORE and HAMMER (op cit). Thus, of the total under this heading, 85% referred to freedom from responsibility or freedom from routine. The causes of "real concern" were mentioned as follows:-

Loss of income	33%
Decreased strength	33%
Health problems	28%
Loss of being needed	21%
Loss of hearing	20%
Feel forgotten and neglected	10%

Ninety four per cent of the ministers thought they were continuing to lead a useful life.

This study shows the usual methodological shortcomings; a doubtful method of approach to the subjects; a failure to supply data on a control group in a case where it would appea to be very necessary; and perhaps most important, a very loose use of the concept of retirement. In common with several others of the studies quoted, the "retired" group is found to include some men who are working part time, and some who are working full time. In this particular case, the "retired" men have not even the fact of leaving the major employment of their lives, since some still do continue to preach, though only on a part time basis. Finally, it must be said that the method of simply "counting heads" and giving results in percentages has a major deficiency in that it does not admit of any indication of intensity with which opinions are held. No mention has been made of the widows' views about their husbands since in my opinion this data is likely to be very unreliable. As far as the particular problem of the retirement impact theory is concerned, this investigation suggests that health, loss of income, and some of the social factors are important in retirement, but we cannot be sure of this for the reasons stated above.

Differential stress among groups of different occupational status is reported briefly

by FANSHEL, KUTNER and LANGNER (1954). A random sample of 500 aged residents of an area in New York City was taken, and personal interviews carried out. A mental health index was developed from questions on the interview schedules. The authors report that "those who were employed seemed to be under the least stress while the retired group had slightly more distress and the unemployed group even more so. One possible explanation of this would be that those for whom the question of employability seems resolved would be under less tension than those for whom there is yet uncertainty".

BUSSE et al (1954 b) carried out an investigation as part of a general research programme which is much better controlled both in its technique, and its conclusions from the data, than most of the other researches we have been considering. The subjects used were divided into five groups, though for present purposes we are mainly concerned with three of these. These were

GROUP "A" - unemployed, considered to be indigent or semi-indigent and recruited as volunteers from the faculties of a University college.
N = 100, 52 women and 48 men. Average age = 70.9 years.

GROUP "B" - retired persons making a satisfactory adjustment in the community. All of higher financial status than those placed in Group "A".
N = 50. Average age = 72 years.
(Data was not all based on this complete series. The smallest group used for statistical purposes was 30).

GROUP "C" - persons working past usual age of retirement.
N = 40. Average age slightly less than 72 years.

The authors refer to a previous paper (BUSSE et al 1954 a), in which they found that amongst other things, "subjects who continue to work after the usual age of retirement have a higher intellectual capacity than those who do not, and their E.E.G. records indicate that, physiologically, their brains are functioning in a manner which more closely resembles the records of younger individuals". As regards these results, we have to consider the inter-relations of the different variables. Thus intellectual capacity may be a selective factor in determining who retires. The E.E.G. data needs closer study but in view of the lack of precision which appears to surround this technique and in view of the lack of knowledge of the physiological basis of the wave forms, one prefers to suspend judgement. It may be that again, E.E.G., as a record of brain functioning, indicates some selective factor among subjects, but it appears to be implied by these authors that it represents a response to environmental influences stemming from retirement.

In the paper under discussion, the authors consider the frequency of depressive episodes. These episodes were those which occurred at least once a month with a duration varying from "a portion of an hour to a few days". The subjects reported that these episodes had not occurred in their younger years, and in 85% of the cases they were aware of a precipitating factor, "usually a specific event which would initiate a train of thought. Hence these episodes are termed "reactive depressions". Group "A" revealed 48% of subjects experiencing such episodes, Group "B" 44%, and Group "C" 25%. The authors comment that "although this would make it appear that working alone plays some vital role in preventing or increasing number of depressive episodes, it is possible that there is an underlying difference between these persons in the various groups, which permits some persons to continue to work, as well as to decrease the number of depressions". One

such difference would appear to be general health, which was not controlled.

An attempt was made to determine the amount of time each subject expended in participating in planned creative and recreational activities and work, with work defined as "some endeavour entered into for financial gain". If an individual had less than four hours of his day occupied by planned activities, he was arbitrarily considered in the 'doubtful' category as regards work. In Group "A" 20% of the subjects reached a satisfactory level, 67% were doubtful, and 13% seemed to have nothing to do to fill in their time. In Group "B", 24% appeared satisfactory, 63% were doubtful, 10% had no useful activities. The authors say, "It is our impression that those persons who have no planned activity or those who devote their time to "receiving" activities (i.e.passive such as listening to radio, etc) are much more prone to depressive episodes than those who, through their own efforts, can achieve satisfaction. The ability to participate in creative activities is very much influenced by the education of the subject. Education is important in developing diversified interests and abilities, which are particularly useful as resources in old age". But here again, we do not know whether the assumed dependent variable, number of depressive episodes, is not in fact the independent variable which is important in determining low level of activities. It would seem that in the opinion of these authors the latter is the case, since they say "we believe that adequacy of adjustment in the elderly is largely determined by strength and weaknesses developed much earlier in life".

This study approaches more closely the idea of scientific research in some respects than in others. The techniques used are more sophisticated; the controls, such as the use of different groups which appear to be relatively

homogeneous within themselves, are reasonable; and the concepts used are defined quite satisfactorily. But the design of the research is such that the prime variable cannot be elucidated, and it is disappointing that results have to be presented in terms of "impressions" and "beliefs" without further illumination. The general indication is that personality prior to retirement is most important in determining reaction to it.

The anthropological approach was used by TOWNSEND (1955) and his associates to investigate kinship and various problems in old age. His investigation was confined to a London borough, and "a much higher proportion of all the older men interviewed than of the population at large (were) or (had) recently been in occupations which are classifiable as Social Class V". The subjects were 200 old people drawn randomly from doctors' lists. Interviews lasting about two hours were carried out and further interviews were carried out a second and third time. The men or the husbands of the women interviewed were divided into three groups, still at work (N = 26), retired up to four years previously (N = 15), retired more than four years previously (N = 21). Only a selection of cases is reported by Townsend, but assuming these to be representative of his total sample, the effect of retirement on the group appear to have been marked. The difficulties to which Mr. Townsend draws attention are several. With retirement, a man is thrown back on his family. Old friendships cannot be maintained because he is too poor to treat his chums and he becomes dependent on his wife and children for pocket money. He finds difficulty in filling in his time, and often experiences a sense of purposelessness and shame. "Family relationships now become all important but they cannot give him back the skills, experiences, and associations of youth and middle age". About two thirds of the men who were no longer at work had retired because of ill-health, disability, or strain, and about one fifth partly

because of an employer's action but mainly because of ill-health. The average age at retirement was 67½, though this conceals wide differences since some men retired before 60 and some after 75. The average age of the working men was 68½. Mr. Townsend concludes that retirement has a drastic effect on the man concerned, and suggests that this may go some way towards explaining Dr. Sheldon's (op cit) finding that whereas old men tend to be either in very good or very poor health, a much higher proportion of women tend to be subnormal in health but have a more tenacious hold on life.

Though it is all too easy to place interpretations on such data as this, it seems to the present writer that the evidence of this paper suggests that retirement impact is mediated by economic factors, rather than directly from retirement as such. More importantly, it seems a pity that again the factor of age should be allowed such a free run. With retired men ranging in age from below 60 to over 75, there is almost certain to be wide variation in the data and since the results are not analysed in even an elementary statistical way, the possibility of biasses in interpretation become marked. Thus, unless one knows <u>all</u> the data, one cannot be sure how typical the quoted cases are, or in what sense they are typical.

As part of a well-documented study of suicide in London, SAINSBURY (1955) examined case records of 409 suicides reported to the Coroner for North London during a three year period. It was found that unemployment was either a primary or secondary factor in 73% of the cases where unemployed men had committed suicide. In 12 cases in this group, the factor involved was "Lack of employment and occupational interest in those over 65", and in a further five cases the same factor was involved except that retirement had

taken place prior to age 65. Unfortunately it is not possible to tell from Dr. Sainsbury's publication how many of the 409 cases in the total sample were aged over 65, and thus to assess as a rate how frequently this factor was operative.

Considering further the relation of age and suicide, Dr. Sainsbury remarks that his own study agrees with previous work in indicating that "loneliness and a lack of occupation appear to be a more urgent problem among the aged than is poverty". It appears that social factors are as important as biological ones in accounting for the high rate of suicide amongst the aged. "During the war, when elderly men were able to obtain useful employment, the suicide rate among them fell more than that of younger men".

In reviewing this work, it must be borne in mind that the sample examined by Dr. Sainsbury was not a random sample of the population, since suicide had occurred in all cases. Hence the cases where suicide in old age occurred and where retirement was a factor, would represent only a very small proportion of the population as a whole. Moreover, this data itself is derived from reports of inquests, and must involve some degree of interpretation. But it seems that there is at least some effect of retirement, and presumably the number of cases where suicide occurred represent only the extreme end of a continuum of stress which in other cases did not reach this extreme pitch.

PEMBERTON (1955) investigated the health of elderly people living at home. He developed a disability scoring system, which showed the expected trends, e.g. an increase as the economic scale was descended, and increased score with age, but "rather surprisingly the mean scores of those

men who had retired did not differ significantly from those still working at similar ages. This suggests that retirement usually occurs for other reasons than ill-health". It also suggests that, among those examined, the relation between retirement and morbidity is not close. The subjects were 192 men and 284 women, and were either living alone, or with husband and wife. They were all people who were willing to co-operate, so it is possible that the people affected by retirement impact were not seen, or were under-represented in the sample.

In a follow-up study of 200 patients over 60 years of age who had been hospitalized in a private psychiatric sanatorium, HIMLER (1955) found that the precipitating factors were "acute family or marital stress" in 49.5% of the cases, but factors such as loss of status, enforced retirement, and feelings of social isolation occurred as secondary in approximately 14% of the cases. In this latter case there were no significant differences between males and females, or between favourable and unfavourable outcome. Economic security was a factor in 18% of the total cases. These cases were drawn from an upper class section of society, and hence any effect of retirement might be softened. Moreover, the sample is composed only of people who were actually hospitalized. But making these two allowances, retirement seemed to have had very little effect.

A research to evaluate the assumption that ageing in rural areas involves few of the problems of adjustment found in urban areas was carried out by TAIETZ, STREIB, and BARRON (1956). They interviewed 249 out of a total of an initial random sample of 294 men (85%) of 60 years of age and over living in six rural counties of New York State. A feature of this study is that some pains were taken to define the concept of retirement being used.

Thus the term "active" was used to denote persons actively engaged in occupations either as self-employed or as employees. The term "retired" referred to either complete cessation of work, or "drastically reduced participation" in the case of self-employed men, so that "by self-definition as well as by the definition of others" they were retired. The terms active and retired refer to occupational roles and not to social functions, etc. Of the men, 154 (62%) were still actively employed, and 95 (38%) had retired. The median age of the active members of the sample was 67 years, and that of the retired 73 years. There was evidence of economic stringency among the retired men, and 54% of them had been compelled to cut down on expenses, notably in respect of the three necessities of food, clothing and shelter. From the financial point of view, the retired non-farmers in the sample twice as frequently reported insufficient income, as did the farm operators, and they were also less well adjusted as indicated by their answers to several questions. Thus, while 9% of retired farm operators (N = 23) thought that "retirement is bad", 21% of the retired non-farm operators (N = 70) thought so. Twenty three per cent of the retired farm operators thought that stopping work had affected their physical health for the worse, whereas 29% of the retired non-farmers thought so. Nine per cent of the retired farm operators had found it difficult to adjust to not working as against 17% of the retired non-farmers, and the respective percentages of these two groups who said they had felt in worse spirits since retirement was 13% and 29%. Comparisons were made between abrupt and gradual retirement, on the widely-held assumption that the latter would show up much better. However, this was not the case. Those subjects who had undergone an abrupt retirement more frequently said they had difficulty in keeping occupied, that they felt in worse spirits since retirement and that their health was worse since retirement. But the subjects who had undergone gradual retirement more frequently said that retirement is a bad thing, that working turned out to be worse for their health, and that it was very difficult to adjust to retirement. These

differences can probably be reconciled to some extent if, as seems likely, the gradual retirees are also the retired farm operators as against the retired non-farmers. Then the differences would tend to be resolved in terms of the differences in outlook prevailing in the two groups.

The conclusion from this research then appears to be that in the sample examined there was a marked degree of disturbance due to retirement, according to the subjects' reports. The methodological remarks one might make have already been brought out in relation to similar pieces of research discussed above, and no further comment will be made here.

The morale of the retired was investigated by STRAIB (1946) by analysis of data derived from a sample drawn from 37 urban areas of the U.S.A. In this sample there were 936 males (77% of the total) and it is with these that the report is concerned. A preliminary analysis of the material suggested that three major variables formed a complex affecting morale; these were health, socio-economic status, and work status. Level of health was determined by the answers to three questions regarding complaints of health problems, time spent in bed through illness, and the taking of medicine. Socio-economic status was determined by interviewer rating on a five-point scale. For the purposes of the analysis, these ratings were combined into two major groupings of high socio-economic status (41% of the sample), and low socio-economic status (59% of the sample). In contrast to many of the other researches we have considered, work status was carefully defined. "Those persons who said they were employed at their regular occupation, or employed at something else, are considered to be "employed" in this paper; together they constituted 49% of the sample. Those persons who said they were not employed are defined as "retired" for the purposes of the present analysis (51% of the sample)". The people in the retired category were also asked

"Do you consider yourself retired?" Sixty replied "No" and 443 "Yes", but a comparison of these two groups on various "crucial variables" (not stated) indicated that there was no significant difference between these two groups. This, in itself, is an interesting finding, in view of the postulated tensions arising from a factual, but not recognised retirement. Morale was defined in terms of three major components; goal-centredness, satisfaction with present life situation, and reaction to danger or adversity. These components were themselves assessed by the answers to certain questions such as "On the whole how satisfied are you with your way of life today?" It will thus be seen that some degree of attention was paid to the definition of the concepts involved in the research.

The data was analysed by means of the simple yet thorough technique of multi-variate analysis. It was found that work status and socio-economic status "affect the morale of the aged independently and to about an equal extent. When the two factors are found in combination they result in the most devastating effect, for over two out of three among those persons who are both poor and retired have low morale. The relationship between retirement and morale also persists when health is held constant. Work status and health are related independently to morale. Further, the morale of people in good health is more affected by their work status than is that of persons in poor health. When all three variables are analysed together, a cumulative effect is found, as shown in the table."

TABLE 11 - Morale by Work Status, Health and Socio-Economic Status

Work Status	Health	S-E Status	N	Per Cent With High Morale
Retired	Poor	Low	141	29
Retired	Poor	High	51	29
Employed	Poor	Low	52	31
Retired	Good	Low	167	33
Employed	Poor	High	49	51
Employed	Good	Low	168	61
Retired	Good	High	97	63
Employed	Good	High	172	75

(Data from Streib op cit, p275, Table 6)

It will be seen from this table that with all three factors detrimental -assuming retirement justifies this term - the per cent having high morale was lowest at 29%, and that the progression to a high degree of socio-economic status made no difference to this. Employment made a slight difference, but not until we have two positive components, employment and high socio-economic status, do we find any group having over half with high morale. But, as the author points out, ".... perhaps the most interesting finding - because it contradicts commonly held notions - is the fact that a person who is retired but has good health and high socio-economic status is more likely to have high morale than a person who is employed but lacks either good health or high income. Retirement is not a period of frustration, maladjustment, and cynicism for all retirants, as is claimed by some professionals and laymen .... the common notion that retirement leads to low morale is not supported by these data, for other factors can overcome the impact of being retired. Those people who regard occupational retirement as the bogey of old age are not considering that retirement is only a part of a complex of factors which affect the older person".

It is significant that this should be the conclusion of one of the few pieces of work to make a real attempt to examine rigorously the factors of the complex around retirement. It is not suggested that this research is an ideal type for the examination of retirement impact. For one thing, counting heads is not measurement. The fact that 29% of the subjects fell into a particular group tells us nothing about the strengths of the various factors and how they varied one with another. This has been mentioned before. Moreover, age and length of time retired or continuing in work past retiring age was not controlled. We only know that the subjects were all over 60 years of age. These are variables which in the last analysis obviously must be controlled, but within the limits of the data, Streib's careful analysis of his results marks a great step forward.

Most recently, at the time of writing, PEARSON (1957 a and b) has published two papers reporting an investigation of 220 men from a large firm whose work histories were studied. One hundred and seventy one men replied to the questionnaire. Economic hardship or general reduction in standards of living, or both, was the reason for carrying on work given by 117 (68%) of the men. "Much less frequently" (no figures are given) fears of old age, loneliness and boredom were mentioned. After two years, [illegible] 74 of the 220 men had retired and were available for interview. All were under 68 and had been retired less than three years. Twelve men were found to be in regular or casual work. All but one of these 12 said they were working primarily to supplement their pensions. Some (no figures given) also mentioned that they missed the routine of going out to work and had felt bored and miserable at home. Of 62 men not employed, 28 (45%) said they were not able or did not want to work, and 34 (56%) said they would like to take a job. "The majority" (no figures given) of the 34 gave the need or desire for extra money

as the main reason but "most" of them also mentioned loneliness and boredom at home, especially during the Winter months. Only 10 men said their physical health had deteriorated since retirement and 36 (including 17 with disabilities) said their health had improved. Of this 10, half said their chronic disabilities were getting worse and half said they were feeling generally ill and tired, four suggesting that retirement allowed them more time to think and worry about their complaints. The conclusion is that "the most noticeable characteristic revealed by the group of men interviewed after retirement was their rather passive acceptance of their new way of life. Before retirement they accepted the work situation and wanted to continue in it as long as they felt physically able to stand the strain; after retirement they settled down more or less contentedly".

The most obvious criticism of this research is that one expects, in a research report, that figures will be given to support all statements. There are times when an investigator wants to record a general impression but major conclusions are not well supported by general statements. The report is fairly discursive in character and there is a lack of control over the variables being discussed. For example, we do not know how long each of the men had been retired. If it is true that settlement into retirement is fairly quickly accomplished - though Mrs. Pearson would probably not agree that this is the case - then it is not sufficient to know that the men had all been retired less than three years. Further, we do not know much about these men prior to retirement. Had the five men who complained of feeling ill and tired exhibited neurotic tendencies prior to retirement? Was the passive acceptance of retirement an example of a fairly passive orientation whether working or not? In sum, then, while interesting descriptively, this research does not tell us much analytically about the effect of retirement.

(v)

There is finally a body of literature which deals with the relation between loss of work and general well-being. This does not necessarily involve retirement since all except one of the studies to be referred to deal with unemployment. It seems important, however, considering the nature of the retirement impact hypothesis, to examine, even if only briefly, the meaning of 'work' in our society, as revealed in the following studies.

BAKKE (1938), in his famous study of the unemployed man, drew attention to the loss of status which comes with loss of employment, through loss of producers' roles. Further "practically every man who had a family showed evidences of the blow his self-confidence had suffered from the fact that the traditional head of the family was not able to perform his normal function". Most interesting, perhaps, was the importance of group pressures in stimulating a man to continue his search for work. ".... the constant repetition of the fear lest their mates should think that there was something wrong with them testified to the power which the opinion of the group has in determining the desirability of a course of action. The pressure of the group in stimulating a man to continues search for work was also evidenced in the statement which trade unionists, in particular, made about what was expected of them. Men do care what their associates think of them".

The value of work as a creative activity, as a source of income, and as a means of making social contacts is further documented by the report of the PILGRIM TRUST (1938). This report is better documented than Bakke's work, especially in its presentation of age breakdowns in the material. But the conclusions are much the same, and again there is an emphasis on group pressures

to work. The investigation was carried out in areas of high and low unemployment. In low unemployment areas to be unemployed was a cause of shame and inferiority. In a high unemployment area where large numbers of one's associates may also be unemployed, there is a feeling of cohesiveness and the effects are not so disastrous. Specifically on the point of retirement, it is noted that "we are some way towards the creation of a new "leisured" group of the old men who have been compulsorily retired from industry and yet are prepared to accept that as an opportunity to live as pleasant a life as their somewhat straitened circumstances will allow".

More recently and more systematically the meaning of work and retirement has been investigated by FRIEDMAN and HAVIGHURST (1954). They examined the work and retirement attitudes of four groups of workers still at work. These groups were:- a group of steelworkers from one company (N = 138); a group of coal miners from four large mining companies (N = 186); a group of retail sales persons from one store (N = 37 males, 37 females); and a group of skilled craftsmen approached by postal questionnaire (N = 172). Besides money, four extra-economic satisfactions were found to be active.

i social participation
ii interesting experiences and creative self-expression
iii routinisation of life activity
iv self respect and the respect of others.

The satisfactions in work were therefore found to be much the same as were found by Bakke and the Pilgrim Trust. However, when retirement is considered, the investigators summarise their findings thus (p186):-

"The temptation is strong to imply that, because the worker has found added significance in his job, depriving him of it through compulsory

retirement - even with an adequate income - would represent a grave social injustice. No such case can be made in any categorical fashion on the basis of our findings.+ We have found workers in all groups who stressed the extra-economic meaning of work who indicated that they would welcome retirement, or having already retired, were satisfied with their lot. Nor can we assume that retirement need be an unsatisfactory experience for many of the workers who feared that they would be unable, or actually were unable, to replace in retirement the life-meanings and satisfactions which they had found in work. But, if we assume a growing tendency toward retirement, the problem becomes one of finding satisfactory substitutes for the work experience, bearing in mind the possibility that there may be in any occupational group (and probably more in the higher skill and status occupations) a hard core of workers for whom there can be no adequate substitute for the job".

The specific implications of this literature for the study of retirement are two. Firstly, it is difficult to generalise from the situation surrounding pre-retirement unemployment to that surrounding post-retirement unemployment. Secondly, the main reason for this difficulty is the effect of social pressures. Thus where social attitudes are work orientated, guilt and inferiority feelings are likely to arise in those without work. Whereas where the social attitudes are permissive in respect of non-working, those who are not working are likely to be able to adjust at least without too much tension. The brief discussion here is regarded as a partial justification for the present writer's insistence on the importance of the social climate in evaluating the effects of retirement. As the

+ Italics theirs

Pilgrim Trust report hints, once it is accepted that older men will cease to work, there may well be an acceptance on the part of the men themselves. It is because of this difference between the context of unemployment and that of retirement that the references included in this section are not included in the summary of the literature with which this chapter began. Perhaps one of our greatest difficulties today is that we are doing our best to create a system of pressures to keep older people at work and this may create at least as much maladjustment as continued work is reputed to avoid.

CHAPTER FOUR

THE RESEARCH DESIGN AND ORGANISATION

In this chapter the design and organisation of the present research are discussed. This discussion falls naturally under four heads.

A. The Research Design
B. The Measuring Instruments
C. The Subjects
D. The Detailed Administration.

A. The Research Design

In Chapter Three some of the literature relating to retirement was reviewed criticially, and attention drawn to shortcomings in method which might account for the continued obscurities surrounding the effect of retirement in spite of the large number of studies which have attempted to investigate it.

The deficiencies of the survey method have been outlined. Suffice it here to say that unless some sort of controlled experimental design is used, we cannot elucidate the interactions of the variables involved, nor can we state which is the independent and which the dependent variable. The usual procedure is to carry out a study, obtain various correlations, and then introduce some explanatory principle which is consistent with them. This is then regarded as a test of this principle or hypothesis. Put like this, it is clear that this this ex post introduction of the hypothesis does not represent a proper procedure, but nevertheless it is a procedure which has been the rule rather than the exception in work in the field of ageing.

It is felt, then, that the cross-sectional type of survey is not suitable for a test of the retirement impact hypothesis. In a cross-sectional sample one's subjects are of varying ages, have been retired varying lengths of time, and perhaps worst of all, may represent a selected group in that those who have responded to retirement with death will be absent from the sample, and therefore the effects of retirement will be under-rated. Hence, some attempt to obtain data on trends within retirement is necessary.

In principle, a rigorous test of the retirement impact hypothesis, does not present great difficulty. It is in the practical execution of a suitable experimental design that the difficulties lie, and this is presumably what has discouraged previous investigators. The two main requirements of this experimental design are

(a) · a longitudinal research design involving follow-up over a period immediately subsequent to retirement,

(b) a comparable group who do not retire, to provide a "control".

The use of the term "control group" is perhaps to be avoided in social science. It cannot be used with the same meaning as when the subjects of the research are animals, since clearly animal populations are subject to a much greater degree of control of breeding, environment, and feeding. However, what is important is that the "control group" in the social science experiment should not have experienced the experimental variable which the experimental group has, and further that there should be no systematic bias in the selection of either of the two groups. If the second condition holds, then while there may be several factors which in the strict sense of the animal experiment are not controlled, it may be expected that these will tend to be randomly distributed within the two groups and therefore not exert a systematic influence on the operation of the independent variable. This statement is similar

to that of FISHER (1949) regarding "randomisation" of the subjects. The ideal type of situation would be one where subjects were paired on known variables, and then two groups constructed for 'experimental' and 'control' by assigning each pair of individuals to the two groups in such a way that any individual has an equal chance of being placed in either group.

Now it must be confessed that it is impossible to set up an experimental design to test the retirement impact hypothesis which follows this ideal type of design. Obviously we cannot assign our subjects to two groups randomly and then determine that all the subjects in one group shall retire, while all those in another shall carry on working. Nor can we assume that insofar as retirement occurs, it will occur randomly of itself. We know it does not. For example, the men who retire are more likely to be in poor health, or feeling the strain of work to such an extent that they leave it (e.g. MINISTRY of PENSIONS and NATIONAL INSURANCE 1954). They will thus represent extreme groups rather than the mass of the retiring population.

One way round this objection would seem to be to take as the men who experience retirement, a sample of men who come under compulsory retirement schemes. Such a sample would certainly be more heterogeneous with respect to health. It would not necessarily be homogeneous with respect to income since compulsory retirement is more likely to carry with it superannuation benefits, though by sampling, men retiring with and without benefits under compulsory schemes, this difficulty could be overcome. But a major objection to this approach is that compulsory retirement itself might produce influences which would affect retirement impact, and in this respect the sample would be non-random. Thus a disproportionate number of healthy men compulsorily retired might react with frustration and become maladjusted. Provided one were careful

to limit one's conclusions to the "compulsory retirement" situation, this would not matter, since the results obtained, by comparison with the group which carried on working, would represent a test of the retirement impact hypothesis with respect to this situation. It would then be necessary to test this hypothesis in other retirement situations. This approach would have the merit of delimiting the research area with a consequent gain in the definition of the problem and of the results. Accordingly, this was the initial approach to the problem in the present research.

The initial research design was intended to make use of subjects retiring under schemes with fixed retirement ages, and subjects from similar types of employment (in terms of nature of job, method of payment, etc) who are not involved in such arrangements. These subjects would, it was hoped, be obtained through firms in the neighbourhood, and would be selected from skilled and semi-skilled grades only, in order to control more precisely the research situation. The resultant loss in the applicability of the results could be overcome by further replications of the experiment with different grades of workers. The subjects would be contacted just prior to retirement, and followed up over a period of retirement to examine what changes took place as a result of, or at least subsequent to, retirement. In this way observations could be made of any changes, virtually as they were taking place, and the shortcomings of the cross-sectional survey method avoided.

This theoretically feasible experimental design foundered on the rocks of impracticability. It relied upon the firms being willing to supply the names of men approaching retirement. Although some firms could be found who were willing to do this, the very small numbers of employees involved was not sufficient to provide a sample. Thus in one

firm which employed about one thousand workers, only four were known to be about to retire during a period of some months. In the city as a whole very few firms in fact enforced a fixed retiring age, and as soon as the possibility of getting a sample under these conditions had disappeared, the problem of non-random retirement which has been discussed above appeared again.

Accordingly, it was decided to turn to a random sample of the city of Edinburgh population. The problem here was to contact subjects who would fall into the requisite categories of retired and non-retired. Obviously, initially nothing is known about the subjects one contacts under these conditions, and some wastage of time is inevitable. Furthermore, one needs to have some special sampling frame since the use of such a sampling frame as the Electoral Register is to inefficient when /is looking for /one members of a particular age group. Fortunately the author was at the time carrying out a survey of the elderly in the city of Edinburgh under the general direction of Dr. Cecil Gordon and for this purpose, a list of all people in this population over the age of 60 had been compiled together with their ages and addresses - a total of some 70,000 names (GORDON, THOMPSON and EMERSON 1957). This sampling frame was again used in the present research, the sample being described in more detail later.

The decision to use a random sample of the population as the basis for this research brought with it certain disadvantages and certain advantages. The important theoretical disadvantage was that there was bound to be some loss of control over the experiment; all classes of the community, all job, all types of retirement would be sampled. Randomisation of the retirement situation, as discussed above, could not be approximated. Against this, however, was the possibility of providing a population picture, and although only some of the

retirements would be random in the sense of being enforced on the subjects, and not taking account of personal factors which may possibly influence the results, the types of retirement occurring will be sampled and a truer picture obtained. Hence the advantages were weighed fairly evenly against the disadvantages. From the practical standpoint the disadvantages preponderated. Because of the number of factors active in the situation, a large sample size would really be required. Moreover, apart from the problem of people who would be found not to 'fit' the experimental design, the subjects, being drawn randomly from the city population, would be likely to live large distances away from each other, and this would involve considerable travelling time and organisation of correspondence - a major disadvantage compared with the alternative of interviewing blocks of subjects at one factory. But against this, the random sample approach involved only the interviewer and the subject. No-one else had any commitment to carry out, and Trade Unions and Management did not have to be consulted. There was also only a minimal possibility of inter-action between subjects. Inter-action might have been a serious problem if several subjects from one factory had been interviewed, since doubtless subjects would have discussed the research amongst themselves, and the results might have been influenced. In the event, as far as the interviewer could ascertain, although some subjects were possibly known to each other, no subject ever found out who else was co-operating in the research, and it was probably never discussed. Hence, there were several points for and against the random sample approach and there was sufficient weight on the credit side to make this approach a feasible proposition. At all events there was no other alternative open, and accordingly the research went forward on this basis.

The next consideration was the length of time between interviews of the same subject, and the total period of each subject's life which should be covered. Ideally, perhaps, a longitudinal research

should be continued for several years subsequent to retirement but practical considerations are important here. Firstly, it would be impossible, using only one investigator, to carry out a protracted programme of interviewing. Secondly, it is improbable that, except where a very large initial sample were taken, the numbers of subjects willing to co-operate over more than a few interviews would be large enough to justify carrying on the research. As in so much research in social science, the possibilities for the research design had to be considered in terms of the time and money available.

But there is also another aspect of this point. How long should retirement be given to show its effects? Reasoning a priori one might suggest that the first year of retirement would cover at any rate the worst of the transitional period from a fully active working life, and there is some evidence that this appears to be so (e.g. PAYNE, see Chapter Two).

Hence it was decided that the first year of retirement would be covered, and each subject would be interviewed three times, at six monthly intervals. This gave the research design shown in Figure 1.

FIGURE 1:- Diagram of Experimental Design for Retirement Research

	Working Group	Working Group
Random Sample Males Aged 65		
	Retired Group	Retired Group
1st interview		
	6 months	6 months

Since this design was laid out by the writer, his attention has been drawn to a paper by BARROW, STREIB and SUCHMAN (1952) which describes a projected research by Cornell University also based upon a longitudinal design. This research is altogether more elaborate than the present work and is intended to last for seven years. However, it appears to resemble the present work in several respects, as far as can be judged from the reference quoted, which is regarded as some endorsement of the discussion set out above. More recently and since this work was begun, an announcement has been made by Birmingham University Medical School of a plan to carry out a longitudinal study of retirement, though in this case very few details are available (ANON 1955).

The main statistical analysis resulting from this design is as follows. Difference scores will be determined for each man by comparing his standing at the first interview with that at the second, and similarly his second standing with his third. Then mean differences will be compared for the 'working' as against the retired group (McNEMAR 1949).

Provided the two groups could be matched for age - and this subsequently proved to be possible - the design thus provided for two main means of control. Running the working and retired groups in parallel should control out changes due to age itself rather than retirement, leaving the measurement of any effect due to retirement relatively uncontaminated. Also, by using each man's initial data as a base-line against which to measure his subsequent data, the effect of initial low level of physical and mental health would be controlled, except insofar as initial low level predisposes to greater subsequent deterioration.

B. The Measuring Instruments

The experimental design thus being determined, the problem arose of what measurements to make within this design. There are two parts to this problem, firstly what to measure and secondly how to measure it.

The question of what to measure has been answered by different investigators in different ways. Some have chosen an extremely concrete index in mortality; others have attempted to use indicators of a less extreme, and less easily determinable kind. Furthermore, reaction to retirement may take any or all of several forms, and while the retirement impact hypothesis is usually stated in terms of death, any attempt to examine the effects of retirement should take account of other possible reactions. One possible approach would be to use the concept of "adjustment to retirement", but it has already been suggested in Chapter Two that this is not a very useful concept to employ as a research variable, at present. Possibly if a factor analysis of a battery of tests yielded a general factor running through it, this could be regarded as "adjustment", but this has not been done. In the meantime adjustment remains a convenient shorthand for talking in a general way about reaction in certain situations.

But a consideration of adjustment does lead to one further alternative. Level of adjustment is only observable by reference to certain indices. These indices may be many, but on the basis of the previous literature one would reason that the response to the impact of retirement might be revealed by variations in four main ones. These are

(i) physical health
(ii) mental health
(iii) activities and social contacts
(iv) general attitudes.

Any, or all, of these indicators might be inter-related. Thus illness might lead to decreased mobility which would probably lead to restricted social contacts. Further, it is doubtful whether, in view of the implications of psychological theory, and recent develpments in psycho-somatic medicine, the duality of physical and mental health can be rigidly sustained. For this reason, no attempt has been made in this research to distinguish rigidly between these two indices.

From the point of view of the retirement impact hypothesis, the variation in these indices which would be expected, are clear. Both physical and mental health would be expected to deteriorate (the actual connotation of "deterioration" here will appear later). Activities and social contacts would be expected to show constriction, a general decrease in number and extent. General attitudes would be expected to become less favourable; again the problem of what is "less favourable" occurs but will be deferred until later.

Thus we come to the second part of the problem, that of how to measure these indices. Research in social science has no greater problem than the provision of useful measuring instruments. In this discipline, even sheer counting, with its attendant problems of classification and validity are difficult enough, but if one wishes to do more than count, the difficulties become much greater. One essential for this particular piece of research was that techniques should be used which had already been tested and validated to some extent at least. Within the confines of this project, the major work of developing and standardising a new technique could not be undertaken. In any case, it seems to the present writer probable that one of the reasons why measuring techniques in social science, though plentiful, are on the whole poor, is that investigators have been too

ready to design their own techniques, and too reluctant to use those already in existence and modify and develop them where necessary.

Apart from this general requirement, the specification which guided the search for techniques was threefold.

(a) The techniques had to be as independent of the observer as possible. This is not meant to imply that the observer could be neutral in the interview situation but that the measurements obtained by the technique should be independent of the observer's judgement. This was the more important as, of course, there was to be only one interviewer, who had an hypothesis in mind, and this must not be allowed to influence the results.

(b) The techniques had to provide some sort of metric. In view of the research design it was considered necessary to do more than simply say how many of the subjects in the sample groups fell into certain categories on the different occasions on which measurements were taken. This has already been discussed in relation to other researches in Chapter Two. For the present purposes it was important to be able to say whether a man was getting "worse" or "better" under the conditions of ageing and retirement. To evaluate the differences some sort of score was necessary for each interview. It is realised that once this position is taken up, problems of the philosophy of measurement as applied to social science, arise. It is felt, however, that it would be a digression to enter into such a discussion here. Suffice it to say that it would be sufficient if the metric available were to provide an ordinal scale, though in common with other fields of social science the ultimate aim would be an

interval scale (COOMBS 1953).

(c) The techniques had to be verbal. It must be admitted that this is only an opinion. At the time when the research was being initiated, little evidence was available on the best techniques to use on studies of older people, although BARRON (1952) has stated that "Pretests among literate subjects using both the interview method and the self-administered questionnaire have suggested that the latter encourages considerably less inhibited responses". As an example, older workers were considerably more willing to class themselves as being in poor health in the self-administered questionnaire than in the face to face interview. As far as the assessment of personality is concerned, the technique which appears to have the most numerous supporters is the Rorschach test. But the validity of this technique is by no means unquestionable and, as is well known, efforts to assess this validity have been proceeding for several years, and are still by no means complete. "There is nothing in the literature to encourage reliance on Rorschach interpretations" (CRONBACH 1956). Apart, however, from the question of its general validity, there appears to be some doubt about the advisability of using the usual norms for assessing older people (CALDWELL 1954). In the context of the present study, there were several other considerations telling against the use of the Rorschach test. In the first place it is held by those who are experienced in the use of this test that some 200 administrations must be made before a sufficient expertise in administration and interpretation is developed. But this would mean that a very lengthy preparation would have to be undertaken before the research could begin, since obviously one could not do the research and attempt to acquire the skills at the same time. In the second place, it was felt that the refusal rate would be increased to a prohibitive level if one were to attempt to introduce Rorschach material into interviews carried out in the subjects' own homes, bearing

in mind that the sample would consist of a random group, not one which had the hope of treatment as an incentive to allow itself to be subjected to the procedure. In the third place, because of the random nature of the population, wide differences in intellectual ability would have to be encompassed and although this would equally be a factor in obtaining acceptance of verbal material, it was hoped that at least such material would appear relatively familiar in type, if not in content, and thus be less likely to appear artificial. Further light is thrown on these points by the recent study of AMES et al (1954) which investigates the responses of old people to the Rorschach Test. These authors summarise the available literature of the use of the Rorschach with old people. The subjects who have been used have nearly all been institutionalised. In the study of Ames and her associates, one third of the subjects were living at home and two thirds in institutions. Attention is drawn to the acceptibility of the Rorschach among these subjects of advanced age, but it is clear that the sample used was over-representative of the higher occupational and educational groups. At the beginning of the study it was necessary for two examiners to work together simultaneously on each subject, and only later was it possible for an examiner to work singlehanded. These facts are interpreted by the present writer as consistent with the point of view expressed above that the use of the Rorschach was not practicable in this present research.

The validity and reliability of questionnaire-type methods of assessment is the subject of even more heated controversy than is the Rorschach test, and on the whole results have not been encouraging (e.g.McNEMAR 1946, ELLIS 1946, CRONBACH op cit). But at least the Minnesota Multiphasic Personality Inventory was regarded by Ellis (op cit) as reasonably promising, and subsequent attempts with it and with similarly based questionnaires have suggested that it may be

possible to use the questionnaire technique for the assessment of groups, if not of individuals. In this research, although it was hoped that in view of the personal and individual nature of the interview the use of the questionnaire would be more successful, a group mean score for the retirement and working groups would be acceptable. Further, the questionnaires would not be used in isolation so that the possibility of internal validation was open as a check. In view of all these considerations, it was decided to persevere with questionnaires as a basis for interviewing. The questionnaires selected are detailed below.

The Assessment of Physical Health

It might be argued that ideally, the measurement of physical health should be by means of a physician's rating. Since information supplied - if it could be supplied - by a man's general practitioner would not be suitable, especially in the case of men who had not consulted their doctor for some time, this would mean a special medical examination of all subjects, and this was impossible. Some means of arriving at an evaluation of a subject's health without such an examination was called for. Moreover, it could equally well be argued that, at least as important as the subject's objective level of health as assessed by a medical practitioner, is his own self assessment of his health. This is a consideration not unknown in socio-medical studies. It is the more pertinent here because with the degenerative diseases of senescence, a man may be assessed as healthy (for his age) by his doctor, despite the fact that the man himself feels the aches and pains attendant on senescence and subjectively assesses his health as poor.

To provide this assessment, the Cornell Medical Index was chosen. A copy of this questionnaire is included at Appendix A. It consists of "195 questions in informal language, so worded as to be understood by persons with a reading knowledge of simple English .... The

questions are of four kinds: those relating to bodily symptoms (for example "Do you usually feel bloated after eating), those relating to past illnesses ("Has a doctor ever said you had kidney or bladder disease"?), those relating to family history ("Did anyone in your family ever have a nervous breakdown"?) and those relating to behaviour, mood or feeling ("Do you often feel unhappy and depressed"?)". (BRODMAN, ERDMANN and WOLFF 1955). The questions are divided into 18 sections, 12 covering various organ systems and miscellaneous items of medical history, and six covering "Mood and feeling patterns". The time required to complete all the questions is in the region of thirty minutes, though it was found in the present research that many subjects could complete it considerably more quickly.

The questionnaire has been validated in various ways. Questionnaires completed by 179 outpatients at the New York Hospital "corresponded closely" with similar questions asked by physicians in oral interviews, and also showed up a large amount of significant medical data which was not uncovered in the oral interviews (BRODMAN, ERDMANN, LORGE, and WOLFF 1949). One hundred and ninety one consecutive patients admitted to the General Medical Department of the New York Hospital were also tested (BRODMAN et al 1951). Of all the diagnostic categories in which disease was found in the hospital investigation, 94% was discovered by physicians who had only the CMI on which to form a judgement. The questionnaire was found especially useful in identifying psychological aspects of disease. It was discovered that the questionnaire could be quite well interpreted by a nurse and a medical technician, though these people could infer specific diseases only seldom, whereas physicians could do so in 87% of the cases.

The questionnaire may be evaluated either by the clincial opinion of a physician or by devising a score of the number of 'Yes' answers to the questions. The former method is desirable in the individual clinical situation; the latter is available when a group is being evaluated. "This (scoring) method is entirely independent of varying skills of different interpreters" (BRODMAN et al 1952). The scoring method is also available for the derivation of an indicator of emotional disturbance. This has been developed as a result of an analysis of questionnaires completed by 5,121 patients admitted during 1948-9 to the Medical and Surgical Departments of New York Hospital, 526 of these being diagnosed as emotionally disturbed at hospital examination and being used as a neurotic sample. In addition the questionnaire has been completed by 610 ostensibly healthy normal men and women collected at random from New York City; 459 new employees of the New York State Hospital; and 371 psychiatric outpatients of the Brooklyn Veterans' Administration. On the basis of cumulative frequencies, cutting points were arrived at and the following criteria are to be considered "presumptive evidence on the CMI of the patient having an emotional disturbance.

1. Thirty or more Yes responses,
2. Three or more questions answered both Yes and No,
3. Omitted answers for six or more questions,
4. Three or more remarks or changes in the questions."

No weighting is given for the relative importance of these criteria but it seems clear that the first is the most important, since "If (yesses are) scattered throughout the CMI an emotional disturbance is to be suspected, especially if more than two appear on the last page of the CMI where are questions about the patient's moods, attitudes and behaviour". (Brodman op cit). It is further mentioned specifically in this paper that the CMI has been found useful in making surveys to compare the probable number of individuals with emotional disturbances in one population with the number in others,

and in providing comprehensive general medical evaluations as well.

STEINHARDT et al (1952) examined the CMI specifically in relation to old people. A team of physicians and psychologists obtained completed CMI's from a group of institutionalised aged for whom medical records were also available. The subjects were 72 men and 99 women, with an average age of 75.9 years. There appeared to be "a close correspondence between the CMI findings and the functional capacity ratings arrived at by a careful medical evaluation". It was concluded that the CMI was useful in approximating the health status of a large group of old people.

A further analysis of the New York Hospital sample found that women expressed more complaints than men both in regard to the body and to moods and feelings (BRODMAN et al 1953). This is reminiscent of the finding of Sheldon (op cit). Older men and women made more bodily complaints than younger ones, but a like number of complaints regarding moods and feelings.

Test retest reliability - though using only a very small sample - was investigated by TUCKMAN et al (1954). The sample consisted of 24 old people living in an institution and 38 living in their own homes, and attending two day centres for older people. The age range of the subjects was 57 to 84 years, with a mean of 71 years. The period between test and retest was between five and a half and 17 months, with a mean time of seven months. A supplementary health questionnaire was also administered. Test retest correlation coefficient for the two questionnaires combined was 0.70. Stability of individual items varied from 98% making the same response to the item on the second administration, to 58% making the same response. Clearly some variation in response

is to be expected if the questionnaire is a sensitive instrument, and this will be included in the test retest coefficient. Some indication that this occurred is to be found in the fact that the items showing the greatest gain on the later administration were those where one would have expected this, for example, in number reporting that they needed glasses to read, high blood pressure, rheumatism, etc. An overall tendency to make fewer complaints on the second administration was discovered as shown in the following table.

TABLE 12 - Mean number of symptoms reported on the Cornell Medical Index on early and late tests for 62 older adults.

	Early Test		Later Test		t
	Mean	S.D.	Mean	S.D.	
Bodily symptoms	25.0	18.1	21.4	16.2	2.5[1]
Mood and feeling symptoms	7.9	8.2	5.3	5.4	3.0[2]

[1] significant at the .05 level
[2] significant at the .01 level

It will be seen that, especially as regards moods and feelings the number of symptoms reported is significantly lower on the second administration. However, the reliability of the questionnaire appears to be quite satisfactory when one bears in mind that test retest reliability assumes that the ideal would be attained when there was perfect agreement between test and retest, that is, a correlation of one, whereas if the questionnaire is valid, one would expect that questions relating to acute rather than chronic conditions would change over a period of time.

A further test of the CMI was carried out by BRODMAN et al (1954). A sample composed of 7,527 men selected at random from those undergoing medical examination prior to military service was taken. Where rejection by the medical ward occurred, reasons were collected, and for those accepted, data was collected during four months of basic training. The data consisted of: number of sick calls; number of days hospitalized; number of days absent without official leave; frequency of disciplinary measures required; and the occurrence of discharge from the service. The group of men accepted for military service was dichotomised at a level of 50 or more 'Yes' responses - the higher of the two levels recommended by the compilers of the questionnaire (BRODMAN et al 1952). As the men with 50 or more responses comprise only 5% of the sample, this is an extreme cut and significant results would be expected. The men with 50 or more 'Yes' responses had a larger number of sick calls, days hospitalized, days absent without leave, convictions by court-martial, and discharges from the service than had the other men. The differences were all significant at the 0.01 level. A similar result was obtained when 171 men who had been rejected for military service were followed up after eight months. Also reported in the same paper is a description by Dr. RUTH TOLMAN of some unpublished data she obtained when she compared responses to the hypochondriasis scale of the Minnesota Multiphasic Personality Inventory with responses to the CMI for 63 patients with pulmonary difficulties. "In those patients high (above 70) on the hypochondriasis scale of the MMPI the average number of Yes responses (on the CMI) was 47.2. The number is not disproportionately high on the psychological questions but on the medical ones, when compared with patients who are not high on the hypochondriasis scale. This finding is consistent with expectation....".

In view of these studies, it is submitted that the CMI is a reasonable substitute for medical

examination in the research situation where such an examination cannot be carried out. The major reservation is on grounds of motivation. The samples used for standardisation, hospital patients, staffs, prospective soldiers, are all different from the general population in level of motivation to be expected. Only the one group of 610 subjects were people who presumably had no ulterior motives influencing their performance. Moreover, all the subjects were American. A recent attempt to test the CMI in a survey-like situation where motivation is low, and where the subjects were British, has recently been carried out (GORDON, EMERSON, and SIMPSON 1957) and has yielded results in accordance with expectation on the assumption that the CMI is valid. These results show a significant increase in score with age amongst a group of railwaymen, and a significant relationship of total score with doctor's diagnosis. It is also suggested in this paper that an improvement could be made in the CMI if an item-analysis were carried out with the intention of re-weighting several of the items. It is hoped to do this at some later date. In the meantime, the possible shortcomings of the Index are to some extent minimised by the use in the present research of two groups running in parallel, and the collection of much other data. Both these contribute markedly to the possibility of checking for internal consistency, and validity.

The Assessment of Mental Health

What was required here was not a psychiatric diagnosis but rather an assessment of personality traits such as neuroticism or emotional disturbance. The sample would by definition consist mainly of 'normal' men. It has been seen that the CMI is designed to supply such an assessment, but since the validity of personality questionnaires in general is open to some question, it was thought that an independent assessment would provide some check on the validity

of the emotional disturbance rating of the CMI. In addition, if this second instrument were specifically designed to provide some index of emotional disturbance rather than as a general health questionnaire it might do this more sensitively than the CMI.

In view of the relatively favourable comment of Ellis (op cit) upon the MMPI, it was originally thought that this might be a suitable instrument to use. However, this is very long, and the newer inventory compiled by SANDLER (1954) is even longer. Clearly, the length of the procedure would be likely to be a major factor in determining the degree of co-operation and motivation on the part of the subjects. This did indeed prove to be the case. The possibility of extracting a subscale was considered but rejected since it was doubted whether a subscale would be extracted which could be meaningful by itself in the retirement situation. Eventually it was decided to use the Heron personality measure.[+] The content of this inventory is given at Appendix A. The validatory work on this inventory which has been progress for four years has recently been summarised (HERON 1956). The inventory is in two parts. A first part of 74 items contains twenty items which are used as the basis for a score of "emotional maladjustment", the remaining items being "buffers" which give the instrument the appearance of a Health Inventory. These items had been selected from items which previous workers had found to distinguish significantly between groups of 'normal' and 'neurotic' subjects. "The odd-even correlation of the twenty item score for emotional maladjustment, corrected to full length is 0.81 (N = 378)" (Heron op cit). The second part of 36 items includes 12 which provide a score for sociability. The odd-even correlation, corrected to full length is here 0.74 (N = 378). The selection of the

[+] I am greatly indebted to Dr. Alastair Heron for his kindness in allowing me to use this inventory and for providing me with the device on extended loan.

items from the total pool of items for both parts of the inventory was made on the basis of three criteria; a statistically significant contribution to the total score; this contribution to be made in as linear a fashion as possible; as far as possible an item should not contribute significantly to the total score for emotional adjustment when it was supposed to be measuring sociability. The groups on which the validation was carried out comprised 378 subjects, composed of 251 'normals' under research conditions, 100 subjects under employment selection conditions, and 27 neurotic inpatients. Since then, more than 1,600 subjects have completed the inventory.

A feature of this inventory is the method of administration. Each statement is printed on a card and these cards are loaded into the centre section of a specially designed box so that the subject may deliver himself one at a time. When he has read the statement and has decided whether in his case the statement is 'true' or 'not true' he can 'post' it in one of two boxes, appropriately marked, attached to either side of the centre section. There is also a paper and pencil version of the inventory, and the results obtained with either version are not significantly different (HERON 1956 b). However, the box is apparently superior in that it heightens motivation to some extent, and also prevents the subject from skipping through the questions to see what the questions are like, before answering. In the present research, the box was especially acceptable because quite a lot of paper and pencil work was required of the subjects for the other techniques, and the different method of administration helped to break the sameness of the interview and make it more interesting. On the other hand, there was some tension introduced when the box was first produced, some respondents thinking it was a tape-recorder, or a "lie detector". Many, however, thought it was a "good gadget", or a "useful idea".

Dr. Heron has been able to compare performance on the inventory of two comparable groups of applicants for the post of bus conductor, one group taking the inventory as part of the selection procedure for employment, and one group being asked to co-operate in "a piece of research" after they had been successful in obtaining the job. In both cases the sample size was 200. It was found that emotional maladjustment was "seriously affected by circumstances of response, the means and variances under selection circumstances being markedly and consistently lower than those prevailing under research circumstances". It appears reasonable, therefore, to expect a higher validity under research conditions with this inventory, provided motivation is adequately maintained.

One would perhaps have liked rather more validation of the technique in the way of neurotic subjects, but there is no doubt that the compilation of the inventory has been approached with considerably more care, and much more attention to the logic of the measurements being made than is the case with several other instruments which are available. Primarily the advantage of the instrument seemed to be that it had been widely used, and was quite short. The general remarks about the relative merits and demerits of the CMI as a questionnaire also apply here, and will not be further developed. There is no doubt that many shortcomings can be discovered in questionnaires but several of these shortcomings can also be discovered in other techniques and the questionnaire does tend to be regarded as a "methodological scapegoat" (BROZEK 1955).

The CMI and the Heron inventory do tend to duplicate each other, though the CMI has a wider medical coverage, while the Heron probably gives a better emotional maladjustment score.

One would expect a high correlation between the two, and in a later chapter this correlation will be assessed.

Activities and Social Contacts

The obvious approach to this area of interest would be simply to obtain interview material on the subjects' activities during a specified period - say the week preceding the interview. However, this method is suspect because although the respondent may be doing his best to give accurate information, he cannot remember what he has done. It is fair to say that this point is commonly recognised among research workers nowadays (e.g.ABRAMS 1955), though an examination of the researches we have considered would not disclose much empirical evidence in support of this statement.

In order to overcome this difficulty a diary sheet+ was drawn up so that the subject could record day by day the time spent on various activities, and with social contacts. The use of such a technique is, of course, not new, but to transfer it to a situation involving low motivation and a random sample of the population would be no small task and it was feared that the subjects would reject any such technique. In the event, while co-operation was by no means perfect, it was found worth while to persevere with the technique. Originally, it was intended that a subject should be asked to keep a diary for the week subsequent to each interview, but this, it was felt, would be asking too much of respondents. It would probably lead to a failure of rapport in the interview, but in addition, in the opinion of the present writer, it would have been rather unethical. When going into the field to ask the favour of co-operation, the research worker must ask himself "What is the minimum information I need to examine this hypothesis properly"? Any

+ A copy of this sheet is included at Appendix A.

attempt to obtain more information than is expressly needed is unfair to those who are willing to co-operate.

In the present research it was thought that if a subject would fill in diaries in respect of three days during the week subsequent to the interview, a fair picture of the week could be obtained. The three days it was decided would be Tuesday, Friday, and Sunday. The selection of these three days for the record was based on a rough observation of the culture pattern in Edinburgh. Monday is probably contaminated to some extent by settling in again at work after the weekend, but Tuesday, it was thought, would represent a fair approximation to usual weekday activity; Friday is apparently a day when many men go out in the evening after receiving their pay, for a drink; while Sunday is a day when family social visiting takes place, and also when, since the more passive forms of recreation such as going to the pictures, or a football match are not available, a better indication is likely to be obtained of what level of activity a man attains when left to his own devices.

Necessarily, since there was only one interviewer, the subjects would have to be left to fill in the diaries themselves, without more guidance than could be given at the end of the interview. This did lead to some loss of quality, but on the whole, the forms when they were completed, were completed quite well.

General Attitudes

It had originally been intended that the assessment of the subjects' attitudes should be carried out in such a way that the data obtained

could be subjected to a Guttman analysis. In this way the research would afford an opportunity to carry out the preliminary work on the development of scales of attitudes towards ageing, retirement, job satisfaction, etc. In the event, time did not permit this, and the interview would have been too cumbersome if much additional material had been introduced into it. Hence an attitude sheet was made up (and is included at Appendix A) which simply asked for self ratings by the subject in a number of areas, viz:- job satisfaction through a comparison of own job with the job of friends and relatives, loneliness, health, religion, satisfaction with or feeling towards retirement (according to whether or not the subject was working), ratings of life satisfaction, and age group identification. At least it was thought such data would help to throw light on the other information obtained, and it could be elucidated and checked by information from the general interview schedule.

A methodological point which should be mentioned here is that the men were asked such questions as

> "How well does your present health compare with your health at age 60"?
> and
> "Which would you say was the happiest period of your life"?

The inclusion of these questions, and some others like them, in the interview appears to contradict what was said in considering the diary technique, about the difficulty of getting information from the subject retrospectively. This point is specifically raised by Abrams (op cit).

> "Even in the prime of life the average man cannot tell you how many colds he had last year. Why, then, should one expect a man of 65 to be able to reply accurately to the question 'Is your health better or worse now

than when you were 50 years of age'"?

Insofar as we wish to collect objective evidence of how the subjects' state of health has varied at the two points in time, Abrams's point is well taken; but such a question may be a legitimate way of finding out something about subjects' present attitudes. Because he cannot remember accurately what his health was like fifteen years ago, he will probably make a judgement in terms of how he feels now. If he feels low and dispirited now, hypothetically he will say that he was much better when he was fifty, though in fact his health status might not have changed at all. The difficulty with this counter-argument is that we would not know when either of the alternatives was in operation. If a man says that his health was better at age 50, he might be constructing a picture of his health then in terms of what he feels now, or it just might be that he did indeed have a very good memory, or a number of experiences at about that age, such as a life insurance examination which enabled him to focus his memories and produce an accurate picture. In the opinion of the present writer the probability would be in favour of the former alternative and perhaps Abrams would agree, but this must depend upon the other evidence obtained from the interview.

The General Interview Schedule

In the analysis of the data collected by means of the various techniques, it would be necessary to take account of the variables which other investigators had shown might affect behaviour in retirement. Accordingly, a general interview schedule was drawn up which would cover these various factors. The schedule, being completed by the interviewer himself, would also serve as an "ice-breaker" for the introduction of the other procedures. The schedule was administered verbally, and this part of the interview proceeded in a semi-structured fashion. That is to say that, although some questions were of the cafeteria form so as to obtain specific

answers, some were of the open-ended type, and in all cases an attempt was made to talk around the questions so as to obtain an insight into general attitudes and to provide validatory material.

This schedule underwent some development in the early stages of the research, but the final form is included at Appendix A. The detail of the form will be dealt with more fully in the results section, but it will be seen from the Appendix that as a result of this rapid development, much material attempting to analyse more fully the retirement situation was included. The same schedule was used on the initial interviews and on the retests, both to check the data previously obtained, and to record any changes due to time.

The procedure of the interview

These instruments were administered in the following order at both initial interviews and retests.

1. General Interview Schedule
2. Heron Emotional Maladjustment (Part 1 of the inventory)
3. Cornell Medical Index
4. Attitude Sheet
5. Heron Sociability (Part 11 of the inventory)

The total time taken per interview varied between one and a quarter and two hours.

On returning home, and prior to examining

X The 'Iam' test (see below) was inserted between the General interview schedule and the Heron E.M. inventory at the second interview only.

any results, the interviewer rated each case on a five point scale on each of the following traits:-

Suspicion
Co-operation
Friendliness
Test Conscientiousness
Depression
Adjustment
Introversion
Intelligence

Also before looking at the results, case notes were written up recording the interviewer's impressions and interpretations of the interview. It was hoped by this means to obtain a further and independent check on the interview. It must be admitted that the ratings and case-notes were not always completely uninfluenced by the results on the questionnaires. For instance, a man would sometimes read the questions aloud and make his answers before 'posting' the card or circling the Yes or No. But in the great majority of cases it was possible to make the judgements quite independently.

All in all, the interviews turned out to be quite successful and the value of the written questionnaires when interviewing a man in a one-roomed house in front of the family was immeasurable. If the man had not been able to make a private, written response, the interview would have been greatly biassed by the interventions of the other members of the family. This kind of difficulty was often experienced with the wife when the general interview schedule was being administered.

Both initial and follow-up interviews followed the same procedure. At the second and third interviews the subject was told "Don't try to remember what you did or said before. I

want to know what you think and how you feel now". This procedure seemed to work quite well, and many of the men spontaneously said that they hoped they would not be expected to remember what they had done before as they could not do so.

The 'I am' test

To some extent the procedure as outlined above imposed restrictions on the subject, since, except when answering the General Interview Schedule, he could not necessarily bring up material which was important to himself but had to rely on the interviewer to determine the area of interest to be considered. Furthermore, it may be that the effect of retirement is not specific in the sense of directly increasing actual illness or awareness of it. The effect may be more general. Therefore it was thought that some form of projective technique would perhaps be useful, and because of the inclination of the present research towards verbal techniques, this might suggest that the Sentence Completion Test would be suitable. However, while there is something to be said for the use of this technique in the present research, there is also something to be said against it. On the one hand, we wish to ascertain whether retirement does produce attitudes which make a man feel he is "being thrown on the scrap-heap". Is there an element of self-deprecation, feelings of inferiority, failing, etc? In other words, are there modifications taking place in the man's self-image? This is a relatively specific area. On the other hand, we do not know what form the modification in the self-image is likely to take. Hence we do not really want to obtain completions to such sentence beginnings as "I get angry when ....". We wish to delve into a more ambiguous area to find out what a man feels about himself. For this reason, the Twenty Statements" test of KUHN and McPARTLAND (1954) appears to be a useful instrument.

As used by these authors, this instrument consists of a sheet of paper on which are the following instructions:-

> "There are twenty numbered blanks on the page below. Please write twenty answers to the simple question "Who am I"? in the blanks. Just give 20 different answers to yourself, not somebody else. Write the answers in the order they occur to you. Don't worry about logic or 'importance'. Go along fairly fast for time is limited". (Kuhn and McPartland op cit).

The idea behind getting the subject to answer as if giving the answer to himself and not as if to somebody else was to try to overcome the determination of his responses by the interview situation, that is, to prevent the subject answering as if to the interviewer.

The test was administered to 288 students of the University of Iowa, as a first experiment. The time given to complete the 20 statements was 12 minutes. The number of responses given varied from 20 down to one or two with a median of 17. The responses took the general form 'I am ....', although often 'I am' was omitted and the response consisted of a single word or phrase (e.g. "student", "athlete", etc). Kuhn and McPartland analysed their data by a content analysis, the basis of which was the classification "consensual" and "subconsensual" references. "These content categories distinguish between statements which refer to groups and classes whose limits and conditions of membership are matters of common knowledge, i.e. consensual; and those which refer to groups, classes, attributes, traits or any other matters which would require interpretation by the respondent to be precise or place him relative to other people, i.e. subconsensual. Examples of the consensual

variety are "student", "girl", "husband", "Baptist", "from Chicago", "studying engineering". Examples of the subconsensual category are "happy", "bored", "pretty good student", "good wife", i.e. statements without positional reference, or with references to consensual classes obscured by ambiguous modifiers". (Kuhn and McPartland op cit). A score may be derived from the number of consensual references the subject makes on the test, and, on the sample tested, it was found that respondents tended to exhaust all of the consensual references they made before they made any subconsensual ones. From subsequent work, of which no details are available, it is said to be possible that those subjects who make few, if any, consensual responses, may show symptoms of emotional disturbance.

In the present research, two modifications to the procedure were made. The time available for the completion of the form was cut to ten minutes. This time was easier to measure in the heat of the interview, and it was thought that the extra two minutes would make little difference to the achievement of the subject. Further, to assist those subjects who were not particularly used to verbalising their self attitudes, the sentence beginning 'I am ....' was printed on a sheet twenty times.

This test was given only on the second interview in the series of three, partly because the possible need for it was only apparent when several of the initial interviews had been completed, and partly because it was felt that to introduce it at the first meeting would be harmful to subsequent co-operation. At the second interview the acceptance of the research would be more developed. It was not given at the third interview because several subjects, although they co-operated in completing the forms, clearly found it a strain, and it appeared often to expose

rather sensitive spots. It was given at the second interview immediately after the general interview schedule so that the subsequent procedures would not put possible responses into the mouth of the subject.

C. The Subjects

The subjects for this research were a simple random sample drawn from the doctors' lists of the Edinburgh Executive Council. Along with names and addresses, dates of birth were also given, and it was therefore possible to select men whose ages fell within any desired period. The men selected were arranged in weeks according to their birthdays, and every subject was visited in his home either the week before, or the week after his 65th birthday, contact initially having been established by letter (reproduced at Appendix B). As nearly as possible the same procedure was followed on the second and third interviews, the subject being visited as nearly as possible six months, and a year to the day after the first interview.

It may seem unnecessary to justify the selection of age 65 as a starting point in the study of retirement, but in fact some explanation should be provided since Townsend (op cit) for example found the average age of retirement to be about 68 years. An investigator who wishes to study retirement impact, especially when the total sample will inevitably be rather small, must try to ensure that sufficient men will retire during the period of the research to give him a fair retirement sample. Therefore, he should choose an age when men are retiring at a high rate, and it may be that he should choose as a starting pointthe age of 68 or so. There is a major

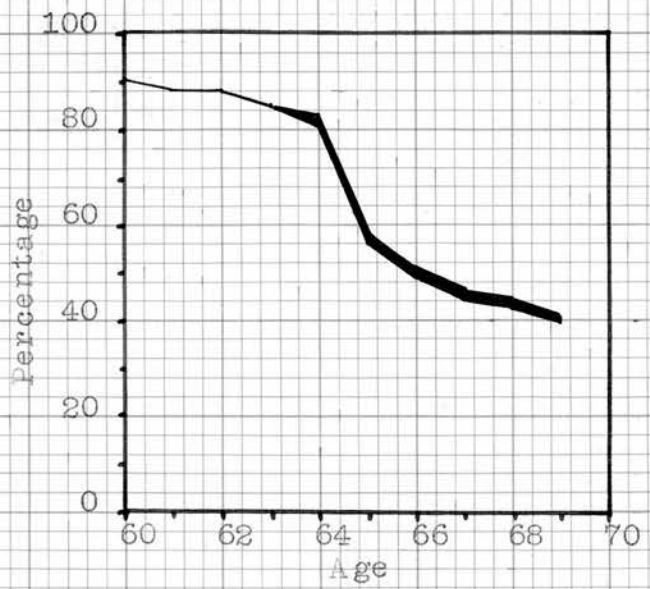
disadvantage to this, in that if an age is chosen which is in some way past the statutory retiring age, many men who are interviewed will have already retired, the possibility of obtaining a base-line measurement will have passed, and the investigator will, for some purposes, be back at the cross-sectional position again.

But the reason why age 65 was chosen as the starting point for the present research, apart from the fact that, as the statutory retirement age it seemed the more logical age to choose, was that, on the best evidence then available, the choice of this age would also ensure that a good number of men just coming up to retirement, would be found. This evidence consisted of The Reasons for Retirement Report (op cit) and The Registrar General's One Per Cent Sample Tables for Great Britain. The Reasons for Retirement Report shows (Diagram 2, p14-15) that for all industries about 40% of men are retired by 65½. This, of course, includes the men who retired prior to age 65 but did not qualify for retirement pension until the statutory age. How many such cases there were is not known. The one per cent sample tables provide data which is plotted in Figure 2 (a) and which shows a sharp fall-off in number of employed at age 65 with a subsequent further, though less, steep decline between 65 and 66. The proportion of men employed part time is small, as will be seen from the figure. It therefore seemed that by taking a man's 65th birthday as the datum, a sufficiently large sample of retiring men would be obtained, and the difficulty referred to above would be avoided.

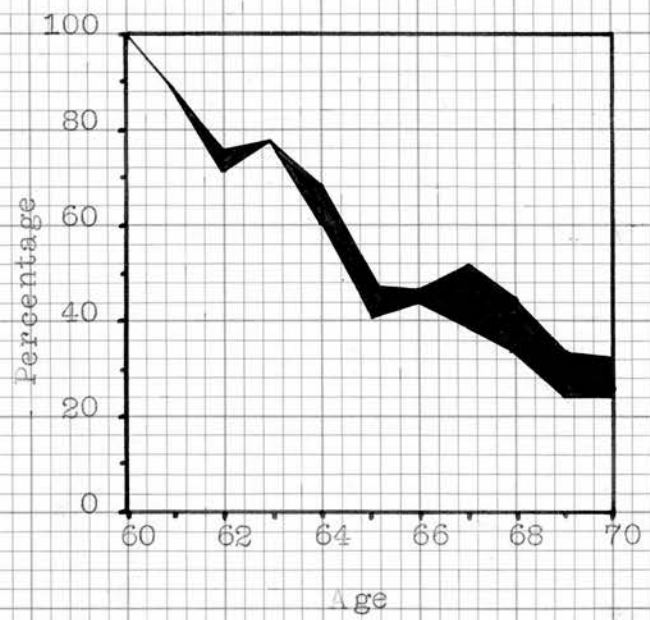
Unfortunately, Edinburgh is somewhat atypical of the country as a whole, as is shown by Figure 2 (b). This data was not available at the time the present research was initiated, being obtained from the survey of older people in Edinburgh (GORDON, THOMSON, and EMERSON op cit).

FIGURE 2 :- Occupational status by Age.

(a) Great Britain. Source - 1% Sample Tables)



(b) Edinburgh. (Source - Old people survey)



Note :- Shaded area represents %age "Working Part-time".

It will be seen from the figure that the proportion of men working falls off more rapidly in the Edinburgh sample in the early 60's. This may well be due to the large number of men employed in commercial occupations in the city who are able to retire at age 60, and to the immigration of numbers of elderly men who retire to the capital. At age 65, a drop of 22% in the proportion 'working' is found in Edinburgh, as compared with a drop of 24% for Great Britain, but after age 65 the Edinburgh figures show a plateau with no increase up to age 66 in the proportion 'not working'. It will also be noticed that there appears to be a much greater provision of part time jobs for older men in Edinburgh than in Great Britain as a whole. Thus it now appears that in Edinburgh there is a marked cushioning effect as regards retirement which, from the point of view of the present research, is a definite disadvantage. When the data became available, confirming suspicions which had arisen during the early stages of the field work, the possibility was considered of shifting the datum age upwards. However, this would have introduced a further variable into the sample, calling for further breakdowns, and accordingly it was decided to persevere with the original datum.

The "occupational climate" in Edinburgh appears very favourable to the older worker. When the author was at one time visiting firms in Edinburgh to obtain the general views of the managements about the industrial problems of ageing, the point was frequently made that the managements were willing to allow their employees to remain at work long after the statutory retiring age, and the ages of many long service employees were quoted with pride. Hence, the picture of retirement in Edinburgh must be seen against this background.

D. The Detailed Administration of the Research

The list of prospective subjects having been obtained, it was checked regularly against the Registrar's return of deaths at the Edinburgh Public Health Department.+ This was partly to avoid writing to men who had already died, thus causing unnecessary pain to relatives, and partly to keep a check on numbers and causes of death in the sample.

The interviews were carried out over a period of 19 months from February 1955 to September 1956. As has been explained, subjects were sent a letter laying out very generally the aims of the research, and giving a time when the interviewer would call. Initial interviews were always carried out in the evenings since there was no means of knowing whether or not a man would be working during the day. Follow-up interviews were also conducted in the evenings if the subject was working, but if it was possible for him to make time in the afternoons, this opportunity was taken so as to allow a further interview to be done in the evening. From the nature of the procedure, it will be seen that some subjects were completing their first, and even their second six months run while others were just beginning, and for a time in the research, first, second and third interviews were all being conducted at the same period. Thus the total of the subjects obtained represents the maximum it was humanly possible for one interviewer to do, bearing in mind the length of an interview - about three and a half hours including scoring and write-up - and pressure of other commitments.

On arrival at the prospective subject's

+ I am indebted to Dr. H. Seiler, Medical Officer of Health for Edinburgh, for permission to use these returns.

house, the interviewer would explain more fully what the research was about, but never specifically mentioned retirement. Any explanation was always given in terms of "wanting to find out something about the problems of older people" so as to avoid as far as possible biassing the subject's subsequent responses. If the subject refused to co-operate, an attempt was made to obtain as much information as possible so as to be able to make some check on the bias of the refusals.

The interview was carried out as described earlier, and at its close, the diary was produced and explained. The diary sheets were left with the requisite dates filled in, together with a stamped and addressed envelope for return to the investigator. A stamped and addressed card was also left so that the subject could inform the investigator of any change of address. So that complete anonymity could be ensured, all these documents were identified only by a code number, and names and code numbers appeared together only on a master key. The problem of keeping track of a sample in the general population was huge, and the change of address card was a small attempt to do something about it. There was no reason to suppose that a man who moved would put himself to the additional trouble of sending it in, but in the event the sample proved very stable, and the few men who changed their addresses, did in fact send the card in.

About two weeks before the second and third interviews, further letters were sent as reminders.+ These are reproduced at Appendix B. Enclosed with the letter was a stamped and addressed card giving alternative dates and times so that the subject could signify what would be a convenient time for him to grant an interview. In most cases

+ My thanks are due to Miss M.F.Anderson, of the Usher Institute, and her staff for undertaking the considerable amount of typing involved.

this card was returned, but where it was not, the investigator called as a routine and usually managed to obtain an interview. With the duplication of interviews considerable effort was involved to fit in times for interviews, and repeated attempts were also made to persuade subjects who refused to co-operate on the second and third occasions, to change their minds. At the close of the third interview, opportunity was given for the subject to ask any questions he wished, and to make any criticisms or comments. The investigator promised, when the research was complete, to let all subjects have a precis of the findings. This, then, is an account of the design of the research. We must now consider the results.

CHAPTER FIVE

RESULTS

In all, 218 men approaching their 65th birthday were asked to co-operate. The table below shows the numbers of co-operators, non-contacts, and refusals at the first, second, and third interviews.

TABLE 13 - Numbers of interviews, non-contacts, and refusals at the three stages.

1st time interviews	= 124		
Non-contacts	=	32	
Dead	=	5	
Total non-contacts	= 37		
Non-contacts (classified)	= 14		
Refusals	= 43	(17 by letter)	
	218		

Total available for interview (= 124+43)=167
% initial refusals of total available = 25.8%

2nd time interviews	= 100		
Refusals	= 15		
Died	= 3		
Non-contacts	= 2		
Discontinued	= 1		
Non-contacts (classified)	= 3		
	124		

3rd time interviews	= 80
Non-contacts	= 1
Incomplete	= 14
Too ill	= 1
Refusals	= 3
Non-contacts (classified)	= 1
	100

% of possible following right through = 47.9%

The table is largely self-explanatory but some detailed comments are necessary. The initial refusal rate, at about 26% is high in relation to that usually obtained in surveys which employ the personal interview, but when the amount of co-operation required from the subject is taken into account it is not surprisingly large. Again, the fact that only about half of the possible men followed the research right through is, from the researcher's point of view, disappointing. It is also a possible source of major bias in the results, for clearly, if all the men who fell out were those upon whom retirement had a traumatic effect the results would at best underestimate the effects of retirement and at worst overlook it altogether. In a later section it will be suggested that these losses exercised no important systematic influence on the results. Some data is available on several of the refusals.

The "classified non-contacts" were men who when approached were found not to fit in with the research design, or who, though willing to co-operate could not do so because of an inability to complete the tests. An appropriate example is that of a man who was found to be suffering from heart disease of probably psycho-genic origin, and who had not worked for several years because of this. These cases were interviewed briefly as far as possible and in some cases followed up. A few

men became seriously ill after the first interview, and subsequently fell under this head.

The 14 incompleted cases were those where insufficient time to carry out a third interview was available since the interviewing extended over nearly two years, and the writer had to leave Edinburgh. Full data for the first two interviews was obtained for these subjects.

Evaluation of the Sample

As has been said, the sample was drawn from a register of the ages, names and addresses of the "over 60's" compiled from the lists of the local Executive Council. We were told that these lists, while containing details of about 95% of the population of the city, would underestimate Social Classes 1 and 5 (on the Registrar General's classification) - the private patients and the social isolates being found in these classes. However, a comparison of the sample drawn for the survey of the domiciliary needs of old people (GORDON, THOMSON and EMERSON 1957) with the Census data showed that the composition of the domiciliary sample as regards social class was very nearly that which would be expected. It was also suggested that the lists might be inclined to overestimate the number of people married, but again the correspondence of sample to expectation on the basis of the Census was very good. Hence, whatever deficiencies there may be in regard to the sample used in the present research, these are almost certainly not due to the shortcomings of the register from which they were drawn.

The above two factors were used in comparing the present sample with the Census material. Social Class (on the Registrar General's classification) was compared for those men aged 65 with the Census age group 65-69 since

a social class breakdown by individual years of age was not available. This might lead to some inaccuracies in the comparison but this is probably not large, since no great changes in social class would be expected at these ages, except among those men who retired and then returned to work in much lower status jobs.

The results of the Social Class comparison are shown in the table below.

TABLE 14 - Comparison of Actual Social Class Distribution with that Expected on the basis of the Census 1951

Social Class	Sample	Expected from Census
I	6	10
II	14	20
III	69	56
IV	14	17
V	21	21
	124	124

chi square = 6.90
n = 4
p between 0.20 and 0.10

The sample does not deviate significantly from what would be expected, but fairly large discrepancies may be seen. The largest contribution to chi-square is in Social Class III, which is markedly over-represented in the sample. Social Classes I and II are under-represented quite considerably, Social Class IV is under represented, and Social Class V is about right.

It may be that the refusals were also disproportionate in a compensating direction thus accounting for the bias in the distribution of the respondents. Accordingly the refusals were analysed by social class. The procedure was as follows. Of the 17 letters received indicating refusal, 16 afforded some clues to probable social class of the writer by the type of notepaper, whether headed, telephone number included; facility of writing and expression; and address. In regard to the latter, it should be borne in mind that the investigator had by this time had considerable experience in estimating social class of subject, and particularly the predominant social class rating of areas of the city. The clues did not admit of a five-point rating of social class, but a three-point rating could be obtained. The letters were rated by the investigator, and independently by another person, who had general knowledge of the research but had not participated in it. The ratings of the letters were as follows:-

Estimated Social Class	Investigators' Rating	Others Rating	Expected on Basis of Census
I, II	8	7	4
III	5	5	7
IV, V	3	4	5
	16	16	16

The differences of opinion in regard to the rating of these cases is negligible. The comparison of ratings with expected social class distribution on the basis of the Censusis suspect because of the smallness of the expected frequencies, but more data is available on a further batch of refusals. This batch comprises 26 men who refused to co-operate when seen, and from whom a certain amount of information was extracted. These men could actually be rated according to the Classification of Occupations 1950. Adding these to the refusals by letter, we obtain an approximation to the total picture of refusals shown in the following table.

TABLE 15 - Comparison of Distribution of Social Class of Refusals with that Expected on Basis of Census 1951

Social Class+	Actual	Expected
I, II	12	10
III	15	19
IV, V	15	13
	42	42

chi square = 2.04
n = 2
p between 0.50 and 0.30

+ "Estimated" social class in the case of 16 letters.

The table indicates that, while the bias of the social class of the refusals is, if anything, in a direction which would be complementary to that of the respondent group, it is not significant. Comparison of the social class distribution of refusals with that of the co-operators yielded a chi-square of 1.76, which, with five degrees of freedom, corresponds to a probability of between 0.90 and 0.80. Thus the slight social class bias of the sample is not accounted for by the refusals.

The situation as regards marital state is very different from that of social class, in that the differences between the obtained frequencies and those expected on the basis of theCensus are significant at an acceptable level of probability, as shown in Table 16. The expected frequencies are obtained by applying the proportions married, widowed, single, and divorced for age 65 to the total number of cases in the sample.

TABLE 16 - Comparison of Marital State of Sample with Census Data

Marital State	Actual		Expected
Married	108		92
Widowed	7		17
Single	7	9	15
Married Apart	2		0
	124		124

chi square = 9.64
n = 2
p less than 0.01

The married men preponderate greatly in the sample. Unfortunately, data on the marital state of the refusals is very limited. Data on only 17 is available, and of these 14 were married, two widowed, and one single, so that it would appear that the bias in the sample is due to some systematic sampling error rather than to a differential unwillingness of single and widowed men to co-operate. Why it is that this preponderance of married men should have occurred in the sample is difficult to explain since as we have seen, the bias does not appear to be due to the register from which the sample was obtained. It is, however, possible that the time lag between compilation of the basic register and drawing the present sample - about 18 months - may explain the deficiency. By this time the more mobile single and widowed men might have moved away.

The conclusion drawn from this analysis is that the sample must be used with care. While the social class dimension seems reasonably accurate, the marital state dimension is not, and marital state may have a marked effect upon a man's reaction to retirement. These considerations must be borne in mind as the account of the analysis proceeds.

In order to estimate the probable effect of this bias on the test scores, mean differences for the different marital status groups were computed and evaluated. The numbers of subjects in the groups other than the married group were too small to allow of a simultaneous breakdown by marital status and occupational status.

The results of the analysis of scores on the first administration of the inventories by marital status are given below. (Table 17) As the second part of this table shows, only one of the differences approached significance, and viewed as one among nine differences, not much emphasis can be placed upon this. However, the trends shown on the first half of the table require some comment, since although numbers in two of the groups are small, the trends do seem to be in some degree systematic. The widowed and separated group shows the smallest scores on all three inventories. This group is an arbitrary construct, but the combination was chosen on the grounds that the tensions, if any, among widowed men, and among separated men, ought for present purposes to be roughly comparable. At all events, this combination was carried out prior to the examination of the results, and so no question of combination so as to produce deliberately the maximum possible homogeneity arises. The married group comes next in line, except in the case of the CMI, where it scores higher than the single group. Thus the inference to be drawn seems to be that on the basis of the available evidence, the group which is over-represented in the present research, the married group, lies in an intermediate position in relation to the under-represented groups. Supposing that sufficient numbers were available to make these trends significant (if, of course, they were maintained) then the bias of the sample would probably not greatly influence the conclusions drawn from it. On the one hand it would underestimate the population scores by being biassed away from the single men, but on the other, it would overestimate the population scores by being biassed away from the widowed and married apart. Just why the pattern of the mean scores is what it is in the present instance, presentsan interesting

problem, but it does not seem fair to erect a rubric of speculation on the basis of such small numbers when the differences are not significant.

TABLE 17 - Analysis of Scores on Heron and Cornell Inventories by Marital Status - first administration only

Marital Status	N	Heron E.M. Mean	s^2	Heron S. Mean	s^2	Cornell Mean	s^2
Married	108	5.11	9.94	4.81	5.19	14.79	1.220
Widowed and Separated	9	4.60	7.93	4.00	3.33	8.95	1.513
Single	7	5.43	5.68	5.29	2.24	13.37	1.162

	F	p	t	n	p
Married vs Widowed and Separated					
Heron E.M.	1.252	+	0.493	114	+
Heron S.	1.560	+	1.090	114	+
Cornell	1.241	+	2.150	111	between 0.05 & 0.01
Married vs Single					
Heron E.M.	1.251	+	0.263	111	+
Heron S.	2.320	+	0.549	111	+
Cornell	1.323	+	0.324	108	+
Widowed and Separated vs Single					
Heron E.M.	1.395	+	0.618	15	+
Heron S.	1.490	+	1.540	15	+
Cornell	1.301	+	0.966	15	+

+ p is greater than 0.10

Notes:- (1) Distributions on which these calculations are based are shown at Appendix C.

(2) The score distributionsof the CMI are highly skewed and have been normalised by means of a logarithmic transformation.

Before proceeding to a consideration of the actual results bearing upon the retirement impact hypothesis, it is necessary to clarify the labelling of the groups involved. The subjects were classified as follows :-

Category.

0 - Had not retired on any classification.

1 - Had left regular employment in which he was engaged prior to age 65. He might be working at another job, or he might be doing voluntary work, but on this criterion he would still be retired.

2 - Had left regular employment and was not systematically occupied at all. Thus, if he were doing voluntary work of a systematic nature calling for a number of hours per day, he would not be regarded as retired on this criterion.

3 - Did the subject regard himself as retired ?

These categories, except for the first as against the other three, are not mutually exclusive, and a subject could naturally fall into any or all of the retirement categories. Obviously, a subject could not fall into category 2 or 3 without also falling into category 1.

The reason for this classification was that, in assessing the impact of retirement, the concept has often been treated in a slipshod way, and, as has been shown in the review of the literature, cases have been lumped together without regard to their degree of retirement. Several of the studies reviewdd included in their retired category men

who admittedly had continued in other full time employment. Clearly, this is important. If retirement is traumatic, is it because a man leaves his familiar occupational surroundings, regardless of whether or not he manages to fit into new ones; is it because he cannot occupy his time; or because he is retired in fact but cannot so regard himself; or is the difficulty that he cannot earn an income which he can regard as a mark of social status. As has been seen, all these alternatives have been variously suggested, and hence the categories of retirement have been used here. It is a matter of some disappointment that fuller use could not be made of this classification owing to the small number of retired men found. Some discussion of this point will be found below.

A further point of classification is that some men who had been early retirants were contacted in the course of the research, and where possible these were also subjected to the research procedure. This group is know as the "already retired" group. To qualify for this group a man must have been retired for at least six months prior to being approached to co-operate. The same categories were used to classify retirement status as in the case of subjects who retired during the course of the research. The aim in continuing with these subjects was to obtain data on a group of men who had been retired some time. The mean length of time these subjects had been retired was 25.4 months, with a range of two to 78 months, and a median of 16 months. They should not be typical of what would be the condition of a group of men who had been retired for a corresponding number of years after retiring at the nominal retirement age of 65, since by and large early retirement is itself indicative of inferior health. But on the other hand they could be expected to be in better health than many men who retired at similar early ages since many of these would have died. Hence they might throw some light on the later stages of retirement.

Using this classification then, the total sample obtained breaks down as follows:-

Working	(0)	64	
Retired but went back to full time work	(1)	9	
Retired, not working after retirement	(2)	23	
Retired but working after retirement, though regarding themselves as retired	(3)	5	(including one man who was not sure whether he was retired or not)
Already retired prior to interview		23	
		124	

Twenty two of the retired (2) men were also in the (3) category, i.e. they had not only stopped working but also regarded themselves as retired. There was some movement from category to category during the time of the research, but the groups remained very stable on the whole.

In the present research 51.6% of the men remained at work during the whole of the time the subjects were being contacted. In the domiciliary survey previously referred to, of 41 men aged 65, 17 (41.5%) were found to be working full time. The difference between these two proportions is not significant (C.R. = 1.12, p is greater than 0.26). Although not significant, this difference is quite large, and may be because the present subjects were contacted in the evenings when the men who were working were more likely to be home, whereas the men in the domiciliary sample were contacted during the day, when many men would be at work.

Having described the classification of groups to be used, we may now turn to a consideration of the results bearing directly upon the investigation of the retirement impact hypothesis. The various indicators will be dealt with in turn.

(1) The Heron Inventory

As a preliminary step, the men who were about to retire or already retired at the time of the first interview were compared as a group with those who were working. The results of this analysis are given in Table 18.

TABLE 18 - Comparison of Heron Inventory Scores at first interview between men "working", "about to retire", and "already retired".

	N(2)	Mean	s^2	F	p	t	n	p
Emotional Maladjustment Scale								
Working	54	4.94	8.65					
About to retire	29	5.10	7.54	1.15	+	0.22	81	+
Already retired 1,2	17	6.41	10.41	1.21	+	1.67	69	approx 0.10
Already retired 1,3	16	5.81	9.26	1.07	+	1.01	68	+
Sociability								
Working	55	4.75	3.94					
About to retire	29	5.28	4.87	1.24	+	1.04	82	+
Already retired 1,2	17	5.17	6.31	1.60	+	0.40	68	+
Already retired 1,3	16	5.32	4.19	1.06	+	0.58	67	+

+ p is greater than 0.10

Notes:- (1) The distributions upon which these figures are based are included at Appendix C.

(2) The N's for supposedly comparable groups may differ slightly since some men did not complete all the procedures.

From this table it may be seen that the mean scores tend to increase from the working group, through the retired group to the already retired group, though none of the differences even approach significance. The men about to retire are also approximately equal to the already retired group on sociability score. It is possible that there might be a slight pro-active influence of retirement among the men about to retire. One might perhaps expect this at a time when men are forced to consider their fitness or otherwise to carry on work. But the trend, though systematic, is so small as not to warrant the basing of an hypothesis upon it, though data from the 'I am' test tobe presented later supports the possibility of such a pro-active effect.

The procedure for comparing the various groups through time, that is, from interview to interview was as discussed by McNemar (op cit). Differences between scores for each subject on the initial test as against the first retest, and between those on the first retest and the second retest were computed. Hence mean differences for each group were found. The mean difference for each retired group was then compared with the mean difference for the working group at the corresponding stage of the procedure by means of the 't' test. Calculation of variances, F ratios, and t-values was carried out according to the orthodox procedures, except where the variances for the groups being compared differed considerably, though not necessarily significantly. In these cases the value of t required for a significance at the 0.01 level was obtained by the formula

$$t_{.01} = \frac{(s_{\bar{x}_1}^2)(t_1)+(s_{\bar{x}_2}^2)(t_2)}{s_{\bar{x}_1}^2 + s_{\bar{x}_2}^2}$$

where $s_{\bar{x}_1}^2$ and $s_{\bar{x}_2}^2$ are the variances of the two comparison groups and t_1 and t_2 are the values of

t for the 0.01 level with the degrees of freedom obtaining for the two groups individually. See EDWARDS (1951).

At this point the hypothesis set up prior to examination of the data, and required by the retirement impact theory might well be restated. There should be a significant increase in emotional maladjustment and a decrease in sociability (represented by an increase in score on the sociability scale) among the men who retire as compared with the men who remain at work.

As regards the men who had been retired some time prior to the initial interview, on the retirement impact theory one would expect them to be complementary to the group who had newly retired in accordance with the experimental design. This research deals specifically with the first year of retirement, and any conclusions based upon it refer only to this first year. It has been shown above that there is some evidence that this is the most difficult period of retirement. But the more extreme proponents of the retirement impact hypothesis maintain that <u>any</u> evidence of increased mortality at any age beyond retirement may be attributed to retirement impact (cf SHELDON 1948). Alternatively, it is said, that should the null hypothesis be substantiated in regard to the first year of retirement, this is only because the effect of the trauma does not become evident until later. If this is so, then the men who have already retired ought to show some evidence of this delayed trauma even if the newly-retired men did not. Hence one would expect them also to show an increase in score. In parenthesis, it ought to be pointed out that the investigation of this group of already retired men is not of the same degree of precision as that of the other groups because the length of time since retirement is not controlled; because any men who have succumbed drastically to any effects of retirement will probably be institutionalised or dead; and because these men

are all prematurely retired they will not be comparable, for reasons previously referred to, with a group of men who are some years past a retirement at the usual age. However, the data is there; it may shed some light on the retirement situation; and it would be wrong to discard it without further examination.

TABLE 19 - Analysis of Different Scores - Heron Inventory

(a) Emotional Maladjustment

Difference of 1st time against 2nd time

		N	Mean Difference	s^2	F	p	t	n	p
Working		53	0.264	8.35					
Retired	(1)	6	-0.167	3.77	2.22	+	0.356	57	+
Retired	(2)	25	-0.430	2.62	3.18	+	0.810	74	+
Retired	(3)	27	-0.220	2.79	2.99	+	0.930	78	+
Already Ret	(2)	12	0.167	3.42	2.44	+	0.111	63	+
Already Ret	(3)	13	0.231	4.36	1.91	+	0.039	64	+

Difference of 2nd time against 3rd time

Working		33	-0.545	3.57					
Retired	(1)	8	+0.250	3.93	1.10	+	1.060	39	+
Retired	(2)	12	-1.080	2.81	1.27	+	0.860	43	+
Retired	(3)	18	-0.945	4.05	1.13	+	0.336	49	+
Already Ret	(2)	11	-1.657	4.86	1.36	+	1.590	42	+
Already Ret	(3)	14	-1.070	4.74	1.33	+	0.850	45	+

+ p greater than 0.10

TABLE 19 - Analysis of Different Scores - Heron Inventory

(b) Sociability

Difference of 1st time against 2nd time

		N	Mean Difference	s^2	F	p	t	n	p
Working		53	-0.019	2.48					
Retired	(1)	6	+0.500	3.50	1.41	+	0.752	57	+
Retired	(2)	22	+0.136	3.56	1.44	+	0.366	73	+
Retired	(3)	26	-0.192	4.33	1.75	+	0.361	77	+
Already Ret	(2)	12	+0.330	2.06	1.24	+	0.696	63	+
Already Ret	(3)	13	+0.620	1.59	1.56	+	1.300	64	+

Difference of 2nd time against 3rd time

Working		33	0.182	2.220					
Retired	(1)	8	-0.125	3.268	1.47	+	0.504	39	+
Retired	(2)	13	-0.154	1.470	1.51	+	0.725	44	+
Retired	(3)	18	-0.222	1.130	1.96	+	1.020	49	+
Already Ret	(2)	10	-1.200	2.840	1.28	+	2.500	41	between 0.01 and 0.02
Already Ret	(3)	14	-0.715	2.840	1.28	+	1.880	46	greater than 0.05

+ p greater than 0.10

Note:- Distributions upon which these calculations are based are given at Appendix C.

With these hypotheses in mind the data can now be examined. It will be seen that the mean differences for all the groups are numerically small. Over the period of the investigation the group picture is one of marked stability, and there appears to be little effect of age, that is, there is no systematic increase in score running throughout all groups. The fact that some large individual

variations in score did occur serves to emphasise the stability of the others. These individual variations will be referred to again in the next chapter. On the E.M. scale, the only mean differences which numerically exceed 1 are the retired (2) group and the already retired (2) and (3) groups, both being differences between second and third interviews. The first appears to be accounted for by case number 175 which gave a difference between second and third interviews of -5; the second to case numbers 175 (-5), 172 (-4) and 199 (-4); and the third to case numbers172 (-4), and 199 (-4), though to counter-balance these, case 82 showed an increase of 5.

The comparison of the variances of the various groups with that of the working group yields no significant differences. There again appears to be no systematic trend running through these results. On the whole, the various groups seem to show increase in variance towards the later retests, on emotional maladjustment but the very marked exception to this is the working group. This large decrease in variance is probably not due to the loss of 20 cases between the second and third interviews, since a comparison between the difference sccres of those men who dropped out after the second interview with those who persisted for a third interview shows that the variances for these two groups were not significantly different. ($F = 1.205$ $n_1 = 19$, $n_2 = 32$), p is greater than 0.10.

In only one case is there a significant difference between mean difference score for the working group and that for one of the other groups (sociability, already retired 2, 2nd vs 3rd interview). In general, the lack of significant differences is striking, and little emphasis can be given to the achievement of one significant difference among so many calculations. The already retired group does tend to score more highly than the other groups, and it will be shown later that this is

also true of the Cornell scores, while case material suggests that some of these men show evidence of poorer health and tend to have retired because they found their work a strain.

The fact that there appears to be an increasing trend for the differences between subsequent tests and the one before it to become negative is probably due to interaction between the test administrations. Although the subjects were specifically asked not to try to recall what answers they had given at previous administrations, and although several spontaneously said that they hoped they would not be asked to try to recall their previous answers because they could not, some degree of test sophistication must have persisted. This may have tended to make the subjects respond in a more superficial and hence more socially-determined way. This phenomenon has also been noted by workers with the Cornell Medical Index (TUCKMAN et al 1954), and it is true of results obtained with the CMI in the present research.

(2) The Cornell Medical Index

The procedures for analysis of this data were the same as for the Heron material. The results of the preliminary analysis to compare the working group with the about to retire and the already retired group are shown in Table 20.

TABLE 20 - Comparison of Cornell Medical Index scores at first interview between men working, about to retire, and already retired

	N	Mean Score	$s^{2(2)}$	F	n p	t	n p
Working	52	13.80	0.0790				
About to retire	29	13.34	0.0550	1.435	28 +	0.244	79 +
Already Retired (2)	17	19.03	0.1322	1.675	16 +	1.448	67 +
Already Retired (3)	16	19.03	0.0782	1.010	15 +	1.760	66 +

+ p is greater than 0.10

Notes:- (1) Distributions upon which these figures are based are given at Appendix C.

(2) Since the distribution of the scores was highly skewed and thus would invalidate the statistical procedures, the distribution was normalised using a logarithmic transformation.

The difference between the means is not significant, though very nearly so at the p = 0.05 level. This is consistent with the corresponding results on the Heron Inventory and suggests that there may be some consistent tendency for the already retired men to be less fit and subject to more stress than the men who were working. Both the already retired groups have the same mean but the smaller variance of the retired (3) group accounts for the greater significance of its difference from the working group mean.

To proceed to the analysis of the difference scores, the results are given in Table 21.

TABLE 21 - Analysis of Difference Scores - Cornell Medical Index

Differences of 1st time against 2nd time

	N	M	s^2	F	p	t	n	p
Working	50	+0.220	25.22					
Retired (1)	8	+1.500	20.56	1.230	+	0.664	56	+
Retired (2)	22	-0.050	12.92	1.950	+	0.244	70	+
Retired (3)	26	-0.350	16.49	1.530	+	0.493	74	+
Already Retired (2)	12	1.667	23.94	1.055	+	0.885	60	+
Already Retired (3)	15	1.692	21.25	1.194	+	0.941	61	+

Difference of 2nd time against 3rd time

Working	32	-0.625	15.125					
Retired (1)	8	-1.725	15.636	1.038	+	0.784	38	+
Retired (2)	11	-1.636	21.855	1.446	+	0.733	40	+
Retired (3)	18	-1.831	15.211	1.143	+	1.079	48	+
Already Retired (2)	11	-3.909	24.819	1.640	+	2.245	41	between 0.05 & 0.02
Already Retired (3)	15	-3.395	20.379	1.345	+	2.072	43	approx 0.05

+ p greater than 0.10

Note:- Distributions on which these calculations are based are given at Appendix C.

In accordance with the retirement impact theory, we should expect the retiring men to show a higher score on the Cornell Medical Index, i.e. make more complaints of illness. But again the picture is one of marked stability, with such changes as there are being mainly negative, especially between the second and third administration. The already retired group initially show an increase, though not a significant one, in mean score, and

this may be consistent with their apparently greater preoccupation with health as suggested by the preliminary analysis. To compensate for this increase in score, they achieve a large negative score on the second administration, one of which, the already retired (2) score, is significantly different from the working group difference at more than the 0.05 level, and the other of which, already retired (3) is significantly different from the working group difference at approximately the 0.05 level. Too much should not be made of these fluctuations, since the mean scores for relatively small groups such as are found in this research are greatly influenced by any large alterations in the score of one or two individuals. Thus in the case of the already retired groups, case 107 shows a difference of +29 between first and second interviews and -26 between second and third interviews. Similarly case 199 compensates for a difference on the first two interviews of +12 with a difference on the second two of -16.

To summarise this data on both the Heron test and the Cornell Medical Index, then, the picture is one of marked stability. The lack of significant differences is to be remarked. Of 30 differences examined, only three approach significance, and these at only the less acceptable levels. Since some differences would be expected to be statistically significant even on a chance basis, the null hypothesis must be accepted. If one examines the size of the various t-values, one is struck by the smallness of most of them. Of the 30, 21 are less than unity and several are very small indeed. What is one to say about this state of affairs? One cannot prove the null hypothesis. If such a succession of very small t-values had been obtained with large samples of several hundreds at least, one would be on surer ground in suggesting that there really was no difference between the groups. On the other hand, if the results obtained had been consistent in direction and with t-values

of sufficient magnitude to suggest that with a larger sample significance would have been achieved, one would have ascribed the lack of definite results to the small samples. As it is, one can say that if an effect is present, it is in any case sufficiently small to suggest that the effects expected under the retirement impact hypothesis are not nearly so great as has been supposed, if indeed they exist at all.

In the above analysis, the retired men have been combined into groups retired 2 or retired 3, men who are not doing any further work after retirement, or those who may or may not be doing further work of some kind but who do regard themselves as retired. Several times in the course of the previous discussion, we have referred to the shortcoming of many researches that they do not take into account the actual state of retirement, but instead lump all the retired men into one category. The distinction made in the present research between retired, and already retired men, and between the various states of retirement within these basic categories, is an attempt to do this. But since the retired 2 and retired 3 groups are not mutually exclusive, some attempt to examine the results of mutually exclusive categories might be looked for. It is one of the disappointments in this research, that for reasons already stated, it was not found possible to reach a sample size such that adequate numbers of men would fall into all the categories. However, although very small numbers are involved, it has been found possible to examine the differences in scores between two mutually exclusive groups among the retired men.

Within the retired category there are three possible groups. These are:-

2,0 Have stopped work do not consider themselves retired

2,3 Have stopped work, do consider themselves retired

0,3 Have stopped work, taken on further work of some description, but consider themselves retired

Only one subject fell into the first of these groups, but sufficient numbers were available at all interviews in the other groups to permit an analysis by the Mann-Whitney 'U' test (Seigel op cit). Numbers of subjects for the second group ranged from 22 to 13 over the interviews, and from four to six for the third group. Hence the analysis boiled down to an investigation of the differences between the second two groups for all interviews for the three tests. The results are given in Table 22.

TABLE 22 - Analysis of differences in test scores between men not working and regarding themselves as retired, and men working but regarding themselves as retired

Test	Interview	p (two-tail)
Heron E.M.	1st	0.50
	2nd	0.46
	3rd	greater than 0.10
Heron Sociability	1st	0.92
	2nd	greater than 0.10
	3rd	greater than 0.10
CMI	1st	0.32
	2nd	greater than 0.10
	3rd	greater than 0.10

It appears, therfore, that as far as the present research is concerned, the presence or absence of post-retirement employment makes no difference to the test scores of the subjects. The work which the subjects had was not, of course, full time employment. The men who had got further full time work after retirement formed the retired 1 group and are shown in the main analysis. The work which the 0,3 men had was part time, casual work of the sort which is usually regarded as

pensioners' work.

The question of the validity of the inventories used has been raised, and can now perhaps be considered in the light of the results. These inventories, of course, do not stand or fall alone in the present research, and the literature relevant to their validity has already been discussed. But even if the procedures have proved valid in other situations it does not follow that they will prove valid in this one. Some evidence on the face validity of the inventories will be presented in the next chapter, but it is worth investigating here the correlation between the Heron and the Cornell inventories. A high intercorrelation does not, of course, prove that both or either of the techniques are valid, and indeed the ultimate correlation of plus (or minus) one would in a sense be self-defeating, since it would show that one of the inventories was redundant. But since the Cornell and the Heron are similar in content, though differently standardised, and since "emotional maladjustment" is related to physiological symptoms, a fair degree of correlation between the two techniques would be expected. On the other hand, there seems no a priori reason why there should be any correlation between sociability and the CMI, except possibly that if a man is too ill to go anywhere he may become misanthropic. Dr. Heron (op cit) has argued that "the great weight of clinical and ordinary observational evidence supports an assumption that healthy individuals may differ in the degree of sociability characterising their behaviour, quite independently of their emotional adjustment to the social and natural environment. The contrary, however, does not appear to be equally true. Those people admitted for treatment as 'emotionally maladjusted' (or 'neurotic') are far more often asocial and withdrawn than the reverse ....".

The correlation coefficients which were obtained between the Heron Inventory and the CMI are set out below.

TABLE 23 - Product-moment correlation coefficients between Heron Inventory Scores and Cornell Medical Index scores

Scale	N	r	p
CMI v Heron E.M. 1st interview	120	0.73	less than 0.0001
CMI v HeronE.M. 2nd interview	93	0.68	less than 0.0001
CMI v Heron E.M. 3rd interview	77	0.75	less than 0.0001
CMI v Heron S. 1st interview	119	0.05	0.60 not significant
CMI v Heron S. 2nd interview	94	0.06	0.64 not significant
CMI v Heron S. 3rd interview	78	0.08	0.48 not significant

These coefficients are in accordance with expectation, the correlation of Heron E.M. with the CMI being about a consistent 0.7, and there being no evidence of correlation between Heron S. and the CMI; as far as the Heron E.M. and the CMI are concerned, this is taken as circumstantial evidence of validity of the inventories in this situation. Further evidence will be discussed in a later chapter. Not much can be said about the lack of correlation between Heron S. and the CMI. It corresponds to the expectation that there would be no correlation, but this lack of correlation is open to alternative interpretations that it may be due (a) to two valid scales measuring different variables or (b) to one or both the scales being invalid with a more or less random distribution of scores. However, the further evidence to be supplied supports the first of these two possibilities.

(3) The "I Am" Test

This test, which has been discussed in Chapter Four, was administered at the second interview only. The subjects were given ten minutes to complete the test, and then were stopped regardless of whether they had completed 20 responses or not. But many subjects could not, or would not, sustain the effort for as long as this, and gave up in a shorter time. Several subjects also would not attempt the procedure at all. Of the 99 men who co-operated on the second interview, 79 made some sort of attempt at the "I am" test. When a refusal occurred, symptoms of tension other than those associated purely with the act of refusing appeared to be present. In some cases this might have been due to the strangeness of the situation, but some men perceived the procedure as a threat, and said that there were some things you just kept to yourself, or "This may make me say things I'd rather not tell you". In some cases, prompting was necessary, when it was clear that the subject had not grasped the meaning of the instructions. The prompt was always the same for all subjects. If they showed puzzlement they were told "You might start off with the statement 'I am a man'". It was hoped that this would convey the idea of what was required, without being so specific as to suggest more than a general type of response. Fifty-three of the 79 subjects required no prompting, and 26 had to be prompted in the way described.

The median time which was expended on the test was five minutes approximately, and as will be seen from the distribution in Table 24, this time appeared to dichotomize the subjects very well, since the distribution is bimodal with subjects either giving up quite speedily, or else carrying on to complete the 20 responses or to complete ten minutes. In only one case was a subject able to complete the procedure in less

than five minutes.

TABLE 24 - Numbers of subjects spending the stated amounts of time on the "I Am" Test

Minutes	f	Minutes	f
1	1	6	5
2	6	7	
3	3	8	7
4	7	9	
5	24	10	26

The distribution of the number of responses is listed in Table 25.

TABLE 25 - Numbers of subjects making the stated numbers of responses on the "I Am" Test

Number of Responses	f	Number of Responses	f
1	1	11	1
2	3	12	5
3	4	13	3
4	11	14	2
5	6	15	3
6	4	16	3
7	5	17	1
8	5	18	1
9	6	19	1
10	4	20	10

The median number of responses was eight. This compares with the median of 17 obtained by Kuhn and McPartland (op cit) with their University students. Allowing for the fact that the

students were given 12 minutes as against ten minutes in this research, and for the fact that 53 men limited their own time of participation by giving up before the expiration of the time allowed, this median is still much lower, and is a rough measure of the difficulty which these elderly men experienced in applying themselves to the test.

There was no relation between the subject's employment status and the likelihood of his refusing to do the "I Am" test. (Chi-square = 0.31, n = 1, p between 0.70 and 0.50). There was also no relation between employment status and the number of responses made by the subject. The mean number of responses for the group which carried on working was 9.98; the mean for the group who retired in the six months' interval between first and second interviews was 9.25; and that for the already retired group was 10.33. The differences between the two latter means, and the working group mean were not significant, the t-values being 0.43 and 0.095 respectively, and p in each case being considerably larger than 0.1.

The first step in the evaluation of possible differences between working and retired men, was to examine the use of 'consensual' responses as a score. In a footnote to their paper (Kuhn and McPartland op cit), the authors refer to the use of the characteristics of responses in research in the clinical field, and they say that "there are some interesting indications that those with few, if any consensual statements to make have symptoms of emotional disturbance, while those having few statements of any kind to make are of Reisman's "radar" type, taking their cues from each specific situation ....".

The responses made by each man were

classified severally as 'consensual' or 'non-consensual' by the present writer, and also by another person, trained as a psychologist,[1] but having little knowledge of the present research. The two raters were in agreement over the classifying of all but 42 of the 776 responses, an agreement of 94.59%. This classification therefore appears to be reasonably stable, and the independent rater's data was used in analysing the responses.

Kuhn and McPartland used the number of consensual responses as a score, and gave a theoretical basis to this procedure by showing that subjects almost always gave all their consensual responses before going on to give subconsensual ones. This was substantiated by subjecting the responses to a Guttman Scale Analysis (GUTTMAN 1950). A coefficient of reproducibility[2] of 0.903 was obtained. In the present research, the responses, when subjected to a Guttman Scale Analysis using the Cornell method (GUTTMAN 1947), gave a coefficient of reproducibility of 0.955 for the 20 possible statements. The assumption, made by Kuhn and McPartland, that non-responses to any statement should be grouped with sub-consensual responses on one side of the dichotomy and opposed to consensual responses was also made here. Guttman regards a coefficient of at least 0.90 as satisfactory (a coefficient of 1.00 would mean that the pattern of any subject's responses would be reproducible from his score).

1 My thanks are due to Mrs. G. MacKinnon who carried out this rating.

2 The coefficient of reproducibility =

$$1 - \frac{\text{number of errors}}{\text{number of questions} \times \text{number of respondents}}$$

Guttman has pointed out that where the "marginals" for a statement (response) are extreme, the coefficient of reproducibility tends to be inflated. Thus if in responding to a dichotomous statement, as here, where the response can only be consensual or subconsensual, the proportion of one type of response is 10% and of the other 90%, the possibilities of error are artificially restricted. The frequencies are distributed in this way in the responses to the last 12 statements in the present research. This is partly due to the fact that only 30 of 79 men completed more than ten statements, and as a result the "subconsensual + non-response" side of the dichotomy is inflated. However, the coefficient of reproducibility based on the first ten statements is still 0.923, so that this consideration does not unduly influence the scaling. It thus appears that in this research also, the subjects tended to exhaust their consensual responses before giving subconsensual ones, and the use of the number of consensual responses as a score is justified systematically rather than on a purely ad hoc basis.

But the fact that the statements constitute a scale may be pursued further for as has been shown, the subjects experienced some difficulty in handling this procedure, and their number of statements is somewhat attenuated. Consider the four hypothetical scores shown below.

Subject	Consensual	Subconsensual	Total
A	5	5	10
B	5	10	15
C	10	10	20
D	10	1	11

On the system of scoring in use here, subjects A and B are bracketed together, as are subjects C and D. Yet at first sight this appears to be erroneous, since A makes 10 responses in all, and 50% of these are consensual, while B makes 15

responses in all and 33% of these are consensual. Similarly C makes 50% consensual responses, while D makes 91%. Scaling, however, resolves this difficulty since we can say something about the predictability of further responses. Once a man begins to make subconsensual responses, the chances are about 90 in 100 that he will go on making them (because of the coefficient of reproducibility). Hence the probability is very high that if subject A had gone on making responses up to a total of, say, 15 he would have continued to make subconsensual statements, and his results would have been similar to B's. A similar argument holds for subjects C and D. The fact that subjects A and D stopped soon after beginning to make subconsensual statements might be due to the difficulty of verbalising subconsensual as compared with consensual statements, to emotional blocking, or to some other unknown factor. In a group of subjects such as those used in this research, the first alternative seems the more probable. On this argument then, the system of scoring using only the consensual responses is adequate in spite of the attenuation present in many cases.

If, then, the system of scoring as used by Kuhn and McPartland is to be used here also, the expectation concerning the difference between retired and working groups must be made explicit. Insofar as consensual statements are those where there is explicit role-or group-membership reference, where a relatively unambiguous view of one's place in society is taken, then one would expect the working group to make more consensual statements than the retired group. This is on the assumption of the sociological version of the retirement impact hypothesis that retirement leads to a breakdown of working group roles and membership, and hence a loss of status.

TABLE 26 - Analysis of number of consensual responses by occupational status

Occupational Status	M	N	s^{2x}	n	F	p	t	n	p
Working	2.24	41	0.08007	40					
Retired (1)	2.50	10	0.0867	9	1.0081	+	0.393	49	+
Retired (2)	1.75	12	0.0820	11	1.109	+	0.779	51	+
Retired (3)	1.60	15	0.0795	14	1.007	+	1.063	54	+
Already Retired (2)	4.18	11	0.1764	10	2.21	+	1.139	50	+
Already Retired (3)	3.93	12	0.1635	11	2.02	+	0.800	51	+

\+ p greater than 0.1

Note:- x Distributions were normalised by means of a logarithmic transformation.

As Table 26 shows, the differences in mean scores for the various groups are not significant, though in the expected direction, and fairly systematic. The results are consistent with the following state of affairs. The men who are still working, or have retired from one job, but are carrying on full time at another, are most aware of their roles and their social identity; the men who have retired from paid employment, whether or not they regard themselves as retired are less well identified socially; while the men who have been retired some time apparently have settled down to it and reorganised their roles and statuses so as to preserve their social identity. The fact that they score more, even than the men who are still working could be due to the insecurities of the latter with regard to their future work status. However, in the absence of significant results this remains speculation, and the t-values are on the whole so small as to render unlikely the possibility of a larger sample yielding significant values.

The analysis of the data using the categories of consensual and subconsensual responses emphasised only one aspect of the products of the subjects. It might be that the considerable amount of material to be found in the responses would be better analysed in another way. The derivation of a suitable set of categories is always a problem when responses to any sort of open-ended question or "sentence beginning" are obtained. The possible dimensions which one might use in the present research are limitless but on an a priori consideration of the possibilities certain dimensions suggest themselves as probably more suitable. These alternatives are detailed below, with an analysis of the responses actually obtained. It should be borne in mind that the different analyses cover the same population of responses, and any response may be represented in more than one analysis. Further, the only analysis which categorises <u>all</u> the responses is the Conflict-Positive one.

a) <u>Work orientated vs Retirement orientated</u>

The rating criteria under this heading were as follows:-

<u>Work orientated</u> - Reference specifically to work, or to job. See status obtained by working. Appears to need work as a major requirement in life. Reference to "usefulness to community", etc. Does <u>not</u> include ambition, e.g. "for more money".

<u>Retirement orientated</u> - Reference to strain of work; need for relaxation, desire to avoid routine, etc.

It might be hypothesized that men who were working would make more reference to work, while retired men would make more retirement orientated responses. The results of analysing the responses on this basis are shown overleaf.

TABLE 27 - Work vs Retirement orientated responses

	Work Orientated		Retirement Orientated		Total Responses		Total Subjects
	Number	%	Number	%	Number	%	
Working	47	11.5	4	1.0	409	100	41
Retired (1)	8	8.7	1	1.1	92	100	10
Retired (2)	17	13.4	4	3.1	127	100	12
Retired (3)	19	12.6	7	4.6	151	100	15
Already Retired (2)	2	1.9	0	0	106	100	11
Already Retired (3)	2	1.7	0	0	116	100	12

The pattern of responses is not in accordance with expectation, since the retired men (retired 2 and retired 3) make a higher proportion of work orientated responses than do the men who are working. On the other hand, the men who have retired but gone to another full time job (retired 1) make a much smaller proportion of work orientated responses. The men who have already been retired some time (already retired 2 and 3) make very few work orientated responses at all. Very few retirement orientated responses were made, but the highest proportion, for what it is worth, was made by the retired 3 group. This is the group the members of which regard themselves as retired. Were these results to be supported by larger numbers, it seems possible that their interpretation might run as follows. The already retired men have resolved any conflict about the work situation. They have left the field, and settled down. The retired 1 men have separated from their previous employment, but have obtained further work which at any rate temporarily solves the problem for them. The working men hope to keep on at their job and have been able to do so. But they have not been able to evaluate their suitability for a job as the re-employed retired men have, by being positively accepted for work. Their tenure of their job is based upon an absence of rejection rather than on anything positive.

The men who have ceased work altogether have not, in the six months since retirement, settled down completely, and their frame of reference is still an occupational one. That this interpretation is not entirely without foundation is suggested by the various comments made by the subjects about work and retirement, and it is also consistent with the findings using consensual and subconsensual responses. But it must also be borne in mind that the analysis is based on number of responses made by the group, and in fact, some few men contributed disproportionately to the small number of relevant responses made. In addition the number of responses, especially in the case of three of the groups, is very small.

b) Superficial vs Introspective

The definitions of these responses were:-

Superficial - Implying a snap "off the top" statement, possibly with a frivolous content. Reference to very common categories such as "football fan", etc. Mention of stereotyped 'good' qualities without qualification.

Introspective - Implying self-evaluation; use of "feeling-words" in description. Some thought given to use of categories.

The hypothesis behind this categorisation was that the retired men, being in a situation where their frame of reference had been broken down would be likely to show more evidence of self-evaluation than the working men, whose situation had not been changed. However, this analysis was abandoned when it was found too difficult to decide what was a "superficial" response and what was an "introspective" one, so much of the judgement depending on one's own preconceptions. Furthermore, it became clear that, on the rating system being used, there was very little difference between

this system and the consensual-subconsensual scheme.

c) Optimistic vs Pessimistic

The definitions of these responses were as follows:-

Optimistic - Indicates contentment, satisfaction unqualified.

Pessimistic - Indicates discontent, dissatisfaction, anxiety.

The rationale for this classification was that the retired men might be expected, on the basis of the retirement impact hypothesis, to make more pessimistic responses than the working men and less optimistic responses.

TABLE 28 - Optimistic vs Pessimistic Responses

	Optimistic		Pessimistic		Total Responses
	No.	%	No.	%	
Working	90	22	11	2.7	409
Retired (1)	14	15.2	1	1.1	92
Retired (2)	25	19.7	20	15.8	127
Retired (3)	29	19.2	24	15.9	151
Already Retired (2)	23	21.7	4	3.8	106
Already Retired (3)	27	23.3	4	3.5	116

As will be seen, the proportion of 'optimistic' responses is of the same order for all the groups, though the retired 1 men show less optimistic responses than any of the other groups. The difference between this proportion and that for the 'working' group gives a C.R. of 1.59, so that it is not significant, though a larger sample might make it so at the 0.05 level. It may be that

these men have reached a position of equilibrium which is neutral in that they are now "living for the day", and where there is an element of passivity as their activities are determined for them by work. On the other hand, this would not explain the large difference between their proportion and that of the working men who are, after all, in a somewhat similar situation. But the most interesting aspect of this analysis is in any case the very large proportion of the responses of the retired men which can be classified as pessimistic. This is nearly five time the proportion of the next groups, the already retired men. Thus, while the results are only slightly in accordance with expectation as regards optimisic, they are quite strikingly in accordance with expectation as regards pessimism.

d) Forward-looking vs Backward-looking

The relevant definitions were as follows:-

Forward-looking - Reference to things in the future, regardless of feeling tone. 'The future' refers to time some distance ahead, not just 'next week' or 'next Saturday'.

Backward-looking - Similar, but reference to the past.

As a working hypothesis it was suggested that the retired men would be expected to make a greater proportion of backward-looking responses, if indeed they regarded themselves as "finished" or as "having no contribution to make", though an equally plausible hypothesis would be that the retired men would make more forward-looking responses since they would be apprehensive of the future.

TABLE 29 - Backward-looking vs Forward-looking responses

	Forward-looking		Backward-looking		Total responses
	No.	%	No.	%	
Working	25	6.1	11	2.7	409
Retired (1)	3	3.2	1	1.1	92
Retired (2)	19	15.0	0	0	127
Retired (3)	19	12.6	6	4.0	151
Already Retired (2)	2	1.9	1	0.9	106
Already Retired (3)	1	0.9	1	0.9	116

The backward-looking responses are few in number, and do not carry much weight. But the forward-looking responses are made proportionately more often by the retired men than by the working ones - or indeed, than by the already retired ones. The difference of the proportions between the retired men and the working men yields a C.R. of 2.63 and p is less than 0.01. Reference back to the protocols suggests that these forward-looking statements made by the retired men are concerned with plans or hopes for altering their present state. The majority of these express a desire to obtain some form of suitable light work, and most usually this type of statement is made in conjunction with reference to financial insecurity or dissatisfaction. Other statements comprise a heterogeneous group which includes a desire to see children who are at present away from home (overseas) and a desire to move to a new area. It thus looks as though the second alternative hypothesis rather than the first is supported.

e) Stress Content

Responses were classified under this head if they indicated the presence of stress, irritability,

worry, anxiety, or conflict.

Clearly, on the retirement impact hypothesis, one would expect the men who retired to make more responses which would have a stress content.

TABLE 30 - Stress Content Responses

	Stress Content		Total Responses
	No.	%	
Working	16	3.9	409
Retired (1)	5	5.4	92
Retired (2)	16	12.6	127
Retired (3)	21	13.9	151
Already Retired (2)	4	3.8	106
Already Retired (3)	6	5.2	116

On the whole the number of responses showing stress content is smaller than might have been expected, but the proportion is much higher for the retired groups than for the other groups. The difference in proportion between the retired and the working group yields a C.R. of 2.80 and p = 0.003 (one tailed). It therefore looks as though some retired men are going through a stressful period, whereas the working men and the already retired men are not.

f) Health Positive vs Health Negative

These categories were defined as follows:-

Health Positive - Satisfaction with general health,

physical state, bodily capacities.

Health Negative - Dissatisfaction with physical state, etc. Mention of specific disorder, or physical shortcoming.

On this analysis, one would expect the retired men to make less positive statements about health, and more negative ones than the working men.

TABLE 31 - Health Positive vs Health Negative Responses

	Health Positive		Health Negative		Total Responses
	No.	%	No.	%	
Working	29	7.1	5	1.2	409
Retired (1)	4	4.4	0	0	92
Retired (2)	6	4.7	3	2.4	127
Retired (3)	8	5.3	4	2.6	151
Already Retired (2)	13	12.3	3	2.8	106
Already Retired (3)	14	12.1	3	2.6	116

The Health Negative responses are few, and the proportions are all of about the same order. However, the Health Positive responses do show the expected differences. The retired men show few responses in this category, the working men appreciably more and the C.R. is 0.96, being therefore not significant ($p = 0.17$ one tail). The already retired men do show a large number of Health Positive statements and the relevant C.R. is 1.99 ($p = 0.02$ one tail). This is due to the large number of Health Positive statements (seven) made by one man who had been very seriously ill for over a year - this had been the cause of his retirement - and who was now delighted to be making some progress. The overall judgement here then is that the expected differences are not shown by the data.

g) Conflict, Neutral, Positive

The analyses subsequent to the consensual vs subconsensual one have not, on any one analysis, involved all the responses without residue. The present analysis, however, does include all the responses. In essence, this analysis is not substantially different from those which have previously been carried out, but it represents a global analysis of all responses. The scheme is based upon that of ROTTER and WILLERMAN (1947), though the categories as used have been defined by the present writer.

Conflict (or unhealthy) responses were those which seemed to reveal poor health, dissatisfactions, depression, anxiety, stress, or personality defect.

Neutral responses were those which were statements of fact, statements which revealed positive or negative traits to an apparently minor extent, or ambiguous statements.

Positive (or healthy) responses were those which showed satisfactions, indications of good health, well being, activity, and a generally well orientated approach to life.

TABLE 32 - Conflict, Neutral and Positive Responses

	Response			
	Conflict	Neutral	Positive	Total
Working	18 (33.8)	227 (226.2)	164 (149.0)	409
Retired (1)	7 (7.4)	55 (50.4)	29 (33.2)	91
Retired (2 and 3)	27 (12.3)	81 (83.6)	43 (55.1)	151
Already Retd (2 and 3)	11 (10.1)	67 (69.3)	47 (45.6)	125
Totals	63	430	283	776

Chi-square = 31.08, n = 6, p less than 0.001.
Figures in brackets are the expected frequencies.

In Table 32, the retired 2 and 3 groups, and the already retired 2 and 3 groups have been combined, since they comprise substantially the same men and this would lead to an inflated chi-square. The result of the analysis is a highly significant relationship between occupational status and type of response. The greatest contribution to chi-square comes from the retired 2 and 3 men, who make very many more than the expected number of conflict responses. The next largest contribution comes from the working men who make very many less than the expected number of conflict responses.

In order to examine the difference between these two groups in particular, an arbitrary scoring system was used, giving -1 for a statement showing conflict, 0 for a neutral statement, and +1 for a positive response.

TABLE 33 - Conflict, Neutral and Positive Responses Difference between Working and Retired 2 and 3 groups

	N	M	s^2	F	p	t	n	p
Working	41	3.76	11.65					
Retired (2 and 3)	16	1.00	11.09	1.051	+	2.76	55	less than 0.01

+ p greater than 0.10

This procedure gave the results shown in the table. The retired men made significantly lower scores than the working men; that is they are further in the "bad" direction.

It is now necessary to draw all these results together. Some correlation between the various rating systems is to be expected since the same responses are being rated with each separate scheme - although the same responses do not necessarily appear in any two different ratings. Again, the final conflict-neutral-positive analysis is a global view of the battery of responses, and perhaps the various other analyses may be regarded as a kind of factor analysis of the total picture provided by it. In other words, the one analysis outlines the whole, the others fill in the elements.

If we ignore those analyses which gave very few responses, we are left with those in Table 34. By and large, the groups fall into pairs. Firstly, there is the group of all men who were working, viz:- the working group, and the retired 1 group. Secondly, there is the group of men who retired in accordance with the experimental design, the retired 1 and the retired 2 group. Thirdly, there is the group of men who were retired prior to being first interviewed. Examination of the table of ranks will show that this is apparently not strictly accurate since the two members of the pair do not always fall in adjacent ranks. This is the case with the working groups on the optimistic, stress content and health positive rankings, and with the already retired groups on the first two of these rankings. However, examination of the relevant tables (Tables 28,30 and 31) will show that in the case of the optimistic rating, all the groups gave results of about the same order, and in the case of the stress content rating all the groups except the retired 2 and 3 group did so. In the case of the health positive ranking all the groups except the already retired groups gave results of about the same order. Hence the combination of the groups into pairs seems reasonable enough. The evidence, then, is that the retired group are a problem group. They show less consensual responses, more work orientated

TABLE 54 - Rankings in various rating systems

	Con-sensual	Work Orientated	Optimistic	Pessimistic	Forward Looking	Stress Content	Health Positive
Working	4	3	2	5	3	5	3
Retired (1)	3	4	6	6	4	3	6
Retired (2)	5	1	4	2	1	2	5
Retired (3)	6	2	5	1	2	1	4
Already Retired (2)	1	5	3	3	5	6	1
Already Retired (3)	2	6	1	4	6	4	2

responses, more pessimistic responses, more stress responses, and more conflict responses. On the other hand, they appear to make as many optimistic responses as do the other groups. The already retired groups are interesting because, with their high number of consensual responses, low number of work orientated responses, and high number of health positive responses, they seem a very settled group. Their mean score on the conflict-positive continuum also approximates to that of the working group (3.4 as against 3.8). The behaviour of the results for the already retired groups compared with those for the working groups (except on the health positive analysis) suggests that it is not unreasonable to regard the retired group as a transitional group between two fairly settled groups, those composed of men still at work, and those composed of men who have had time to settle in to retirement. The case of the health positive analysis may perhaps be illuminated by the consideration that many of the men who were still working expressed, in another part of the interview, their anxiety about the possibility of their health remaining good enough for them to continue working.

The obvious question which these results raise is how they are to be reconciled with the absence of differences between the several groups as shown by the questionnaires. In the former case we have evidence of at least a quasi-morbid state, in the latter we have none. One possibility is that since the "I am" test was given at the second interview only, it falls into one of the pitfalls referred to in regard to "cross-sectional" researches, namely that it does not take into account the possible relation between poor health and likelihood of retirement. However, in the present research it is possible to check this. If it is true that the retired men now show more evidence of morbidity because they were more ill when they retired then their Heron and Cornell scores ought to be higher at first and second interview than those for the working men. It

has already been shown that the mean differences between the first and second interview did not differ significantly for the two groups. What is now necessary is an examination of the scores at the first interview. The results of this analysis are shown in the table below.

TABLE 35 - Comparison of men still working with men who were about to retire. First interview. Results on Heron Emotional Maladjustment, and Sociability, and the Cornell Medical Index. Only men completing "I Am" test.

	N	Mean	s^2	F	p	t	n	p
Heron E.M.								
Working Group	41	4.77	8.07					
Retired Group	16	5.50	9.66	1.20	+	0.85	55	+
Heron S.								
Working Group	41	4.93	4.48					
Retired Group	16	5.86	6.46	1.44	+	1.41	55	+
C.M.I.								
Working Group	41	17.00	23.75					
Retired Group	16	16.39	16.00	1.48	+	0.44	55	+

+ p greater than 0.10

It seems that the effect noted on the "I am" test is not due to initially low level of health at the first interview. In other words, it appears that the results are not due to "sick people retiring". However, a closer examination of the results does show that the lowness of the score on the "I am" (i.e. a 'poor' score) is achieved largely by the contribution of six men

who score at or beyond the extreme negative end of the 'working' distribution. The mean scores for this group of six men are

Heron Emotional Maladjustment	7.5
Heron Sociability	5.8
CMI	22.0

It appears then that the personality of the men who form this small nucleus is an important factor in giving the retired men as a group their characteristic pattern of responses, and part of the apparent inconsistency in results seen when comparing the questionnaire results with the "I am" test results is accounted for. But examination of the material provided by this test also suggests that the "I am" has revealed some general effects of retirement which may not become, or at least have not yet become, translated into symptoms of disorder, or into anything that could truly be called by any such name as "maladjustment". In view of the statistical data offered in Chapter Nine, it is doubtful whether this occurs to any great degree. Few of the men referred in negative terms to retirement as such, though one or two did. But several references were made to economic stress consequent upon retirement.

These two influences, then, are regarded as between them accounting for the apparent inconsistency of the results on the various tests. Other possibilities are open. The sceptic might suggest that either, or both the procedures (the questionnaires and the "I am") are invalid. The "I am" is regarded by the present writer as rather hard to falsify satisfactorily. There are two reasons for this. One is that it is hard to give superficial or frivolous responses without this being apparent; one or two of the better educated subjects did this and it could be clearly seen. The other is that the "I am", as

has been remarked, aroused a good deal of tension in the interview situation, and subjects rejected it rather than falsified it.

As regards the Heron inventory and the CMI, some evidence in regard to validity, both in this and other researches has already been presented. In addition, the author feels bound to mention the sincerity of many subjects who spontaneously said at the end of completed interviews that they had tried to do their best to give accurate answers. He is, of course, mindful also of the few men whose products were probably to some extent unreliable. Here lies another advantage of longitudinal research or panel interviewing, since a revisit gives a chance of checking information and successful falsification calls for a sustained effort on the part of the subject. All this may be unconvincing to the sceptic, but it may be possible later, in some degree, to satisfy him.

(4) The Work and Retirement Situation

Having detailed the major results of the test material, we may now turn to consider the work and retirement situation of these men. This situation is illuminated by the evidence to be found in the Personal Data Sheet, and the Attitude Sheet (both are reproduced at Appendix A). The factual material is self-explanatory, but a brief comment on the attitudinal material is perhaps called for.

It will be recalled that the original intention had been to investigate the attitudes of the subjects by means of a scaling technique, but that this had not proved possible within the

confines of the present research. However, a good deal of material which indicates the opinions and attitudes of these men was uncovered both by the Attitude Sheet and by the Personal Data Sheet. Because the original data is mainly in the form of statements in the mens' 'own words, it cannot properly be said to measure the attitudes concerned, but it does indicate categories into which the men may be placed.

The material available for the examination of retirement attitudes consists of open-ended questions which were asked of the subject in a general interview (though asked in a controlled way, the answers being taken down verbatim) and some questions which were administered in a structured form on an attitude sheet.

There were marked differences between the groups in their previous employment history which are summarised by reference to the number of years in last job, that is, the job held at the time of interview in the case of men still working, or the one held prior to retirement in the case of men who had retired.

TABLE 36 - Number of subjects having spent the stated number of years in last job

Number of years	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
0-4	12		2	1	5	20
5-9	7				3	10
10 or more	45	9	21	4	15	94
Total	64	9	23	5	23	124

It is clear from inspection of Table 36 that the retired men differ from the working and already retired men in respect of their previous working history. Nearly all the retired men (34 out of 37) had worked at their last firm for more than ten years, and this is consistent with the fact, which will be shown later, that the great majority of them retired at a fixed age limit, the companies which have such arrangements naturally being unwilling to employ new labour near retirement age. All the men who had retired and then got further full time work were unwilling retirants under these fixed age schemes and were all somewhat disgruntled on this score. The working group contained 19 men who had been in their present job less than ten years. These were seven men who were employed casually as labourers; three skilled and three semi-skilled tradesmen who changed their job rather frequently but within the same kind of work; one man from the Army who had continued as a civilian clerk, and one from the Merchant Navy who became a civilian fitter for the Navy; one man who sold up his business after illness and took another job to keep his hand in; and three men who got themselves a job in the same line of business with no fixed retiring age when they knew that a fixed retiring age would be enforced. This seemed to be a fairly representative sample of the working population.

The three men in the retired groups who had been employed only a relatively short period in their last job were two night watchmen and one man employed on British Railways, who changed his job though still remaining within that organisation. The already retired group really consists of two major sub-groups, those who retired prematurely because of personal choice and the ability to do so as a result of being in employment of high status, and those who retired prematurely because of ill-health. This latter sub-group supplies all except one of the already retired men who had been employed less than ten

years at the time of retirement. The remaining man had been in casual and intermittent employment for some time prior to retirement. It is important to bear in mind, therefore, that in respect of the occupational conditions governing retirement, the working, retired, and already retired groups were very different. They differed considerably as to whether a man had been employed in the same firm for a number of years, and hence knew that retirement would occur at 65 or whether he had to carry on working because a short period of employment with his firm would not entitle him to a pension. It may be that this operates selectively. Two men, as we have seen, left, five years early, jobs which would have entailed their retirement at 65, so that they could get other jobs without this requirement while they were still young enough to stand some chance in the labour market. It may be that in this way men who would succumb to the stresses of retirement make an occupational change which protects them from it, though the evidence from this sample is that this does not happen very frequently as a deliberate process. But a short period of service with the last employer, with its implication of absences of fixed retiring age and also company pension is probably indicative of a situation where a man would not be financially able to retire, even should he wish to do so.

This point may be further elaborated by considering the prospective sources of income during retirement in the case of the men still working, and the actual sources of income of those who retired or were already retired. Table 37 gives the relevant data.

TABLE 37 - Numbers of subjects in the various occupational groups having the stated sources of income in retirement

Source of Income	Workg	Retd 1	Retd 2	Retd 3	Already Retired	Total
None	2				1	3
Retirement Pension alone	32	2	2	1	4	41
Private or Other Source alone	3				2	5
Other pension alone			1			1
O.A.P. and company pension	20	5	16	3	4	48
O.A.P. and private etc	5		2		9	16
Company and private etc	2	2	2	1	3	10
Total	64	9	23	5	23	124

Perhaps the most immediately striking thing about the table is that three men, two working and one retired, have no retirement income at all. These men had not been insured prior to 1948 when the new National Insurance pension regulations came into force and therefore would not qualify for an old age pension until ten years had elapsed. The man who had retired, however, clearly had a sufficient income since his standard of living was quite high. But the most important consideration is that the pattern of sources of retirement income for the various occupational statuses is quite different. If they retired, 32 of the 64 working men (50%) would have no source of income other than an old age pension, but the corresponding proportions for the other groups were, for the retired men who had got other full time work (retired 1) two of nine (22.2%); for the rest of the retired men (retired 2 and retired 3) three of 28 (10.7%) and for the already retired men (four of 23 (17.4%). These latter men would not have retired early had it not been for ill-health.

Corresponding to this, while 22 of 64 men (34.4%) in the working group said they would get a pension from some source other than the standard retirement pension, seven of nine of the retired 1 men said they got such a pension; 23 of the 28 retired men (82.2%) said they got such a pension; and 12 of the 23 already retired men (52.1%) said they were in receipt of such a pension. Clearly, the difference between the already retired and the retired group is largely the difference between involuntary and voluntary retirement - a proportion of the former group being, as has been seen , premature retirants on health grounds. The difference between the working and retired groups is complementary to what was found in the previous paragraph.

The sources from which these pensions came or were to come did not differ between the two groups. Most of them were pensions from employers, though a few men reported that they had subscribed for pensions to Trade Unions. Most of the pensions were small in amount, mainly because the men were too old to derive full benefits from more recently instituted super-annuation schemes. The question of the amount of benefit was not explored systematically since it was not considered central to the issue on hand, but several men mentioned amounts ranging from nine shillings to one pound and one man said his ex-employers paid him £2. The professional and managerial men were somewhat better off than this. Though they never quoted exact figures, they always commented on the "comfortable arrangements" they had come to with their respective firms. Some of the men who were still working entertained hopes of getting some kind of ex gratia payment if and when they retired, but the uncertainty of this, or the probable small size of the payment, or both, led them to discount it in their financial planning for retirement.

The subjects shown in Table 37 as having private incomes were so classified mainly because they had saved with retirement as a possible end in view. The number of men with what is normally understood as a private income was very small - possibly five at most - though it is not possible to say with certainty. It is surprising, perhaps, that more men did not save for retirement but, of course, not many of them had the opportunity to do so. Many of the men mentioned that financial stringency had been with them all their lives.

In assessing the financial possibility of retirement, it is obviously important that a man should know what his pension is likely to be, or even whether he will get one. Whether or not a man had knowledge of what his pension would be prior to retirement is shown in Table 38. The degree of fore-knowledge varied greatly. Some men who would qualify for a fixed proportion of their salary knew exactly what they would get, some could work it out because the amount received would be ascertainable according to a known formula, but some did not know until a few weeks prior to retirement. Hence what is really important in the table is that it gives some indication of the number of men kept at work to some extent at least because of doubt about what pension they would get, if any.

TABLE 38 - Numbers of subjects having or not having knowledge of pension entitlement prior to retirement

Foreknowledge of Pension	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Yes	45	6	16	5	12	84
No	19	3	7		11	40
Total	64	9	23	5	23	124

Of the total sample, 84 (67.7%) had foreknowledge of their pension entitlement and 40 (32.3%) had not. For the working men the proportions were 70.4% and 29.6%. The proportions for the other groups were: retired 1, 66.7% and 33.3%; retired 2, 69.5% and 30.5%; retired 3, 100% and 0%; and the already retired men 52.2% and 47.8%. Leaving aside the already retired group, whose peculiarities have already been mentioned, the percentages having foreknowledge about their pension were not very different for the working and the retired groups. But a difference does emerge when the question is asked "Knowledge of what"? Further analysis of the men who had foreknowledge about their pension shows the following:-

	Working		All Retired (1,2, & 3)	
	No.	%	No.	%
Knowledge that they would get a pension	13	28.9	20	74.0
Knowledge that they would not get a pension	32	71.1	7	26.0
	45	100.0	27	100.0

The percentages are almost reversed for the two groups.

It therefore appears, as was suggested above, that the financial factor was a strong one in keeping men at work since they could not afford to retire, and that this is the explanation of the relation between employment history and occupational status. The relation between the financial factor and attitudes to retirement will be dealt with later, but before this is done there are various other characteristics of the various occupational groups to be examined.

In previous discussions of retirement much has been made of the importance of a well organised approach to leisure, and the possession of hobbies and interests as means of warding off the ill effects of retirement. Particular emphasis has been laid upon the possibility of "education for retirement" and the taking up of new hobbies and social activities in preparation for the event. It is not proposed to argue directly here for or against this view, but it is important to know whether the retired men showed a tendency to prepare for retirement or to possess more hobbies and interests than the other occupational groups. If they did, then the possible deleterious effects of retirement might be blanketed by this fact. It might be, for example, that men having few hobbies and interests would be scared to retire and only those who were inherently stable and optimistic would take the plunge.

The men in this sample were not markedly interested in clubs or organisation, as the following table shows.

TABLE 39 - Numbers of subjects belonging to the stated numbers of clubs or organisations

Number of clubs etc	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
0	35	6	13	1	9	64
1	13	2	4	2	8	29
2	11	1	4	1	2	19
3 or more	5		2	1	4	12
Total	64	9	23	5	23	124

The term "club or organisation" for the present purpose includes all organised activities which require active participation at meetings, etc. Thus membership of a Trade Union would count if

meetings were attended other than during working hours, but not if the membership were completely passive. Apart from a few men who belonged to societies with specific aims and one or two active Trade Unionists, the most frequent kind of club was the "Working Mens'", or the regimental.

In the total sample, 51.6% of the men did not actively participate in any club or organisation. If membership of at least one club or organisation is taken as the criterion, then there is no relationship between occupational group and such membership (chi-square = 2.13, n = 2, p is between 0.50 and 0.30).

It seemed possible that the retired men might participate with greater intensity than the working men in club and organisational activity, even though they did not participate in a greater number of organisations. As a first approach to this, the data was examined to see whether the retired men showed a greater tendency than the working men to be office bearers in the organisations of which they were members. However, only nine of the working men, four of the retired men and five of the already retired men were office bearers so that no trend was indicated on the evidence available.

It was also possible to say whether the activities in question were regular or not. This data is given in Table 40.

TABLE 40 - Numbers of subjects participating regularly in clubs or organisations

Participation Regular	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Yes	22	3	8	2	7	42
No	42	6	15	3	16	82
Total	64	9	23	5	23	124

There was no relation between regularity of participation and occupational grouping. (Chi-square = 0.16, n = 2, p is approximately 0.90). Possibly the retired men did not actually participate more in organised activities but thought they did. Thus Payne (op cit) found that the men in his sample who said they never had a moment to spare, objectively did no more than men who said they took things easy. Something of the sort was impressionistically observed in the present sample where men who appeared to do nothing in particular maintained that they always had plenty to do and "never wearied". A more specific investigation of this was attempted by asking the men how their present frequency of participation compared with that at age 60.

TABLE 41 - Numbers of subjects reporting the stated comparitive frequency of organised activity with age 60

Comparitive Frequency	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Less	20	3	6	2	6	37
Same	39	6	14	2	13	74
More	5		3	1	4	13
Total	64	9	23	5	23	124

The relation between occupational group and comparitive frequency of organised activity is not significant. (Chi-square = 4.04, n = 2, p between 0.20 and 0.10). However, the greatest contribution to chi square comes from the retired group who do seem to have increased their participation more often than expected. The retired men themselves did not regard this as part of a conscious effort to compensate for loss of other activity. But they did sometimes mention that, with more time available, or with the cessation of shift work, they were able to go out to clubs more. But the general impression was of a tendency towards apathy, especially among the working men who were often too tired to do anything but sink into a chair when they came home at night.

Apart from these organised activities, the use of spare time is difficult to pin down, for if a man says he potters in the house, this may mean that he sometimes does an odd job, or alternatively that he carries out fairly elaborate "do-it-yourself" schemes. Similarly, if a man can give one or two quite definite ways in which he spends his spare time, this may mean that he does these things and nothing else, or that he can give these as examples of a general well-organised orientation. Obviously to arrive at an adequate assessment is extremely difficult. The procedure followed here was simply to rate the men according to whether it appeared that their use of spare time was general or specific. The basis for this rating was that if a man said he read the papers a bit, went to the football on Saturday, sometimes went to the pictures, did a bit of decorating in the house, etc, this was classed as a general use of spare-time; if he said that he spent some time reading books or papers, was a keen amateur photographer, and a mountaineer, being a Life member and Committee member of the Alpine Club, and was also on various other committees, this was classed as specific

use of spare time. These are actual examples and illustrate also the fact that to some extent it was possible to check the claims of the subjects. Sometimes it was the wife or daughter who volunteered information after the interview, but more reliable was the interviewer's own observation. Thus in the two cases mentioned, such a check was possible. The amateur decorator lived in a home which was very badly in need of decoration, and the apparent activity in this line was limited to a recently painted cupboard door. In the home of the amateur photographer-climber, some photographic plates and chemicals stood on a side tible, and in the hall a pair of climbing boots and skis were standing. The information relating to use of spare time, then, is probably reliable, and is given in the table below.

TABLE 42 - Number of subjects showing general or specific use of spare time

Spare time use	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
General	48	6	16	3	17	90
Specific	16	3	7	2	6	34
Total	64	9	23	5	23	124

The relationship between use of spare time and occupational status is not significant. (Chi-square = 0.38, n = 2, p is approximately 0.80).

Another aspect of the use of spare time is the possession of hobbies or interests. No definition of a hobby or interest was given to the men. All items given under this heading were accepted if they seemed regular activities and not just something which a man did occasionally. Thus, if a man said his hobby was golf, and then showed that he just played an occasional game, this

was not regarded as a hobby, but if a man said that he managed a round of golf two or three times a week, this was included. Similarly, participant activity had to be involved. Hence men who said their hobby was football, that is, watching a match on Saturday and during the rest of the week talking a great deal about the local team, this was not regarded as a hobby.

TABLE 43 - Numbers of subjects having the stated numbers of hobbies

Number of Hobbies	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
0	44	6	10	4	11	75
1	13	2	8	1	7	31
2	6	1	5		4	14
3 or more	1		2		1	4
Total	64	9	23	5	23	124

It will be seen from Table 43 that the majority of these men (60.5%) had no hobby at all, and the impression was also gained that there was a social class gradient about hobbies, men in the artisan and labouring classes tending to have no hobbies and to spend their spare time in bed or sitting around, and men in the professional and quasi-professional classes tending to have at least one hobby and often several - probably partly because they could afford to doso. The relation between number of hobbies and occupational grouping, on the basis of possession of at least one hobby, approached significance. (Chi-square = 4.73, n = 2, p is between 0.10 and 0.05). The greatest contribution comes from the men still working, who less often than expected reported having hobbies. The next largest contribution comes from the already retired men who more often

than expected reported having hobbies. The retired men tended to have hobbies more often than expected but this was much less marked. When the question is asked whether the men took up these hobbies prior to retirement, as a preparation, or subsequent to retirement as a remedy for boredom, the answer is to be found in Table 44.

TABLE 44 - Numbers of subjects professing to have taken up hobbies recently

New Hobbies	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Yes	1	0	1	1	0	3
No	63	9	22	4	23	121
Total	64	9	23	5	23	124

It is clear that hobbies were almost always of long standing. This, taken with the findings in regard to the number of hobbies, suggests that presence or absence of hobbies may have been a factor in the decision to retire or to remain at work. The men who had a choice, that is, the men who remained at work, and part of the already retired group, acted consistently with their prior possession of hobbies. If they had none, they tended to stay at work, whereas if they had some, they tended to retire. The retired men on the other hand had no choice about retirement - as will be shown later, they nearly all retired under fixed age schemes - and so the possession of hobbies was only marginally an issue. This analysis confirms broadly the impression gained during the interviewing, though as has been suggested, the issue is somewhat complicated by financial considerations, the men who could afford a number of hobbies being also the men who could afford to retire. Moreover, the analysis does not say whether there was a tendency to spend more time on long-standing

hobbies once retirement had taken place. Experience with the sample again suggests that there was.

On the whole, the preceding analyses suggest a marked tendency not to make any preparation for retirement. Some men saved for retirement and were able to supplement their pensions from this source, but as far as the more "psychological" aspects of preparation were concerned, little was done. As a matter of fact, the stress which is placed on the importance of having a hobby itself seems to derive in part from a social class bias, since the high tolerance for long periods of complete inactivity on the part of many men in the sample, both working and retired, was impressive.

The men who were working, in the main intended to carry on working, while the majority of the retired men did not intend to take up further work. There were exceptions to this as Table 45 shows.

TABLE 45 - Numbers of subjects intending to retire (working men) or regarding themselves as retired

Regarding Self as Retd or Intending to Retire	Working	Retd 1	Retd 2	Retd 3	Already Retired
No	54	9	1		3
Yes	8		22	4	18
Don't know	2			1	2
Total	64	9	23	5	23

All the men who had retired and then got further full time work intended to keep on working. Of the men who retired in accordance with the experimental design, and who had not got further work, all except one also regarded themselves as retired, while four of the five men who retired but who had got further work either part time or temporarily, regarded themselves as retired and one was not sure. The latter was a man who had retired as a schoolmaster, and was now training for the Ministry. Although he regarded himself as retired at the time of interview, he would shortly be in employment again. The five men among the already retired group who either did not regard themselves as retired or were undecided were men whose health was the determining factor in their retirement, and they either intended or hoped to get work again if their health improved.

Among the working men, six of the eight who intended to retire said they had had enough of work, or that work was getting too much for them; one was off sick at the time he was first interviewed and said he intended to retire if he did not soon get well; and one was due to retire under a fixed scheme a few weeks after the first interview. This latter man was, however, subsequently lost to the research. One of the two men who was not sure whether or not he would retire made this contingent upon his getting possession of a house which had been in his family some years. His health was failing. Another found his work very heavy but said he would like to carry on until the firm closed down, as it was expected to do within the next year.

The length of time these men intended to carry on working is shown in Table 46. The

figures are for all the men who at the time of the research were working full time and did not definitely intend to retire, that is, 56 working men and nine retired (1) men.

TABLE 46 - Numbers of subjects at work full time who intended to stay at work for the periods stated

Length of time	Working	Retired 1
Less than one year		1
Two - three years	4	2
To achieve some definite date	11	
Don't know, etc	41	6
Total	56	9

It appears from this table that, despite their avowed intention to keep working, for three of the retired 1 men, this was really quite a short-term project. Four of the workingmen also did not plan very far ahead. The 11 men who had in mind some definite date at which they might give up work almost all mentioned age 70 as their target date. Frequent mention was made of the increased pension available if they worked till their 70th birthdays, though several men in this and other groups were rather vague about the nature of the increments, and the increment appeared to be rather less of an incentive to those who knew its amount than to those who did not. Two or three of the men carrying on for some definite date were waiting to qualify for their pensions in 1958 after having been self-employed or in non insured occupations.

The great majority of the men (47 of 65 - 72.3%) who did not know how long they would carry on working said that they would keep working

as long as they were allowed by the firm, or as long as their health held out. There appeared to be considerable anxiety on this score, especially among men who felt their health failing but knew that they needed the money which only work could give them.

Financial necessity was the main reason for continuing at work, as the following breakdown shows.

TABLE 47 - Reasons given by men working for continuing at work

Reason for continuing work	Working	Retired 1	Total	%
Finance (1)	14	1	15	23.1
Boredom (2)	8	1	9	13.9
Apprehension (3)	3	3	6	9.2
Other (4)	11	1	12	18.5
(1) and (2)	16	2	18	27.6
(1) and (3)	3	1	4	6.2
(2) and (3)	1		1	1.5
Total	56	9	65	100.0

In 15 of the 65 cases (23.1%) finance was the sole reason for continuing to work, and altogether it was given as a reason in 37 cases (56.9%). It was, therefore, by far the largest single reason for continuing to work. This was also the finding of the Ministry of Pensions (op cit), though their figure (44.1%) is rather lower. When talking of the dislike of boredom, respondents simply said they "would weary with nothing to do", or some such phrase. "Apprehension" involved rather more than this. There was in these cases a definite element of fear of going into a decline, either specifically in health or generally. As

can be seen, this fear did not account for a great many of the cases as a single factor, but it appeared as at least one factor in 11 cases (16.9%). The other reasons made up a composite category. In the main they were men who could give no definite reason for carrying on but said they "just wanted to" or "never gave retirement a thought". One man, the managing director of a firm, who spent evenings working in connection with his business, and whose wife was in a nursing home, said he would like retirement if he had enough friends to help him while away the evenings. One man expressed the opinion that work was simply a duty. A man ought to work and no more could be said.

It appears from this analysis, then, that the financial incentive was the strongest in keeping people at work. It has been pointed out above that many of the men in the working groups felt anxiety lest their health did not hold out, and it was suggested that this was due to their financial worries. The present analysis shows how prevalent a problem this was. It does not show, however, the strong feelings aroused in almost all men in regard to the shortage of money. At some point in almost every interview this was mentioned by the subjects, and the impression was left with the interviewer that this was a most distressing problem to them.

The determinants of retirement reported by the retired and the already retired men are shown in Table 48.

TABLE 48 - Determinants of retirement reported by retired and the already retired men

Determinant	Retd 1	Retd 2	Retd 3	Already Retired	Total	%
Age limit	9	16	4	3	32	53.4
Own decision		5	1	6	12	20.0
Health		2		14	16	26.6
Total	9	23	5	23	60	100.0

It should be noted that all the retired 1 men, that is to say, all the men who had retired and found further full time work again were retired at a fixed age limit. They were thus unwilling retirants who would otherwise have carried on at their present job. They all had either arranged to begin new jobs before they left their previous ones, or else spent a week or two contacting individual firms until they found a job. Because of their success in obtaining further work, which bore out their opinion that they were quite fit to carry on, they tended to be the more disgruntled that they had had to leave their former job. It would have been very much more acceptable for them to carry on there.

The men who retired and did not get further full time work were also mainly retired at a fixed age limit. This was so in 20 of the 28 cases. By contrast with the retired 1 men, they seem to have made more preparation for retirement by means of saving, and there was less, though still some tendency, to be strongly critical of their enforced retirement. For example, when discussing this they were more apt to mention difficulties in promotion of younger men if the older ones did not retire. Of the six men in the retired 3 and 3 groups who took the decision to retire, three did so because of dissatisfactions with work, one because of the positive attractions

of retirement, and two fell midway between these two categories. Both the men in the intermediate position were feeling the strain of their work, and both were foremen in their trades. Both had intended for many years to retire before, as one put it, they "had to crawl home from work". The only decision which remained to be taken was when to retire. For one, age 65 seemed natural because he would then be entitled to a pension. For the other, an ingrowing toe-nail acted as a "trigger factor" (cf Richardson op cit). Being obliged to have a minor operation to remove this and having to be off work for two weeks, he decided to stay off altogether. The two men who retired for health reasons had both not expected to retire, and had both suffered a catastrophic breakdown in health. Although it was clear from their condition that neither would work again, both refused to admit that they were retired, though one, confined to his house after a hemiplegia, gradually became resigned to continued inactivity, and the other with a chronic cardio-vascular disorder, though protesting strongly that he intended to get another job, in fact never looked for one, and even placed impossible conditions upon his getting one.

The figures for the already retired group show the effect of failing health in premature retirement. Fourteen of the 23 men in this group retired prematurely for this reason. All of the men who retired on their own initiative were men in fairly affluent or very affluent circumstances who took advantage of the opportunity to retire. The three men shown as retiring at a fixed age limit are not strictly correctly so described, but they were discharged at the initiative of the employer, two being redundant and one being dismissed. At this age, this is tantamount to retirement (though one subsequently got a full time voluntary appointment, and one a part time job as a childrens' crossing keeper).

A comparison may be made between the reasons for retirement given by these men and those participating in the Ministry of National Insurance's Survey (op cit). The comparison is not likely to be exact, since the latter work analysed only men who took pensions at 65 (or 70). In the present research some of the men appearing in the retirement group did not retire until they were approaching 66, and hence they would have been included by the Ministry of National Insurance only at age 70. Moreover, as has been implied in the above discussion, the reasons for retirement are often somewhat ill-defined and their ascription to one category or another rather arbitrary.

For the purposes of comparison, the retired 1 men must be omitted, since they would not qualify for a retirement pension as they continued to work.

TABLE 49 - Comparison of reasons for retirement of present sample and that of the Ministry of National Insurance

	M. N. I. Sample			Research Sample	
	No.	%		No.	%
Chronic illness	1,218	25.2		16	31.5
Retirement by employer or discharge	1,374	28.4		23	45.0
Ill-health	1,201	24.8			
Heaviness or strain of work	174	3.6	43.5		
Wish for rest or leisure	325	6.7		12	23.5
Other reasons	408	8.4			
Not interviewed, no reply	134	2.8			
	4,834	100.0		51	100.0

Some combination of categories has been carried out in the M.N.I. sample, as can be seen from the table,

since the numbers in the present research did not admit of such a fine breakdown. But the broad comparison is clear enough. The proportions taking pensions through chronic sickness is quite comparable and well with in the limits of error. But the percentages for retirements by employer, and retirements on own initiative are almost exactly transposed for the two samples. This may be indicative of the state of affairs referred to previously where the facilities for men to carry on tend to be much more marked in Edinburgh than in many other places. Thus men who did not have to retire would have no need to do so, and would carry on. This would mean their under-representation in the sample and its biassing towards the men who were compulsorily retired. There is some indication that something of the sort is happening since the sub-sample for Scotland in the M.N.I. survey shows the second highest proportion of compulsory retirements in the whole country. In a range of percentages from 15.1 to 6.8, with a figure for all regions of 11.2, the Scottish region shows 13.3% of retirements taking place compulsorily. Scotland also has the third highest proportion of men staying on at work (62.5%). The proportion of men staying on at work in the present sample is 58.9%, which considering the relative sizes of the samples and the roughness of this analysis seems very close.

Thus, although at first sight the figures seem of a different order from the national sample, further analysis shows the variation to be not unduly great. But even supposing the sample to be seriously biassed towards the men who were compulsorily retired this would tend to exaggerate the effect of the retirement impact hypothesis. For this would mean that the sample contained a disproportionate number of men who had retired on grounds other than those of ill-health or strain. Hence, it should be a 'purer' sample for the testing of the hypothesis.

Although they felt they wished to continue work, several of the men who did so found some shortcoming with it. On the other hand, the men who had retired did not justify their continued retirement by saying that their previous job had been difficult. In common with what is observed in other fields they probably only remembered the best aspects of work. The full position is given in the table below.

TABLE 50 - Numbers of subjects according their present, or last job, the stated ratings

Job Rating	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Easy	34	3	19	3	22	81
Some complaint	23	2	1	2	1	29
Difficult	7	4	3			14
Total	64	9	23	5	23	124

A disturbing feature of the table is that six of the nine men who had retired and then got further work had some complaint to make about their new job, and four found their jobs difficult to do. The choice of new job was very limited for these men, and the work had to be got through channels which were already made. Either relatives spoke for them at the places where they themselves were employed, or the men had to make personal contacts. The usual agencies such as labour exchanges did not work for these men. As one man said when asked if he liked his new job, "you've no choice - you've got to like it". The complaints were on the grounds of the heaviness of the work, but two men also found difficulty in adapting to new work. Inasmuch as the retired men did not overestimate the difficulty of their job, this ought to lead to an overestimation of the effectsof retirement, if any, since the men would not have the social defence of having left a job which was beyond the capacity of their advancing years.

The great majority of all men thought that a fixed retiring age was a bad thing. The usual ground for this, given in almost all cases, was that a man ought to be able to carry on if he feels he can. Especially in the case of the working men who were against retirement, retirement was not acceptable on any grounds save ill-health. The statement was often made that retirement in any case was bad for one. On the other hand, the men who were for a fixed retiring age thought that if a man had worked until he was 65, he had done his share. The view was often put forward that "a fixed retirement age would be all right if the pension was all right" or "a fixed retirement age on the present pension would be nonsensical" or "unworkable".

TABLE 51 - Numbers for and against a fixed retiring age by occupational group

	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Pro	10	1	4	3	4	22
Con	33	7	14	1	9	64
Don't Know	7	1	5	1	4	18
Total	50	9	23	5	17	104

Note:- Only 104 subjects were asked this question.

It was thought, when designing the research, that the answers to the question on whether or not the subjects thought a fixed retiring age was a good thing, might be somewhat influenced by egoinvolvement, and so, as a check on this, a question was inserted in another part of the questionnaire which asked in general terms for a general comment on whether it was a good thing for "people" to retire, or whether it was better for them to carry on working. Despite

some fears that the men might not be able to make the abstraction from themselves in particular to people in general, all but a few were able to do this. The results are given in Table 52.

TABLE 52 - Answers to a general question on the merits or demerits of retirement

Answer	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Pro retirement	3	4	6	1	4	18
Con retirement	37	4	10	1	7	59
Neutral, Don't know, etc	9		6	3	6	24
Total	49	8	22	5	17	101

Note:- Only 101 subjects were asked this question.

It can be seen from this table that the attempt to 'depersonalize' the question had little effect upon the answers. Owing to the small number of subjects who voted other than 'con' retirement and the resultant small expected frequencies, a contingency coefficient cannot be worked out, there being no really meaningful way of combining categories. However, 62% of the men remained constant in their judgements between the two questions.

The most important qualitative aspect of the answers was the very marked emphasis which the working men gave to the importance of the connection between retirement and morbidity. It seems that whatever the basis for the assumption of this relationship, the propaganda

which has been put out about the beneficial effects of work on the ageing worker have been singularly successful. Many men reported that they had seen "men go downhill rapidly as soon as they retired". But in response to further questioning, they were unable to particularise. The men in the group who had friends who had retired (see Table 105) were much less certain of the relationship between the variable, though this did not greatly influence their own decisions about retirement. Perhaps the most surprising aspect of the table is the 11 men in the retired 2 and 3 groups who were against retirement in general.

All except three of these men were retired by the action of their employers. Of these three, two had to retire because of severe ill-health. Financial difficulties to a greater or lesser degree were present in all except two cases, and all the men except one talked of getting further employment, though only four had actually done so.

It therefore appears that in this sample there were marked negative attitudes to retirement based on a fear of its consequences and a worry over the financial aspct. It is difficult to say which of these was the more influential. In some cases they were even in opposition, shortage of money making retirement so far outside the bounds of possibility as not to be worth considering. The retired group did not fear the consequences of retirement, though those who had got some sort of further employment did make remarks such as "you're better doing something", which suggested that they had felt somewhat bored with nothing to do, and also that to some extent they subscribed to the popular view. Even though they could afford to live in retirement, nearly all the retired men were experiencing some financial pressure, though this was not as great as that feared by the working men to be consequent upon retirement.

The numbers of men who thought that the financial aspect of retirement would be, or was, a worry to them, are shown in Table 53.

TABLE 53 - Numbers of subjects saying that the financial aspect of retirement would be, or is, a worry to them

Financial Aspect or Worry	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Yes	31	5	6	2	9	53
No	33	4	17	3	14	71
Total	64	9	23	5	23	124

It can be seen that 53 of the 124 men (42.7%) thought that finance would be a worry to them in retirement. This figure includes only the men who said they would actually be worried, and does not take account of the men who said "it would mean a considerable readjustment", or some such phrase. If all the men at work are considered, that is, the working together with the retired 1, 49.4% were worried about the financial aspect of retirement. Of the remaining 50.6%, several men said that it was not a worry because they did not intend to retire anyway, and some said that if they had to retire, it would be a worry. On the other hand, of the men who no longer did any full time employment (retired 2, retired 3 and already retired) 17 (33.4%) said finance was a worry to them. This relatively low figure indicates that the retired men had on the whole successfully dealt with their financial problems. But that some men were worried prompts the question as to who they were. Fourteen of them had been forced to retire, nine by ill-health, and five because of a fixed retiring age. All the men who had retired prematurely and were troubled about money had done so because of ill-health. The remaining three men of the 17 had retired of their own accord. Two just drifted into

retirement after a period of indecision and casual work and both sporadically made efforts to get further work. The third man had retired early with a very comfortable income which had been subsequently somewhat undermined by inflation. Worry over money was a very relative thing. Some men were worried that they would not be able to exist at all on the money available. Other men were not as hard pressed as these, having company pensions or the prospect of them, but they did face a severe tightening up of their budget. Even the two most affluent men in the sample, one a director of several companies, and the other a retired Chartered Accountant, said that they had begun to cut back on expenditure and to be worried a little about it. This relativity of financial stringency is, of course, no new phenomenon, and has been perpetuated in the well known anecdote of the millionaire who was down to his last yacht.

One or two final impressionistic comments on attitudes towards finance in retirement need to be made. No attempt is made to document these or to be definitive about them. The field would require a full scale research in itself to document properly. But a discussion of attitudes to retirement, and finance in it, must draw attention to the fact that almost without exception the men in the sample commented on the small size of the retirement pension. These comments were varied and sometimes colourful. But they were all forceful. Almost as much feeling was generated by the denial of pensions to men who carried on working past age 65, the subjects feeling that they were entitled to them. As a matter of fact, if there were a really urgent need to encourage men to return from retirement to work, the experience with the present sample suggests that one way to do this would be to abolish the earnings rule. Several of the retired men felt it was not right that if they went back to work they would lose their pensions, and although theycould have done with the extra money to be gained from doing a job, some refused to work on

principle. They were supported in this view to some extent by a practice which appeared not infrequent in Edinburgh. This works out as follows. A "part-time job to suit pensioner" is advertised in the press. The retired man goes along. He is shown the job and discovers that the hours to be worked constitute very nearly a full working day. For example, the working day may be six hours. The job may be quite a heavy one and often is. An example which occurred was filling sacks of grain. The pay is then discussed and the prospective employee is informed that there is no point in paying him "more than two pounds ten because you'll only lose your pension". Needless to say, many men refuse, but some are so anxious to eke out a small pension that they cannot resist the prospect of an extra fifty shillings. The men who refuse these jobs describe them as "exploitation" and this does not seem too harsh a term. The culprits, it should be said in fairness, are not the more reputable employers in the city but one or two quite large firms, as well as several smaller ones, have been known to resort to these practices. Whatever other effects it might have, the removal of the earnings rule would remove also the possibility of employers using it as a means of obtaining cheap labour.

The attitude and influence of the wife is closely connected with the topic of attitudes to retirement and finance. A priori one would say that quite apart from any doominance of the wife's role in the marriage relationship, the mere fact that she has to run the house and requires money to do this would mean that her requirements would be considered by a man contemplating retirement. It is true that previous research has shown that women are not considered as much by their husbands as they might be when the pay packet is being apportioned, but the act of retirement brings such a drastic drop in income in most cases that this would, on the face of it, seem to be a different situation. The views of the wives of these

subjects are tabulated below. Not all the men were asked this question, the omissions being men who were lost to the research prior to its completion. Moreover, it should be noted that the data is obtained from reports by the men themselves. It is, therefore, not surprising that there appears to be a concordance between the mens' opinions and those of their wives. But every opportunity was taken to check the information with the wives at some point in the three interviews, and it is felt that this data is not unrepresentative of the wives' true opinions.

TABLE 54 - Attitudes of wives of subjects to retirement

Attitude	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Pro	6	0	12	3	4	25
Con	21	6	5	0	2	34
Don't know	22	2	5	2	10	41
Total	49	8	22	5	16	100

The two important points about this table are the large size of the "Don't know" category, and the way in which the numbers of wives pro and con do indeed follow what the men actually did.

The "Don't know" category also includes men with no wives, but the number of men widowed and single is not large. It therefore appears that since 41% of the men at least did not care to commit themselves as to their wives' attitude to retirement, the influence exerted by the wife must be indirect if it exists at all. The prima facie evidence from this table is that it does exist. In the case of the working men, 12.2% of the wives were pro retirement and 43% against it. For the men who had retired and immediately got new full time jobs, the proportions were 0% and 75%; for the

retired men (retired 2 and 3) the proportions were 55.5% and 18.5%. The most common reason for the wives being against retirement was the shortage of money, while the reason for being in favour was that their husbands needed a rest. Though only two of the wives actually said so, some of the working men said they thought their wives wouldn't be able to stand them under their feet all day. On the other hand, some women appeared to like the company which their husbands were able to provide by being at home.

When the attitudes to retirement of the wives were compared with those of their husbands as revealed in the responses to the general retirement question, it was not found possible to work a correlation since the numbers in the pro boxes of the contingency table were too small. However, it was found that 52 of 100 men agreed with their wives. This is much lower than would be expected, but the true extent of the agreement is somewhat obscured by the large number of wives' attitudes falling in the "Don't know" category.

The men were asked whether the wife had influenced them in their decision about retirement. This was often difficult for the men to say, but at least they were able to say whether retirement was ever discussed, in the case of the men still working, or whether the wife accepted it in the case of the retired men. The actual figures, for what they are worth, are given in Table 55.

TABLE 55 - Numbers of subjects whose wives exercised the stated degrees of influence on retirement behaviour

Wife's influence	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Influence	3	1	8	1	5	18
Non-influence	4	1	6	1	5	17
Don't know	42	6	8	3	6	65
Total	49	8	22	5	16	100

It is noticeable that 65% of the subjects were non-committal about the influence their wives had on their retirement behaviour. But this is largely due to the wives of the men in the working group. This is consistent with the fact that many of these men never considered retirement as a possibility, and hence never discussed it with their wives. In the retired group, it has already been seen that most of the men retired at a fixed age and so properly speaking the wives did not have a chance to exercise much influence - though they may have advised their husbands not to get another job. But they did appear at least to condone retirement to some extent. About a third of them exercised a positive influence in retirement. This, of course, is important since if a man is required to retire but his wife does not accept this, it must place him in a situation of great conflict. The already retired men also show that about a third of them were supported by their wives in their decision to retire, though again, several of these men had no choice but to retire because of ill-health.

The information presented in this discussion does no more than skirt around a problem which is very important but except indirectly is not germane to the present research. If it could be shown that there was a conflict in the retirement situation between the requirements of

the situation, the attitudes of the man, and the attitudes of his wife, this would be very important in the elucidation of any observed effect of retirement upon health and well-being. It is not claimed that discussion pins down the problem satisfactorily but it is believed that a fair reading of the data presented is that the wife probably does exercise a marked influence in retirement, since usually the retirement behaviour of her husband coincides with her apparent opinions about retirement. This influence seems to be exerted in general conversation rather than in specific discussions of retirement.

The question of difficulties in settling into retirement having been raised, it is worth considering how many of the retired men complained of having had difficulty in adjusting to retirement. The figures are given in Table 56.

TABLE 56 - Numbers of subjects having or not having difficulty in adjusting to retirement

Having Difficulty	Retd 1	Retd 2	Retd 3	Already Retired	Total
Yes	2	8	2	4	16
No	1	14	3	10	28
Don't know	1				1
Not applicable	4			2	6
Total	8	22	5	16	51

The results are responses to the question, "Did you have any difficulty getting used to retirement"? The four men who appear in the retired 1 group in the not applicable category were men who did not pause between retiring from one job and going on to the next. The two men who appear in the same category in the already retired group had not really made up their minds about retirement. One had not

worked for more than a year because of ill-health and one had drifted into retirement, but was not sure whether he would stay retired.

Of the total men, 16 (31.4%) had had difficulty in retirement. Nine of these men complained of boredom at the beginning of retirement, but they settled down with varying degrees of success during the period of the research. Some of these men said that they were just bored but that this had had no effect on their health. One man, however, said he became "sick with boredom". He managed eventually to get a part time job. Three of the men who complained of boredom eventually decided to change their answer at the third interview to "no difficulty". Five men in saying they had difficulty in adjusting to retirement, were in fact saying they had difficulty in getting used to their illness, since all of these men had been forced to retire as a result of ill-health, two of them rather suddenly. This group included all four already retired men who had had difficulty. One man had retired and moved away from the city where his friends were. This caused him considerable difficulty and he intended to move back again when last seen. One man was devastated by being declared redundant, not long after being told he would be able to have a job for years. This gave him the feeling of not being wanted and of being "thrown on the scrap heap".

The time taken to get used to being retired apparently varied somewhat. One or two men settled into it straight away, but the concensus of opinion seemed to be that the first two or three months were the worst. However, one man said he had had a very enjoyable first year of retirement, but he was worried about how the next years would turn out.

One was left with the impression at this point that retirement called for some perseverance. If one could get over the first two or three months, things would begin to work out. But some men - for example, those in the retired 1 group - gave up after a week or two, perhaps because the fears about retirement which exist very strongly in the pre-retired population, appear to be borne out during the first stressful weeks.

It is possible, and it has been argued that cessation of work, apart from any effect it may have as such, constitutes a social loss, in that the contacts and friendships formed with workmates and colleagues are broken. Moreover, there is some evidence (e.g. Freidman and Havighurst, op cit) that people take a pride in belonging to "the firm", that this gives them status, and that it is in part this which is liable to cause stress in retirement. Some evidence is available for the sample which bears upon this point.

TABLE 57 - Numbers of subjects maintaining contact with firm

Contact with firm maintained	Retd 1	Retd 2	Retd 3	Already Retired	Total
Yes	3	13	3	8	27
No	5	9	2	8	24
Total	8	22	5	16	51

About half the men maintained contact with their firm after retirement. The proportion was higher for men who had not taken up new full time work than for those who had, as might be expected. But this picture should not be taken at its face value. For, although contact was maintained, this was in all except one or two cases limited to calling to collect superannuation or pension payments. A few firms organised a yearly get-

together for their retired men but had apparently little effect on the men as a whole. Although none of the men in the present sample were members, contact was made with a club run by a firm for their retired men. This club ran rather well, and enable whatever value the men found in being members of a large organisation to be in part preserved. Several firms told their retired men that they would always be glad to see them, but only one man availed himself of this opportunity, and then only very seldom.

Of all the men who retired, 12 (23.5%) said they were glad to leave their firms, 18 (35.3%) were neutral about it, and 21 (41.2%) said they were sorry to leave. No very definite formulation could be given to the feelings of regret, but in the words of one man, "when you've been 40 years at the same place its bound to be a bit of a wrench". On the whole the retirants spoke well of their firms, and even the men who had been reluctant, but forced, to retire did not on that account feel aggressive towards their late employers.

It might be though that what the men really missed was not so much the firm itself as the people they had worked with. Almost the same percentage (20 out of 51, 39.2%) were sorry to leave their workmates as were sorry to leave their firm. But these were not necessarily the same men, as the following contingency table shows.

TABLE 58 - Comparison of feelings regarding leaving firm with feelings regarding leaving colleagues. All retired men.

		Feelings regarding leaving firm			
		Glad	Neutral	Sorry	Total
Feelings regarding leaving colleagues	Glad	6	3	2	11
	Neutral	3	11	6	20
	Sorry	3	4	13	20
	Total	12	18	21	51

A contingency coefficient has not been worked out because of the small expected frequency in the Glad/Glad cell. But it can be seen that the agreement on the two sets of answers is far from 100%. In fact, the percentage of complete agreement is 30 of 51 = 58.9%. It seems then that the sense of loss, or however, the feelings are described, on leaving both firm and colleagues is not as large as might have been thought. But it needs to be pointed out also that many men mentioned the possibility of seeing their ex-workmates again in street, club and pub, and they often expressly said that this was why they were not unduly sorry to leave them at work. (The men who were glad to leave their workmates were men of long standing in their job who believed that "the people aren't what they used to be"). Impressionistically speaking, the investigator was left with the opinion that in many cases no particular wrench was felt at all.

Naturally with the shortage of money, and other dissatisfactions which accompanied retirement in some cases, the men were not content in many cases to remain in retirement. The numbers of men who intended to return to work are shown below.

TABLE 59 - Numbers of retired men planning to work again

Planning to work again	Retd 1	Retd 2	Retd 3	Already Retired	Total
Yes	8	11	5	3	27
No		11		13	24
Total	8	22	5	16	51

More than half the men - to be exact 53.0% - planned to work again. It is necessary, however, to be clear as to the work these men inteded to get. The retired 1 men, by definition were all men who had returned to full time employment after having retired from their jobs. Their intention had been fulfilled, and the "work" they had intended

to get was full time work as usually thought of. The retired 3 men also by definition had got work after retirement, but they still regarded themselves as properly retired, whereas the retired 1 men did not, and the work they had got was not fulltime, all except one definitely carrying the status of "a pensioner's job". These were such jobs as crossing keeper outside a school, and part-time helper in a school meals service. The exception was a man who had taken up a full time course of study, and was regarded as falling into this category since all his day was occupied, though he was not paid for it. Fourteen of the remaining 38 men retired (36.9%) thought they would like to work again but the sort of jobs they had in mind were again part-time "pensioners' jobs". But of this group, only five had really tried to get work. The position with regard to re-employment seems to be this. A fairly large minority of the men who retire intend to find further full time work because they need the money and also in some cases because life means only work to them. In the present sample the proportion was 15.7%. It seems likely, at least in a city like Edinburgh where the employment possibilities are varied, that most of the men who want go get further full time work, if they are reasonably fit, can do so. Probably the position is quite different in an area of predominantly heavy industry, as for example in the West Riding of Yorkshire. A larger proportion - in the present instance 37.3% - say they would work if they could find suitable part-time, light work, but of these only about 70% actually will go out of their way to find work, and less than this proportion are able to get fixed up with work.

One of the questions arising from the above discussion is how the attitudes towards retirement changed with time. Over the period of the research, one would expect the attitudes of the working, and the already retired men to remain fairly constant, but the attitudes of the

men who retired to be in a state of flux. The previous discussion has used as its basis a summary of three interviews for each man. The analysis now to be considered deals with change between the three interviews in a global way, and derives from the two series of statements on which the subject rated his attitude to retirement. It will be seen from the copy of the rating sheet, given at Appendix A, that two forms of the retirement attitude question were used, one for men who were not retired at the time of interview, and one for those who were. The assumption - or perhaps the hope - was that these two sets of statements as separate systems did represent some sort of scale of intensity of attitudes about retirement, and also that they were comparable one with another, that is, that to tick the first statement in question6 was equivalent to ticking the first statement in question 7. This may be a very big assumption, but it underlies the comparison of the ratings made before retirement by the men who retired, with those made after retirement. That the assumption is not outrageous is suggested by the nature of the questions themselves. It is not as though one were comparing responses to two questions covering quite different areas. Also, the material for the retired group does appear quite consistent and not unduly affected by the transfer from one set of ratings to another. It is only fair on the other hand to draw attention to this fact, and to bear in mind that the results for the retired men are alone subject to this transfer. The procedure, then, was to allot an arbitrary number of points, ranging from 0 to 4 to the different statements of each question so that, if the above assumption is granted, ratings on question6 could be compared with those on question 7 by translation into the arbitrary points system. On this basis, the results for the total sample were as follow.

TABLE 60 - Numbers of subjects having the stated attitudes to retirement. Total sample.

A 1st against 2nd interview

		Interview A					
		0	1	2	3	4	Total
	0	19	3	1			23
	1	4	17	3			24
Interview B	2	1	7	15	1		24
	3	1	4	3	3	2	13
	4			2	5	4	11
	Total	25	31	24	9	6	95

B 2nd against 3rd interview

		Interview B					
		0	1	2	3	4	Total
	0	12	2	1	1		16
	1	2	12	1	1		16
Interview C	2	2		13	2		17
	3	1	2		2		5
	4		1	1	2	7	11
	Total	17	17	16	8	7	65

In this table, the higher the number assigned to the rating, the more favourable the attitude to retirement. The hypothesis that there is an effect of retirement may be tested in the following way. For each pair of interviews (A against B or B against C), the diagonal descending from left to right represents "no change". The cells below the diagonal represent a change contrary to the retirement impact hypothesis, i.e. more positive attitudes to retirement. The cells above the diagonal represent a change in accordance with the retirement impact hypothesis, i.e. more negative attitudes to retirement. On the null hypothesis, the total number of subjects

changing their attitudes should be divided equally between the two alternatives. The discrepancy between this expectancy and the observed changes, may then be evaluated by chi square. This requires that the expected frequencies for either direction of change be not less than five, or in other words that the total changes be not less than ten.

Considering the first against second interview, the total net change was 36, ten changing to more unfavourable and 26 to more favourable attitudes to retirement. This represents a significant change for the better as compared with the hypothesis of no systematic change (chi square = 7.12, n = 1, p is less than 0.01).

In the case of the second against third interview, with a total net change of 18, a change to more unfavourable attitudes of seven, and a change to more favourable of 11, the change is not significant (chi-square = 0.88, n = 1, p is between 0.50 and 0.30).

The contribution of each of the occupational groups must now be considered. Table 61 shows the numbers and proportions of each type of change by occupational group.

TABLE 61 - Retirement attitude. Analysis of changes by occupational group

Group	Change to Unfavourable	Change to Favourable	Stable	Total
Total	10 (10.5)	26 (26.4)	59 (63.1)	95 (100)
Working	6 (10.3)	10 (17.2)	42 (72.5)	58 (100)
Retired	1 (4.0)	14 (58.3)	9 (37.7)	24 (100)
Already Retired	3 (23.1)	2 (15.4)	8 (61.5)	13 (100)

Note:- Numbers in parentheses are percentages of group total responses. Working group includes all men at work, i.e. working and retired 1. Retired group includes retired 1,2 and 3).

The figures for the already retired men are very small, but the proportion remaining stable is roughly similar to the corresponding proportion for the working group. But the most important trend revealed by the table is the comparison of the retired and working groups. It will be seen that the retired men maintain a stable judgement much less often than do the working men, and by the same token they much more frequently become more favourable to retirement. The difference between the proportions changing to more favourable judgements of retirement is very large, and yields a critical ratio of 3.72 (p approximately 0.0002).

But it is not only that the retired men tend to become more favourable to retirement more frequently than do the working men. Their judgements are in any case on the whole more favourable. Comparing the judgements made by these two groups at first interview, we find a chi-square of 10.96 which, with two degrees of freedom represents a p of less than 0.01. Thus again there appears to be a prospective effect of retirement. Although, as we have seen, the

men who retired anticipated difficulty in retirement and had their worries and conflicts about it, they nevertheless were quite favourably disposed towards it before they retired, and they became more favourable as they got used to it. Since these prospective attitudes could not themselves be a predisposing factor in retirement - most of the men having retired at a fixed retiring age - it is possible that this phenomenon may in part be due to the knowledge that retirement at 65 would have to take place, and a consequent adjustment to it. There was also some selection in that the men who were very unfavourable to retirement among those who retired at a fixed age quite speedily got other jobs, and this did not appear in the retired group. The already retired group, although remaining stable to about the same degree as the working group, showed a degree of satisfaction in retirement similar to the retired group.

Between the second and third interviews, the analysis of changes is more difficult because the numbers available become still smaller. The following table shows the position.

TABLE 62 - Retirement attitude. Analysis of changes by occupational group. Second against third interview.

Group	Change to Unfavourable	Change to Favourable	Stable	Total
Total	7 (10.8)	11 (16.9)	47 (72.3)	65 (100)
Working	3 (8.3)	2 (5.6)	31 (86.1)	36 (100)
Retired	4 (26.6)	5 (33.3)	6 (40.1)	15 (100)
Already Retired	0 (0.0)	4 (28.6)	10 (71.4)	14 (100)

As far as actual stability is concerned, the picture is much the same as that between the first and second interviews. The majority of the working men, and of the already retired men, remain stable,

whereas the retired men are much more unstable in their responses. However, there is some indication that retired men may tend rather more frequently to become unfavourable to retirement towards the end of the year. As the table shows, this was so in four cases of the 15 between the second and third interviews. There were not changes back from a previous favourable change, and three of them represented changes of more than one category.

In the case of the one-category change, there was no apparent reason why this change should have taken place, and the subject appeared to be quite well satisfied with retirement. In the other three cases, there were financial difficulties, though one subject also said, at the third interview, that he was only now beginning to realise the permanence of retirement. Thus, in these cases, the change towards more unfavourable attitudes towards the end of the first year of retirement, appears to be a real one.

The important findings of this examination of the work and retirement situation of these subjects appear to be as follow. The problem of finance is so important to these men in retirement that there is no possibility of making successful retirement a feasible course for most of the subjects without a large reorganisation of present pension schemes. By the same token, probably nearly all men who could or would continue working did so.

A second most important factor in determining men to keep at work was the assumption by these men of a close relationship between retirement and sickness or even death. In view of the lack of actual evidence from their own experience which these men were able to furnish, it

seems likely that these fears were the result of propaganda - either intentional or unintentional - which is to be encountered in the popular press, in semi-official pronouncements, and official exhortations. Whether or not it is desirable on some grounds that men should continue to work after retiring age, and in view of the lack of scientific evidence upon which to base this propaganda, one must ask whether it is in fact good from both the health and the ethical point of view to induce so widely among the working population such anxieties, which often have the ring of morbidity about them.

As regards the retired men, it seems that the art of retirement calls for some perseverance. The first few months after the step has been taken appear to be the most difficult was a general rule. If these can be faced and overcome, then there appears to be a slackening of tension. Many men probably never persevere long enough but try to take a flight back to their former way of life involving a search for new employment. This again may involve further tension if they find they cannot get a new job. There is some indication, though rather small, that some men may begin to feel some reaction against retirement towards the end of the first year, but this tendency is not sufficiently widespread to discount the much more marked swing in favour of retirement on the part of the majority of the retired subjects, between the first and second interview.

We may now consider the material on the more general attitudes of these subjects.

(5) General Attitudes

Supplementary to the data relating to to the work and retirement situation of the subjects, a good deal of material which indicates the opinions and attitudes of these men was collected, both by the attitude sheet and by the personal data sheet. On the latter, as can be seen by reference to the sheet reproduced at Appendix A, questions were asked about any plans or ambitions the men had, whether they had achieved all they wanted in life, and whether they had any problems or difficulties. On the attitude sheet, the men were asked to rate how they felt about religion; how their health compared with their previous health; which was the happiest period of their lives; how happy their lives had been; and which age group they felt they belonged to.

Although the attitudes to be dealt with here relate to a more general view of life, they may be related to the occupational status of the men in terms of the retirement impact hypothesis. In terms of this hypothesis, the retired men ought to score "worse" - however this is measured by the particular question under consideration - than do the working men. At each of the three interviews, the men were asked whether they had any plans or ambitions. In terms of the retirement impact hypothesis the retired men ought to have fewer plans and ambitions, since they ought to have a more pessimistic and constricted outlook, and hence be disinclined, or unable, to make plans. Table 63 shows the number of subjects having plans or ambitions at any of the three interviews.

TABLE 63 - Number of subjects reporting plans or ambitions by occupational group

Having plans or ambitions	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Yes	12	2	4	2	8	28
No	52	7	19	3	15	96
Total	64	9	23	5	23	124

It will be seen that it is not characteristic of the group as a whole to make plans for the future. Only 22.6% of the sample reported doing so. The relationship between having plans and occupational status is not significant (chi square = 2.45, n = 2, p approximately 0.30). The largest contribution to chi-square comes from the already retired group who had plans more frequently than expected. This is a very small group, and is once again influenced by the men of higher socio-economic group who had many interests and hobbies, and the wherewithal to pursue them.

Some remarks may perhaps be made about the nature of the plans these men had made. The general impression made by the sample as a whole was of a group who had reached a point in life where there was only the present. As some men in all occupational groups commented "What plans can you make when you're 65"? There was also a strong feeling of financial restriction - "if you had money you could plan all right". It is interesting to note here the large number of men who regarded the football pools as a means of breaking free from the restrictions which age and finance put upon them. Usually the remark was made in a semi-jocular fashion but there was no doubt that many men did see this slender chance as their only one of doing anything but drift with the tide. Whether this is typical of other age-groups would be worth exploring. The men in this

sample appeared to rest a considerable degree of hope on this possibility.

The plans which were in fact made were rather of the nature of pipe-dreams, or else of a very general type. Some men said that they would like to visit relatives overseas, although they had no hope of doing so. Others merely said they planned to keep fit and working. In only two cases were plans so strongly held that they persisted through more than one or two interviews, and except in these cases none could be said to be a real driving ambition.

The men who were working and who had plans, in the main wanted merely to keep working. In some cases the plan was to work longer to save more money and then at 70, as one man put it "to have a proper retirement". One or two men wanted to move away to the country, but only one man could be said to have a really concrete plan. He intended to develop his hobby of woodwork into a business of his own, and had got to the stage of enquiring about a suitable small workshop.

Those retired men who had plans - there were only six - wanted to get light work for pocket money. One man was planning to move back to the district he came from as a boy and where the family still had connections. He considered it would be cheaper to live there than in Edinburgh. Another man, a retired schoolteacher, had decided to enter the Church, and was taking a full time course with this in mind.

Some of the already retired men also had plans for getting further work. One man wanted a shop with a small house attached so he could restart his business. One, now retired from

business, intended to have his first real holiday since before the war. Another intended to take his family travelling on the Continent.

It thus appears that in the case of all occupational groups, the plans entertained were not such as to entail a restructuring of the life-style. Nearly all the plans were short-term, and the impression was one of passivity in the face of advancing years and financial stringency.

The men were asked whether they had achieved most of their ambitions, the idea behind this being that if the retired men in fact were experiencing the effects suggested, this would contaminate their views of life. On the retirement impact hypothesis, then, significantly less of the retired men, than of the working men ought to say they had achieved their ambitions. The results obtained on this question are given in Table 64.

TABLE 64 - Number of subjects saying they had achieved most of their ambitions in life, by occupational status

Achieved	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Yes	33	3	10	2	11	59
No	31	6	13	3	12	65
Total	64	9	23	5	23	124

About half the men thought they had achieved most of their ambitions in life, or, having few ambitions satisfied with the way things had turned out for them. Many of the subjects fell under the latter head. But there was no relation between occupational status and the belief that one's ambitions had been achieved. Though the

differences which went to make up chi-square were in the expected direction, the value of chi-square, 0.33, with n = 2 gave a probability of between 0.90 and 0.80.

Of the men who considered that they had not achieved their ambitions, most had no specific dissatisfactions to report. They mentioned a general feeling that they might have done better in life. Some had rather more concrete dissatisfactions, such as not having achieved the promotion they expected, or not having made sufficient money. Not more than four could give specific disappointments. These were in the form of missed opportunities, to emigrate, or to start a business on one's own.

At the very end of the personal data sheet at each interview, the men were asked whether they had any problems or difficulties. This was an open-ended question, with no guidance given as to what was regarded as a problem or a difficulty, so as to allow the men to choose their own definitions, and to say exactly what they felt.

On the retirement impact hypothesis, it would be expected that the retired men would report problems and difficulties more often than the men who were working. Basing the analysis purely on whether or not the subjects raised any problems at all, the relationship between raising problems and occupational status was not significant, though it tended towards an acceptable level of confidence (chi-square = 5.16, n = 2, p is between 0.10 and 0.05) The largest contribution to chi-square was from the already retired men who were found more frequently than expected in the group which had problems. The next largest contribution came from the working men who were under-represented in the group which had problems.

TABLE 65 - Number of subjects having the stated problem or difficulty, by occupational status

Problem or Difficulty	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
None	45	6	11	3	10	73
Financial	5	1	4		3	13
Health	4		2		3	9
Other	9	2	4	1	4	20
Financial and Health					2	2
Financial and Other	3		2	1	1	7
Health and Other						
Total	64	9	23	5	23	124

The retired men showed the same pattern as the already retired men, but to a smaller degree.

The problem mentioned most frequently was finance, but the proportion of subjects reporting this problem did not vary significantly from group to group. Of the 24 subjects in the working group who had problems, nine (37.5%) mentioned finance; for the retired group the corresponding figures were seven out of 14 (50%); and for the already retired group six out of 13 (46.1%). The differences were not significant, the critical ratios (proportions) for the differences between the working and retired, and the working and already retired, being 0.75 and 0.51 respectively. Health was seen as a problem relatively infrequently. In all it received only 11 mentions, four out of 24 by the working group, two out of 14 by the retired group, and five out of 13 by the already retired group. This is what would be expected because the already retired group includes men who were forced to retire early because of ill-health.

The problems falling under the heading 'other' were a very mixed bag. They included four men who were worried about the health of their wives, two who were worried about the possibility of losing their jobs, two retired men who wanted to find jobs urgently (because of financial difficulty) and two who were encountering business difficulties. There were also men who admitted they "just worried" and saw things as problems which other people would not. But there were no systematic differences between the various occupational groups.

Besides these open-ended questions which were asked at the end of the completion of the personal data sheet, information of a more structured type was obtained from the attitude sheet. Six of these questions are relevant here, those relating to loneliness, religion, comparitive health, happiest period of life, happiness of life, and subjective assessment of age group. The small numbers do not warrant a very detailed statistical treatment and the results will be dealt with descriptively. In view of these small numbers, the groups have been combined to form three composite groups, as previously explained. See footnote to Table 61.

The question concerning loneliness may seem rather naive but nevertheless it has been found to be of value in other researches (e.g. Gordon, Thomson and Emerson, op cit). The major impression gained from this sample is that only a very small proportion of the men were ever lonely, no matter what their occupational status, though there was a slight tendency for more men to complain of occasional feelings of loneliness as the observation year continued. But this tendency was not significant over the whole sample.

Table 66 sets out the figures for the total sample, and, analysing the changes by chi-square in the manner discussed on page , we find chi-square for the changes between the first two interviews equal to 1.169 (n = 1, p is between 0.30 and 0.20). For the changes between the second and third interviews, chi-square equals 0.80 (n = 1, p is between 0.80 and 0.30).

TABLE 66 - Numbers of subjects expressing the stated degrees of loneliness. Total sample.

A First against second interview

		Interview A			
		Not Lonely	Lonely Sometimes	Very Lonely	Total
Interview B	Not Lonely	73	7	0	80
	Lonely Sometimes	13	5	0	18
	Very Lonely	0	1	0	1
	Total	86	13	0	99

B Second against third interview

		Interview B			
		Not Lonely	Lonely Sometimes	Very Lonely	Total
Interview C	Not Lonely	52	7	0	59
	Lonely Sometimes	3	4	0	7
	Very Lonely	0	0	0	0
	Total	55	11	0	66

The most important point from the two parts of the table is the large proportion of men who maintained at all interviews that they were not lonely. At the first interview, the proportion was 86 of 99 (86.9%); at the second 80 of 99 (80.9%); and at the third 55 of 66 (83.4%). The fact that only one man said he was very lonely is not surprising in view of the high proportion of married men in the sample.

TABLE 67 - Percentages regarding themselves as not lonely at the three interviews, by occupational group

	Interview A	Interview B	Interview C
Working	91.7	83.5	89.0
Retired	79.1	67.7	100.0
Already Retired	80.0	93.0	78.6
All groups	86.9	80.9	89.5

The percentages regarding themselves as not lonely in the different occupational groups are compared in Table 67. The figures are somewhat unstable but as a general comment it may be observed that those for the retired group are lower at the first two interviews than either of the other two groups. The figure of 100% classing themselves as not lonely at the third interview is probably an artefact due to losses from various causes in an already small group. At interview C, on this classification, only 16 men were involved in the retired group.

TABLE 68 - Numbers remaining stable or changing judgements in directions indicated, by occupational groups - Loneliness

	1st v 2nd interview				2nd v 3rd interview			
	Stable	Change better	Change worse	N	Stable	Change better	Change worse	N
Working	49	3	8	60	31	4	1	36
Retired	18	1	5	24	13	3	0	16
Already Retired	11	3	1	15	12	0	2	14

When changes in ratings of loneliness are considered, it can be seen from Table 68 that retired men did tend to make proportionately rather more changes for the worse than did the other groups, at any rate between the first and second interview, but the numbers are too small to be very illuminating.

Comparing all groups then, it does seem that the retired men are more prone to feel lonely than either of the other two groups. But the overall impression is one of stability, the diffierence between the retired and the working groups being not so much differences in changes as the maintenance of an initial difference.

There was no reason to suppose that the stability of the not lonely responses was due to the tendency of the subjects to falsify their answers. But as a check, comparison may be made with men of a comparable age who were asked the question in the domiciliary survey of Edinburgh already referred to. The mean percentage not lonely for the occupational groups in the present research was

approximately 83% at the first interview. The domiciliary survey sample gave the following figures for men aged 65:-

Not lonely	34
Lonely sometimes	5
Very lonely	0
	39

Not lonely = 87.3%

The comparison is, therefore, quite close. It may be that subjects in both the researches falsified the answers, but there is no reason to suppose that this was the case.

If the retirement-impact theory were valid, it ought to be the case that retired men would be more prone to depression than working men. To some extent this has already been treated in the discussion of the questionnaires, but one of the ways in which this depressive attitude might show is in the assessment of present health, the men who are depressed and pessimistic being more inclined to say that their health is inferior now to what it was at some earlier period, prior to retirement. In order to examine this possibility the subjects were asked to compare their present health with their health at age 60, and the results of this question were used as indications of attitude rather than as statements of fact. There will, however, be a factual element in the answers to these questions. Some men, on any showing, had clearly deteriorated in health very rapidly in recent years. Hence it is important to bear in mind any actual differences in health that there were between the various groups. This can be checked to some extent by reference to the scores at initial interview on the Cornell Medical Index, and the Heron Emotional Maladjustment scale. It can be seen from Tables 18 and 20 that there were no significant differences between the mean scores for the groups.

Since health attitudes are so important a part of the retirement impact hypothesis, an attempt is made here to treat the data on health attitudes in extenso, though the small numbers available to some extent vitiate this.

TABLE 69 - Numbers of subjects making the stated evaluation of their present health as compared with their health at age 60. Men working full time.

A First against second interview

		Interview A Health comparison with age 60			
		Better	About the same	Worse	Total
Interview B	Better	4	2	0	6
	About the same	3	43	6	52
	Worse	0	2	1	3
	Total	7	47	7	61

B Second against third interview

		Interview B Health comparison with age 60			
		Better	About the same	Worse	Total
Interview C	Better	3	2	0	5
	About the same	2	25	1	28
	Worse	0	3	1	4
	Total	5	30	2	37

It is at once obvious from this table that the great majority of these working men did not think that their health had altered since age 60, and they also did not change this judgement during the course of the research. If we consider part A of the table, 48 men (summing along the diagonal) or 78.7% did not change their assessment

between the first two interviews, leaving only 13 to change. Eight (13.1%) of the men appear above the diagonal and therefore "improved" their judgement of their health between first and second interviews, and five (8.2%) appear below the diagonal and therfore "worsened" their judgements. In part B of the table it can be seen that 29 of 37 men (78.5%) did not change, three changed for the better and five for the worse. We must now compare this picture with that for the retired men.

TABLE 70 - Numbers of subjects making the stated evaluations of their present health as compared with their health at age 60. Retired men.

A First against second interview

		Interview A Health comparison with age 60			
		Better	About the same	Worse	Total
Interview B	Better	2	2	0	4
	About the same	1	15	0	16
	Worse	0	2	2	4
	Total	3	19	2	24

B Second against third interview

		Interview B Health comparison with age 60			
		Better	About the same	Worse	Total
Interview B	Better	1	2	0	3
	About the same	1	8	1	10
	Worse	0	0	2	2
	Total	2	10	3	15

Between the first and second interview, 19 of the 24 men in this group (79.2%) did not change their evaluation of health. Two changed for the better, and three for the worse. There was thus no marked worsening of evaluation between the first two interviews. Between the second and third interviews, 11 of the 15 (73.5%) did not change their evaluation. Of those who did change, three changed for the better, and one for the worse.

The picture for the men who were already retired when first interviewed is given below. It has been shown (see Table 48) that the very great majority of this group had been either forced to retire by ill-health, or influenced in their decision to retire by symptoms of strain. This is indicated in the tables by the proportion of men at each interview saying that their health was worse than at age 60.

TABLE 71 - Numbers of subjects making the stated evaluations of their present health as compared with their health at age 60. Men already retired.

A First against second interview

		Interview A: Health comparison with age 60			
		Better	About the same	Worse	Total
Interview B	Better	1	0	1	2
	About the same	4	4	1	9
	Worse	0	1	4	5
	Total	5	5	6	16

B Second against third interview

		Interview B: Health comparison with age 60			
		Better	About the same	Worse	Total
Interview C	Better	1	1	0	2
	About the same	1	6	2	9
	Worse	0	1	3	4
	Total	2	8	5	15

The proportions rating their health as worse than at age 60 for this group were:

1st interview	2nd interview	3rd interview
37.5%	31.3%	26.7%

The corresponding percentages for the other groups were all below 20.

If this group is analysed in the same way as the other groups, it is found that there is a slight indication of a belief that health was declining. At the first two interviews, 9 of the 16 men (56.3%) did not change their estimation of their health. Two changed for the better, and five for the worse. Between the second and third interviews, ten of 15 men (66.7%) did not change; three changed for the better and two for the worse.

If the analysis of these ratings can be taken as yielding valid information, it seems to indicate that in total, the subjects felt their health had remained fairly constant since age 60. The changes which occurred were not more than a move to adjacent categories between interviews, except in one case where a man moved from 'worse' to 'better' between the first and second interviews. The reason for this change was that this man, between these two interviews, had undergone successful surgical treatment for an internal disorder of long standing. The analysis of changes, though admittedly vitiated by small numbers, does appear to show that for this sample the changes were small, and the hypothesis originally suggested, not substantiated.

Some previous researches had asked subjects to judge which was the happiest period of their lives. The aim in those researches was to obtain

an absolute statement, and to examine how the assessment of the happiest period varied with some other variable such as age. In the present research, the subjects were asked to carry out such a rating, but here the aim was simply to observe whether the subjects thought that proximate years since 60 were happier than the distal years before 60. At the back of this intention was the hypothesis that the retired men, if general attitudes were becoming more pessimistic, would think that their earlier years had been happier than their more recent ones. Accordingly, the answers to this question were simply dichotomized, though the material as to actual ratings is available, together with the reasons why the men rated as they did. This data is not relevant to the present issue and is, therefore, not presented here.

Viewing the sample as a whole, 58 out of 73 (79.5%) men did not change their judgements between the first and second interviews. Between the second and third interviews, 45 out of 55 (81.9%) did not change. Of the 58 men who did not change their judgements between the first and second interview, 52 (92.9%) thought that some period prior to age 60 had been the happiest, and of the 45 who did not change between the second and third interview, 37 (84.5%) thought so. This general picture is characteristic of all the occupational groups. What is of more importance here, however, is the analysis of trends over the year's observation. The men who carried on working gave the following results.

TABLE 72 - Numbers of subjects estimating the stated period of life to be the most happy. Men continuing to work.

A First against second interview

		Interview A Happiest period of life		
		Before 60	Since 60	Total
Interview B	Before 60	26	6	32
	Since 60	2	5	7
	Total	28	11	39

B Second against third interview

		Interview B Happiest period of life		
		Before 60	Since 60	Total
Interview C	Before 60	18	3	21
	Since 60	5	4	9
	Total	23	7	30

Between first and second interviews, 31 of the 39 men (79.5%) did not change their assessment. Of the eight men who did change, two changed for the "better" and six for the "worse". On the basis of no systematic change, one would expect the proportions changing either way to be 50-50. As was discussed earlier, the numbers changing are too small to attempt any statistical analysis of the change. Between the second and third interviews, 22 of the 30 men concerned (73.4%) did not change their judgement, and of the eight men who did change, three changed for the worse, and five for the better. To some extent then, the trend between the first two interviews was corrected in the second two. This tendency to correction between the second two interviews has been noted before (primarily in the analysis of the inventory material, and appears to be

characteristic of this sample).

The retiredmen showed much the same kind of pictures as the working men.

TABLE 73 - Numbers of subjects estimating the stated period of life to be the most happy. Retired men.

A First against second interview

		Interview A Happiest period of life		
		Before 60	Since 60	Total
Interview B	Before 60	15	2	17
	Since 60	1	2	3
	Total	16	4	20

B Second against third interview

		Interview B Happiest period of life		
		Before 60	Since 60	Total
Interview C	Before 60	8	0	8
	Since 60	1	3	4
	Total	9	3	12

The small numbers present a difficulty in analysing the trends but it is clear that there was no marked tendency of these men to become more likely to undervalue the happiness of their lives since 60. Between first and second interviews, of three men changing, two changed for the worse and one for the better, and between the second and third interviews, none changed for the worse and one for the better.

The already retired group also showed the same characteristics.

TABLE 74 - Numbers of subjects estimating the stated period of life to be the most happy. Already retired men.

A First against second interview

		Interview A: Happiest period of life		
		Before 60	Since 60	Total
Interview B	Before 60	11	0	11
	Since 60	2	1	3
	Total	13	1	14

B Second against third interview

		Interview B: Happiest period of life		
		Before 60	Since 60	Total
Interview C	Before 60	11	1	12
	Since 60	0	1	1
	Total	11	2	13

Between the first interview and the second, two men changed their judgement, both of them to the "since 60" cell. Between the second and third interviews, one changed, and this change was towards the "before 60" cell.

Some men in all occupational groups could not make the judgements required because, they said, all their lives had been equally happy. The number of men who could not make the judgement for this reason is given below.

	Working	Retired	Already Retired
1st v 2nd interview	19	4	2
2nd v 3rd interview	11	3	1

Several comments may be made about this analysis. Firstly, viewed as a group of elderly men, there was a marked tendency for these subjects to choose the earlier periods of their lives as the most happy. Secondly, there was a pronounced stability of the subjects' judgements. Thirdly, the numbers of subjects available was small, when breakdown into occupational groups was attempted. But the latter point should not be pressed so far that no conclusion regarding the original hypothesis (of differential change between working and retired groups) is drawn. At least as important in determining the pattern of results are the first two points. In view of these, although no definitive treatment of the hypothesis is possible, there appear to be good grounds for suggesting that the hypothesis should be rejected.

As well as being asked which had been the happiest period of their lives, the men were also asked to make an overall rating of the happiness of their lives. Again there are objections which may be made to this approach. It is rather naive, and it might be expected that all men would say their lives had been very happy as they preserved the appearance of contentment which our society requires. In the event, no-one was able, or willing to describe his life as having been "moderately unhappy" or "very unhappy", and to this extent the objection is sustained. On the other hand, what one was looking for was indications of changes in judgements during the year to see whether the retired men showed changes which the working men did not - or vice versa. Moreover, there is the point that the rating was being asked for after a good deal of other questioning, and by this time rapport would have been established or at least there would appear to be no reason why a man should falsify his statement.

There is, of course, the possibility that boredom would influence the situation and prompt the easiest, socially acceptable response. It also ought to be said that what appears to be a naive question is not necessarily a useless one. What appears to be a nonsensical question to a man who has not experienced the problem will be quite reasonable and acceptable to a man who has. If one comes across a man who has and has always had a depressive outlook, it will not seem absurd to him to classify his life as "very unhappy". No such men were found in the present sample, but this may be due to the absence of the postulated effects of retirement equally as well as to a fault of the question.

In the following tables, the categories "Moderately unhappy" and "very unhappy" are omitted, since they were not used by any subject. The picture for the total sample is as shown in Table 75. It will be seen that about half the men maintained throughout that their life was very happy. Between the first and second interviews 62 of the men (61.4%) did not change their judgements, ten (9.9%) changed their judgements for the better, and 29 (28.7%) for the worse. Of the ten who changed for the better, two subsequently changed back again, leaving a net change of eight. Of the 29 who changed for the worse, five subsequently changed back again, leaving a net change of 24. On the hypothesis that there is no systematic change, these changes should be divided equally and hence the expected frequency for both kinds of change should be 16. On this basis there is a significant change for the worse between the two interviews (chi-square = 8.0, n = 1, p is less than 0.01).

TABLE 75 - Number of subjects rating the happiness of their lives as shown. Total sample.

		Interview A			
		Very Happy	Moderately Happy	Average	Total
Interview B	Very Happy	48	5	2	55
	Mod Happy	10	11	3	24
	Average	5	14	3	22
	Total	63	30	8	101

		Interview B			
		Very Happy	Moderately Happy	Average	Total
Interview C	Very Happy	33	4	3	40
	Mod Happy	3	8	4	15
	Average	1	1	10	12
	Total	37	13	17	67

Between the second and third interviews, 51 (76.1%) of the men did not change, 11 (16.4%) changed for the better, and five (7.5%) changed for the worse. The net changes were six and three respectively. This change is not significant (chi-square (corrected) = 0.44, n = 1, p is greater than 0.30). The initial change for the worse is not compensated by a comparable change for the better between the later interviews. The largest contribution to this change came from the men who moved to an adjacent category from one involving a judgement of greater happiness, that is, in particular from Very Happy to Moderately Happy and from Moderately Happy to Average. It seems likely, though this cannot be checked, that part of this shift represents increasing candour, or perhaps increasing ability to evaluate one's experiences as a result of the previous interviews. But it also appears to involve an effect of six months ageing.

It is now necessary to examine the occupational groups individually.

TABLE 76 - Numbers and proportions remaining stable or changing judgements in directions indicated, by occupational group. Happiest life period.

1st v 2nd interview

Group	Stable		Change better		Change worse		Total	
	N	%	N	%	N	%	N	%
Working	38	62.3	6	9.8	17	27.9	61	100
Retired	13	54.2	3	12.5	8	33.3	24	100
Already Retired	11	68.8	1	6.2	4	25.0	16	100

2nd v 3rd interview

Group	Stable		Change better		Change worse		Total	
	N	%	N	%	N	%	N	%
Working	29	76.4	7	18.4	2	5.2	38	100
Retired	12	80.0	1	6.7	2	13.3	15	100
Already Retired	10	71.5	3	21.4	1	7.1	14	100

From Table 76, it can be seen that the changes during the period of observation were generally similar for all groups. Between the first and second interviews, the retired group showed a greater tendency to change than did either of the other two groups. But this tendency was noticeable in both directions and was probably not significant, though the smallness of the numbers involved did not admit of a statistical test of this. Between the second and third interviews, the overall picture is one of stability, with the retired group the most stable of all. Again, however, smallness of numbers make a generalisation suspect. It seems fair

to say that no trend for the worse is to be noted in these results on the part of the retired group.

By and large this question worked better than expected. While it is true that nobody recorded any degree of unhappiness, the judgements were,with this qualification, quite well scattered, and appeared to fluctuate rather than falling solidly within the "very happy" sector, giving the impression that the results obtained were reasonably valid.

As a final aspect of the investigation of general attitudes, the men were asked to say to which age group they felt they belonged, the age groups being labelled not in chronological terms, but colloquially. It seemed fair to assume that if indeed the retired men felt any effects of retirement, they would be inclined to relate this to ageing. To put this more specifically, the retired men ought to show an increasing tendency to rate themselves in the older categories of the scale, over the period of observation.

The results of putting this question to the men are shown below for the total sample.

TABLE 77 - Numbers of subjects making the stated ratings of their age group. Total sample.

		Interview A						
		Aged	Old	Elderly	Middle Aged	Young Adult	Total	%
Interview B	Aged	0	0	0	1	1	2	2.0
	Old	1	0	1	0	1	3	3.0
	Elderly	0	1	24	11	0	36	36.4
	Middle Aged	0	0	10	36	5	51	51.5
	Young Adult	0	0	1	2	4	7	7.1
	Total	1	1	36	50	11	99	100
	%	1.0	1.0	36.4	50.5	11.1	100	

		Interview B						
		Aged	Old	Elderly	Middle Aged	Young Adult	Total	%
Interview C	Aged	0	0	0	1	0	1	1.5
	Old	0	1	1	0	0	2	2.9
	Elderly	0	0	14	13	1	28	41.2
	Middle Aged	0	0	5	26	1	32	47.0
	Young Adult	1	1	0	1	2	5	7.4
	Total	1	2	20	41	4	68	100

It can be seen from Table 77 that the men in this sample of 65 years old did not regard themselves as old to any great degree. Half of them regarded themselves only as "middle aged" throughout the three interviews. Appreciably less at the first two interviews, and somewhat less at the third regarded themselves as "elderly". The judgement "middle aged" was usually made with some vehemence and many men said they only used this category because it seemed rather absurd for a man of 65 to call himself a young adult. The admission of being elderly was usually rather

grudgingly conceded, and because it seemed that to assign oneself to this category was to admit that ageing was beginning to have an effect, this category may be used to compare the felt age of the three groups, working, retired, and already retired. The percentages of these groups regarding themselves as elderly at the first interview were as follows:-

Retired	45.8
Already Retired	37.5
Working	32.2
Total sample	36.4

The much more marked tendency of the retired men to consider themselves elderly when compared with the working group is interesting since at the time of this first interview they, of course, not yet retired but just on the point of retiring. The difference between the percentages is not significant (C.R. proportions = 1.17) but a larger sample would probably make it so. It looks as though impending retirement was having some prospective effect.

The judgements on age group showed much the same stability as the judgements made in response to other questions in that the proportion of subjects remaining constant in their judgements was of the same order from interview to interview. But a greater number of categories was available for change, and those who did change used them. Some of the subjects made quite violent fluctuations between one end of the scale and the other. Possibly this was due to the unfamiliarity of the judgement to be made.

For the total sample, 64 of the 99 men concerned (64.6%) did not change their assessment between the first and the second interview.

Fifteen (15.2%) changed towards the younger end of the scale, and 20 (20.2%) towards the older end of the scale. Since between the second and third interview, three and five of these groups respectively changed back again, the net change was 12 and 15. This degree of change was not significant (chi-square = 0.34, n = 1, p between 0.70 and 0.50).

Between the second and third interviews, 43 of 68 men (63.2%) did not change. Eight (11.8%) changed towards the younger end of the scale, and 17 (25.0%) towards the older end of the scale. The net change was three and 14 respectively. This change was significant (chi-square = 7.6, n = 1, p is less than 0.01). Therefore, as might be expected, the men did begin to rate themselves at the older end of the scale more frequently towards the end of the observation period.

Turning now to an analysis of the data by occupational status, it is found that between the first and second interviews 40 of the 59 men in the working group who answered the question (67.8%) did not change their judgement. Eleven (18.6%) changed towards the older end of the scale, and eight (13.6%) towards the younger end. However, the net change was ten and six respectively. This change was not significant (chi-square = 1.0, n = 1, p is between 0.50 and 0.30). The change between second and third interviews was also not significant for this group. Between these interviews 27 of 39 men (69.3%) did not change, eight (20.4%) changed towards the older end of the scale, and four (10.3%) towards the younger. The net changes were six and three respectively (chi-square = 0.44, n = 1, p between 0.70 and 0.50).

The retired group showed considerably more change than the working group. Between the first and second interviews 13 of 24 (54.1%)

did not change. Four of the 24 (16.7%) changed towards the younger end of the scale, and seven (29.2%) towards the older end. The same trend was even more markedly maintained between the second and third interviews. Of the 15 men concerned, seven (46.7%) did not change - three (20.0%) changed towards the younger end of the scale, and five (33.3%) changed towards the older end.

The already retired men showed much the same degree of change as the working group. Between the first and second interviews, 11 of 16 men (68.7%) did not change their judgements, three (18.8%) changed towards the younger end of the scale, and two towards the older end. Between the second and third interviews, nine of 14 (64.2%) did not change, one changed towards the younger end of the scale, and four (28.6%) towards the older.

The picture here then seems to be that the total sample tends to rate itself as older as time goes on, and this tendency is made up of contributions of varying sizes from the different groups. The working group shows a slight change towards the older end of the scale, but the retired group not only more often regard themselves as elderly than do the other groups before they retire, but show a much greater tendency to move towards the older end of the scale as time goes on. It is unfortunate that the numbers in the sample are small, for statistical analysis is not possible, but the trends revealed are sufficiently large to suggest that a larger sample would make the differences significant. The already retired men represent a middle group. On the one hand they are, as a group, more ready to classify themselves as elderly, but they are more stable than the retired men. This is to be expected since the retired men are a transitional group while the working men and the already retired men are relatively settled.

It cannot be said that the differences between the occupational groups which have been revealed by this examination of some general attitudes are very marked. While it can be argued, and has frequently been pointed out above, that the sample is small, it is intensive, and if the retirement impact hypothesis were correct, then over the period of the investigation more effects of retirement would surely have been noticed. Two of the findings show interesting differences between the occupational groups. These are the differences in degree of loneliness and estimated age group. The trend shown by the retired group on the estimated age group question has just been mentioned. But the interesting thing is that on loneliness the retired men at first interview, that is, when they were just on the point of retiring, showed just about the same proportion not lonely as did the men already retired, and markedly lower than the proportion of working men so describing themselves. Again, the retired men, just prior to their actual retirement were more likely to class themselves as elderly than either of the other two groups. It therefore looks as though the effect of retirement on the attitudinal systems involved in these judgements is prospective. This would be in accordance with the use of continuance at work as a criterion of ageing which was sometimes observed during the research.

(6) <u>The Diary</u>

It will be recalled that the diary was left with the subjects to be completed and sent on to the interviewer, and that three days, Tuesday, Friday and Sunday, were selected as those on which the diary should be kept. The extent of the co-operation required led to a number of refusals to co-operate, some of these being due to unwillingness proper, and about an equal proportion being due to an inability to rise to the level of clerical skill involved. The

details of this co-operation are given in Table 78. In this table, A indicates completion of a diary at the first interview, B completion at second interview, AB at both the second and third interviews, and so on.

TABLE 78 - Analysis of type of co-operation

Type of co-operation	Group: Working	Retired	Already Retired
A	11	4	3
B	3		
C	1		1
AB	6	5	3
AC	2		1
BC	1	2	
ABC	12	11	4
	36	22	12

In this, and subsequent analyses, composite groups have been used, in view of the smallness of numbers. Thus the working group consists of all men actually at work, that is, the "working" and "retired 1" men. The retired group comprises all men who left full time employment, that is, the men who were completely unoccupied, as well as those who got further part-time or occasional employment. The already retired group consists of all the men who were already retired when first seen.

From the table it can be seen that half the retired men completed three diaries, whereas one third of both the other groups completed this number. Summarising the co-operation over all, Table 79 is based upon the number of men in each group who completed at least one diary.

TABLE 79 - Extent of co-operation

	Group		
	Working	Retired	Already Retired
Total cases	73	28	23
Total diaries	36	22	12
Percent participation	49.4	78.6	52.2

Again one finds a similarity in the behaviour of the working and the already retired group, but a marked difference between these groups and the retired group. The difference in proportions co-operating between the working and the retired group was significant ($p = 0.015$); the difference between retired and already retired approached significance ($p = 0.046$); and the difference between working and already retired groups was not significant ($p = 0.82$). There is no direct evidence to account for these differences, but, in view of the previous findings, it might be suggested that the retired men, finding themselves with the necessity of establishing new frames of reference, are more agreeable to observing their new situation so as to make new adjustments. It might be argued, alternatively, that the retired men simply had more time to complete the diaries, but this would not account for the similarity of the already retired men to the working men, unless it were hypothesized that the already retired men had filled up their time with "work-substitutes". This hypothesis also involves the implicit assumption that the retired men are a transitional group, and hence it is not inconsistent with the original statement made above.

Impressionistically, it may be said that refusal of the diary was seldom phrased in terms of not having time to complete it, except in the case of one or two men having executive jobs who did, in fact, appear to have very little time to spare. It was much more often the case that

the man said "I don't think I'll bother" or some such phrase, which did not appear to imply time pressure as a reason for refusal. In the light of the differences in the proportions co-operating, it must be borne in mind then, that the working and already retired men who co-operated may not be truly representative of their samples, though it must also be said that in considering this matter, no obvious biasses can be discerned.

It would be possible, in using the diary material, to formulate a very large number of hypothesis, but the present investigation will be limited to those below. The hypotheses related to expected differences between groups are based upon an assumption of the truth of the retirement impact hypothesis.

1) There will be less time recorded by the working group on weekdays as compared with Sundays, since work will account for a large proportion of the time expended on weekdays, whereas on Sundays a man will have to find his own means of illing in time.

2) There will be smaller differences between weekdays and Sundays in the case of the other two groups. In the case of the already retired group, there will be less difference than in the case of the retired group who would be expected to be still somewhat work orientated, and hence to regard Sunday as a day of rest.

3) The working group will acount for more time, in total, than the retired, and the already retired groups. The retired group will show a trend of decreasing amount of time accounted for as time goes on, and apathy increases.

4) With the loss of work as a means of filling in time, there will be no compensating adjustments in time accounted for under other heads.

5) Time spent on social contacts by the retired men will decrease compared with that spent by the working men (since apathy will set in).

6) Of the social contacts experienced by the retired men, less will be initiated by them, and more by others as compared with the working group. The retired men will approximate to the already retired men.

The results will now be considered in the light of these hypotheses. The following table summarises the data, for the analysis of time recorded by day and interview, for the different groups. The test used was the Friedman two-way analysis of variance (SEIGEL 1956). Using this (non-parametric) test, the null hypothesis would be that there should be no differences in the sums of ranks within each of the groups.

From Table 80 it can be seen that there is a highly significant relation between amount of time recorded and day of the week for the working group. There is also a markedly significant relationship, though at a somewhat lower level, in the case of the retired group, and a non-significant relationship in the case of the already retired group. Tuesday and Friday, for both the working and the retired groups, are "weekdays", whereas Sunday is not so regarded, and less time is recorded. For the already retired group the week is fairly homogeneous. This result is consistent with hypotheses one and two. It suggests that the retired group is still to some extent work orientated, and this state of affairs persists throughout the period of the investigation.

TABLE 80 - Analysis of time recorded by day of week, and interview

Group		Interview A			Interview B			Interview C		
		Fri	Sun	Tues	Fri	Sun	Tues	Fri	Sun	Tues
Working	Sums of ranks	73.5	29.5	72.5	64.0	38.5	72.0	75.5	42.5	72.0
		p is less than 0.001								
Retired	Sums of ranks	67.5	34.0	68.0	52.5	33.0	58.0	79.0	43.0	59.5
		p is less than 0.01								
Already retired	Sums of ranks	24.5	19.0	19.5	12.5	12.0	28.5	10.0	26.5	26.5
		p is between 0.20 and 0.10								

As regards total time recorded, the differences between the three groups for the first administration of the diary were analysed by the Mann-Whitney 'U' test (Seigel op cit), and the data are summarised in the table below.

TABLE 81 - Differences between groups in total time recorded at first administration of diary (Mann-Whitney 'U' test)

Comparison		Significance level (one tail)
Working v Retired	(Tues & Fri)	0.235
	(Sun)	0.087
Working v Already Retired	(Tues & Fri)	0.210
	(Sun)	0.014
Retired v Already Retired	(Tues & Fri)	greater than 0.05
	(Sun)	greater than 0.05

It can be seen from this table that only one of these probabilities approaches an acceptable level, that between the working and already retired groups on Sundays. Trends in amount of time accounted for between the first and subsequent interviews are analysed in Table 82. In this table, the means referred to in the column headed M are the mean differences between the two interviews in question. The t ratios are for the comparison of the working group with the other two groups in each case. It will be seen that there are marked instabilities in the total time recorded when the men are considered in total. A somewhat similar trend to that discernible in the case of some of the questionnaire results is indicated, namely, the tendency to mark less at the second interview as compared with the first, and to compensate for this at the third interview by recording more. However, there are exceptions to this trend, as can be seen.

TABLE 82 - Trends in mean time accounted for between interviews

	M	s^2	F	p	t	n	p
Interview A v Interview B (Tuesday and Friday)							
Working group	-37.3	25,810					
Retired group	-17.5	51,950	2.05	+	0.292	31	+
Already Retired group	-93.14	13,293	1.95	+	0.891	23	+
Interview B v Interview C (Tuesday and Friday)							
Working group	+25.4	9.952					
Retired group	+12.92	47,100	4.73	appx 0.05	0.187	25	+
Already Retired group	-19.25	12,590	2.32	+	0.702	15	+
Interview A v Interview B (Sunday)							
Working group	-32.8	48,950					
Retired group	+27.0	28,100	1.74	+	0.851	31	+
Already Retired group	-52.14	26,390	1.86	+	0.209	23	+
Interview B v Interview C (Sunday)							
Working group	+52.4	36,018					
Retired group	+46.2	24,009	1.50	+	0.091	24	+
Already Retired group	+187.5	33,728	1.07	+	1.260	15	+

\+ p is greater than 0.10

Under the Tuesday and Friday analysis, the already retired group record less and less time, while under the Sunday analysis the retired group record more and more time. However, none of the trends are significantly different from those for the working group, and therefore these variations should not be over-stressed, especially as neither the retired, nor the already retired group are anomalous on both analyses. It appears

then, that in relation to trends, the null hypothesis must be accepted, or alternatively, hypothesis three, above, is not supported by the evidence.

It is now appropriate to consider the relative amounts of time spent by the different groups on various activities. Since there appear to be no significant trends over the periods of observation, as regards the totals, all completed diaries in respect of the working men have been taken together, and also those for the retired, and already retired groups. The diaries for Tuesday and Friday have, however, been kept separate from those for Sunday. The data upon which the following discussion is based will be found at Appendix D. The procedure followed was to calculate, for each activity recorded, the mean amount of time per item over all the relevant diaries. The data are summarised in Tables 83 and 85 in terms of the percentage of time recorded, spent in various activities.

It will be seen that, as expected, during the morning and afternoon the main occupation of the working group is work, and indeed about 65% of the day is take up with work, whereas the corresponding percentages for the retired and the already retired are 31% and 25%. It might be a matter for surprise that the amount of recorded time occupied by work is so high in the case of men who have retired, but this is an artefact of the items grouped under work. Also included under this head, besides paid employment, were housework, gardening, household repairs, cooking, and shopping. Reference to Appendix D will show that whereas almost all the time accounted for under this heading on weekday mornings and afternoons is for the working men, paid employment, for the retired

and already retired men housework and gardening are the two major contributions. It could be argued that to include these other activities under the same head as paid employment is very arbitrary. However, this was done deliberately to see if any substitution takes place with retirement to keep the amount of work up to some acceptable level. In this connection, the common element in all the activities listed here under 'work' is assumed to be the element of obligation to do a job or a household chore which would not otherwise get done.

TABLE 83 - Percentages of total time recorded occupied in various ways. Tuesday and Friday.

	Working	Retired	Already Retired
Morning Meal	3.54	3.69	2.98
Work	30.48	18.04	14.65
Leisure at Home	2.19	10.92	10.50
Leisure outside Home	0.64	2.49	4.34
Aftern'n Meal	6.50	4.19	4.50
Work	29.32	11.73	7.86
Leisure at Home	2.80	8.17	12.30
Leisure outside Home	0.83	5.53	10.45
Evening Meal	2.85	3.52	3.84
Work	4.87	3.92	2.30
Leisure at Home	11.30	21.99	21.80
Leisure outside Home	4.68	5.79	4.48
	100.00	100.00	100.00
Total mean time accounted for (mins)	897.02	661.45	706.07

In terms of total time recorded during the day as 'leisure' (including both at home and outside) the working group so records 23% of the total time at weekdays, the retired group 55%, and the already retired 62%. The critical ratios

(proportions) for the differences between working and retired, and working and already retired groups, respectively, are 2.52 and 2.49. The corresponding one tail p's are 0.0059 and 0.0064. But the difference between the retired and the already retired groups is not significant. (C.R. = 0.40, p = 0.3446 (one tail).

In the evening the proportion of time occupied by work is of the same order for all groups, though the qualitative difference in the activities still applies. The fields in which the compensation for loss of working time takes place are leisure at home, and outside home. The increase is essentially in terms of passive pursuits - reading papers, resting, and listening to wireless - as reference to Appendix D will show. Hobbies are not taken up to any great extent, a confirmation of the report obtained in the interview. However, it should be noted that gardening, which is included under 'work', but which might equally be included under hobbies, does show an increase after retirement. To that extent, the increase in hobbies is underestimated.

The pattern of activities is not the same for the two retired groups, the already retired men tending to take more leisure, especially leisure outside the home, in the afternoon than the men who retired during the period of the research. The latter spend rather more time on working in their gardens and around the house. If the question is asked why the retired men and the already retired men show any time at all under the heading of employment, the answer is that some of these men did take temporary, sporadic, or part-time employment which accounted for the totals shown.

The working men, as might be expected, tended to spend the evening after work relaxing, though they did go out to some extent. The employment they did in the evenings was overtime, or shift work in almost all cases. Only one man had a second (part-time) job as well as his other full time one.

It seems then, that hypothesis four is not supported by this evidence. The retired, and the already retired men do tend to compensate for loss of working time by taking moreleisure, and to some extent by doing more housework and gardening. That the increased time spent in passive leisure is a real compensation, and not just an increase in "lost time" is indicated by the fact that it is accounted for.

In passing, it will be seen that a great deal of the time spent in leisure outside the home falls under the heading of "elsewhere". This is to some extent a shortcoming of the diary form in that not sufficient alternative categories were provided for the men to use. However, a further breakdown is available to indicate the places covered by the "elsewhere" category, since the subjects were asked to write in where this time was spent, and many, though not all, did so. In table 84, the breakdown of activities recorded under the "elsewhere" section are shown. The working mens' activities for the weekday evenings only are shown since they did not record much under this heading for mornings and afternoons, as indeed one would expect.

TABLE 84 - Breakdown of activities recorded under "Leisure outside home - elsewhere" section. Weekdays only. Numbers of instances reported.

Activity	Working Evening	Retired M.	Retired A.	Retired E.	Already Retired M.	Already Retired A.	Already Retired E.
Visiting friends or relatives	8		2	3	3	1	2
Cinemas, theatres, etc	9	2	5	11	2	7	7
Business, T.U., etc meetings	10	4	5	2	3	6	
Walking	5	5	7	8	6	6	3
Total	32	11	19	24	14	20	12

There appears to be no activity which accounts for an unduly large proportion of this 'umbrella' category, and which thus could alter very much the picture provided by the other figures. It is perhaps worthy of comment that the retired and the already retired men are financially able to visit the cinema and theatre so frequently, proportionately more frequently, in fact, than the working men. But it must be remembered that the men who would feel marked financial stringency in retirement were in the main able to keep working.

Table 85 gives the summary information for the groups in respect of Sunday. Here the distribution of time for the various groups is much more alike, though the working group still record a fair amount of time as paid employment. The retired and the already retired men also record some time as occupied with work, but this again tends to be housework, household repairs and the like, rather than paid employment, for the casual or part-time jobs which these men do,

do not on the whole call for Sunday duty.

TABLE 85 - Percentages of total time recorded, occupied in various ways. Sunday.

		Working	Retired	Already Retired
Morning	Meal	4.96	4.42	2.95
	Work	8.62	7.60	4.16
	Leisure at Home	14.80	15.01	19.39
	Leisure outside home	6.12	4.24	11.89
Afternoon	Meal	5.19	3.95	3.85
	Work	4.16	3.16	1.53
	Leisure at home	16.54	20.60	15.84
	Leisure outside home	5.85	9.66	7.96
Evening	Meal	5.19	4.06	5.58
	Work	2.75	2.25	1.30
	Leisure at home	16.60	18.40	20.80
	Leisure outside home	7.22	6.65	6.75
		100.00	100.00	100.00
Total mean time accounted for (mins)		623.43	633.69	803.14

Whereas the differences in leisure time recorded on weekdays were significant when the working group was compared with the other two, for Sundays, the corresponding differences were not significant (working v retired C.R. = 0.499, p = 0.3085 (one tail); working v already retired C.R. = 0.95, p = 0.1711 (one tail)). It will be noticed from these results that there is again a tendency for the retired group to show characteristics - in this case leisure time recorded - intermediate between the working and the already retired groups. As in the case of the analysis for weekdays, some further examination is perhaps needed of the relatively large amount of time recorded as spent "elsewhere" under the head of leisure outside the home. This is given in Table 86.

TABLE 86 - Breakdown of activities recorded under "Leisure outside home - elsewhere" section. Sundays only. Numbers of instances reported.

Activity	Working			Retired			Already Retired		
	M.	A.	E.	M.	A.	E.	M.	A.	E.
Visiting friends or relatives	4	10	9		5	5		2	
Church	14	1	9	13	1	10	12	1	6
Business, T.U., etc									
Walking	4	10		4	5	2		6	1
Other recreation	2	3	1		2		3	4	3
Total	24	24	19	17	13	17	15	13	10

It will be seen from this table that during the period under review there was a good deal of Sunday recreation in the form of walking, going to Church, and visiting friends and relatives. The interest in walking was as a form of exercise, some men walking very long distances around the city streets, in order to get out of the routine of sitting in a chair. This was true of men who were not necessarily bored, but there was a strong feeling that "ageing joints have to be exercised".

The fact that there was quite a large amount of visiting friends and relatives, in terms of number of episodes recorded, leads on to a discussion of social contacts, and hence to a consideration of the two hypotheses suggested above. The time spent in social contacts was not included in the foregoing discussion, because it has already been accounted for as a block. For example, the fact that a man spent x minutes in the park, and during this time met a friend, is one event in terms of total time recorded. To have included social contacts in the analysis of

the total time accounted for would have involved double counting.

Table 87 shows the proportion of total mean time recorded on weekdays which was occupied during certain portions of the day by certain contacts.

TABLE 87 - Percentage of total mean time recorded occupied by stated contacts. Weekdays only.

Time of day	Type of contact	Working	Retired	Already Retired
Morning	Workmates	4.87	0.51	0.71
	Ex-workmates	0.03	0.34	0.66
	Friends	0.26	0.37	1.11
	Tradesmen	0.12	0.28	0.14
	Others	0.33	0.34	1.11
Afternoon	Workmates	5.66	0.06	0.19
	Ex-workmates	0.03	0.38	0.00
	Friends	0.03	1.37	1.62
	Tradesmen	0.14	0.00	0.00
	Others	0.04	0.03	2.03
Evening	Workmates	0.94	0.19	0.00
	Ex-workmates	0.18	2.04	0.00
	Friends	2.26	3.46	5.12
	Tradesmen	0.00	0.00	0.00
	Others	0.24	2.42	0.46
% of total time accounted for		15.13	11.59	13.15
Total time accounted for (mins)		897.02	661.45	706.07

It will be seen from the table that the differences between the groups in terms of percentage of total time occupied with social contacts are not large. The working men, in having the largest total time so occupied, also reveal the value of work in the making of social contacts. Almost three quarters of their social contact time was occupied with workmates. The retired group and the already retired group - especially the latter - appear to compensate for their loss of work contacts by increasing them in other directions. For the already retired men, presumably because of the time which has elapsed since retirement, ex-workmates figure almost infinitesimally in their contacts, but the retired men still have a fair amount of contact (about 24% of all their contacts) with ex-workmates. This is especially true in the evenings, when former working contacts appeared to be renewed by this group. Friends now play a much larger part for both the groups of retired men. About 45% of the retired men's contacts and nearly 60% of those of the already retired men derive from this source. A further relatively large item in the case of both the retired groups is another umbrella category - "other contacts" - which accounts for 2.79% of the total time in the case of the retired men and 3.60% in the case of the already retired men. This again may be regarded as a defect of the diary form since many social contacts could not be allotted to specific categories, due to the omission of such headings as "relatives". However, since in most cases the nature of the other contact was recorded by the man completing the diary, light can be thrown on who these other contacts were.

For the working group, as might be expected from the small proportion of time occupied on weekdays with "other contacts", a number of these contacts were of the relatively brief kind associated with work. Contacts with "business men", "customers", "staff", "people

travelling to work", etc. Of 27 "other contacts", 12 (44%) were of this type. Relatives accounted for a further ten (37%) and the remainder were comprised of "neighbour", "stranger", "doctor", "minister", and "dentist". The relatives, as might be expected, were all seen during the evening. The retired men reported a wider range of contacts under the head of "other contacts". Of 30 contacts of this type, seven (23%) were with relatives - all again in the evening - and 15 (50%) were with "casual contacts", "acquaintances", "neighbours", and similar chance meetings associated with morning and afternoon walks, sitting in parks and the like. The remainder were contacts associated with sundry business activities such as shopping, and visiting the Income Tax Inspector. In the case of the already retired men, seven of 17 (41%) were with relatives, and these were distributed evenly throughout the day. Five (29%) were contacts deriving from sick visiting and club activity, and the remaining five were casual contacts. Although the retired and the already retired men recorded fewer contacts than the working men under the head of other contacts, they tended to be of longer duration.

It appears then that as far as weekdays are concerned, the retired and already retired men do adjust their pattern of contacts to meet the situation brought about by cessation of work, and the evidence, such as it is, suggests that the already retired men are, as would be expected, ahead of the retired men in this process. We must now turn to consider the situation in regard to Sunday's social contacts.

Table 88 shows the proportion of total time accounted for which was spent on various contacts on Sundays. Here, the position is quite different from what it is on weekdays.

TABLE 88 - Percentage of total mean time recorded occupied by stated contacts. Sundays only.

Time of day	Type of contact	Working	Retired	Already Retired
Morning	Workmates	0.54	0.00	0.00
	Ex-workmates	0.00	0.00	0.00
	Friends	0.55	0.57	1.95
	Tradesmen	0.04	0.22	0.00
	Others	0.00	0.08	0.24
Afternoon	Workmates	0.00	0.00	0.00
	Ex-workmates	0.00	0.00	0.00
	Friends	2.88	2.28	1.36
	Tradesmen	0.00	0.00	0.00
	Others	10.22	4.21	1.28
Evening	Workmates	0.46	0.00	0.00
	Ex-workmates	0.00	0.07	0.00
	Friends	4.74	3.40	1.64
	Tradesmen	0.00	0.00	0.17
	Others	1.95	4.04	0.34
% of total time accounted for		21.38	14.87	6.98
Total time accounted for (mins)		623.43	633.69	803.14

The working group, although recording less time in total, spends, as a proportion, almost half as much time again in social contacts. By far the largest contribution to this is the 10.22% spent on "other contacts" on Sunday afternoon. The retired group also show an increase in proportion of time accounted for by social contacts, but it is much smaller than the working group proportion. Its chief components are a fairly large contribution from "other contacts" on Sunday afternoon and Sunday evening. The "other contacts" for these groups are mainly relatives, though the retired men also have some Church contacts which the working men do not. Relatives represent 70% of the working mens' "other contacts" and 56% of those of the already retired men. The total picture for these two groups is fairly similar, even though the scales are different. Sunday,

for these men, seems to be a day of social visiting. For the already retired men, on the other hand, the proportion of total time recorded spent on social contacts is small in comparison with the other two groups, and Sunday appears to be primarily a day of relaxation in one's own immediate circle, though there is some contact with friends and relatives.

It appears then that this evidence is in support of hypothesis five, the retired men tending to record less time in social contacts. However, this is only partly true, since, for weekdays, the already retired men, who might be expected to report still less time so occupied than the retired men, in fact record more. Examination of the figures suggests that the already retired men have tended to substitute friends for workmates whereas the retired men have not done this as much, though it is possible that they may continue this process as time goes on. They do, however, show a slight inclination to continue contacts deriving from work, that is, with "ex-workmates".

The hypothesis is much more strongly supported by the figures for Sundays. The working men maintain a fairly high level of social activity with about one fifth of their recorded time being so spent. Possibly a powerful factor here is the lack of time during the working week for making visits to relatives, etc. Possibly also these men are used to maintaining a higher level of activity in general. The already retired men, as suggested above, now fall into their expected place with relatively few social contacts, and the retired men are intermediate.

The data relating to hypothesis six, the extent to which contacts are initiated by the various groups must now be examined. Table 89 shows the analysis of the initiation of contacts

TABLE 89 - Analysis of the initiation of contacts by occupational status and interview

Contact Initiated By	Interview A			Interview B			Interview C		
	Working	Retired	Already Retired	Working	Retired	Already Retired	Working	Retired	Already Retired
Self	14 (35.0)	12 (70.6)	7 (46.6)	9 (29.0)	15 (55.6)	2 (40.0)	15 (57.6)	10 (40.0)	13 (59.1)
Other	12 (30.0)	5 (29.4)	1 (6.8)	7 (22.6)	11 (40.7)	2 (40.0)	4 (15.4)	4 (16.0)	4 (18.2)
Mutual	14 (35.0)	0 (0.00)	7 (46.6)	15 (48.4)	1 (3.7)	1 (20.0)	7 (27.0)	11 (44.0)	5 (22.7)
Total	40 (100.0)	17 (100.0)	15 (100.0)	31 (100.0)	27 (100.0)	5 (100.0)	26 (100.0)	25 (100.0)	22 (100.0)

by occupational status and interview.

Before commenting on the form of the results, it is necessary to draw attention to the fact that the analyses are based on relatively few recorded contacts from each occupational group. The recording of the contacts, and by whom each was initiated was the most difficult part of the diary form, and it was not filled in by many of the men who completed the diary. It also follows from this that the diligent recording of contacts by one or two men in an occupational group may affect the form of the results for that group. However, the picture as a whole is probably not badly distorted by this factor, and while the data does not admit of any sophisticated analysis, it may be taken at its face value.

It appears then that the first half of hypothesis six is supported. The retired men do indeed show a marked fall in self-initiated contacts. They also start from a very high level. The working men on the other hand show a tendency to report a greater proportion of self-initiated contacts. The already retired men also show an increase in these contacts. There are noticeable fluctuations in the trends shown by the latter groups, but the trend for the retired men, when compared with them, seems clear enough.

What is not so clear is the data in regard to the second part of hypothesis six. The retired men show an initial rise in other-initiated contacts but then a sharp fall, whereas the increase in mutually initiated contacts, though small at first, is considerable by the third interview. This contrasts with the behaviour of the working group who show a rise and then a drop between interviews. It would be unwise to develop a

complex hypothesis to account for this sparse data. If the trend for the retired group is a real one, however, it might be argued that the retired group do lose the facility for making contacts themselves, especially through loss of work as a source of these contacts; that for a time they rely markedly on visits from relatives and others; and that, finally they succeed in re-establishing their own contacts in the framework of retirement by mutual meetings in clubs, parks, in the street, and so on.

To sum up this discussion of the diary then, hypotheses one and two appear to be supported, though whether the empirical fact of different amount of time being recorded is subject to the theoretical interpretation put upon it is to some extent obscured by the fact that the already retired men do seem to regard Sunday as a day of rest in that they spend more time that the other two groups in simply relaxing at home. However, a new frame of reference may make them tolerant of this situation in a way which the other two groups are not. Hypotheses three and four are not supported. The retired men do not show a decreasing amount of time recorded as time goes on, and they do compensate for the loss of work to some extent. The data in respect of hypotheses five and six are somewhat equivocal, but in general the hypotheses seem to be supported, the retired men tending to record less time as occupied with social contacts, and to initiate fewer contacts than the working group, though there is some evidence from the behaviour of the already retired group to suggest that this is a process which may be halted and reversed, as adjustment to a new situation is achieved.

All this discussion must, of course, be viewed in the light of the differential co-operation of the different groups in completing the diary.

Co-operation was much more common among the retired group than among either of the other two groups. It may be that the half of the working group who completed at least one diary were the men who were especially diligent and fairly well organised in their daily lives. It is the impression of the investigator that this is so. Thus, although the diaries may represent a fair picture of the retired mens' time, it very probably underestimates the apathy, or aimlessness, or disorganisation, of the working mens' time. This may also be true of the already retired men, who co-operated to about the same extent as the working men. If so, it would suggest that the retired men may be passing through a phase which will eventually be left behind, when the problem of how to spend time is intrinsically interesting to them. On the other hand, it has been seen that the already retired men are in worse health than the retired men, and it may be that this renders suspect, direct comparison between the retired and the already retired groups.

CHAPTER SIX

THE CO-OPERATORS AND THE LOSSES

There are three main ways in which the foregoing discussions could be called into question. These are, firstly, that extraneous factors possibly affecting retirement are uncontrolled as between the different occupational groups; secondly, that the admittedly large losses from the sample exerted an influence on the results, rendering them suspect; and thirdly, that the questionnaires themselves are suspect and hence that part of the discussion which depends upon scores obtained from them is invalidated. The third of these possibilities has already been briefly discussed in Chapter Five, and we shall return to the topic in Chapter Seven. For the moment the first two of these possibilities will be discussed in turn.

The description of the sample obtained

In the research work which has been carried out in the field not only of retirement, but more generally in ageing, several factors have been found to be related to the possibility of dealing successfully with the problems which ageing raises. Among these are education; job status; social participation and social contacts; hobbies and spare time activities; membership of clubs; and religious activities. The existence of these possible influences on a sample of ageing men brings up the question of further controls to eliminate differential influences on the different experimental groups. Clearly, if all the retired men were more wealthy and of a higher social class

than the working men, and if these factors were related to the ability to deal successfully with ageing, then any detrimental effect of retirement would tend to be masked by the better situation of the retired men.

Complete control of all possible variables can never be attained in an experiment in social science, and even if one limits the controls to those assumed a priori to be relevant by means of matched groups, the matching may not take account of variables in fact relevant but a priori not assumed to be so. It further involves the collection of data from very large numbers of subjects. Nevertheless, the use of matched groups is an ideal to be arrived at. An alternative, though less powerful method of matching, is available where there are insufficient numbers in the initial samples to cope with the large losses due to the number of discards required by matching of individuals. This method requires that the composition of the two groups, but not necessarily the characteristics of the individual subjects within groups should be matched. Thus if one group contains a man of Social Class I, the other should also do so, and if one group contains a man who has had a University education, so should the other. But it is not required that both groups should contain a man from Social Class I who also has been to University. This method again involves a large number of discards, though not as great as the first method. An extended discussion of these methods is to be found in CHAPIN (1947).

These methods are difficult to use with a random sample of the population unless this is very large. In the present research the sample is small, but as large as it was possible for a single investigator to deal with over nearly two years.

Another approach would be to build up the experimental and control groups by allotting the subjects obtained randomly to one or other of the groups prior to administering the experimental experience. This again is not practicable here, because the decision as to who should retire could not, of course, be controlled by the experimenter. These are deficiences of the sample, but some attempt to overcome them can be made.

The data which would allow of matching if a sufficiently large sample had been obtained, was in fact collected and it is therefore possible to evaluate the composition of the different occupational groups to see whether there are significant differences between them. In all the subsequent tables, the first column includes all men who remained at work throughout their participation in the research; the retired 1 group (column 2) includes all men who retired from one job but got another one very soon afterwards; the retired 2 group includes all men who, during the period of the research, retired and did no further work. All except one of these also thought of themselves as retired. In the retired 3 group are the men who retired during the period of the research and regarded themselves as retired but who had managed to get themselves other work, usually of a temporary nature. The men who were already retired when first seen are included in the already retired group, whether or not they regarded themselves as retired.

A check was maintained on the accuracy of this information throughout the period of contact with each subject, but the changes which took place were few. For this reason, in presenting this material, the information for each subject has been summarised over the three interviews.

The marital status of the subjects as a group has already been dealt with, but the following table shows marital status broken down by occupational grouping.

TABLE 90 - Marital Status by Occupational Grouping

	Working	Retd 1	Retd 2	Retd 3	Already Retired 2 & 3	Total
Married	58	7	19	4	19	107
Widowed	3	2		1	2	8
Single	2		4		1	7
Married Apart or Divorced	1				1	2
Total	64	9	23	5	23	124

Taking together all men who were occupied (the working and the retired 1) and comparing them with all the men who were retired (retired 2, retired 3, and already retired), it is found that 89% of the working men were married and 84% of the retired men. The difference between these percentages yields a critical ratio of 0.82. P = 0.412 and hence this difference is not significant.

Social class, which has also been referred to above, may be broken down by occupational status. The social class grouping is that of the Registrar General, and the occupation for retired men is taken as their last full time gainful employment.

TABLE 91 - Social Class by Occupational Status

Social Class	Working	Retd 1	Retd 2	Retd 3	Already Retired 2 & 3	Total
I	4				2	6
II	5		3	2	4	14
III	36	6	16	1	10	69
IV	9		3		2	14
V	10	3	1	2	5	21
Total	64	9	23	5	23	124

It appears from Table 91 that the working and the already retired men are more representative of the higher social classes. All the Social Class I men are to be found in these two groups. This is because the Social Class I men who were interviewed were either self employed or in jobs such as Chairmen of companies where they could, and did, carry on beyond the age of 65, or were sufficiently affluent to have retired relatively early in life. However, the relation between occupational status and social class is not significant (chi-square = 1.98, n = 2, p is between 0.50 and 0.30).+ Although this is so, it is well to bear in mind that the already retired

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+ Note:- In order to compute chi-square it was necessary to combine categories in order to produce expected frequencies of at least five. This was done in all subsequent analyses where chi-square was used, in a manner similar to that for the diary analysis. The working men are combined with the retired 1 men to produce a group all of whom are at work full time. The retired 2 and retired 3 men are combined to produce a group all of whom have completed systematic full time working. The already retired group was kept separate except in two cases, one of which was the social class analysis.

men show this slight bias, since this does appear to exercise some influence on data to be presented subsequently, though not on the results of the investigation of the main hypothesis.

The education of the subjects is detailed in Tables 92 and 93.

TABLE 92 - Number of subjects finishing full time education at stated ages

Age finishing	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
13 or less	16		4	1	5	26
14	37	8	16	3	9	73
15	5	1	1		3	10
16	5		2		4	11
17	1					1
18 or more				1	2	3
Total	64	9	23	5	23	124

TABLE 93 - Level of Education

Level	Working	Retd 1	Retd 2	Retd 3	Already Retired 2 & 3	Total
Elementary	43	7	17	3	12	82
Secondary	3		1	1	4	9
Further	18	2	5	1	6	32
Higher					1	1
Total	64	9	23	5	23	124

The picture is much as would have been expected. An appreciable number of subjects in nearly all the occupational groups left school at 13 or earlier, but the modal age for leaving school was

14. Few pursued any protracted full time education beyond that statutorily prescribed. The relation between age finishing full time education and occupational group is not significant (chi-square = 5.47, n = 4, p is between 0.30 and 0.20). The level or type of education is in accordance with this analysis. Most subjects did not proceed beyond elementary education, but quite a large number did so. Only one subject attended a University, and he was a man who had retired some years before interview, being in very prosperous circumstances. The further education referred to is a very mixed bag, since it includes all kinds of part-time education taken up after leaving school. Hence the bulk of the 32 men concerned had taken vocational courses as a supplement to apprenticeships, or book-keeping or commercial courses. A few, however, had gone on for institutional qualifications such as C.A. These were to be found in both the working and the already retired groups.

Many of the men had come from the large families common at the end of the 19th century, and they had still many sibs living. But the general picture of family relationships was not one of a closely-knit group with all the members fully functional. A distinction must be drawn between operative and inoperative members of the family. Subjects could, if pressed, give details (which may or may not have been accurate) as to the whereabouts of their relatives, but usually contact was limited to children and one or perhaps two close relatives such as a brother or sister. Tables 94 and 95 show the number of brothers and sisters <u>living</u> at the time of the interviews, and the frequency with which at least one of these sibs was seen.

TABLE 94 - Number of sibs living at time of interview

Number of Sibs	Working	Retd 1	Retd 2	Retd 3	Already Retired 2 & 3	Total
0	8	1	2	2	1	14
1	9	1	6	1	3	20
2	11	1	4		7	23
3	11	2	1	1	7	22
4	12	4	4	1	2	23
5 +	13		6		3	22
Total	64	9	23	5	23	124

All family sizes are represented in all occupational groups.

TABLE 95 - Frequency of sibs visiting

Frequency of Visiting	Working	Retd 1	Retd 2	Retd 3	Already Retired 2 & 3	Total
Not at all	11	1	3	2	2	19
Once week	13	3	7		7	30
Once fortnight	1	1	1			3
Once monthly	15	1	1	1	3	21
Once or twice a year	19	2	8	2	2	33
Unwilling	4	1	3		2	10
Too far	1				7	8
Total	64	9	23	5	23	124

It will be seen that in the different occupational groupings about one half to three quarters of the known sibs actually visited, or were visited by, the subjects. It could be suggested

that the possession of a closely-knit family would affect retirement by predisposing towards it, where the number of close social contacts was an influence, or by influencing away from it, where the other members of the family were work orientated. In point of fact there was no relationship between occupational status and frequency of visiting sibs (chi-square = 0.98, n = 2, p is between 0.70 and 0.50).

The availability of children with whom contact could be maintained, and from whom help might be forthcoming, might be a factor in successful adjustment to retirement, and if men who had large families were to be found disproportionately among the retired groups, this might influence the results. The number of children in Edinburgh available to each subject is shown in Table 96.

TABLE 96 - Number of children in Edinburgh by occupational status

No. of children	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
0	17	2	9		5	33
1	15	4	6	1	8	34
2	15	1	4	1	5	26
3	8	1	2	2	1	14
4	4		2		2	8
5 +	5	1		1	2	9
Total	64	9	23	5	23	124

The large majority of subjects had at least one child in Edinburgh and the differences between occupational groups were not significant (chi-square = 0.67, n = 2, p is between 0.80 and 0.70). Almost all the available children either lived with their parents or visited at least once a week.

TABLE 97 - Frequency with which available children visit parents

Children Visiting	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Once a week or living with	45	7	14	5	17	88
Less than once a week	2				1	3
Total	47	7	14	5	18	91

Some of the subjects had children out of Edinburgh, a larger proportion (40%) of the working men having children out of the city than of the retired men (23%). See Table 98.

TABLE 98 - Number of subjects having children out of Edinburgh

Number of children	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
1	15	2	6	1	7	31
2	8	1		1	4	14
3/4	3					3
Total	26	3	6	2	11	48

The frequency with which these childrenwere seen was naturally less than in the case of children in the city. But nevertheless most of them were quite frequently seen - the most usual situation being where a child would entertain the parents for their holidays, and return the call later in the year.

Most of these children were seen once or twice a year. B ut the main issue is whether or not these children were likely to be an influence in promoting successful adjustment to retirement. Where there were already children in the city, their influence would be less important. But it would be likely to be important where the only children were out of the city. Of the 33 men who had no children living in Edinburgh, 28 also had no children living outside. There was, then, a number of men having no children at all, and the men concerned are to be found in all occupational groups.

Most of the men were able to supply details of relatives other than sibs, or children who were available for contact. The "other family" available to the men is shown in Table 99.

TABLE 99 - Subjects having different numbers of family other than sibs or children

Other Family Generation	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
None	13	1	4	3	9	30
Same generation	26	4	11	1	12	54
2nd generation	17	3	5	1	2	28
3rd generation	1					1
Same and 2nd	5	1	3			9
Same and 3rd	2					2
2nd and 3rd						
Total	64	9	23	5	23	124

The already retired men on the whole fare worst on this analysis, since about 39% of them have no relatives under this head. About 25% of the retired men, and about 19% of the men who carried

on working, have no such relatives. Not all these available relatives are near at hand, however. Of the 51 working men who had other relatives, 40 had them within the city. Five of the nine retired 1 men had such relatives; 15 of the 23 retired 2 men; one of the five retired 3 men, and 11 of the 23 already retired men. Thus the majority of other relatives mentioned do live within the city. The contacts with these relatives tend to be somewhat spasmodic and often fortuitous. In nearly all cases it was not possible to obtain any concrete statement from the men about the nature and frequency of these contacts and this was not pressed since it was not central to the main enquiry, and in any cases these contacts did not appear on the whole to be operative ones. It has already been pointed out that the great majority of the men were married, and this is again shown by the table below, which analyses the composition of the households concerned. Apart from this, it will be seen that a large proportion also had children living with them.

TABLE 100 - Composition of subjects' households and occupational status

Composition of Household	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Self	4	1	1			6
Self and spouse	30	2	11	2	9	54
Self, spouse, child (ren)	22	4	8	2	10	46
Self, spouse, child (ren) and others	5	1				6
Self, spouse, relatives	1					1
Self, relatives	2	1	1	1	3	8
Self and others			2		1	3
Total	64	9	23	5	23	124

Of the working men, 45.2% had at least

one child living with them, and the corresponding percentages for the retired and the already retired groups were 33.7 and 43.5 respectively. There was no significant relationship between occupational status and children living at home (chi-square = 0.56, n = 2, p between 0.80 and 0.70). The men who were living with relatives were mainly widowers living with some younger member of the family, usually a daughter and son-in-law, or daughter-in-law and son.

It is important to consider how well the subjects were settled in their social environment, since it has been found that the floating population is the most prone to such troubles as mental disorder, and suicide (e.g Sainsbury, op cit). This is dealt with in the present research by considering whether the men were natives of the city, how long they had lived in their present neighbourhood, and how long they had lived at their present address. As would be expected, most of the men were natives of Edinburgh.

TABLE 101 - Whether or not native of Edinburgh

	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Native of Edinburgh	41	7	13	4	12	77
Not native	23	2	10	1	11	47
Total	64	9	23	5	23	124

Of the men who were still working, 66.2% were natives, and so were 63% of the retired men. The corresponding percentage for the already retired men was 52%. Contrary to the most obvious explanation - that several men in this group might have "retired to the Capital", in fact, only one had done so, and he had been in Edinburgh almost

five years, having retired early. Only two men men in the whole sample had been less than ten years in the city, and 112 had been in the city 25 or more years.

Time in the city itself is not necessarily a complete indication of integration within a relatively static social environment. Edinburgh as a city is fairly compact but the impression was gained from interviewing these men that they did not travel about the city a great deal, at any rate for social purposes. In fact these men had had a good opportunity for integration in their neighbourhoods since most of them had lived there for many years. In the table below, the term "neighbourhood" is not defined except as the men themselves defined it. In point of fact, although the use of this term was not checked systematically, it was always used by the men, of a small area comprising a few streets of fairly homogeneous housing.

TABLE 102 - Numbers of men living in neighbourhood various lengths of time

Time present neighbourhood	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
All life	7	1	3	2	4	17
25/ + years	27	3	14	1	9	54
10-24 years	26	4	5	2	7	44
5 - 9 years	4	1			2	7
0 - 4 years			1		1	2
Total	64	9	23	5	23	124

Of the total sample 57% had lived in their present neighbourhoods 25 years or more. The percentages for the men at work and the men retired were 59% and 71% respectively. The difference was not

significant (C.R. = 1.10). A further indication of the stability of the sample as far as residence is concerned is that 43 of the total of 124 (34.7%) had lived at their present address more than 25 years, and a further 66 (53.2%) had lived at the same address between ten and 24 years. The pattern was similar for all occupational groups. Only seven men had had a change of address in the five years previous to interview and these were only single removals - there were no "rolling stones".

It is possible to live for a number of years in a particular neighbourhood and never make more than a nodding acquaintance with a neighbour, though in Edinburgh this is less easy because of the large number of tenements with their common stairs. The field of social contacts may be viewed as a series of concentric rings, centred on the self. The superficial contact with the fellow traveller on the bus then would constitute the farthest out of these rings, and the intimate friendship where confidences are exchanged would constitute the innermost ring. The former was not thought to be of great importance in influencing retirement behaviour, either by predisposing to retirement or helping to induce well-being, through the feeling that a lot of people were known, after retirement. But an attempt to elucidate these casual ephemeral contacts was thought to be worth while because it was found when the research was begun that when men were asked how many friends they had, they would reply "dozens" or some such term, indicating that they had a very wide circle of friends. Further elucidation, however, would reveal that this circle consisted of just such casual contacts and that the situation as regards friendships involving some sort of emotional tie was usually quite different. It is the latter which, a priori, appear more likely to be effective in offsetting the effects of retirement, if any. The question "How many people would you say you know"? was then included in order to skim off the casual contacts so as to reveal the situation in regard to the stronger relationships. "People known" was

defined as people to chat to or pass the time of day with.

All the men knew at least one other person outside the family, even if this was only someone with whom they chatted whilst waiting for the bus. Twenty-two (17.7%) knew less than five people to chat to or pass the time of day with, while 97 (78.4%) knew ten or more. The pattern was the same for all occupational groups comprising the total.

When we come to the analysis of actual friendships, however, we find that the picture is very different from what would have been the case if the casual contacts had not been skimmed off. For the purposes of collecting the data which make up the table below, "friends" were defined as "people you would visit, or who would visit you, or people you would make a point of seeing". This last phrase was used since men of some social classes did not on the whole visit very much, but met their regular friends in clubs or bars.

TABLE 103 - Numbers of subjects having different numbers of friends

Number of friends	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Less than 5	39	6	13	2	9	69
5 - 9	15	1	6	1	10	33
10 or more	10	2	4	2	4	22
Total	64	9	23	5	23	124

Of the 124 co-operators, 55.6% report less than five friends as defined above, 26.6% report between five andnine friends, and 17.8% report

ten or more friends. There was again no significant relationship between number of friends, and occupational status (chi-square = 2.68, n = 2, p is between 0.30 and 0.20). The major contribution to chi-square is from the already retired men, of whom more than expected have the larger number of friends. It might be supposed that this is due to their increased opportunities for making friends since retirement. However, this was true only in some cases. In only four cases was there evidence that after retirement men had been enabled to make new friends. This was due to their having increased time to meet people by joining new clubs and getting out more. Most of the friends possessed by the retired men were friends of long standing. A more influential factor was that some men who were in a position to retire early because they had highly paid or superannuated jobs, or both, were also members of those social classes where the practice of making friends, of visiting, and spending time with these friends, is the standard pattern.

In point of fact, as Table 104 shows, friendships were even less effective than might be supposed from Table 103. Most of the men who had less than five friends actually had none at all, or at least, none personally contacted, though in a few cases letters were exchanged.

TABLE 104 - Numbers of subjects seeing friends with various frequencies

Friends seen	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Not at all	34	5	9	2	9	59
Weekly or more	12	1	5	3	9	30
Fortnightly	5	2	1		2	10
Monthly or less	13	1	8		3	25
Total	64	9	23	5	23	124

Again the relationship between occupational grouping and frequency of seeing friends is not significant (chi-square = 5.43, n = 4, p between 0.30 and 0.20). Again the largest contribution to chi-square comes from the already retired men who not only more frequently have a large number of friends, but also see them more often.

To carry the analysis of friendship a stage further, the men were asked if they had any "special friends", meaning by this any friends they were with a great deal, inwhom they would confide, and with whom they would discuss personal problems.

TABLE 105 - Numbers of subjects having different numbers of special friends

Number of Special friends	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
None	40	4	14	4	12	74
1	12	2	5		4	23
2	7	3	2			12
3 or more	5		2	1	7	15
Total	64	9	23	5	23	124

More than half of the men (59.7%) claimed no special friends, 28.2% said they had one or two, and 12.1% said they had at least three. There was again no relation between occupational status and possession of friends in this category, though once again the already retired men, for the reasons mentioned above, had a few more friends than would have been expected by chance (chi-square = 2.44, n = 4, p between 0.70 and 0.50). As would be expected in the case of such close friends, there was a high frequency of contact with them. Of the 50 men who had special friends, 38 (76%) saw them at least weekly. This was characteristic of

all occupational statuses.

Although the occupational status groups did not show any great variation in the numbers of friends available and the frequency of seeing them, the occupational statuses of these friends themselves is worth investigating. It must be borne in mind that this information is not too reliable, since the friends referred to include in this case all "friends" so called, and the subjects were somewhat vague about the relationship with the men referred to, even though an attempt was made to confine them to close friends. The numbers involved are somewhat smaller than in the case of the other questions, since this question was not introduced until later in the series of interviews, and hence some men who were lost to the research did not answer the question at all. With these provisos then, the information was as shown in Table 106.

TABLE 106 - Number of subjects having friends of the stated occupational group

Friends retired	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
All	4	1	2		3	10
Some	9		6	3	5	23
None	36	7	14	2	8	67
Total	49	8	22	5	16	100

The idea in mind in asking this question was that there might be an imitative effect in retirement. That is, the men who had many friends retired would tend to retire when they got the chance, whereas the men who had friends who carried on working would themselves carry on working. One

or two men did indeed mention pressure from friends to retire, but apart from this there was no overt statement about friends' influence. However, the relationship shown in the table is close (chi-square = 4.25, n = 1, p between 0.05 and 0.02). There are two influences which must be taken into account before accepting this as substantiating the hypothesis. One is that the initial hypothesis could only be regarded as supported if the men who retired had the opportunity of making a choice. If, that is, the majority of the retirants did so under conditions other than a fixed age limit. But this is not the case, the great majority of retirements taking place compulsorily. The second influence is that the retired friends of the retired men should be friends of reasonably long standing, capable therefore of exerting an influence to retire, and not friends met because they also were retired. In point of fact, this requirement was fulfilled in all cases except one, the exception being an ex-railwayman who retired and then renewed acquaintance with a man who also had retired from the railways. In all the other cases, the important thing about the friends of long standing who had retired, was that the fact that they and the subject had retired was contingent upon their being roughly the same age group rather than upon any direct interaction. Further analysis, therefore, suggests that the important factor in the situation is age rather than imitation.

Finally, on this topic of social contacts, it has been suggested (e.g. Cavan et al op cit) that contact with young people is conducive to a healthy old age. As the popular belief puts it, "mixing with young people keeps you young". One or two of the subjects actually quoted this when the question of how many young people they knew, was put and discussed. For the purposes of the research, a young person was defined as anybody below the age of 25. This

age was chosen arbitrarily.

TABLE 107 - Numbers of subjects having contact with various numbers of young people, as defined

Number of Young People Known	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
0	25	6	11	1	13	56
Less than 5	7	0	0	0	0	7
5 - 9	24	3	9	1	7	44
10 or more	8	0	3	3	3	17
Total	64	9	23	5	23	124

It will be seen from Table 107 that 46.2% of the men knew no young people, and that 61 (49.2%) knew at least five. The great majority of these young people were grandchildren of the subjects, or, in the case of those subjects who had younger children, these children's friends. Church activities also accounted for some of the contacts. There was no relationship between occupational status and possession of different numbers of young contacts. (Chi-square = 1.02, n = 2, p between 0.70 and 0.50).

MOBERG (1953) and Britton and Britton (op cit) found that religious activities and affiliations were related to successful "adjustment" in old age, and it is therefore important to know whether this affected the occupational groups differentially. The subjects were all asked whether they were a member of a church. Sixty four (51.6%) said they were, but this is not a reliable guide to religious activity. There is the consideration that responses to questions about religious beliefs

are apt to be unreliable in any case. In the present research, the subjects made replies which were on the whole more frank than had been expected. But in any case, for many men, church membership implied having one's name on a roll somewhere, even if they had not attended church for a considerable time. Some said that they went very occasionally in order to keep their name on the roll.

Hence, as a more accurate guide, the subjects were also asked how often they went to church. The difficulties inherent in this approach are well-known but the resultant picture is probably fairly accurate with not a great deal of over-reporting.

TABLE 108 - Numbers of subjects attending church, with the various frequencies

	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Never	32	6	11	3	11	63
Once a month or less	18	1	6	1	3	29
Once a fortnight or less	2		4		1	7
Weekly	8	2	2	1	6	19
Twice weekly or more	4				2	6
Total	64	9	23	5	23	124

About half the men never went to church at all. Of the other categories, probably "once a fortnight" and "once a month or less" were euphemisms for "seldom or never". Weekly attendance or more is the category which is probably indicative of the sort of church activity of interest here - activity

which affords identifications and emotional satisfactions. The men who went twice weekly or more held offices in the church, or were members of choirs. There is a strong social element in church going as well as the religious aspect, and it may have been the former rather than the latter which provided the greater satisfactions. Social satisfactions were specifically mentioned by two of the subjects. Four subjects spoke specifically of religious satisfactions. The relation between occupational status and churchgoing was not statistically significant (chi-square = 5.50, n = 2, p between 0.10 and 0.05). The greatest contribution to chi-square came from the already retired men, more of whom than would be expected were to be found among the more frequent attenders at church. The disadvantage of a small sample is at the bottom of this finding, since the already retired group have within it two Catholics and two office bearers in the Church. Socio-economic status is also a factor here, since the office bearers and the regular church attenders tend to be higher in the social scale.

It might be hypothesized that increasing age would lead to an increase in religious activity, on the grounds that as one subject said, "a man wants to make his peace". If this were the case, and if, indeed, such activity were effective in promoting general well-being, then it would be important to ensure that this increase did not occur differentially in the various occupational groups. Accordingly, the men were asked how their frequency of churchgoing compared with when they were 60. Bearing in mind Abram's (op cit) criticism, that a subject would not be able to make an absolute assessment of this, it is nevertheless worth trying to get a subjective assessment to see whether this tallies with the other available data. Table 109 shows

the self-estimates of comparitive frequencies of attendance at church.

TABLE 109 - Subjects' self-evaluations of present frequency of attendance at church compared with frequency of attendance at age 60

Comparative Frequency	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Less	15	2	5		7	29
Same	40	7	16	5	16	84
More	9		2			11
Total	64	9	23	5	23	124

Eighty four (67.8%) of the men said their frequency of churchgoing was the same as at 60, and this number included most of the 63 who said they never go now. That is, they have never been churchgoers. There was no significant relationship between comparitive frequency of churchgoing and occupational status (chi-square = 2.96, n = 4, p between 0.70 and 0.50). Insofar as these figures are based upon a summary of three interviews, they may mask an effect which in fact took place. It may be that the retired men showed a greater tendency to churchgoing over the period of observation. A further check of all retired men over the period in question revealed change in frequency of churchgoing between interviews in only one case, where the frequency went down owing to a decline in health.

Although not central to the main theme, it may perhaps be asked why these men went more, or less to church. No detailed reply will be given, although the data is available. The reasons for going less were ill-health, pressure

of business, quarrels with ministers, and apathy. The reasons for going more were increased opportunity with cessation of Sunday working, and social reasons, with one or two who went more frequently for religious reasons.

The actual complaints and symptoms of these subjects, and the comparisons between the different occupational groups, are dealt with more fully in the section on the inventories, but a summary of the frequency of visiting doctor is available. In Table 110 the statements regarding visits to doctor are summarised over the three interviews. Thus a man who was seeing his doctor currently at any interview was classified as "currently". It might be the case - and frequently was - that a man was seeing his doctor currently at all interviews, though not necessarily with the same illness.

TABLE 110 - Numbers of subjects visiting doctor at given intervals

Seeing Doctor	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Currently	30	5	12	2	15	64
3-6 months ago	4	1	3	1	3	12
6 months-1 year ago	4			1		5
1 year or more ago	26	3	8	1	5	43
Total	64	9	23	5	23	124

On analysis, the relationship between occupational status and recency of seeing doctor is not significant, but nearly so at the 0.05 level (chi-square = 4.69, n = 2, p between 0.10 and 0.05). In view of the numbers of

chi-square analyses carried out, it is only to be expected that some relationship will prove to be significant by chance. But it is also true that the already retired group scored higher than the working group on the Cornell inventory at the initial administration and that t did tend towards significance at the 0.05 level. It is the contribution to chi-square of the already retired men, more of whom than expected had recently seen their doctors, which makes the relationship approach significance here. Taken as a whole, the sample may be compared with that for the domiciliary research. There the frequency of consultation with doctor for the men aged 65 was as follows:-

Currently	12
3 - 6 months ago	4
6 months - one year ago	2
One year or more ago	17
Not known	6
	41

Chi-square here is 2.58, n = 1, and p is greater than 0.10. The greater frequency with which the present subjects appear to visit their doctors is probably due to the fact that the information is summarised over three interviews.

Much the same impression is gained when one considers the number of men with "recent illness". "Recent illness " included any sickness which resulted in a curtailment of normal activities. This therefore included colds, and other minor ailments. Since the information is summarised for three interviews, the figures are for men who had had a recent illness at any time during the period of the research. The relationship between occupational status and having had a recent illness approaches an acceptable level of significance (chi-square = 9.66, n = 2, p is between 0.02 and 0.01). Again, by far the most

important contribution to chi-square came from the already retired men who had had a recent illness much more often than would be expected by chance. As can be seen from the table below, nearly all the already retired men came into this category.

TABLE 111 - Number of subjects having had a recent illness

Recent Illness	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Yes	32	5	14	2	20	73
No	32	4	9	3	3	51
Total	64	9	23	5	23	124

Of the 20 already retired men who reported recent illness, 11 had a chronic illness which had been influential in bringing on retirement. In seven cases the illness was acute, and had arisen since retirement, and in two cases there was a possible relationship between the two, where the men had left their jobs because of stress, and later developed disorders with a possible stress component. It might perhaps be mentioned as a matter of interest that of the total sample, only two or three men said, in response to questioning, that they tended to go to doctors more now than they previously had done, and there did not seem to be a large effect of age on this point. However, several men said that they tend to "steer clear of doctors" and "preferred to doctor themselves".

Since most of the subjects were married, it is necessary to know the state of health of the wives, inasmuch as this may affect retirement behaviour, and satisfactions in retirement. Men may retire to help a sick wife run the home,

and when retired may be worried by the prospect of an ailing wife. Again, a wife's incapacity may force activity on a man who might otherwise sit and vegetate. An assessment of their wives' health was obtained from the men, and it is important to bear in mind that this information is not necessarily related to actual fact, but represents only the husband's view.

TABLE 112 - Numbers of subjects assessing wife's health in the categories shown

Wife's Health	Working	Retd 1	Retd 2	Retd 3	Already Retired	Total
Good	31	4	7	3	8	53
Average	17	2	6		6	31
Bad	8	1	6	1	3	19
Don't know or No wife	8	2	4	1	6	21
Total	64	9	23	5	23	124

These categories of health are, of course, very crude, and do no more than give a rough indication of the wife's health. They are simply assessments which the present writer made on looking at the husbands' reports. In general, if no complaint was made about the wife's health, or nor specific disorder mentioned, the health was coded "good"; if some remark was made such as "she's not too good" or "she's up and down", or some symptom or disorder which was not incapacitating was mentioned, this was coded "average"; while if specific symptoms were mentioned which appeared to be incapacitating, this was coded "bad". But if the categories are crude so in this case are the original data, and it must also be remembered that in many cases, during the time of the research, the interviewer got to know the wives quite well. Probably it would be fair to regard

the categories as essentially a dichotomy with good on one side and average plus bad on the other. Combining all the working men and comparing them with all the retired men, there appears to be no significant relationship between occupational status and wife's health (chi-square = 3.37, n = 3, p is between 0.50 and 0.30).

In summary of this examination of the basic social data of this sample, it may be fairly said that there appear to be no systematic biasses influencing one occupational group as against another. The picture generally does not lead one to expect any large deviation from the norms for this age group, though undoubtedly there are some, especially in the case of marital status. It seems reasonable to conclude that there are no systematic differences which would differentially affect the results so as either to obscure or over-emphasise any effect of retirement. On the other hand, the sample is not large enough of itself for more than tentative generalisation and nor is it referable to the population from which it was drawn without some reservations.

The foregoing description and analysis covers all men who co-operated at least once. Within this group are some men who were eventually to become losses, and we must now turn to a discussion of these together with those men who did not co-operate at least once.

The Analysis of Losses

The term "losses" is used to refer to all men who failed to complete the full plan of the research. A large part of these losses is,

of course, composed of refusals. But in a longitudinal research design, additional losses due to factors such as death are unavoidable.

The results which have been derived from the data might well be invalidated if the losses from the sample over-represent the "difficult" or "maladjusted" subjects. In the extreme case, for example, the losses might be composed of all the men showing morbid symptoms leaving a sample which gave results leading one badly to under-estimate the effect of retirement.

It will be recalled that the social class of refusals at first interview were examined in relation to the rest of the sample, and it was found that no significant difference existed. Further analysis of the characteristics of the losses as compared with the rest of the sample will now be presented.

The losses at the first interview, of course, yield much less information than those at subsequent interviews. These were men who did not complete any of the procedures. However, 22 men supplied sufficient data for some assessment, albeit subjective, to be made. The reasons for the refusal to co-operate, based in most cases on an interpretation of the available interview material, rather than any direct statement, are shown in Table 113.

TABLE 113 - Reasons for refusal to co-operate at first interview

Reason	
Apprehensions (probably regarding ability to complete questionnaires)	2
"Could not be bothered", irritation, etc	6
Influence of wife	4
Lack of time (wife's illness, pressure of business, etc)	6
Too ill, poor health	3
Aggressive refusal	1
Reason unclear	2
	+
	24

+ Two cases gave more than one reason for refusal.

It seems from this analysis that there was no obviously predominant reason for refusal likely to bias the results. There also appeared to be no bias in terms of occupational status. Of the 22 refusals under consideration, five (22.7%) intended to retire; while of the 124 men who co-operated at the first interview, 28 (22.6%) intended to retire. The reasons for retiring or continuing at work are unfortunately obscured by a large area of uncertainty, as Table 114 shows.

TABLE 114 - Reasons for retiring or continuing at work given by men who refused to co-operate at first interview

Reason	Working +	To Retire
Wife's health		1
Health reasons		2
Financial	4	
Boredom, etc	2	
"Fed up with work", etc		2
Don't know	12	1
	18	6

+ May be more than one reason per person

Clearly, the number of subjects for whom no reason for the proposed course of action is known, is too large, and the number proposing to retire too small, to allow any conclusion to be drawn from this table. But it is not inconsistent with the suggestion that these reasons do not appear to be biassed in any particular direction, and in particular they do not suggest a marked degree of maladjustment. However, it is possible to obtain more insight into this problem by ratings of physical and mental health. These are derived from an assessment of the available material for each case.

TABLE 115 - Apparent level of physical health

Level of health	Working	To Retire
Good	4	2
Average	8	1
Poor		1
Don't Know	3	3
	15	7

The present writer lays no claim to any expertise in this field, and the ratings simply represent a judgement based on recency of last seeing doctor, presence or absence of diagnosed illness, and general complaints of illness. The ratings used are crude, and the shortcomings of a rating such as "average" are so familiar as to need no discussion. Much the same considerations apply in the case of mental health, shown in Table 116.

TABLE 116 - Apparent Level of Mental Health

	Working	To Retire
Assumed Good	4	1
Assumed Average	6	2
Assumed Poor	3	1
Don't Know	3	2
	16	6

The fact that nearly one fifth of the working men who refused at first interview were classified as "poor" on mental health may seem excessive, but it is not intended to imply that there was marked pathology. Rather was there evidence of some stress - perhaps "maladjustment" would be a better word. Viewed in this light, the figure may not appear so high, especially when compared with other studies (c.f. Monroe Fraser).

Taken together, then, these two tables indicate that there appears to be no reason to suppose that the retired men tended to refuse at first interview because they were maladjusted. More insight into the problem of losses as a whole is afforded by the consideration of the men who were lost at the second interview.

The losses at the second interview comprised 24 cases, viz:-

Refusals	17
Died	3
Discontinued	3
Non Contact	1

The three men who died represented each of the three occupational categories, one working, one retired, and one already retired. The retired man died of a cerebro-vascular accident which occurred while he was working, and it was probably coincidental that he was just about to retire. The already retired man had a long history of illness which had originally led to his retirement.

Of the three men who were discontinued two gave, at the first interview, information of doubtful validity, and two could not complete the tests at all at the second interview. Two of these were unable to do so on grounds of ill-health which had necessitated early retirement. One revealed a long history of casual employment, and was having psychiatric treatment as an outpatient after having been an inpatient in a mental hospital. This leaves a balance of 17 refusals, whose apparent reasons for refusal are given in Table 117.

TABLE 117 - Reasons for refusal of men who would not co-operate at second interview

Reason	Numbers
Influence of wife	2
Irritation, could not be bothered, interview too long	12
Reason unclear	3
	17

It will be seen from this table that in terms of losses, a heavy price was paid for the amount of information to be obtained, since 12 of the 17 refused to go further on grounds which were connceted with the length of the interview.

There appeared to be no discernible relation of refusal at second interview to occupational group (chi-square = 1.40, n = 1, p is between 0.30 and 0.20). The losses by death, as pointed out above, were evenly distributed between the occupational groups. Of the 17 men who refused, one had retired by the second interview, seven were still working, and no information could be obtained in respect of the remaining seven.

At the third interview, the reason for one of the three refusals was unclear, but of the two other men, one was "too busy" and one "could not be bothered". One of the three had retired by the time of the third interview, but the other two were still working.

The scores on the questionnaires at the first interview of the men who refused at the second, are important, and one must ask whether they differed significantly from the scores of the corresponding co-operators. In Table 118, these scores are compared.

TABLE 118 - Comparison of First Time Questionnaire Scores of Losses at Second Interview with those for Co-operators

		Co-operators Mean Score	S.D.	Losses Mean Score
Heron E.M.	(Working)	4.90	2.92	4.33
	(Retired)	6.41	3.23	5.30
Heron Sociability				
	(Working)	4.80	2.20	4.00
	(Retired)	5.17	2.51	5.00
Cornell	(Working)	13.73	1.08	17.43
	(Retired)	19.03	1.16	23.11

It will be seen that, with the exception of the Cornell scores, the means for these groups are all well within two standard deviations of those for the co-operators. In the case of this exception the mean for the working group losses is largely influenced by a man who scored 50 on the Cornell. This man was very casual in his work and other habits, and he had also been ill for some time with a variety of symptoms. The mean for the retired group losses includes scores of 54,50, and 43 - all men who had a long history of illness and intermittent employment. It should be noted also that the means for the losses group also include the scores at the second interview of the men who were lost at the third interview. It appears from this analysis that the men who were lost did tend to make more complaints of illness when viewed as a group, but that this was due mainly to some few men who scored very high and whose illnesses were the cause, rather than the effect, of retirement.

For the losses in general, that is losses from all causes over the three interviews, it is possible to separate out the responses of the losses from those of the co-operators, and hence compare them over a wide range of variables. Wherever possible, statistical procedures have been applied to the analysis of differences but this was not always possible due to the smallness of the numbers involved, and the doubtful validity of combining response-categories meaningfully.

In discussing the results of these analyses, it needs to be borne in mind that, of 36 analyses, 35 results are not significant at even the 0.05 level, and one is significant at this level but not at 0.01. Hence it cannot be said that the losses are likely to be greatly biassed in comparison with the co-operators. However, such trends as are discernible will be briefly discussed below.

As regards attitudes, the losses appear more frequently than the co-operators to regard their present health as better than at age 60; to be somewhat more extreme in the favourableness or unfavourableness of attitudes to retirement; to be more inclined to rate their lives as very happy; and to be more likely to rate themselves in the younger age groups. However, the lowest p for differences between the groups on any of these factors is 0.19, and hence these trends are not really of any great influence in biassing the sample.

The losses had more often finished their education prior to age 14 than had the co-operators (p is approximately 0.08). This would appear to support the view that the decision to co-operate or not might have been in part influenced by a man's belief that he would not be able to cope with all the test procedures.

There was some slight indication that the losses came from larger families than did the co-operators, though this was only marked in the case of very large families (five or more in family) (p greater than 0.1). There was also a slight tendency for the losses to visit less, and be visited less among the family (p greater than 0.1). There was no discernible relationship between family position and co-operation (p = 0.42). The losses were somewhat more likely to have children of their own in Edinburgh (p is greater than 0.20), and to receive visits from them (p is greater than 0.20). The losses were also slightly more likely to have some children out of Edinburgh (p greater than 0.2) and of those people contacted who had such children, the losses tended to be more often visited by them (p greater than 0.05). There was no discernible relationship between degree of co-operation and structure of household. It was not possible to apply a statistical test here, because of the smallness and scatter of the numbers of cases.

Both groups showed much the same patterns of stability of residence. The co-operators were only very slightly more likely to be natives of Edinburgh (p greater than 0.30), but among those who were not natives, the losses showed a similar small tendency to be more likely to have lived in Edinburgh 25 years or more (p is greater than 0.30). These trends were also to be noted in the length of time lived in present neighbourhood, and time lived at present address.

Unfortunately, the investigation of the relationships of the subjects with their friends cannot be very thoroughly compared as between co-operators and losses. Most of the losses occurred after the first interview and it was not until the second set of interviews that an improved schedule which covered this area more comprehensively was introduced. However, insofar as can be ascertained from the material available, the losses reported about the same number of friends as did the co-operators (p greater than 0.30).

Church membership again showed little variation between co-operators and losses. The co-operators tended slightly more often to be members of a church (p greater than 0.20), and there was some indication of lesser likelihood of attendance fairly regularly (more than once a month) in the case of the losses (p greater than 0.20). The co-operators tended to say that they went more frequently now than when they were 60, more often than did the losses (p is greater than 0.1).

There was virtually no relation between a subject's seeing his doctor in the last six months, and whether or not he completed the research (p is greater than 0.70). The losses

showed a very slight tendency more frequently to report a recent illness (p is greater than 0.30). There was some tendency for the losses to report that their wives were in good health more frequently than the co-operators. But again this was not significant (p is greater than 0.1).

Coming now to plans and ambitions, there were again no significant differences between the groups. The co-operators did more often say that they intended to move their residence (p greater than 0.20) but there was almost no discernible difference at all between the groups in terms of having plans and ambitions in general (p greater than 0.7), and in terms of their self-estimates of achievement of ambitions (p greater than 0.8).

The losses somewhat more often than the co-operators said that they had no problems or difficulties but this was also nowhere near statistically significant (p is greater than 0.30).

The co-operators were more likely than the losses to have been all their lives in one job (p is greater than 0.10), and correspondingly they more often showed a history of regular, rather than casual employment (p = 0.19). They also more often regarded themselves as taking part in more club activity than when they were 60 (p greater than 0.1), and they less often gave evidence of "general" as against "specific" use of spare time (p greater than 0.05). There was, however, no difference between the groups in terms of number of hobbies as such (p is greater than 0.80).

There was a slight tendency for fewer of the co-operators than of the losses to be intending to carry on work (p is greater than 0.30). Of the men who were carrying on work, rather more of the losses mentioned finance as a reason for doing so (p is greater than 0.1). This is consistent with the sources of income expected by the men if they should retire. Rather more of the men in the losses group than in the co-operators group said they would have only the retirement pension, or this pension, supplemented to some extent by one additional source such as supplementary or company pension. The significance level here was the highest recorded (p between 0.02 and 0.01). There was also some indication that a feeling of relative security in retirement might be expected on the part of the co-operators to a greater degree than among the losses, since the co-operators slightly more often had foreknowledge of their pension (p between 0.30 and 0.20). On the other hand, the losses less often than the co-operators said that the financial aspect of retirement was a worry, though there was no evidence that this difference was other than due to chance (p is greater than 0.50). The tendency of the losses to keep on working because of the financial reward was complemented by the finding that a greater proportion of them than of the co-operators found their job "easy to do" (p = 0.10). Another characteristic of the losses which showed to a minor degree (p greater than 0.10) was their tendency to extremes in regard to the length of time they intended to continue working. They either intended to retire within the next year, or they intended to carry on indefinitely - the latter rather more frequently than did the co-operators. None of them/intermediate judgements/made of how long they would carry on, such as "another two or three years".

A final comparison may be made in respect of the reasons for retirement given by those men who had retired. The numbers here

are very small, and no statistical analysis will be attempted, but, of the reasons for retirement given by the co-operators, 11 of 51 (21.6%) were health reasons whereas for the losses, five of nine (55.6%) were health reasons. However, the more accurate comparison is that between the losses and the already retired group of co-operators, for all the losses who gave poor health as a reason for retirement had in fact already retired. The already retired group of co-operators gave health as a reason for retirement in nine of 23 cases (39.1%). This is still quite a large difference, but it should also be borne in mind that two of the losses who had retired for health reasons, became losses when they eventually died.

It may be thought that to base a discussion on significance levels in most cases so far above those commonly regarded as satisfactory, is unsound. On this view, the comforting conclusion would be that the refusals are not likely to bias the sample, and hence the conclusions, unduly. However, one is considering a single sample of reasonably small size, and in relation to a number of factors. If the losses represent a series of systematic differences such that cumulatively they amount to a serious bias, it is important to draw attention to this. The position is summarised in Table 119. In this table, no factors are recorded which yield differences which are significant only at the 0.3 level or more. This level is set quite arbitrarily. The table contains two columns. In the first of these are listed factors which would imply that the losses are better "adjusted" than the co-operators and hence that the remaining sample over-estimates the amount of maladjustment to be found in a truly random group. In the second are listed factors which would imply that the losses are less well "adjusted" than the co-operators and hence that the remaining sample underestimates the amount of maladjustment to be found in a random group. As suggested at the beginning of

this discussion, one would hope that, if indeed any bias exists, it would follow the first, rather than the second of these alternative directions.

TABLE 119 - Summary of results of analysis of losses

Factors implying that resultant bias over-estimates effects of retirement
Comparison of health (0.20)
Coming from larger families (0.10)
Children of own in city (0.20)
Frequent visiting from children (0.20)
Children out of city (0.20)
Frequent visits from children out of city (0.05)
Wives in good health (0.10)
Moving residence (0.20)

Factors implying that resultant bias under-estimates effects of retirement
Earlier termination of education (0.08)
Visit less (0.10)
Visit less among family (0.10)
Membership of a church (0.20)
Frequency of attendance at church (0.20)
Comparative frequency of churchgoing with 60 (0.10)
Length of time in job (0.10)
Regular employment (0.19)
More club activity now (0.10)
General use of spare time (0.05)
Finance as a reason for carrying on work (0.10)
Few sources of retirement income (0.02)
Foreknowledge of pension (0.20)

Note:- The figures in parentheses indicate the approximate probability level for significance.

On a purely numerical basis (i.e. number of factors operative), it would appear that the losses do indeed operate in a direction which would tend to make the research results under-estimate the effects of retirement. However, this is to regard each factor as having an

equal weighting. Unfortunately we do not know what other weighting to assign to the various factors, and all of them have been found to be related to pathology of various kinds in ageing, though in several cases the results are somewhat contradictory.

However, in view of the very low levels of significance obtaining and since the factors are by no means all on one side, but tend to distribute themselves it seems fair to argue that the effect of the losses is at least very small. Hence the writer feels justified in rejecting the suggestion that the losses are a serious source of bias in the research.

CHAPTER SEVEN

THE VALIDITY OF THE QUESTIONNAIRES

We come now to an investigation of the third of the suggestions put forward at the beginning of Chapter Six, namely that the questionnaires are suspect. Clearly this question is of central importance to the whole investigation. Some evidence regarding the validity of the questionnaires was presented in Chapter Five in the shape of correlations between the Cornell Medical Index and the Heron Inventory. Some more evidence is discussed below.

In this discussion it needs to be borne in mind that the major reason for introducing some assessment techniques was to provide a means of assessment independent of the observer's judgement. A second reason was the need to provide some sort of metric, for the measurement of changes in themselves probably quite small. Thus the underlying assumption - based, of course, on the behaviour of these techniques in other reported research - is that they would have a certain validity in this situation, and would be an improvement on the interviewer's own (subjective) judgement.

This has an important bearing on the procedures to be adopted in the further validation of the techniques. The subjective rating of cases is only in terms of broad categories. If the questionnaire material were divided into corresponding broad categories, say by using the quartiles of the relevant distribution of

scores, then it might seem that the correct procedure would be to compare the two sets of ratings over the whole range of cases. But there appear to be two major objections to this.

The first objection is that, with the admittedly crude subjective ratings, there is a large interval of uncertainty in the middle of the range which corresponds to an implied judgement of "no discernible aspect of outstanding importance in either direction". But the answers to the questionnaires might be expected to be more sensitive in this area, and to disperse cases coming under this implied suspension of judgement to their proper categories, leaving a group with intermediate scores who "really" were intermediate. So if all cases over the whole range were used, the intermediate category of subjective ratings would possibly tend to underestimate the accuracy of the questionnaire scores.

The second major objection is that there is really no warrant for setting up the interviewer's own judgement as a criterion of the validity of the questionnaires. To say that the questionnaires were valid if they agreed with the interviewer in assigning the subjects to similar categories would be paradoxical. If the agreement were, for example, 100%, then the use of the questionnaires would have been otiose, while if the agreement were nil, the only course would be to reject the questionnaires and accept the interviewer's rating. In other words, the more usual approach to the problem of validity would be acceptable only if the questionnaires were themselves on trial, and were being validated against a perfectly accurate judge, or at any rate one whose error was very small.

This appears to be an assumption underlying the validation of many techniques against clinical judgement. The present writer believes that his own ability in assessment is by no means in this class, especially when it is remembered that the cases being judged fall within the normal range for the population, with the consequent relative absence of marked symptoms. The questionnaires which were used were carefully selected and have been satisfactorily tested out in other situations, as has been detailed in Chapter Four.

Hence, the subsequent examination will be largely post hoc in character. We shall determine which cases fall at the ends of the range of scores, call these the extreme categories, and then see whether there is any good reason why these cases should fall at the extremes, basing our judgement on the available material from other parts of the interview. It is true that this kind of procedure has been frowned upon from the point of view of classical scientific method, but it appears to be the best course here, in the light of what has been said above.

There are two exercises in the assessment of validity which will be attempted. One is to see whether the cases falling in extreme categories "ought" to be there on the basis of other material. The other is to examine the cases who markedly change their scores to see whether, in the light of other material, they could have been expected to do so.

The first step, then, is to determine the extreme categories. These are taken simply as the quartiles of the distribution of scores in each case, that is, in respect of the Heron

Emotional Maladjustment, the Heron Sociability, and the Cornell Medical Index. Thus Q_1, the lowest 25% of the cases, corresponded to the "Good" or low score category, and Q_3, the top 25% of the cases, corresponded to the "Bad" or high score category. It needs to be borne in mind that a perennial problem of psychology and medicine is involved here. The measurement of bad health or malfunction is relatively easy. The measurement of good health - if this is not to be defined merely as absence of bad health - is very difficult. We shall thus expect less clear-cut results in the case of Q_1 than in the case of Q_3. As Dr. Heron (op cit) has put it: "It is indeed unsafe to assume that a respondent obtaining a lower score than eight on the present measure (the Heron E.M. Inventory) <u>is</u> well adjusted; all that can be said is that in the light of the available evidence such a respondent is likely to be well adjusted and that the probability that this is so is reasonably high".

It was found that in the case of both the Heron inventories, the Q_3 category could, without doing much violence to the data, be defined as "all scores of seven and over". Thus in the case of the Emotional Maladjustment scale, for the first administration, this gave 40 cases instead of the 31 required by the quartile; for the second administration 25 cases which was exactly right; and for the third administration 21 instead of 20 required. The results for the Sociability scale were similar, as were the results for Q_1 "scores of 0 - 3", though the limit of this category as defined by the quartile tended to be somewhat less stable. In the case of the C.M.I. it was similarly found possible to define the limits of Q_3 for all administrations as "scores of 23 or more", and of Q_1 as "scores of 0 - 9".

These exercises were carried out after the analysis of the data had been proceeding for some months, and therefore any rating attempted by the investigator at this late stage would almost certainly have been contaminated by familiarity with the scores of the subjects concerned, and with the case material. However, it will be recalled (see Chapter Four) that at the completion of each interview, and prior to scoring of the test results, a rating was made on a series of five point rating scales. There was thus available for this analysis, a set of field ratings made at the time of each interview, and these were made the basis of comparison with the quartiles. It was thought from the outset that a five point rating scale would be rather more sensitive than the field ratings warranted, but it has been shown (SHEPPARD 1954) that this tends to spread ratings away from the middle category (which is usually an interval of uncertainty) and that the two categories on either side of this middle one can then be combined to give a relatively sound three point scale. In the final use of the field ratings, this was done.

For the Heron Emotional Maladjustment scale, two of the rating scales were used. These were Depression and Adjustment. A rating on either of these towards the "Bad" end of the scale meant the inclusion of the case in the "Bad" category. Two Intermediate meant a final intermediate rating, while a "Good" and an "Intermediate" or two "Goods" meant a final rating of "Good". This tended to iron out the anomalous cases, as when the investigator rated a man as depressed but also rated him as adjusting quite well to this depression. Sometimes the juxtaposition of ratings which seemed logically impossible was found to be necessary in the field.

The way in which were distributed the cases falling into Q_1 and Q_3 at the first interview is shown in TABLE 120.

TABLE 120 - Cases falling into bottom (Q_1) and top (Q_3) quartiles compared with interviewer's field rating. Heron Emotional Maladjustment, first administration.

		Heron E.M. Q_1	Heron E.M. Q_3	Total
Field Rating	Good	22	6	28
	Intermediate	5	3	8
	Bad	3	20	23
	Total	30+	29+	59

+ Note:- The field rating system was not introduced into the test procedure until some of the first time interviews had been carried out. Hence numbers of cases for whom ratings were available were somewhat less than numbers in quartiles.

It will be seen in the table that some of the extreme cases on the inventory fell in the intermediate category of judgement. This was true for all subsequent tables as well, and it looks as though the questionnaires did, in fact, spread the subjects quite well. Because of the small total number in the intermediate category in the table, very small expected frequencies are found, and hence the computation of chi-square requires that categories be combined. In order to make the test of the validity as rigorous as possible, the observed frequencies in the intermediate categories were combined with the rating category opposite to that expected on the basis of the Heron rating. Thus the cases in the first ("Good") quartile of the Heron scores, who fell in the intermediate category on the rating, were combined with the subjects who fell in the "Bad" category of rating. This maximised the error, and the expectancy therefore is that the obtained significance level would underestimate the true significance of the relationship.

Combining the categories in this way yields a chi-square of 10.45 with one degree of freedom and p is approximately 0.001. This appears to be very satisfactory.

TABLE 121 - Cases falling into bottom (Q_1) and top (Q_3) quartiles compared with interviewer's field rating. Heron Emotional Maladjustment. Second administration.

		Heron E.M. Q_1	Heron E.M. Q_3	Total
Field Rating	Good	23	7	30
	Intermediate	7	4	11
	Bad	5	14	19
	Total	35	25	60

Table 121 shows the position for the second administration of the Heron E.M. inventory. Chi-square for this table, with two degrees of freedom is 12.32, and p is between 0.01 and 0.001. The corresponding data for the third administration of this inventory is given below in Table 122.

TABLE 122 - Cases falling into bottom (Q_1) and top (Q_3) quartiles compared with interviewer's field rating. Heron Emotional Maladjustment, third administration.

		Heron E.M. Q_1	Heron E.M. Q_3	Total
Field Rating	Good	16	7	23
	Intermediate	4	3	7
	Bad	2	11	13
	Total	22	21	43

In this table it is again necessary to combine categories as is the case of Table 120. This yields a chi-square of 2.84 which with one degree of freedom corresponds to a p of between 0.10 and 0.05. It will be remembered that this tends to underestimate the level of significance of the data. As a matter of interest, although it has not been allowed to influence the results, a re-reading of the case notes suggests that there is some evidence in favour of the Heron inventories' classification of seven cases in Q3 who were rated at the time of interview as "Good" by the interviewer. Hence, although it appears rather like special pleading, it must be said that the results for this third administration are not unsatisfactory.

In considering the Cornell Medical Index, it will be remembered that it has a dual role. It gives the number of complaints made by the subject, and hence is in some sense a measure of health, but it is also possible to regard it as a measure of neuroticism. The second role will be considered here, and the first will be briefly discussed later. The criterion used here is the same as for the evaluation of the Heron E.M. inventory.

Table 123 (overleaf) shows the results of the analysis. In all cases combination of categories for chi-square has been necessary and this has been done, as in the case of the Heron inventory so as to maximise the possibility of error. Thus the probability levels appear to be somewhat lower than they really are. But even so, the relationship between rating and questionnaire score is not marked, except at the first administration. It appears that the C.M.I. does not agree so well with the field ratings as does the Heron inventory. The latter shows such a highly significant relationship to start

with that even the subsequent falling off only brings it down to just below the level at which the C.M.I. starts.

TAB LE 123 - Cases falling into bottom (Q_1) and top (Q_3) quartiles compared with interviewer's field rating. Cornell Medical Index.

1st administration

		C.M.I. Q_1	C.M.I. Q_3	Total
Field Rating	Good	20	6	26
	Intermediate	5	2	7
	Bad	5	14	19
	Total	30	22	52

Chi-square = 4.70, n = 1, p between 0.05 and 0.02

2nd administration

Field Rating	Good	15	12	27
	Intermediate	5	3	8
	Bad	4	15	19
	Total	24	30	54

Chi-square = 0.84, n = 1, p is greater than 0.30

3rd administration

Field Rating	Good	15	9	24
	Intermediate	5	2	7
	Bad	3	10	13
	Total	23	21	44

Chi-square = 0.74, n = 1, p is greater than 0.30

As an explanation of this relatively poor showing of the C.M.I. as a measure of neuroticism or emotional maladjustment, it is suggested that it results from the dual role of the C.M.I. If the frequencies in Table 123 are examined, it will be seen that the interviewer's field rating of "Good" is subject to quite a wide margin of error as indicated by the C.M.I. It is possible that this confusion arises because of the measurement of health by the C.M.I. A man, for example, who had a severe physical illness without emotional complications might score high on the C.M.I. but not on a valid inventory measuring neuroticism. If this be granted, then the original idea in using the two inventories, that the Heron would be used to measure emotional maladjustment, while the C.M.I. would provide a measure of health, as well as a check upon the Heron E.M., appears to be vindicated.

It has already been shown (see page that the correlation between Heron and Cornell inventories works out at about 0.70 for the three administrations. Another way of looking at this, and also at the way in which the quartiles for the two questionnaires, are related, is to see which cases would fall into the two quartiles on both tests. When this is done, it is found that:-

At the first administration, of 36 cases appearing in the C.M.I. first quartile, 23 (64%) also appeared in the Heron first quartile; and of 32 cases in the C.M.I. third quartile, 24 (75%) appeared in the Heron third quartile.

At the second administration, of 26 cases appearing in the C.M.I. first quartile, 15 (58%) also appeared in the Heron first quartile; and of 26 cases appearing in the C.M.I. third quartile, 20 (72%) appeared in the Heron third quartile.

At the third administration, of 24 cases appearing in the C.M.I. first quartile, 19 (79%) also appeared in the Heron first quartile; and of 21 cases appearing in the C.M.I. third quartile, 16 (76%) appeared in the Heron third quartile.

The correspondence appears to be good, and to be maintained throughout the period of the research, with the third quartile, as expected from the above discussion, rather more steady than the first quartile.

We come now to a comparison of the Heron Sociability Inventory with the interviewer's ratings. The relevant rating here is that of "Introversion". Dr. Heron, in his paper (op cit), says that "the term 'sociability' has been selected for this part of the inventory mainly because it is somewhat less likely than is 'introversion-extroversion' to be narrowly identified with any particular school of thought in contemporary psychology". But the basis of the scale appears to be introversion-extroversion, and when the use of this inventory was decided upon, prior to the publication of Dr. Heron's paper it was thought that introversion would be a suitable trait upon which to base judgement. However, it must be confessed that this led the interviewer into considerable difficulty. It is well known that the facile translation of Jung's concepts into terms of social participation and number of social contacts is not accurate. The interviewer started off with the assumption that introversion, if it were used at all, ought to be used as defined by Jung. Unfortunately, this proved extremely difficult in the interview situation, and the interviewer often found he was giving undue weighting to such indicators of introversion-extroversion as those referred to above. It was only later that the more sophisticated use of the concept became possible. Thus, to put it briefly,

the interviewer's judgement of introversion underwent some fluctuation from time to time. At the outset, he was probably making a more naive judgement which might be expected to have more relevance to sociability, but subsequently these ratings tended to fluctuate more, as the interviewer strove to use a purer concept of introversion. Hence, it was to be expected, prior to the analysis of the validity of the test material that the correspondence, if any, between field ratings and inventory quartiles would be better at the first than at subsequent interviews. This expectation turned out to be substantiated.

TABLE 124 - Cases falling into bottom (Q_1) and top (Q_3) quartiles compared with interviewer's field rating. Heron sociability.

1st administration Heron Sociability

		Q_1	Q_3	Total
Field Rating 'Introversion'	Low	11	2	13
	Intermediate	11	8	19
	High	7	12	19
	Total	29	22	51

Chi-square = 6.86, n = 2, p between 0.05 and 0.02

2nd administration

Field Rating 'Introversion'	Low	10	5	15
	Intermediate	7	5	12
	High	5	12	17
	Total	22	22	44

Chi-square = 4.88, n = 2, p between 0.10 and 0.05

3rd administration

Field Rating 'Introversion'	Low	11	0	11
	Intermediate	5	5	10
	High	4	11	15
	Total	20	16	36

Chi-square = 2.02, n = 1, p between 0.20 and 0.10

From the table it will be seen that the significance levels are not as high as those for the emotional maladjustment scale, and they tend to get lower from administration to administration. In the case of the data for the third administration, it was again necessary to combine categories and again this was done to represent the inventory in the most unfavourable way. In view of this, and in view of the impurity of the criterion the correspondence is fairly, though not outstandingly, good.

It remains in this first exercise to consider the validity of the C.M.I. as a measure of health. For a fuller validation on another population, with the aid of medically skilled personnel, the reader is referred to GORDON, EMERSON and SIMPSON (unpublished). Here it must suffice to produce what evidence is available. The writer lays no claim to medical skill, and has attempted no health rating; but a reasonably objective rating can be made up on the basis of recency of consultation with doctor, and specified reason for visiting him, or illness diagnosed. In the main, if a subject had not seen his doctor for more than six months and complained of no illness, he was classified as 'health Q_1', i.e. that it would be expected that the C.M.I. would show him in the first quartile. If he complained of some illness, whether or not he had seen his doctor, or if he had seen his doctor within six months for any reason whatever, apart from 'routine check-up', or minor reasons such as 'having ears syringed', he was graded as intermediate, while if he had seen his doctor during the last six months, and had had a serious acute, or chronic, disease diagnosed he was graded 'Q_3'. For this analysis only, it was decided to use all available cases instead of just those appearing in the extreme quartiles on the questionnaire, since this was, in a sense, a prediction situation, rather than a post hoc substantiation. There was in this case a criterion which ought to be sufficiently stable to use as a yardstick.

The results of this analysis are shown below in Table 125.

TABLE 125 - Comparison of health ratings on basis of interview material with Cornell Medical Index quartiles.

		Q_1	Intermediate	Q_3	Total
Interview Material	Q_1	26	18	8	52
	Intermediate	8	27	8	43
	Q_3	2	5	16	22
	Total	36	50	22	118

Chi-square = 37.04, n = 4, p less than 0.001
C = 0.489 (maximum for this table = 0.812)

The correspondence appears to be good, and the contingency coefficient reasonably high. It will be noticed that the marginal totals for the interview material rating are skewed towards the 'good' end of the scale as compared with the view that sickness estimates are higher when based upon subjects' interviews than when based on G.P. records, and these in turn are higher than estimates based upon hospital records.

No data for the corresponding analyses for the second and third interviews will be presented, since the form of the interview material was such that only changes in previous health status were recorded at subsequent interviews, and these changes were few in number.

The general comment upon this first exercise, then, is that on the whole the questionnaires have stood up quite well to this examination, and

the Heron E.M. the best of all. A phenomenon common to all the questionnaires is their tendency to show decreasing levels of significance, when compared with interviewer ratings, at interviews subsequent to the first one. There appear to be two elements in this. One is the variation in the criterion, that is, in the interviewer's judgement. The other is test sophistication and test interaction. As regards the first of these, the interviewer inclines to the view that his judgement was responsible in the main for the lowering levels of significance. This has been discussed at the appropriate places above. Apart from the difficulties actually experienced in the interview situation in coming to a final judgement, there is the fact that, considered apart from interviewer judgements, the correlations between the questionnaires, and the allocation of the subjects to the two extreme quartiles appeared to hold up rather well. As regards the second element, it is only to be expected that with the administration of the same questionnaires at three consecutive interviews, even though these interviews were six months apart, some interaction would result. We have seen that the pattern for the scores was generally to decrease with time. As an overall trend, this would not matter since the experimental design allows for this in dealing only with differences between groups for the different administrations.

We now turn to the second exercise, the consideration of cases observed markedly to change their scores. The definition of a marked change was rather arbitrary, a score change of at least five being taken for the Heron E.M. inventory, one of three for the Heron Sociability intentory, and one of ten for the C.M.I.; but it should be noted that these scores are each approximately twice the standard deviation of the relevant distribution for the largest (working) group of scores.

Below are given the relevant details of cases which changed at least five points on the Heron E.M. inventory.

Case No. 55 Score change -9 (12:3)

At the second interview, the interviewer remarked "Tension seemed less than when I first saw him", though there was also a suggestion that Subject might now be unwilling to admit symptoms because he was at the time rather apprehensive about his job. He also showed a considerable drop in C.M.I. score, which may substantiate this last remark, or may indicate that the change is a real one.

Case No. 21 Score change -6 (8:2)

Between the interviews Subject underwent the serious operation for which he was waiting at the first interview. At the first interview he was unable to work and very worried about money; at the second he had got another job and said he was financially settled. C.M.I. score dropped from 37 to 25. This subject had had a brief spell of psychiatric treatment some time prior to the first interview.

Case No. 129 Score change -5 (8:3).

This subject was managing director of a business which was doing relatively badly at the time of the first interview. At the second interview the interviewer noted that Subject seemed "a little more satisfied and well adjusted than in the Summer", and Subject was "very satisfied with trade in the last few months". The interviewer's field rating showed an improvement corresponding to that of the test score. This subject showed some signs of neuroticism.

Case No. 23 Score change -5 (13:8)

Subject was self-employed as a director of his own furniture firm. He was a semi-invalid after a coronary thrombosis, and exhibited as well some signs of insecurity, partly involving his European origin, and partly his lack of education. At the second interview, Subject was noted as being more healthy and cheerful. He had gone to live with his son while his (Subject's) wife was in hospital, and this appeared to have improved Subject's adjustment.

Case No. 175 Score change -5 (12:7)

At the time of the first interview, Subject had not worked for several months, due to arterio sclerosis. This was associated with marked depression. The picture had not changed at the second interview, and neither had the field rating, but the interviewer remarked that Subject looked happier and fitter than when last seen. It was also suggested, however, that this might be due to resignation rather than to a genuine improvement.

Case No. 167 Score change -5 (7:2)

Subject had a history of mental illness, and had had to give up his own business because of this. At the time of the second interview he had bought the new house which he had always promised his wife and things seemed to be improving for him. Between the second and third interviews when the score decrement took place, the settling in process continued, and at the third interview it had turned out satisfactorily. No field rating for the second interview is available, but that for the third is satisfactory.

Case No. 89 Score change +5 (5:10)

Between the interviews, this Subject appeared to have aged, and the field rating noted an increase in depression. Subject appeared to have neurotic tendencies, and these seemed to be aggravated somewhat by insecurities about his job.

Case No. 134 Score change +5 (5:10)

Subject showed various neurotic symptoms, e.g. hypochondriasis, fainting, anxiety. At both the first two interviews he was worried about his ability to carry on with his job, and the resulting financial insecurity. The field rating is not helpful, the interviewer showing a slight increase in adjustment rating from 'poor' to 'intermediate'. Against this, Subject had just before the second interview been to his doctor with haematuria and this had upset him.

Case No. 158 Score change +5 (7:12)

Subject was an introverted, inadequate man, who was on both the relevant interviews rated 'poor' on adjustment. At the time of the second interview Subject was in conflict over the question of retirement. He wanted to retire because he felt his job was getting too much for him, and being a single man he could afford to do so. But he feared the loneliness and possible effect on his health about which he appeared in any case very anxious, with very little apparent cause.

Case No. 82 Score change +5 (3:8)

This Subject had had a rather turbulent career, and was regarded by the interviewer as exhibiting neurotic tendencies. Between the interviews when the score increment occurred, he seemed to have become more concerned about his health, and also to have become more insecure. This is not reflected in the field rating, but the case notes record the feeling of "mental strain" aroused by his lay preaching activities.

In summary of this analysis, it seems that the score changes can be supported in six of the ten cases, numbers 21,23,55,89,129, and 167. It is perhaps not without interest that in all these cases there was evidence of neurotic

tendency, and emotional lability may account in part for the relatively large swings in score.

The same procedure may be followed in respect of the Cornell Medical Index. Of the cases which thus arise for examination, seven, numbers 21,25,55,89,134, 158, and 175 have already been examined above, though case numbers 158 and 175 will need to be re-examined for a swing back, between the second and third interviews in C.M.I. score.

Case No. 107 Score changes +29 (28:57) and -26 (57:31)

This Subject increased his score very markedly between the first two interviews and then decreased it by about the same amount between second and third interviews. No reason for the great initial increase in score is to be found in the case notes, which suggest that Subject had improved somewhat in the interval. This is borne out by the field rating. However, it was remarked at the third interview that "Subject seems to be much more optimistic and his health is 'much better'.... Subject thinks his health has improved and says he is looking forward to a year or two of healthy life. He sometimes feels as though he could now do a job". The corresponding Heron scores were 10; 12; and 9.

Case No. 164 Score changes +18 (24:42) and -11 (42:31)

It will be seen that this Subject increased his score markedly between first and second interviews, but later compensated partly for this by decreasing his C.M.I. score by 11 at the third interview. At the first interview, Subject had just returned to work after being away 11 months after a severe injury to his left arm. He impressed the interviewer as rather emotional and somewhat depressed. At the second

interview, it was noted that "Subject looked rather worn and pathetic... He said he and his wife had been through some pretty troublesome experiences (illnesses) since I had last seen them.... Subject's arm still troubling him a lot and he cannot use it properly. Frequently he is in pain". At the third interview it was noted that "Subject seemed brighter than when I last saw him.... he remarked that he was probably worrying about something last time". The corresponding Heron scores were 9; 12; 11; field ratings followed the trend of the C.M.I.

Case No. 28 Score change +16 (27:43)

Between the interviews this subject had a perforated appendix. At the second interview he professed to be feeling "much better". No other evidence to support the increase in C.M.I. score could be found from the medical point of view, though psychologically there was some indication of a mild anxiety about money and work, and this related to health in his recognition of his declining strength. The Heron scores were 10 and 11. This subject had a history of neurosis in the first World War.

Case No. 199 Score change -16 (36:20)

The evidence in this case was in the main contrary to the decrease in score. Subject, who suffered from extensive rheumatoid arthritis, was largely incapacitated, and he appeared to become more resigned to his illness at time went on. However, perhaps the remark of the interviewer that at the third interview Subject seemed not to regard himself as ill but rather as disabled, may have some significance. Another important factor is that the second interview was conducted at mid-Summer when the weather was rather better. The field rating showed a very slight improvement over the period. The Heron E.M. score was eight at both interviews.

Case No. 238 Score change +14 (12:26)

Between the two interviews, Subject appeared to undergo a marked deterioration. It was noted that his limbs trembled markedly and he exhibited some intellectual deterioration. He also complained of occasional light-headedness. There was evidence also of some emotional instability at the second interview. The Heron E.M. scores decreased from six to four.

Case No. 193 Score change +13 (19:32)

There was clear evidence here of an extensive deterioration in health. Apart from a great deal of tension in the household over money, and neuroticism of the wife, Subject had changed his job and found it a change very much for the worse. At the second interview he reported pains in the feet and legs, vertigo, and a general apprehension about his state of health. Field ratings indicated a change for the worse, and Heron E.M. score increased from four to seven. The C.M.I. score further increased to 36 at the third interview.

Case No. 203 Score changes +12 (33:45) and -12 (45:33)

Between the first two interviews a coronary thrombosis compelled Subject to retire. He had had another coronary thrombosis some time previous to the first interview but had managed to get back to work. Now his loss of work was giving rise to considerable anxiety. At the third interview there was nothing to account for his decrease in score beyond the fact that he was able to get out and about again, especially as it was then Summer. The Heron E.M. scores were 7; 8; and 8.

Case No. 196 Score change -12 (15:3)

It will be seen that this Subject's score was not of a very high order even at the first interview.

As a whole, his level of health appeared to be good. He was off work at the time of the second interview, having had an ingrowing toe nail removed, and he had decided that this would be an appropriate time to retire. He experienced some relief at having taken this decision as he felt that his job was rather getting on top of him.. The field rating showed an improvement at the second interview. The Heron E.M. score decreased from eight to four.

Case No. 174 Score change +12 (9:21)

There was little indication of any reason for the increase in this Subject's score, though the field rating recorded an increase in Depression. Subject did appear to be concerned about his health but this was more noticeable at the first interview than the second one. The Heron E.M. score moved from five to six.

Case No. 35 Score change +11 (18:29)

This subject had had periodic eye trouble and at the time of the second interview was waiting to go into hospital for an operation for cataract. He remained optimistic about his health but said that "the key to life is good health". Health also came up once or twice at the second interview which suggested that Subject might be thinking rather more about it than he had previously.

Case No. 73 Score change -11 (20:9)

At the first interview, Subject was living in very poor housing conditions and also had tuberculosis. He was off work and very worried about money. At the second interview he had been moved into a newly decorated Council flat, and was tremendously pleased with it. He was also back at work. He said that when he was ill he felt "pretty low and inferior" but this was largely past now. The Heron E.M. score showed a decrease from four to three.

Case No. 109 Score change +11 (5:16)

There seemed no specific reason to account for this subject's change of score. He reported having a gastric ulcer on both occasions but appeared to have stopped going to his doctor of his own accord.. The field rating suggested a slight decrease in adjustment and the Heron E.M. score increased from nought to four, so that the results are consistent.

Case No. 175 Score change +10 (42:52)

A brief account of this subject between the first and second interviews has already been given. There, we noted a score decrement; now we have a score increment. At the third interview, while in appearance Subject was better, and he had managed to get a job for two hours a day from his old firm - a sinecure really - hopelessness had returned, and deterioration was evident in apathy and disorganisation. The field rating showed a slight improvement, but it was thought to be a difficult case to rate because of extreme resignation giving the appearance of some degree of "adjustment".

Case No. 158 Score change -10 (22:12)

This subject's score change on the Heron E.M. between his first two interviews was discussed above. His C.M.I. score then increased from 10 to 22. The score decrease to be considered now is thus a compensation to some extent. But in between the second and third interviews Subject had retired and this had not turned out satisfactorily. The field rating shows no change and the case notes are unhelpful on the point of health. Although the decrement in score is not positively indicated, it is not contra-indicated. The Heron E.M. score shows some constancy with a move from 12 to 11.

Of the fourteen cases discussed in this section, the score differences are regarded as supported in eight cases (35,73,107,164,193,196,203, and 238) and as unsupported - though not necessarily refuted - in the remainder.

It remains to investigate the Heron Sociability scale. Sixteen cases showed shifts of scores of three or more, covering in all 18 changes (i.e. including some changes between second and third interviews). On examination it was found that it was difficult to relate the case material to the sociability score in a meaningful way, and it was decided to attempt to relate the changes in sociability score to those in the field ratings of "Introversion". The difficulties connected with this rating have already been discussed, and therefore not too much reliance should be placed upon the results of this investigation. However, the fact remains that of 15 changes for which ratings were available, there was agreement between these changes and those of the ratings in ten, and disagreement in five. The writer prefers not to risk overstating the case and tosay only that there is no reason to suppose this part of the test procedure invalid.

The conclusion to be drawn from these two exercises would appear to be that the tests, and especially the Heron inventory, have stood up to the investigation rather well. The results from the first exercise are perhaps somewhat more satisfying in terms of rigour but it should be borne in mind that the attempt to relate individual scores to individual cases is pressing the inventories and the case material rather hard. In a situation of low motivation such as in a pure research situation with nothing at stake for the subject, overall group characteristics are often all that can be obtained. Such has been the approach of this research. The case material itself, apart from the field ratings, is simply the interviewer's impressions and additional information

set down at the conclusion of each interview, and as such, points which might have great importance in the estimation of the validity of the questionnaires may have been omitted. This may have been the case in the only example which seemed to the interviewer an obvious omission on the part of the inventories. This was Subject Number 48, who had developed what appeared to be an hysterical symptom, though his scores remained low and constant. All the dynamics of this case could not be elucidated in the research situation, but it could be that his score pattern would be an accurate representation of the subject's feelings.

CHAPTER EIGHT

DISCUSSION OF AND CONCLUSIONS FROM, THE EMPIRICAL RESULTS

It is now time to draw these results together. It may be stated at the outset that the results of the foregoing research do not support the retirement impact hypothesis. As far as mental and physical health are concerned, no effect of retirement is to be noted. What appears to be most important in determining a man's pattern of scores is his basic personality rather than any influence of work or retirement. The picture is one of remarkable score stability. There is no reason to suppose that this is due to a sample bias exercising a blanketing effect on the retired group or to a lack of validity of the questionnaires. One cannot prove the null hypothesis, but there is no reason at all, on the basis of the results, to reject it.

The investigation of attitudes, however, presents a somewhat different picture, though again it is by no means as catastrophic, at any rate for the men in this sample, as the retirement impact hypothesis would lead one to expect. The results of the attitude investigations do show that some stress is being experienced by the men during this first year of retirement. Thus the retired men rate themselves as older than do the working men, and they are more likely to admit to feeling lonely. They also show, in their answers when questioned about their views on retirement, some ambivalence accompanied by a swing towards a more favourable view of retirement after the first six months of it. However, the trend is somewhat less clear as the first year of retirement proceeds, and some men experience more misgiving later on, though

the general feeling seems to be one of increased satisfaction.

The 'I am' test substantiates this impression of stress among the retired men. It should be emphasised that the stress indicating responses cannot really be called morbid, but evidently the initial experience of the retirement situation does arouse some tension in the men.

These tensions are generated during a time of readjustment and, in view of the high degree of co-operation obtained from the retired men, it would appear that they are concerned to evaluate their new situation as best they can. The diary shows that they do not respond to the need for re-orientation in a very constructive way, and there is abundant evidence from various parts of the interview material to show that the tolerance for passivity is extremely high. This suggests that education for retirement, admonitions to take up extra hobbies, and increase social participation, are to some extent an imposition of unfamiliar norms of behaviour when in fact men retiring can make their adjustment in terms of their own norms. They do this by doing a little more gardening, helpingrather more in the house, doing occasional shopping, and taking a lot more passive leisure.

It appears that the retired group is in a transitional stage between the working group and the already retired group. This interpretation involves the question of whether the already retired group can be considered as directly comparable to the other two groups. It has been suggested at the appropriate point in the report that this is only partly true. Nevertheless, for the purpose of generalisation here, it is true enough. This, combined with the fact that the retired men do tend to change their attitude to retirement for the

better, suggests that retirement calls for some perseverance. No doubt, at least initially, social pressures have some influence in the situation. The retired men, as their diaries show, tend to remain work orientated for some time, whereas the already retired men have restructured their patterns of activity (or passivity). Hence it must be rather strange for the men to find that they are outsiders as far as their firm is concerned, and to realise that they are not up with the latest developments among their erstwhile colleagues. They appear to try to maintain contact with these ex-workmates in the evenings, but if the already retired men are anything to go by, these contacts eventually lose their force and new friendships are formed on another basis than work.

The retired men themselves in several cases remarked that the first two or three months of retirement were the worst. Apart from the adjustments required by loss of work, adjustments to change of income were urgent and difficult, though even so, there was some evidence that the men who retired were to some extent those who were better able to afford it.

While it is true that the retired men do show these difficulties, it is the impression of the writer, that, considering the number of possible sources of tension reviewed, it is surprising that more differences between them and the working men have not revealed themselves. It is undoubtedly the case, and even to be expected, that the retired men would reveal some indications of unsettlement consequent upon cessation of work. But these indications lead one to conclude that the process of resettlement does not involve morbidity in any true sense. In this way, the presence of retirement influences as shown by the more general techniques, and their absence as shown by the questionnaires, is reconciled.

Perhaps the most interesting phenomenon is that where the retired group do show evidence of stress, they tend to show it at the initial interview, that is, just before their retirement, and to maintain it thereafter. There thus appears to be a prospective effect of retirement. But this is hardly surprising. In the opinion of many men, especially those who remained at work, retirement is a situation fraught with danger. It appears that the widely disseminated views about the value to health of continued work have had the desired effect, though this has not happened without cost in terms of anxieties on the part of men approaching retirement age. Men will hold this opinion despite the fact that they know men who have successfully retired, and have only vaguely heard of someone who has not. In this respect, the men with retired friends are rather better informed, though even here one gets the impression that they regard their friends' survival as unusual. Since there is at least some evidence that the retirement impact hypothesis is false, surely this evidence ought to be given the same wide publicity that the retirement impact hypothesis itself has had.

There is, however, a much more potent source of the fear of retirement. This is the problem of finance. Very few men in the sample were free of some degree of financial stringency, though this ranged all the way from being worried about the relative decline in the value of fixed investments to the inability to exist on the retirement pension unless this were supplemented from some other source. The retired men, as has been said, were somewhat better off than many of the men in the sample, but they did feel the need to cut down very considerably their patterns of expenditure. Their wives felt it perhaps even more, since the household budget was cut at a time of rising prices. It may be said that, if the men complained, they should go out and find further work. Some did this; perhaps more would have done so if the earnings rule had not been enforced. But the

retired men were on the whole not complaining unduly. The financial difficulties surrounding retirement were much more powerfully appreciated by the men who carried on working. For many of them, retirement just was not a possibility to be even considered, and for these men there was no prospect of doing anything but continuing to work. The possibility of a breakdown in health, and a consequent inability to carry on working, was a very real one, and gave rise to a considerable degree of fear. Fortunately for the men concerned, work was available for older workers at this time, and for those men who were unduly ailing, the possibility remained temporarily remote. But in view of this state of affairs, it is not surprising that the men on the threshold of retirement experience some last minute misgivings.

The implication of this discussion is that retirement, as experienced by these men, is not traumatic, and the retirement impact hypothesis in the present case, not sustained. The fact that some tensions were found to exist is not taken as supporting the retirement impact hypothesis because they were not morbid. It must be remembered that the retirement impact hypothesis implies a morbid, and even catastrophic reaction to retirement but nothing of the kind was found here.

However, there are two strictures on the present results. These are firstly, the fact that they refer only to the first year of retirement, and secondly, that the sample is rather small. These will be discussed in turn.

Evidence to suggest that the first year of retirement is the most difficult has been referred to above. However, since no previous longitudinal research has been carried out, this remains an assumption, and one which has of

necessity been made here. The retirement impact hypothesis in one of its forms seems also to make it. A priori it would seem reasonable enough. Clearly, it is desirable that the assumption should be tested, but such a test awaits a research with greater resources than the present one. Two longitudinal researches now being carried out have been mentioned in Chapter Four, and with the means at their disposal, no doubt light will be thrown upon this problem. But, oddly enough, some of the proponents of the retirement impact hypothesis who would not be satisfied with the present research on the grounds that it covers only the first year of retirement, would probably not be satisfied either with those larger researches which have now been started, should they show no effect of retirement.

The difficulty would appear to be that these people are proponents of a theory which is untestable. They start from the assumption of the truth of the theory, and therefore the aim is to reveal the effect of retirement. If a research is carried out which does not support the notion of retirement impact, then they would say it is not that there is no impact but rather that the research is defective, or not sensitive enough to reveal the true state of affairs. Some examples of this approach were discussed in Chapter Two. The implication of this approach for the present discussion is that it becomes impossible to agree a criterion of retirement impact. If one examines a group of retired men during the first year of retirement and shows no retirement impact, then, aside from any criticisms of method which may be made, the answer comes that the negative result is due to the probability that retirement impact occurs later than the first year of retirement. If now it is agreed simply to accept the results for what they are worth and then to investigate the second year of retirement, well and good. But one has the strong feeling that if the second year's results also turn out to be negative, then it will be said that this is because the third year is

important. And so on. Thus, supposing that the recently started research at Birmingham Medical School, for example, were to show no effect of retirement after ten years, would this satisfy the retirement impact supporters? One suspects not, and one is strengthened in this suspicion by the fact that it has been suggested that since men in general die at earlier ages than do women this is itself an instance of retirement impact. This, of course, could be true but it seems to the present writer that it would be necessary to reach agreement on what is to be ascribed to retirement impact and what not. Without further investigation the shorter life span of the male might equally well be due to constitutional differences from the female. As a matter of interest, insofar as this view of retirement impact is stated in general terms and is based upon the stereotype that women never retire (because of their status as housewives), it can be shown that the curve of female mortality is unrelated to the curve of female retirement from work. But this discussion is reserved for Chapter Nine. Unless the supposed effects of retirement can be shown to follow reasonably closely upon retirement itself, intervening influences must be taken into account, and may alter the whole situation. However, further elucidation of these points will no doubt eventually be forthcoming.

We turn now to the question of the sample size. This was, for the investigator, the most disappointing aspect of the research, but the labour of collecting subjects had been underestimated and completeness of material was given preference over number of subjects. The subjects form a randomly drawn sample of the population of Edinburgh men aged 65, but the numbers are hardly sufficient to form the basis for definitive conclusions about retirement impact, even though the experimental design enables one to place more confidence upon the results than if the material had been less rigorously collected.

The attempt to solve this problem, at least in part, has been made in the following manner. In Chapter Two it was asserted that the attempt to investigate psychological and sociological problems by using large-scale data such as that available in the Census, is not satisfactory, and involves many assumptions. On the other hand we have here a piece of research in some depth, the results of which suggest that no effect of retirement is to be expected. With the large-scale data alone, if one were to find no retirement impact, it would not be clear whether there really were no impact, or whether the data were too coarse to show it. But using our small scale data, we can psoitively predict that the statistical data ought to reveal no impact. This is the hypothesis which is tested in Chapter Nine.

CHAPTER NINE

SOME STATISTICAL MATERIAL

The data for a statistical examination of retirement are not easy to come by, but when available it does seem at first sight as though retirement is followed quite soon by death. However, the obvious criticism is that many people are known to retire because they are ill, and under these circumstances retirement may not be an important factor in the cause of death, or indeed may even delay it by providing rest and a certain recuperation for an ailing man. It is necessary, therefore, to take into account the numbers of men retiring because of ill-health when attempting this approach to an examination of the problem. This refined sort of evidence is even harder to come by. MATHIASEN (1953) quotes two pieces of data which are relevant to this point. The first is from information supplied by the personnel manager of a large firm (NATIONAL INDUSTRIAL CONFERENCE BOARD 1950). This personnel manager "declares that statistical analysis of the records of company employees who have retired since 1925 indicates that these men live on the average longer than the general population. The variation from the general population is believed by the personnel manager to be large enough to indicate the importance of retirement as against continuing at work in prolonging life. This post-retirement longevity record was established even though between 30 and 40% of these employees who retired did so because of ill-health".

This evidence, however, based upon records of only one company and with no further details of the subjects, is really only anecdotal

in character. But the second investigation which Mathiasen quotes is more valuable. MYERS AND SHUDDE (unpublished) analysed two sets of records. These were

a) the records of the mortality of primary beneficiaries under the Federal Old Age and Survivors Insurance system,

and

b) the records of annuitants under the Railroad Retirements Board.

This data is, of course, American. The conditions for qualification for a pension are such that the group of railroad annuitants are a non-disabled group, since the disabled have been excluded because they are eligible for a special disability pension. On the other hand, the group of Old Age and Survivors Insurance beneficiaries is probably weighted towards those in poor health since the pension provided is such that, as with our own retirement pension, many men do not willingly revert to such a low level of income while it is still possible for them to work; in other words, the "healthiest workers are the ones most likely to continue at work".

What this amounts to, then, is that we have two groups of retirees, one maintaining a high level of health and one a low level, and on the retirement impact theory we should expect that mortality would be high after retirement in both groups, with retirement causing deaths among the otherwise healthy "railroad" group, and probably contributing to the deaths which would in any case have occurred by previous ill-health among the "old age " group. However, the results do not accord with expectation. The analysis shows that among Old Age and Survivors Insurance beneficiaries, the ratios of actual mortality to expected mortality (this latter being based on

white male death rates for the U.S.A. for 1944) were highest for the first year after retirement. For those retiring at age 65, the ratio was 175%. They dropped to a much lower figure in the second year after retirement, and by the fourth year after retirement the ratios of actual to expected mortality were only slightly in excess of 100%. But in the case of the Railroad Annuitants (non-disabled) the ratios of actual to expected mortality are only slightly above 100% for the first year after retirement (107% for retirement occurring in the age group 65-69), and for the age group 60-64 the ratio is only 73%. This latter figure, as Mathiasen points out, indicates the importance of the factor of health selectivity, since it is in this age group that the disability annuities are most used to draw off the disabled group.

The evaluation of these figures must tend to refute a retirement impact theory, though if one is eager to find some indication that retirement may be detrimental - in some unknown way - in some cases, the ratio of 107% among the Annuitants cannot be overlooked, even though it is sufficiently small to be due to some chance fluctuation. There are other reservations one must have about these figures which apply in general to researches of this type. The most important of these is concerned with the practice of deriving specific control conditions from general assumptions about the nature of the group under investigation. In this case we have a group of Old Age and Survivors Insurance beneficiaries and on general grounds we know that these men will work on as long as they can because of the shortage of money. We therefore make the assumption that the men who do retire will be in relatively poor health, and we use this as a specific control in our interpretation of the data. However, we do not know <u>how important</u> a factor ill-health is in this group, and how it interacted with other factors to bring about retirement in actual cases. This

is a similar criticism to that made above in the case of the "Reasons for Retirement" research of the Ministry of Pensions. We do not know how much of ill-health is really a lack of desire to work or how the two interact.

A second reservation specific to this research is connected with the criticism just made. Differences in pension scheme go with differences in socio-economic status. The "railroad annuitants" may be superior to the "old age beneficiaries" in terms of the amounts they have been able to put by privately for their retirement, and hence may have less money worries. This would also be consistent with the very low ratio of actual to expected deaths among the 60-64 age group if one hypothesized that men retiring at this age were an economic elite who had put by for retirement and had long anticipated it. They may also be superior to the "old age beneficiaries" in terms of ability to use leisure time, and in terms of general interest. At all events the "railroad annuitants" must be a much more homogeneous group than the "old age beneficiaries", since the one group has a common occupational background while the other is drawn from all sorts of occupations.

These criticisms do not detract to a serious degree from the usefulness of the investigation as a piece of evidence contradicting the retirement impact theory, since this theory merely states that retirement is a factor in causing mental and physical morbidity and mortality, whereas the data indicates the presence of retirement with at most a slight degree of mortality, in one group at least. But the point is that these statistical researches are not powerful in examining the complex of influences emanating from retirement. They are of use mainly in showing something of the size of the problem to be expected.

The retirement impact theory has also been investigated statistically by McMahan and Ford (op cit). The question with which these authors were concerned is "Does entry into retirement shorten life expectancy"? The samples used for the investigation were composed of retired Army and Air Force officers who spent some part of their life in retirement during 1925-48. There were two sub-groups, 2,798 officers who died while in retirement during the period; and 1,432 officers who retired during the period 1925-33. Both the groups were taken from official records.

"Successive survival rates" were computed for the data. For example, if 80 of 100 officers retired at ages 60-64 survived the first five years of retirement, the survival ratio for that initial period would be .80. The authors say

> "It was reasoned that if entry into retirement is a factor increasing mortality, the survival ratio for a given age group should be lowest in the initial retirement period. For example, there should be a smaller proportion of survivors of a group aged 60-64 passing through its first five-year period of retirement than of a group in the same age bracket passing through its second five year period (having retired at ages 55-59). Even if the higher mortality rate were experienced only during the first one or two years of retirement, it should serve to lower the survival ratio for the full period since there is no reason to expect that the mortality during the remainder of the period is markedly lower than average".

The general results of this investigation were that officers of the studied populations who entered retirement at ages 50-54 and 55-59 were generally less likely to survive five years than officers of comparable ages who had retired earlier

and were entering their third five year period of retirement. But officers who retired at age 60 or later were considerably more likely to survive their first five years of retirement than earlier retired officers of comparable age were to survive their second or third five years of retirement. These results are explained in general "commonsense" terms, the authors suggesting that retirements below 60 occur mainly on grounds of ill-health, while those above 60 occur on grounds of age or length of service. Health is postulated as a selective factor. The retirement impact hypothesis is rejected.

A major difficulty in the interpretation of these results is that the population studied is a military one, and it is often the practice for retired officers to take up other employment. This would certainly appear to be the case in Britain, and it is probably easier for retired officers to get suitable employment than for other men of comparable age. Thus, firstly, it is somewhat hazardous to apply these results to a general industrial population, and secondly, concerning specifically the retirement impact theory, we do not know how many of the officers did in fact get further employment after leaving the service. If we assume that, since they were to some extent incapacitated, early retirants would be less likely to obtain further employment than those who retired purely on grounds of age or service, then this might have the effect of artificially distorting the results by increasing survival ratios in the older age groups. Under these circumstances the retirement impact theory could still be true while the data would lead to its rejection.

The secretary to the Pension Fund of a large firm, in a personal communication to the present writer, supplied data on retirees under the scheme. A preliminary analysis of the records of

the scheme showed a higher than expected mortality after retirement age. But when the material was re-analysed to take separate account of men who retired prematurely on grounds of ill-health, it was found that the mortality was no higher than expected and no retirement impact was suggested.

So far in this chapter we have examined statistical investigations which have been reported, but if retirement had the effect which it is said to have by proponents of the retirement impact theory, then this should be revealed in the various statistics relating to mortality and morbidity in the population. It therefore seems worthwhile to examine the statistics derivable from various sources in order to see whether there are indications that this is so. The kind of evidence one requires are signs of a sudden increase in deaths in the region of the age at which retirement reaches its higher frequencies, or, in the case of non-fatal illness, indications of a marked increase in general practitioner consultations, or mental hospital admissions. Naturally, in attempting to do this, one is not suggesting that even if evidence could be obtained of marked increases in morbidity and mortality rates at about the age where retirements became markedly more frequent, this would constitute more than circumstantial evidence in favour of the retirement impact hypothesis. This hypothesis can only be examined adequately by means of specific researches designed especially for the purpose, and of which the research detailed earlier is an example. But such circumstantial evidence could be expected to be consistent with the results of that research, and hence would be of great importance in supporting or casting doubt upon it. If one could show that the periods of more frequent retirement were periods also of disturbance as revealed by the various figures obtainable, this would render the retirement impact theory plausible while if the outcome of such an examination of the figures were negative, this would be damaging evidence against the theory.

The curve of retirements for the population of Great Britain has already been set out in Figure Two. It will be seen that the percentage working decreases from 91% at age 60 to 58% at 65 and then to 41% at age 69. If the impact theory of retirement has the validity claimed for it, then this decrease in numbers working ought to be reflected in increased amount of sickness, etc. Therefore, what we need is to examine the various statistics to see whether there is any indication of a marked increase in the presence of morbid conditions in the period around 65 years of age. Moreover, the indicators of disorganisation we are seeking should show in the case of men but not of women since their employment experience is different and does not entail a sudden break from employment.

1. MORTALITY

As a first step, mortality experience of the older age groups is examined. In Table 126, age specific death rates per cent together with comparable data on retirement are shown. It will be seen that the female retirement trend, i.e. percentage of age group retired, increases suddenly at ages 59-60, while the male trend goes up very steeply at age 65 and flattens out slightly thereafter. But in neither case does the respective death rate curve rise in concordance with the retirement curve, and it would also appear that this is not due to a delayed effect of retirement, since if the effect were delayed, it would be expected that the sharp increase in gradient of the death curve would indeed show, but would occur after an interval of a certain number of years. There is a slight upward jump in the male death curve at age 67, but this is not comparable with the great increase in retirement which occurred two years earlier. The male death curve does show greater fluctuation than the female, but this also occurs prior to retirement.

TABLE 126 - Comparison of Mortality and Retirement Experience By Individual Years of Age

England and Wales 1931

Males

Age	60	61	62	63	64	65	66	67	68	69
% Retired	6.9	8.5	8.4	12.0	14.7	37.1	44.9	48.6	49.8	53.7
1st Derivative	[illegible]	1.6	-0.1	3.6	2.7	22.4	7.8	3.7	1.2	3.9
% Deaths	2.5	2.9	3.2	3.4	3.8	4.1	4.3	4.9	5.3	5.7
1st Derivative		0.4	0.3	0.2	0.4	0.3	0.2	0.6	0.4	0.4

Females

Age	55	56	57	58	59	60	61	62	63	64
% Retired	0.7	0.8	1.5	1.4	1.6	4.3	4.7	5.3	6.0	5.3
1st Derivative		0.1	0.7	-0.1	0.2	2.7	0.4	0.6	0.7	-0.7
% Deaths	0.9	0.8	1.0	1.1	1.2	1.3	1.5	1.7	1.8	2.1
1st Derivative		-0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.3

The direct comparison of death rates and retirement rates is not strictly legitimate since the retirement figures are a prevalance rate representing the numbers retired at any one time, regardless of when retirement took place, whereas the death rate figures are incidence rates, based on the number of deaths occurring in the period. Therefore, the first derivatives of the respective figures have been worked out and are also shown in Table 126. The first derivative shows the slope of the curve at any particular age by analogy and the differential calculus, and thus gives an indication of the size of the increment between the particular age and the one immediately before it.

From the first derivatives it will be seen that at a time when the slope of the male retirement curve is increasing markedly, the slope of the male death curve is showing a tendency to decrease, i.e. while increments in numbers retiring are increasing, increments in numbers dying are tending to diminish. It remains true that there is an upward jump in the death curve at age 67 but on the basis of these curves, the fairest verdict seems to be that there is no relation between retirement and mortality. However, a more detailed analysis is possible.

An Analysis of the Census Material on Retirement and Mortality

Since the Census provides details of numbers employed, and retired, it should be possible to relate these figures to the available material on mortality so as to throw some light on the tenability of the retirement impact hypothesis. At the time of writing (1957), the Occupational Mortality tables for the 1951 Census have not been published, but the full material is available for the 1931 Census. There seems to be no reason to suppose that the results obtained from an examination of the earlier Census should be any different from

those which might be obtained from the later one, except possibly as a result of the variation in cultural stereotypes and attitudes towards older people and their work. This variation has already been adumbrated. Thus the emphasis on cessation of work at the earlier period might have led to a lower degree of tension in retirement than is reputed to exist nowadays and hence conclusions drawn from the earlier material might not be applicable to the situation at the later date. However, as usually stated, the retirement impact hypothesis has a more physiological than cultural implication, and so this consideration may be temporarily disregarded in the examination of the material in the 1931 Census (REGISTRAR GENERAL 1931a, 1931b). This examination, of course, can only throw light on the retirement impact hypothesis in its more extreme form, that is, that "retirement is a ticket to death".

Initially, it could be hypothesised that those occupations which showed a high age specific retirement rate would also show a high age specific death rate in the corresponding age groups. This hypothesis can be illuminated, though not tested, by the Census material. There are two main reasons for this. One is, as mentioned just previously, that the retirement rate is a prevalance rate, and we do not know what the incidence of new cases of retirement is, whereas the death rate is an incidence rate. This is another way of stating the objection to many of the empirical researches reviewed in Chapter Three that we do not know how long after retirement death occurred, and, of course, we do not in this case know even that the deaths occurred among the retired group disproportionately as one would expect. The other main reason is that we again do not know whether the true state of affairs is "sick people retiring" rather than "retired people becoming sick". However, in the first case, on the hypothesis, one would still expect, in spite of the scope for inaccuracies that a high retirement rate at any one time would be reflected in a high death rate. In the second case, it should be possible

to make some assessment of the occupations from other data to see which of the two possibilities was likely to be operative; but this presupposes that a relationship between high death rate and high retirement rate is to be found. If such a relationship were not found this would be evidence against the hypothesis.

As a first step, then, high and low rates for both retirement and death were ascertained. The age specific death rates for the age groups from 45 upwards for all the occupations to be found in Table 4a of the Occupational Mortality Tables are also expressed by the Registrar General as ratios of the corresponding rates for the total employed male population. Selecting all those occupations where a direct comparison could be made with Occupation Table 12, corresponding ratios were worked out for the retirement rates. Since the maximum increase in retirement rates is to be found in the 65-69 age group, this age group was used in the initial classification. The two sets of ratios, one for retirement rates and one for death rates, were set out in frequency distributions and the upper and lower quartiles of these distributions were calculated. All ratios falling above the upper quartile value (Q_3) were accepted as high, and all those falling below the lower quartile value (Q_1) were accepted as low. There were 77 occupational groups on which information could be obtained, and by the procedure outlined, 19 occupations were obtained in each of the groups except "Death Rate Ratio High" where, due to rounding off of values, 20 were obtained. The occupations falling into the four groups were then compared to see whether in fact the same occupations occurred in both high or both low categories. The result of this analysis is shown in Table 127.

TABLE 127 - Analysis of Retirement and Mortality Ratios of Age Specific Rates for Occupational Groups to those for "All Males" Age group 65-69 England and Wales 1931

Death Rate Ratio / Retirement Rate Ratio

	High	Intermediate	Low	Total
Low	7	7	5	19
Chi-square = 1.24, n = 2, p greater than 0.50				
High	7	9	4	20
Chi-square = 1.10, n = 2, p greater than 0.50				

Retirement Rate Ratio / Death Rate Ratio

	High	Intermediate	Low	Total
Low	4	10	5	19
Chi-square = 0.32, n = 2, p greater than 0.80				
High	7	5	7	19
Chi-square = 3.38, n = 2, p greater than 0.10				

On the null hypothesis of no relation between death rate ratio and retirement rate ratio, we would expect that the cases in each category would be distributed according to the distribution of the total cases, viz 1, 2, 1 (since the analysis is based on the quartiles). It will be seen from the Table that the null hypothesis must be accepted and that there appears to be no relationship between death rate ratio and retirement rate ratio.

But there is an objection to this simple analysis. By limiting the examination to one age group only, and to those cases where the respective rates may be characterised as high or

low, it may be that significant relationships have been over looked. For, suppose that an occupational group was characterised by low death rates throughout all age groups, but that, due to the impact of retirement, a large increase in death rate occurred in the 65-69 group. If the earlier death rates were much lower than those for the total population (and hence death rate ratios were low), the increase with greatly increased retirement rate, though large, might be no more than to bring the death rate ratio somewhere near the top of the intermediate group (for example). Thus it is important, as a further step, to take into account the increase in the ratios with age, and this has been done by computing the first derivatives for the four final age groups, that is, the slopes of the ratio curves at age groups 55-64, 65-69, 70-74, and 75/+. The use of the ratios for retirement rates and death rates to those for the total population has been continued since what is required is not the absolute rate of increase at any age - we know that both retirement rates and death rates will increase with age - but the relative increase (or decrease) compared with what is happening at that age in the total working population.

The data on which this further analysis is based, is reproduced at Appendix E. The method was somewhat impressionistic, and this appears to be unavoidable. Attention was concentrated on the three middle age groups covering the age range 55-74, as the age group 75 and over is a terminal one and will be unduly influenced by what has happened in earlier age groups. The first derivatives for these three age groups and for each occupation were scrutinised to see whether concomitant changes in slope of the curves for retirement and death rate ratios could be observed. Each occupation group was judged to show "no relationship", "slight or some relationship", or "marked relationship".

In ascribing each occupation group to its category, where the data for an occupation was equivocal, that occupation was given the benefit of the doubt and was put into the "slight or some relationship" category. This may seem like attempting to force the data in order to substantiate one's hypothesis, but at this time the writer was strongly of the opinion that the retirement impact hypothesis was untenable, and therefore it was desirable to counteract his inevitable bias in interpreting the results. The result of this second analysis was as shown in Table 128.

TABLE 128 - Summary of Relationship between Retirement Rate and Death Rate Ratios (First Derivatives)

Occupation No.	No Relationship	Slight or Some Relationship	Marked Relationship
	6, 9, 11,	2,3,4,7,8,	25,26,36,
	12, 15, 16,	14,17,18,	62,66,73, 79.
	20, 21, 22,	19,34,37,41,	
	23, 24, 27,	47,48,55,	
	28, 35, 38,	58,61, 71,	
	39, 40, 42,	75,77,78,	
	43, 44, 45,	84,85,86,88.	
	46, 49, 50,		
	51, 52, 53,		
	54, 56, 57,		
	59, 60, 63,		
	64, 65, 67,		
	68, 69, 70,		
	72, 74, 76,		
	80, 81.		
	Total = 44	Total = 25	Total = 7

N = 76 (Occupational Group 87 omitted since it is also contained in Occupational Group 88).

In 58% of the occupations there appeared to be no relation at all between the slopes of the two curves. In 32 cases there was at least some relation between the slopes, implying that there is some relation between death and retirement. but this may be an indication that men already sick are retiring, and that health itself is the independent variable. Some further information on this point may be obtained by reference to the Standardised Mortality Ratios for all ages 35-64 for the various occupations, which are supplied by the Registrar General. These SMR's should provide an index of the level of health within each occupation without regard to retirement. Where this ratio is high, with many more deaths than would be expected on the basis of the death rates for the general population, it may be expected that these rates will continue to be high beyond the age of 65, and that there will be a corresponding increase in retirement rate.

When the SMR's are compared with the figures for the 65-69 age groups in respect to retirement and mortality, it is found that only the first of these expectations is borne out. Death Rate Ratio for the 65-69 age group is found to be highly correlated with SMR (35-64) ($r = 0.743$, p is less than 0.001). On the other hand Retirement Rate Ratio is negatively correlated with SMR, and though this correlation is not high, it is significant ($r = -0.318$, p is less than 0.01). Furthermore, Retirement Rate Ratio and Death Rate Ratio show virtually no correlation with each other ($r = -0.103$, $p = 0.38$). Too much emphasis should not be placed on the latter two correlations because the requirements regarding the distributions for produce moment correlations, notably that of homoscedasticity, are not adequately met. But the examination of the scatter diagrams which form the basis of this statement, also provide a clue to the interpretation of the results. The failure of the arrays to meet the requirements of homoscedasticity is due largely to the fact that there are ten occupational groups which have a

very high Retirement Rate Ratio, and low SMR, and Death Rate Ratio. Were it not for these Retirement Rate Ratios and SMR or Death Rate Ratios, these two correlations would probably be about zero.

This leads to the final, and perhaps most illuminating part of this analysis. The ten occupations are as follow:-

> Platelayers, Railway officials, Railway engine drivers, railways signalmen, railway porters, teachers, postmen and sorters, bank and insurance officials, Civil Service and Local Authority Administrative and Executive staff, and Police.

These occupational groupings, it will be seen, are those where a fixed retiring age is usual at either 60 or 65 and this is reflected in the fact that retirement in all these occupations at age 65 is at least twice as frequent as in the general population. The Police are an exceptional group in that retirement tends to take place very early, and at age 45 the frequency of retirement is more than 18 times as great as that in the general population. Their death rate ratios are above 100 after age 45 but these ratios do not follow the trend of the retirement rate ratios. This group is discarded from further analysis. Of the other nine groups, seven are among those where "no relationship" has been noted, and two where "some slight relationship" is to be noted. The groups made up of the various grades of railway employees are especially interesting as they are groups where medical examinations are given, and hence where there will be a selecting out of men in poor health. In these groups the relationship is at a minimum.

The summary of this analysis is, then, that there appears to be only slight evidence in support of the retirement impact hypothesis. Subjectively speaking, a careful examination of the data gives the impression that death rate ratio is much more closely related to employment conditions (as these are reflected in the SMR's) than to frequency of retirement.

As has been explained above, this analysis cannot supply unequivocal support for, or refutation of, the retirement impact hypothesis, though it must be regarded as telling against this hypothesis.

2. MORBIDITY

Working still in accordance with our original reasoning, it may be that though retirement does not lead to an increase in mortality, yet it might lead to an increase in morbidity of a kind not sufficient to cause death. But morbidity is less easy than is mortality to deal with in such an examination as this since all deaths but only certain diseases are notifiable and these diseases are not the ones which account for any major proportion of deaths among older people. However, some indications may be obtained for our purposes from the figures for hospital in-patients, from the various accounts which have been given of general practices, from the Survey of Sickness and from figures for mental hospital admissions. This material is sketchy but provides some indications which are of use.

(a) General Practice and the Survey of Sickness

McGREGOR (1950) gave an account of the

first year's work of a general practitioner under the National Health Service in a practice in Hawick. At the time in question, business in the town was prosperous. There was a shortage of skilled labour and there were appeals made the married women who were skilled to return to work. "Homework" was very commonly done by women who could not go to factories. The important implication of this seems to be that since labour was short, retirement would not be enforced for men. McGregor's figures lump together all ages over 65, a regrettable shortcoming in nearly all the work which might have been useful under this heading, and it is therefore difficult to discover the effect of retirement directly. But the following figures may be extracted from McGregor's tables.

	M	F	Total
Numbers in practice aged 65 & over	165	206	371
% in practice aged 65 & over	6.64	8.28	14.92
Numbers retired	94	31	125
% retired of total aged 65 & over	56.95	14.35	15.04

The assumption involved in this calculation is that at least the great majority of people retired are over 65, especially in the case of men. But there is every reason for thinking this assumption justified (see above, the remarks on the 1931 and 1921 Censuses). Moreover, the percentages estimated for the retired group are consistent with the known behaviour of men as compared with women in regard to retirement. Since we now know that in McGregor's group a greater proportion of men over 65 than of women is "retired", we should expect a greater increase in the proportion of sickness among the men as we pass from the 45-64 age group to the over 65 age group compared with the women in accordance with the retirement impact theory. But the reverse seems to be true, as the following figures suggest:-

	M	F
% population with one or more illnesses, age group 45-64	56.1	71.3
% population with one or more illnesses, age group 65+	58.2	75.2
Increase in proportion	2.1	3.9

Hence the women have much fewer retirements, but slightly greater increase in frequency of illness between the under and over 65's. Although numbers for most of McGregor's breakdowns are small, the following are interesting since they help to give some picture of the possible psycho-somatic and psychological disorders of the groups under examination.

	% of age group accounted for				
	0-4	5-14	15-44	45-64	65+
Ill defined symptomatic illness	3.2	2.4	2.8	4.0	2.6
N =	8	7	29	57	14
Anxiety state and hysteria	1.2	1.0	7.1	6.2	6.0
N = M	0	2	17	20	8
F	3	1	56	38	24
Digestive diseases	11.9	5.9	6.5	7.1	8.4
N = M	18	8	35	39[X]	18
F	12	9	32	27	29

[X] 24 of these peptic ulcers

The greater number of women than of men requiring consultations for anxiety state and hysteria is associated, says McGregor, with the onset of the menopause. It is interesting to note that the prevalence of ill-defined symptomatic illness and that of the anxiety states and hysterias tends to decrease after age 65. The digestive diseases tend to increase, but these diseases may well comprise other diseases than psycho-genic ones.

FRY (1952) gave an account of a year in a general practice in South East London. Unfortunately, his figures are massed for males and females, so that not a great deal for the present purpose may be gleaned from them, but

he mentions that the age group requiring most medical attention was the over 70's, which seems to imply that the retiring men were not a great source of morbidity. As regards mental health, we learn that in this practice, neuroses were most common between 50 and 60 and this is almost entirely accounted for by a rise in female incidence.

Perhaps the most pointed comment in regard to the question of the validity of the retirement impact theory is that although besides the two papers mentioned above there have now been other accounts of general practice, including one of eight general practices (LOGAN 1955), none of the authors have commented upon retirement as a factor in morbidity, though in fairness it should be pointed out that the investigation by Logan was admittedly exploratory. Hence it does not seem that the effect of retirement was sufficient to bring itself to the notice of the writers in question as giving rise to a considerable proportion of their caseload.

A further possible source of information in this discussion is the Survey of Sickness (REGISTRAR GENERAL 1953). This Survey was carried out every month from the beginning of 1945 until it was suspended on grounds of economy in March 1952. The reference quoted here deals with the results for the years 1948 and 1949. Table S.S.4 (pp 24-5) of this report gives figures from which the following are abstracted.

TABLE 129 - Sickness and Medical Consultation Rates per 100 persons interviewed by Sex and Age. Mean of 1948 and 1949 England and Wales

Sickness Rates

Age	Males Rate	Males 1st derivative	Females Rate	Females 1st derivative
35-	59		71	
45-	64	5	76	5
55-	69	5	80	4
65-	75	6	85	5
75/+	83	8	89	4

Medical Consultation Rates

Age	Males Rate	Males 1st derivative	Females Rate	Females 1st derivative
35-	35		39	
45-	42	7	53	14
55-	50	8	57	4
65-	68	12	60	3
75/+	73	11	76	16

Sickness rate = number of persons per 100 interviewed who were ill at any time during the period irrespective of when the illness began

Consultation rate = number of medical consultations in the period per 100 interviewed

It can be seen from Table 129 that, in the case of sickness rates, there is the expected increase with age, and an examination of the first derivatives suggests that there is some increase in sickness at about retirement age in the case of males. But in the case of females this does not occur. In any case, it is not sufficient to compare with the large increase in retirement rate at these ages. The medical consultation rates for males show a rather more marked increase at about age 65 than do the females.

It cannot be said that these figures show any very convincing evidence in support of the retirement impact hypothesis. When it is remembered that ten yearly age groups are in question, there are a number of simple hypotheses (in the scientific sense) to account for this phenomenon rather than to assume that it is the effect of retirement which shows. Taken together with the foregoing research, there appears to be no reason so far to revise our previous conclusion regarding the retirement impact hypothesis.

A number of possible hypotheses may be advanced to account for the increase in consultations but not in sickness. One may, for example, hypothesise an increase in "sub-liminal anxiety", i.e. anxiety which reveals itself in vague symptoms which are not sufficiently marked to be counted a diagnosis by the doctor. Or one might suggest that at about the time when entitlement to a pension is officially achieved, men are beginning to go to their G.P.'s to see what their employment potential is, or to get a general check-up. Both of these hypotheses would be easily testable by an analysis of G.P. records. Unfortunately, it has not been possible so far to arrange for such an analysis.

An interesting analysis is given by the Survey of Sickness of Sickness Rates and Medical Consultation Rates by income, which is relevant in this connection, as the lowest category of income, under £3 weekly (this was in 1948-49) is probably predominantly made up of old age pensioners (Table 339, p52).

TABLE 130 - Sickness and Medical Consultation Rates per 100 persons interviewed by sex and income group

Income Group of Chief Wage Earner	Sickness Rates		Medical Consultation Rates	
	M	F	M	F
Year 1948				
Under £3	81	81	88	57
£3 - £10	60	70	35	42
£10 +	59	68	42	47
Year 1949				
Under £3	82	83	89	63
£3 - £10	62	73	39	46
£10 +	59	71	36	47

It will be seen from these tables that the rates are in all cases higher for the "Under £3" income group than the others. This may be an effect of age. Since many of the "Under £3" group will be old age pensioners, this group will also have a large number of people with declining health. But two points are worth noticing. The first is that, granted the validity of this statement, yet the trend is consistent (i.e.decreasing) though less marked, between the other income groups as well, and this argues that a real trend with income is present, though accentuated in the lowest group by the presence of a disproportionate number of old people. Secondly, the medical consultation rate is, for both years, much higher for the males under £3 than for women, and drops enormously, compared with the women as we pass to higher income groups. This appears to argue for some relation between income and sickness which may involve, for example, the disturbance felt by a man at the loss of his livelihood and a consequent inability to support his family. In the absence of further evidence, this remains pure hypothesis but it will be noted that, although the Medical Consultation Rate exhibits this phenomenon, Sickness Rate does not, male and female

rates here being very nearly equal. It seems possible, therefore, that the high medical consultation rate represents insecurity, and perhaps ill-defined symptomatology rather than actual sickness. On the other hand, it may be that men who are ill also go to the doctor because they need medical certificates and that their need to subsist on National Insurance payments puts them in the lower income category, whereas the women complain of sickness but have no similar motivation to visit their doctor.

In common with the general practice data, the Survey of Sickness does not give any figures for the retired group as such, though in a further table (S.S. 10, p38), they supply figures by sex and occupation, and include a group of "retired, part-time, unoccupied and not stated". Although the Sickness and Medical Consultation Rates for this group are considerably above those for any of the other occupation groups, in the absence of any indication of the proportions of the members of this group falling under each section of the classification, and also in the absence of any information at all about the ages of the people involved, it is not possible to do more than take note of this fact as a very indirect suggestion of a possible relationship between retirement and morbidity.

Table S.S. 11 (p41) of the Survey of Sickness data gives an analysis by sex and age of the nature of illnesses or injury. If we examine diseases where there may be a possible "stress" element, we obtain the following figures:-

TABLE 131 - Number and average monthly percentage of illnesses and injuries according to the W.H.O. Short List by Age and Sex 1949

Nature of illness or injury	Ages 16 to 64 Males	Ages 16 to 64 Females	65+ Males	65+ Females
	% of all causes		% of all causes	
2. Psychoneuroses, mental disorders	0.6	0.5	0.3	0.3
6. Heart and arteries	1.4	1.9	4.0	4.3
12. Ulcer of stomach and duodenum	1.7	0.2	0.7	0.4
13. Other stomach	7.5	5.5	5.8	6.5
14. Other digestive	2.5	4.8	3.3	4.9
17. Ill defined symptoms	23.5	32.2	22.4	27.0

From these figures it is apparent that there is no appreciable effect of a deleterious nature. Most of the figures for males show a decline between 16-64 and the 65+ group, only "Heart and arteries" and "Other digestive" showing an increase. In both these cases the rise in passing beyond 65 is greater for men than for women but the aetiology of heart conditions is probably mainly determined by other factors occurring rather earlier than retirement. At all events, even if we accept this evidence as in favour of the retirement impact theory, it is very little support and the figures are much too crude to call for more than a note that "there may be something there".

(b) Mental Health

One would have thought that the investigation of major causes of admission to mental hospitals would be a simple exercise when compared with the difficulties of other research in the psychological and social sciences. It is surprising therefore that the data in this

field is so limited.

In a paper already referred to in Chapter Two, LEWIS AND GOLDSCHMIDT (1943) give an account of an investigation of social factors in the admission of 25 men and 25 women to a mental hospital for the aged. It was seen above that only a minimal effect of retirement, if any at all, was to be found.

The authors also supply an account of financial security among this group of patients. Five of the females and nine of the males were financially insecure, and "four of them felt keenly their dependence on others for maintenance". This evidence is only suggestive but it appears that some emphasis is to be placed on financial insecurity in the causation of mental illness.

As might be expected, previous mental health was very important as a cause of admission, and "the majority of these patients had been ill-adjusted and difficult people". These findings are in general agreement with those of the present research.

In another article, LEWIS (1946) supplies figures for a number of years by age and sex of mental hospital (first attack) admissions. Again, all figures for the over 65's are lumped together, and hence one cannot attempt much in the way of analysis by age. One of Professor Lewis's main points in this paper is that one must be cautious in one's interpretations of statistics of mental hospital admissions. For example, he attributes the decline in rate of admissions for the over 65's, which his

figures show, to an administrative rather than a psychological cause, namely the "retention in public assistance institutions of many people who should - and would thirty years ago - have been admitted to a mental hospital". This caution will be borne in mind in this analysis of mental health statistics.

In support of his arguments for the dependence of figures on administrative arrangements, and social attitudes towards mental illness, Lewis quotes figures originally given by Tietze of first admissions to all mental hospitals in New York State 1940-41. These figures are broken down by quinquennial age groups and would be useful to consider in the present context. The relevant figures are given in Table 132.

TABLE 132 - Rates per 100,000 Corresponding General Population by Age and Sex

			1st derivative		2nd derivative	
Age	M	F	M	F	M	F
40-44	130	115	-	-	-	-
45-49	134	130	4	15	-	-
50-54	158	149	24	19	+20	+ 4
55-59	178	151	20	2	- 4	-17
60-64	227	177	49	26	+29	+24
65-69	291	242	64	65	+15	+39
70/+	541	478	250	236	+186	+171

These figures have been treated in the same way as those previously considered; that is, the first derivatives have been taken. The second derivatives showing the rates of increase are

also given. Referring to the 65-69 age group, it will be seen that the rate of increase for females (2nd derivative) is over twice as large as that of males, and the increase itself is about the same size for both sexes. Again there is no sign of detrimental effects of retirement among the males.

A further indicator of mental health, even though rather indirect, is suicide. Suicide may be regarded as the ultimate response to an intolerable situation, and it might be suggested that the tensions due to retirement would lead to an increase in the likelihood of a breakdown in morale and hence to an increase in suicides. In order to investigate this, the three year averages for Suicide in Great Britain have been worked out for the three most recent years available at the time of writing (1956) and these are presented in Table 133, together with the relevant first and second derivatives. (REGISTRAR GENERAL 1952, 1953A, 1954, and REGISTRAR GENERAL FOR SCOTLAND 1952, 1953, 1954).

TABLE 133 - Suicide Rates Per 100,000 in Age Group, Three Year Averages (1952-3-4) Great Britain

	Mean Rate per 100,000		1st derivative		2nd derivative	
Age	M	F	M	F	M	F
45-	17.8	10.2				
50-	23.6	13.4				
55-	27.3	14.7				
60-	34.4	15.7	7.1	1.0		
65-	38.3	16.9	3.9	1.2	-3.2	0.2
70-	38.7	16.2	0.4	-0.7	-3.5	-1.9
75-	42.3	12.8	3.6	-3.4	3.2	-2.7
80-	41.7	10.2				
85+	35.5	6.1				

It will be seen from these figures, that while there is an upward gradient in the case of males at ages 60 and 65, and this trend is only slight in the case of females, this is not related to the impact of retirement in any marked degree since the curves are quite different in shape, the suicide curve having a decreasing slope (as shown by the second derivatives) and the retirement curve an increasing one. Although there does not seem a direct connection between retirement and suicide there is some evidence, which is considered in Chapters Two and Three, that loss of employment may have some effect (SAINSBURY 1955, BATCHELOR and NAPIER 1953). Again, SWINSCOW (1951) has published figures which show that suicide rates vary as unemployment rates. However, in this case one has to bear in mind that without further, more precise, investigation one is not justified in drawing a conclusion. Times of high unemployment are also times of disruption in other ways and it may be more general effects of such a disruption which bring about the increase in suicide - in Durkheim's term "anomique suicide". Or again, suicides might occur as a result of some well defined factor such as financial difficulty.

In summary of all the foregoing data, it would seem that there is little evidence in favour of the retirement impact theory from those areas where one might have expected to find it. Some slight evidence which might be used in favour of the theory has been discovered but this is very small when compared with what has been hypothesised. To some extent lack of evidence is due to the very general nature of the available information, and more precise data might have yielded different results. But perhaps the most important point to make is that the effects of retirement have apparently not been in themselves sufficiently drastic to impress those who have investigated mortality and morbidity

with the need to extract it as a major factor, and to use it as the basis for a dichotomy in the analysis of their data. The approach to a test of the retirement impact hypothesis by way of this general statistical data is admittedly imprecise as has been pointed out before. But this examination, taken with the results of the detailed investigation, provide strong grounds for the rejection of the retirement impact hypothesis.

CHAPTER TEN

FINAL COMMENTS

The discussion of Chapter Nine taken with the results of the main research suggests that the refutation of the retirement impact hypothesis may be urged with some confidence. It is, therefore, necessary to review, in the light of this finding, the discussion of Chapter One. What difference to the picture there presented does the refutation of the retirement impact hypothesis make?

Perhaps the most obvious comment is that the arguments for requiring people to remain at work must now stand on their own merits. It is no longer possible to argue that not only ought men to work but that it is better for them to do so. The evidence against the retirement impact hypothesis ought to be given the same consideration as has been accorded that in favour of the hypothesis. If this is done, it may be expected that more men will retire, though the increase in numbers will probably not be large, since the men involved fear economic hardship more than retirement impact itself.

On the other hand, it seems that the numbers of men to be attracted back into work after having retired, is quite small. The estimates put forward in Chapter One are probably

not far out. At any rate in Edinburgh in this sample, almost all the men who felt the need to carry on, whether this was financial need, or any other kind, were able to do so, and the men who are retired were content to be so, in spite of some disadvantages. Such men may look for, and even take, other employment, but it is usually "pensioner's work" which does not make any great contribution to the productive effort of the country.

If the financial pressures to remain at work were removed by, for example, raising the retirement pension to a level which allowed of the maintenance of a reasonable standard of living, then the numbers of men retiring would greatly increase. This would occur to an even greater extent, of course, if the probability of the retirement impact hypothesis being false, were widely acknowledged. There is very little likelihood of this state of affairs coming to pass, because the economic situation, it is said, will not allow it, but to some extent the position will be alleviated in future with the increase of private superannuation schemes, and the possibility of a national one. In the meantime, as was mentioned in Chapter One, authorities such as Hopkin, and the Institute of Actuaries, do not seem to regard the possibility of being able to pay for pensions as out of the question. Their arguments do not involve a provision for paying a level of pension which would allow of more than a subsistence level, and upon the economic possibility of this, the present writer is not qualified to judge. There does, however, seem to be something wrong when men who have no option but to continue working, because of financial stringency, say that "when you've done fifty years you've earned a rest".

More serious is the situation as regards the maintenance of a sufficient level of health to keep working. The Phillips Committee suggest that an improvement in health in old age may have enhanced the ability to keep on working. The evidence of the present research is that this is probably not so. The investigator has no knowledge of actual level of health in previous decades so that no comparison can be made, and it may be that health in old age has in fact improved, but certainly evidence of ill-health was forthcoming. Especially was there a good deal of anxiety lest health should deteriorate to a level where work was impossible. One is struck by the apparent willingness of many firms to 'carry' an older worker until he qualifies for a pension, and the amount of latitude allowed an older workman by a foreman in an unofficial way is remarkable. Studies of job change and adjustment to work amongst older workers must take this into account if their results are not to be seriously deficient. Again this is something that may be put right when the improvement in living conditions mentioned by the Phillips Committee really does take effect. The health of working men may improve so much as to enable them to contemplate working till age 70 with equanimity. A national superannuation scheme would also contribute to the situation by allowing men who would not carry on beyond 65 to retire in relative comfort. In the meantime something should be done to relieve anxiety among the men who carry on, by giving them the knowledge that a reasonable standard of living is available if they cannot carry on working.

Above all, it appears that a change is needed in the climate of opinion as regards the older men continuing at work. Several men in the sample, when asked their views on retirement, said that a man "ought to work". It seems that

the conflict in retirement would be considerably lessened if, instead of urging men so consistently to keep on working, it came to be more widely accepted that it is quite a natural thing to retire if one has worked up to pension age, and feels that one would now like some leisure. This is possible now, of course, if a man has the means, but the man who would have to retire on a retirement pension alone and rely on National Assistance or the help of children often feels guilty, and unsettled, if he retires. This is involved also in the loss of status as the bread-winner. The men who wish to retire often show a conflict of views with their wives, who naturally are worried about the household budget. No matter how strong the wish may be unless retirement is the norm of behaviour for this age group, and unless it can be accomplished without too drastic a financial upheaval, a loss of status by the man concerned is inevitable.

Once it is seen that the retirement impact hypothesis is unsound, the problem of whether or not to require older men to keep working as a means of defraying part of the pension bill, is a moral one. Some would come down on the side of economic expediency; some - and it must be confessed, the present writer among them - would argue that the worth of a society is in part measured by the way it cares for its older people. Consistent with this, is the view that, unless it can be shown to be detrimental to his well-being, a man who has worked for 50 years and feels he would now like to enjoy a life of leisure, should be allowed to do so. Since this is a moral problem, there is no scientific answer to it. But an answer may eventually be given by economic facts, since there are already signs that, as industry undergoes a period of stringency, the older age groups are again the ones to become redundant, and Government departments themselves are cutting

back by retiring workers aged over 65 who have been held past retirement on a temporary basis. If this trend continues, no doubt we shall find ourselves once again in a situation where P.E.P. or a similar body can talk of the need for older workers to enjoy a well earned rest. At least one will be able to reconcile this view with some of the research findings.

As a matter of fact, it seems that, if the aim should still be to encourage the older worker to continue at work, a simple way to do this would be to abolish the earnings rule by which a pensioner loses a shilling from his retirement pension for every shilling he earns above a fixed level.[X] This would have the effect, firstly, of undermining the exploitation of pensioners which has been referred to earlier, and secondly, of removing what many pensioners see as an injustice. In their view they have earned a pension, which is due to them at 65, and rather than lose it again they will not return to the labour force, even though their level of pension is considerably below what they could earn in industry. This view may very well be unsound, but no amount of official explanation is likely to change it.

These are problems which will no doubt occupy the politician and the administrator as the Welfare State continues on its way. For the psychologist, though he may have his opinions, the task is, as was said in Chapter One, to investigate scientifically, and to present the results of his investigations. Two further lines of research are suggested by what has gone before. The first is that some sort of guidance

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X At present £2 10s. 0d.

about retirement might well be given. The "education for retirement" schemes seem to the present writer to be on the whole a wrong step because they tend to encourage the idea that retirement is a situation of great difficulty, when the aim should be to put across the idea that it is a state to which it is relatively easy to become accustomed. That, at any rate, is the finding of the present research. On the other hand, it may be better for some few people who exhibit marked neurotic traits, for example, to keep working as a kind of occupational therapy. This is not inconsistent with the rejection of the retirement impact hypothesis. This hypothesis is concerned with the detrimental effects of retirement, whereas at this point we are concerned with the evaluation of pre-existent personality traits. Rather than institute large scale educational schemes indiscriminately, it would appear to be not a difficult task to design a test battery for use in "retirement-guidance" situations. The techniques used in the present research would, it is felt, provide a suitable basis for such a battery, though certain amendments such as the discarding of several items from the tests, mainly on the grounds of conciseness, would need to be carried out.

Insofar as there is a pro-active effect of retirement, an important further line of research would be to investigate at what period these worries and stresses begin to become important. Doubtless this varies with type of employment. It appears that some American schoolteachers, for example, comparatively early in their careers include retirement in their plans (KUHLEN &JOHNSON 1952), and while interviewing for the British Institute of Public Opinion, the present writer noticed that a similar view on retirement was held by some at least of the British professional classes. Thus, just as

cohorts are now being followed up for ten years after retirement to examine the after-effects, so similar longitudinal studies should be made to examine the onset of its pro-active effects. If the point at which retirement became to be seen as a problem could be determined, suitable reassurance could be given. This would not be education for retirement, that is, "how to deal with the difficulties which will arise", but literally reassurance, that is "there is no reason why problems should arise".

The second line of research is also connected with guidance in retirement, and indeed with social organisation in old age in general. Much emphasis is placed upon the value of social participation in old age, and general activities, interests, and hobbies, are counselled. Yet the present research is not alone in suggesting that the importance of hobbies and activities in the lives of retired men is greatly over-rated (see e.g. Payne, op cit, Pearson, op cit). The notion of active striving for stimulation is apparently not one which fits into place in the lives of all people. One remembers the examples from animal psychology where the animal, in the absence of stimulation, simply goes to sleep. Much the same thing seems to be true of many men. An astonishingly high tolerance of passivity is to be noted. If stimuli are present, the organism responds; if not, it remains supine. But it does not, in many cases, actively seek stimulation. A further psychological examination of this phenomenon in relation to retirement, and old age generally, would be of great use to administrators, social workers, club organisers, visitors, and all those who have to do with old people.

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APPENDIX A

COPY

PERSONAL DATA SHEET

CONFIDENTIAL
Sample No.____

Date of interview _____ Date of retiral _____

Job (State exactly) Grade _____
Dept _____
Industry _____
Job change since first interview YES NO
If YES, how does this job compare with your previous one? _____

How many brothers or sisters have you?
Brothers ___ Sisters ___
Do you visit one another? YES NO
If Yes, how often? Weekly
Fortnightly
Monthly
Once or twice a year
Too far to visit
Unwilling

Are you married
Widowed
Single
Married
apart
Divorced?

How many children have you in Edinburgh? ____
Do you visit one another? YES NO
If YES, how often? Weekly
Fortnightly
Monthly
Once or twice a year
Too far to visit
Unwilling

Remarks _____
_____
_____

How many children have you out of Edinburgh? ____
Do you visit one another? YES NO
If YES, how often? Weekly
Fortnightly
Monthly
Once or twice a year
Too far to visit
Unwilling

Remarks _____
_____
_____
_____
_____
_____

Have you any other family in Edinburgh? _____
(Prompt:- Uncles, Cousins, Aunts, Nieces, Nephews)
Out of Edinburgh? _____

Do you visit one another? YES NO

If Yes, how often? Weekly Remarks _____
Fortnightly _____
Monthly _____
Once or twice a year _____
Too far to visit _____
Unwilling _____

Whom does your household consist of?

_____
_____

If moved since last seen, do you now live in

Lodgings
Rooms
Rented house
Own house

How many people do you know? -5 5-9 10+
Who are they? _____
Have you any friends? YES NO How many?
(Friends= people visited, -5 5-9 10+
visiting, or making a
special point of seeing).
If Yes, where obtained? _____
Do you see them at all? YES NO
If YES, how often? Weekly
Fortnightly
Monthly
Once or twice a year
Too far to visit
Unwilling
Would you say your circle of friends has shrunk in the last year or so? YES NO
Have you any really special friend? YES NO
If YES, who? _____
Do you see them at all? YES NO
If YES, how often? Weekly
Fortnightly
Monthly
Once or twice a year
Too far to visit
Unwilling
Are these people retired or working? _____

"Some people say its better for people to retire when they come to pension age, others say its better for them to carry on working. What do you think?" _____

Do you know any young people well? YES NO
If YES, who?_____
Do you see them at all? YES NO
If YES, how often? Weekly or more
Fortnightly
Monthly
Once or twice a year
Too far to visit
Unwilling

Do you belong to any clubs or organisations? YES NO
If YES, how many? ____
Do you hold office in any of them? YES NO
If YES, how many? ____
How much time does this sort of activity involve? ____
Is this a regular thing? YES NO Remarks _____
How much time do you spend on this sort of activity now, compared with what you did at the age of 60?
More
About same
Less
If MORE, or LESS, give reasons _____

Are you a member of a church? YES NO
If YES, do you get along? YES NO
If YES, how often? Never
Monthly
Fortnightly
Weekly
Twice weekly or oftener
How much time do you spend on church activity now, compared with when you were 60? More
About same
Less
If MORE or LESS, give reasons _____

What do you do with your spare time? _____
What are your major hobbies and interests, if any?____
_____
How long have you been interested in them? _____

When was the last time you visited a doctor?
Reason _____ Currently
3-6 months ago
6 months-1 year ago
1 year +

Have you had any illness since I saw you last? YES NO
If YES, state what _____

Do you intend to retire? YES NO D.K.
(Or if not occupied, do you regard yourself as retired? YES NO D.K.)
State reasons YES or NO _____

If you intend to carry on working, how long will you do so? _____
Do you find your present job easy or difficult to do? _____
If already retired, determinants _____
If fixed retiring age, what did you feel about it? _____

(Whether retired or not) How does your wife feel about your retirement? _____
If retired, what part did your wife play in your decision to retire? _____
What did you feel about retirement before you actually did retire? _____
What do you feel about it now? _____
What do you like
think you would like about retirement? _____

What do you dislike
think you would dislike about retirement? _____

Does the financial aspect of retirement worry you?
YES NO D.K.

What are
will be your sources of income in retirement?
O.A.P. SUPP. Company Private Income Other

If retired, did you find it difficult to adjust to retirement? YES NO D.K. Remarks _____

Have you maintained contact with your firm since retirement? YES NO
How did you feel about leaving your firm? _____
How did you feel about leaving your colleagues workmates? _____

Do you plan to work after retirement from your old job?
Have you got) YES NO
If got work, how did you find it _____
How does it compare with your old job?
Better
About same
Worse

Remarks _____

Do you plan to move to another district? YES NO
How is your wife's health? _____
Have you made, or do you intend to make, any plans for the future? _____
Have you achieved most of your ambitions in life?

Have you any problems or difficulties? _____

Case Notes:-

Rating Scale

	N A	B	C	D	M E
Suspicion					
Co-operation					
Friendliness					
Test Conscientiousness					
Depression					
Adjustment					
Introversion					
Intelligence					

APPENDIX A

COPY

THE "I AM" TEST

Sample No. _____

Please complete the following twenty sentences to make answers to the simple question "Who am I?" Just write twenty different answers in the spaces provided. Answer as if you were giving the answers to yourself, not to somebody else. Write the answers in the order they occur to you. Don't worry about logic or order of importance. Go along fairly fast, if you can, for time is limited.

1. I am _____
2. I am _____
3. I am _____
4. I am _____
5. I am _____
6. I am _____
7. I am _____
8. I am _____
9. I am _____
10. I am _____
11. I am _____
12. I am _____
13. I am _____
14. I am _____
15. I am _____
16. I am _____
17. I am _____
18. I am _____
19. I am _____
20. I am _____

APPENDIX A

COPY

THE HERON INVENTORY

PART ONE - EMOTIONAL MALADJUSTMENT

1. I have never suffered from meningitis
2. My bones have never been fractured
3. I sweat very easily even on cool days
4. During the last year I have had no accidents at work
5. I am troubled by sick headaches
6. My feelings are easily hurt
7. Some times when I am not feeling well I am cross
8. I frequently feel lonely even when with people
9. I consider myself rather a nervous person
10. I often have indigestion
11. At times I feel like swearing
12. I lack self-confidence
13. My memory seems to be all right
14. I am troubled by aches and pains
15. I never have nightmares
16. I worry too long over humiliating experiences
17. I gossip a little at times
18. I feel weak all over much of the time
19. I suffer from piles
20. I wake up fresh and rested most mornings
21. Most of the time I feel depressed
22. I have been free from boils in the last year
23. My eyesight is sometimes blurred
24. I have lost consciousness as a result of a head injury
25. I worry over possible misfortunes
26. I have troublesome varicose veins
27. It is difficult to irritate me
28. Once in a while I put off until tomorrow what I ought to do today
29. I am troubled with feelings of inferiority
30. I sometimes become deaf
31. I hardly ever suffer from winter coughs
32. Once a week or oftener I suddenly feel hot all over without apparent cause
33. My bowels are not opened every day
34. I have had stomach ulcers
35. I sometimes have dizzy turns
36. I get angry sometimes
37. I have suffered from fits

38. I have healthy natural teeth
39. I suffer from frequent loose bowel motions
40. I am happy most of the time
41. I should like to know some important people because it makes me feel important
42. I frequently notice my hand shakes when I try to do something
43. I do not sweat easily in cold weather
44. My physique is excellent
45. I brood a great deal
46. Once in a while I think of things too bad to talk about
47. I often feel self-conscious in the presence of superiors
48. I have a good appetite
49. My joints are affected by arthritis
50. I feel that very little works out the way it should in life
51. I take laxatives at least once a week
52. I often have trouble in getting to sleep or staying asleep
53. I am frequently bothered by stomach upsets
54. I would rather win than lose in a game
55. I have no particular physical or health problems
56. My ankles swell towards the evening
57. I am often just miserable and in low spirits for no sufficient reason
58. I sometimes get short of breath without having done heavy work
59. I get cramp in my calves on walking or running
60. I have periods of such great restlessness that I cannot sit long in a chair
61. My hands often feel damp and clammy
62. I do not like everyone I know
63. I have suffered from Rheumatic Fever
64. I get palpitations or thumping in my heart without obvious reason
65. I have never had a fainting spell
66. Often I feel worried and tense with very little cause
67. I become short of breath on running upstairs
68. I have very few headaches
69. I catch cold frequently
70. I get nervous in such places as lifts, trains or tunnels
71. I am troubled by discomfort in the pit of my stomach every few days or oftener

72. I often jump to conclusions
73. I cannot understand what I read as well as I used to
74. I enjoy good health

PART TWO - SOCIABILITY

75. I am inclined to sit and think about myself
76. I am usually unconcerned about the future
77. I am inclined to take life too seriously
78. It bothers me when people watch me at work
79. The presence of the opposite sex makes me feel shy
80. I like to mix with people socially
81. Before I act I like to stop and think things over
82. What others think of my actions does not bother me much
83. I sometimes treat my work as if it were a matter of life and death
84. I like to play practical jokes on people
85. I am inclined to limit my acquaintances to a select few
86. I find it easy to act naturally at a party
87. I dislike stopping to analyse my thoughts and feelings
88. At times I have to fight against bashfulness
89. I often act on the spur of the moment without thinking things over
90. Quite often I get excited and tense
91. When out with other people I prefer to keep quiet
92. The morals of modern youth are generally superior to those of former generations
93. I like to have time to be alone with my thoughts
94. I am troubled about being self-conscious
95. I do not always tell the truth
96. I find it difficult to get in the swing, even at a lively party
97. I like to have a lot of social engagements
98. There is a lot to be said for the saying "Eat drink and be merry, for tomorrow we die"
99. I am troubled with feelings of inferiority
100. I dislike talking about myself even to close friends
101. I tend to be overconscientious
102. I am usually a good mixer
103. I think of myself as a lively sort of person
104. When I am bored I feel like stirring up some excitement

105. I am inclined to be moody
106. I am inclined to keep in the background on social occasions
107. On the whole I am rather an impulsive person
108. Watching sporting events usually absorbs me so completely that I forget myself
109. At a gay party I can usually let myself go and have a thoroughly good time
110. I consider myself a happy-go-lucky individual

APPENDIX A

(MEN)

CORNELL MEDICAL INDEX HEALTH QUESTIONNAIRE

Directions:
If you can answer YES to the question asked, put a circle around the YES.

If you have to answer NO to the question asked, put a circle around the NO.

Answer all questions. If you are not sure, guess.

A

1.	Do you need glasses to read?	Yes	No
2.	Do you need glasses to see things at a distance?	Yes	No
3.	Has your eyesight often blacked out completely?	Yes	No
4.	Do your eyes continually blink or water?	Yes	No
5.	Do you often have bad pains in your eyes?	Yes	No
6.	Are your eyes often red or inflamed?	Yes	No
7.	Are you hard of hearing?	Yes	No
8.	Have you ever had a bad running ear?	Yes	No
9.	Do you have constant noises in your ears?	Yes	No

B

10.	Do you have to clear your throat frequently?	Yes	No
11.	Do you often feel a choking lump in your throat?	Yes	No
12.	Are you often troubled with bad spells of sneezing?	Yes	No
13.	Is your nose continually stuffed up?	Yes	No
14.	Do you suffer from a constantly running nose?	Yes	No

15.	Have you at times had bad nose bleeds?	Yes	No
16.	Do you often catch severe colds?	Yes	No
17.	Do you frequently suffer from heavy chest colds?	Yes	No
18.	When you catch a cold, do you always have to go to bed?	Yes	No
19.	Do frequent colds keep you miserable all winter?	Yes	No
20.	Do you get hay fever?	Yes	No
21.	Do you suffer from asthma?	Yes	No
22.	Are you troubled by constant coughing?	Yes	No
23.	Have you ever coughed up blood?	Yes	No
24.	Do you sometimes have severe soaking sweats at night?	Yes	No
25.	Have you ever had a chronic chest condition?	Yes	No
26.	Have you ever had T.B. (Tuberculosis)	Yes	No
27.	Did you ever live with anyone who had T.B.?	Yes	No

C

28.	Has a doctor ever said your blood pressure was too <u>high</u>?	Yes	No
29.	Has a doctor ever said your blood pressure was too <u>low</u>?	Yes	No
30.	Do you have pains in the heart or chest?	Yes	No
31.	Are you often bothered by thumping of the heart?	Yes	No
32.	Does your heart often race like mad?	Yes	No
33.	Do you often have difficulty in breathing?	Yes	No
34.	Do you get out of breath long before anyone else?	Yes	No
35.	Do you sometimes get out of breath just sitting still?	Yes	No
36.	Are your ankles often badly swollen?	Yes	No
37.	Do cold hands or feet trouble you even in hot weather?	Yes	No
38.	Do you suffer from frequent cramps in your legs?	Yes	No

39. Has a doctor ever said you had heart trouble? Yes No
40. Does heart trouble run in your family? Yes No

D

41. Have you lost more than half your teeth? Yes No
42. Are you troubled by bleeding gums? Yes No
43. Have you often had severe toothaches? Yes No
44. Is your tongue usually badly coated? Yes No
45. Is your appetite always poor? Yes No
46. Do you usually eat sweets or other food between meals? Yes No
47. Do you always gulp your food in a hurry? Yes No
48. Do you often suffer from an upset stomach? Yes No
49. Do you usually feel bloated after eating? Yes No
50. Do you usually belch a lot after eating? Yes No
51. Are you often sick to your stomach? Yes No
52. Do you suffer from indigestion? Yes No
53. Do severe pains in the stomach often double you up? Yes No
54. Do you suffer from constant stomach trouble? Yes No
55. Does stomach trouble run in your family? Yes No
56. Has a doctor ever said you had stomach ulcers? Yes No
57. Do you suffer from frequent loose bowel movements? Yes No
58. Have you ever had severe bloody diarrhea? Yes No
59. Were you ever troubled with intestinal worms? Yes No
60. Do you constantly suffer from bad constipation? Yes No
61. Have you ever had piles (rectal hemorrhoids)? Yes No
62. Have you ever had jaundice (yellow eyes and skin)? Yes No
63. Have you ever had serious liver or gall bladder trouble? Yes No

E

64. Are your joints often painfully swollen? Yes No

65. Do your muscles and joints constantly feel stiff? Yes No

66. Do you usually have severe pains in the arms or legs? Yes No

67. Are you crippled with severe rheumatism (arthritis)? Yes No

68. Does rheumatism (arthritis) run in your family? Yes No

69. Do weak or painful feet make your life miserable? Yes No

70. Do pains in the back make it hard for you to keep up with your work? Yes No

71. Are you troubled with a serious bodily disability or deformity? Yes No

F

72. Is your skin very sensitive or tender? Yes No

73. Do cuts in your skin usually stay open a long time? Yes No

74. Does your face often get badly flushed? Yes No

75. Do you sweat a great deal even in cold weather? Yes No

76. Are you often bothered by severe itching? Yes No

77. Does your skin often break out in a rash? Yes No

78. Are you often troubled with boils? Yes No

G

79. Do you suffer badly from frequent severe headaches? Yes No

80. Does pressure or pain in the head often make life miserable? Yes No

81. Are headaches common in your family? Yes No

82. Do you have hot or cold spells? Yes No

83. Do you often have spells of severe dizziness? Yes No

84. Do you frequently feel faint? Yes No

85. Have you fainted more than twice in your life? Yes No

86. Do you have constant numbness or tingling in any part of your body? Yes No

87. Was any part of your body ever paralysed? Yes No

88. Were you ever knocked unconscious? Yes No

89. Have you at times had a twitching of the face, head or shoulders? Yes No

90. Do you ever have a fit or convulsions (epilepsy)? Yes No

91. Has anyone in your family ever had fits or convulsions (epilepsy)? Yes No

92. Do you bite your nails badly? Yes No

93. Are you troubled by stuttering or stammering? Yes No

94. Are you a sleep walker? Yes No

95. Are you a bed wetter? Yes No

96. Were you a bed wetter between the ages of 8 and 14? Yes No

H

97. Have you ever had anything seriously wrong with your genitals (privates)? Yes No

98. Are your genitals often painful or sore? Yes No

99. Have you ever had treatment for your genitals? Yes No

100. Has a doctor ever said you had a hernia (rupture)? Yes No

101. Have you ever passed blood while urinating (passing water)? Yes No

102. Do you have trouble starting your stream when urinating? Yes No

103. Do you have to get up every night and urinate? Yes No

104. During the day, do you usually have to urinate frequently? Yes No

105. Do you often have severe burning pain when you urinate? Yes No

106. Do you sometimes lose control of your bladder? Yes No

107. Has a doctor ever said you had kidney or bladder disease? Yes No

I

108. Do you often get spells of complete exhaustion or fatigue? Yes No

109. Does working tire you out completely? Yes No

110. Do you usually get up tired and exhausted in the morning? Yes No

111.	Does every little effort wear you out?	Yes	No
112.	Are you constantly too tired and exhausted even to eat?	Yes	No
113.	Do you suffer from severe nervous exhaustion?	Yes	No
114.	Does nervous exhaustion run in your family?	Yes	No

J

115.	Are you frequently ill?	Yes	No
116.	Are you frequently confined to bed by illness?	Yes	No
117.	Are you always in poor health?	Yes	No
118.	Are you considered a sickly person?	Yes	No
119.	Do you come from a sickly family?	Yes	No
120.	Do severe pains and aches make it impossible for you to do your work?	Yes	No
121.	Do you wear yourself out worrying about your health?	Yes	No
122.	Are you always ill and unhappy?	Yes	No
123.	Are you constantly make miserable by poor health?	Yes	No

K

124.	Did you ever have scarlet fever?	Yes	No
125.	As a child, did you have rheumatic fever, growing pains or twitching of the limbs?	Yes	No
126.	Did you ever have malaria?	Yes	No
127.	Were you ever treated for severe anemia (thin blood)?	Yes	No
128.	Were you ever treated for "bad blood" (venereal disease)?	Yes	No
129.	Do you have diabetes (sugar disease)?	Yes	No
130.	Did a doctor ever say you had a goitre (in your neck)?	Yes	No
131.	Did a doctor ever treat you for tumour or cancer?	Yes	No
132.	Do you suffer from any chronic disease?	Yes	No
133.	Are you definitely <u>under</u> weight?	Yes	No
134.	Are you definitely <u>over</u> weight?	Yes	No
135.	Did a doctor ever say you had varicose veins (swollen veins) in your legs?	Yes	No
136.	Did you ever have a serious operation?	Yes	No

137. Did you ever have a serious injury? Yes No
138. Do you often have small accidents or injuries? Yes No

L

139. Do you usually have great difficulty in falling asleep or staying asleep? Yes No
140. Do you find it impossible to take a regular rest period each day? Yes No
141. Do you find it impossible to take regular daily exercise? Yes No
142. Do you smoke more than 20 cigarettes a day? Yes No
143. Do you drink more than six cups of coffee or tea a day? Yes No
144. Do you usually take two or more alcoholic drinks a day? Yes No

M

145. Do you sweat or tremble a lot during examinations or questioning? Yes No
146. Do you get nervous and shaky when approached by a superior? Yes No
147. Does your work fall to pieces when the boss or a superior is watching you? Yes No
148. Does your thinking get completely mixed up when you have to do things quickly? Yes No
149. Must you do things very slowly in order to do them without mistakes? Yes No
150. Do you always get directions and orders wrong? Yes No
151. Do strange people or places make you afraid? Yes No
152. Are you scared to be alone when there are no friends near you? Yes No
153. Is it always hard for you to make up your mind? Yes No
154. Do you wish you always had someone at your side to advise you? Yes No
155. Are you considered a clumsy person? Yes No
156. Does it bother you to eat anywhere except in your own home? Yes No

N

157. Do you feel alone and sad at a party? Yes No
158. Do you usually feel unhappy and depressed? Yes No
159. Do you often cry? Yes No
160. Are you always miserable and blue? Yes No
161. Does life look entirely hopeless? Yes No
162. Do you often wish you were dead and away from it all? Yes No

O

165. Does worrying continually get you down? Yes No
164. Does worrying run in your family? Yes No
165. Does every little thing get on your nerves and wear you out? Yes No
166. Are you considered a nervous person? Yes No
167. Does nervousness run in your family? Yes No
168. Did you ever have a nervous breakdown? Yes No
169. Did anyone in your family ever have a nervous breakdown? Yes No
170. Were you ever a patient in a <u>mental</u> hospital (for your nerves)? Yes No
171. Was anyone in your family ever a patient in a <u>mental</u> hospital (for their nerves)? Yes No

P

172. Are you extremely shy or sensitive? Yes No
173. Do you come from a shy or sensitive family? Yes No
174. Are your feelings easily hurt? Yes No
175. Does criticism always upset you? Yes No
176. Are you considered a touchy person? Yes No
177. Do people usually misunderstand you? Yes No

Q

178. Do you have to be on your guard even with friends? Yes No
179. Do you always do things on sudden impulse? Yes No

180.	Are you easily upset or irritated?	Yes	No
181.	Do you go to pieces if you don't constantly control yourself?	Yes	No
182.	Do little annoyances get on your nerves and make you angry?	Yes	No
183.	Does it make you angry to have anyone tell you what to do?	Yes	No
184.	Do people often annoy and irritate you?	Yes	No
185.	Do you flare up in anger if you can't have what you want right away?	Yes	No
186.	Do you often get into a violent rage?	Yes	No

R

187.	Do you often shake or tremble?	Yes	No
188.	Are you constantly keyed up and jittery?	Yes	No
189.	Do sudden noises make you jump or shake badly?	Yes	No
190.	Do you tremble or feel weak whenever someone shouts at you?	Yes	No
191.	Do you become scared at sudden movements or noises at night?	Yes	No
192.	Are you often awakened out of your sleep by frightening dreams?	Yes	No
193.	Do frightening thoughts keep coming back in your mind?	Yes	No
194.	Do you often become suddenly scared for no good reason?	Yes	No
195.	Do you often break out in a cold sweat?	Yes	No

APPENDIX A

COPY

ATTITUDE SHEET

CONFIDENTIAL

Sample No._____
Date _____

In each question below, please put a tick against the answer that you feel applies to you.

1. How well does your job compare with those of your relatives?

   BETTER
   ABOUT THE SAME
   WORSE

2. How well does your job compare with those of your friends?

   BETTER
   ABOUT THE SAME
   WORSE

3. Which of these statements describes how lonely you feel?

   VERY LONELY
   LONELY SOMETIMES
   NOT LONELY

4. How important to you is religion?

   VERY IMPORTANT
   FAIRLY IMPORTANT
   NOT IMPORTANT AT ALL

5. How does your present health compare with your health at age 60?

   BETTER
   ABOUT THE SAME
   WORSE

6. If you have NOT YET retired, which of these

statements describes how you feel about it?

I am longing to retire
I shall be glad to retire
I shan't mind retiring
I would rather not retire
I would rather do anything than retire

7. If you HAVE retired, which of these statements describes how you felt about it?

I am very glad I retired when I did
I am quite glad I retired when I did
On the whole I think I did right to retire
I'm sorry now that I retired
Retirement has been a very bad thing for me

8. Which period of your life would you judge to be most happy?

Childhood up to about 14
14 - 20
20 - 39
40 - 59
60 - 65
NOW

9. Has your life been

VERY HAPPY
MODERATELY HAPPY
AVERAGE
MODERATELY UNHAPPY
VERY UNHAPPY

10. In which of the following age groups do you feel you belong?

AGED
OLD
ELDERLY
MIDDLE AGED
YOUNG ADULT

APPENDIX A

COPY

DIARY SHEET

Day _____ Date _____ Sample No. _____

	Time spent (mins)
MORNING	
Rise	
Meal	
WORK	
Employment	
Housework	
Gardening	
Household Repairs etc	
Cooking	
Shopping	
LEISURE AT HOME	
Reading papers	
Reading books	
Listening to wireless	
HObbies	
OUTSIDE HOME	
Clubs	
Bar	
Park	
Public Library	
Elsewhere (State where)	

CONTACTS	State Who	Initiated by Self/Other
Workmates		
Ex-workmates		
Friends		
Tradesmen		
Other		

LUNCH

AFTERNOON	Time spent (mins)
WORK	
Employment	
Housework	
Gardening	
Household repairs etc	
Cooking	
Shopping	
LEISURE AT HOME	
Resting	
Reading papers	
Reading books	
Listening to wireless or TV	
Hobbies	
LEISURE OUTSIDE HOME	
Clubs	
Bar	
Park	
Public Library	
Elsewhere (State where)	

CONTACTS		State Initiated by Who Self/Other
Workmates		
Ex-Workmates		
Friends		
Tradesmen		
Other		

TEA

EVENING	Time spent (mins)
WORK	
Employment	
Housework	
Gardening	
Household repairs etc	
Cooking	
Shopping	
LEISURE AT HOME	
Reading papers	
Reading books	
Listening to wireless	
Hobbies	
OUTSIDE HOME	
Clubs	
Bar	
Park	
Public Library	
Elsewhere (State where)	

CONTACTS		State Initiated by Who Self/Other
Workmates		
Ex-workmates		
Friends		
Tradesmen		
Other		
TOTAL		

Has this been a typical day in your life?

APPENDIX B

Letter A

(Sent out before first interview)

The Usher Institute,
Warrender Park Road,
Edinburgh, 9.

Dear

This Department is carrying out an investigation in Edinburgh into the various aspects of life among people over the age of 60. We feel that the best way of doing this is to make direct contact with people over this age and so we have drawn a number of names out of a hat. Your name is one of those which has been drawn and I am writing to see if I may have your co-operation.

I should like, if I may, to see you and explain more fully what we are doing, and therefore will call at your home on ..... If you agree to help me, you will not be asked to do anything except answer some questions. Needless to say, the strictest confidence will be observed throughout.

I am looking forward to seeing you.

Yours sincerely,

APPENDIX B

Letter B

(Sent out before second interview)

The Usher Institute,
Warrender Park Road,
Edinburgh, 9.

Dear

You may remember that at the last interview you were good enough to give me, I said I would like to see you again in six month's time. This six months will have elapsed on ...., and I am writing to find out whether that date would be suitable for you to see me again.

I should be greatly obliged if you would complete the enclosed card and return it to me as soon as possible so that I may make the necessary arrangements for this stage of my interviewing programme. Thanks to the help you have already given, the research is progressing well, and is providing much useful information about the many problems we set out to investigate. It is only by getting your further assistance that the work can be brought to a satisfactory conclusion.

If you are free to see me in the afternoon, this would be a great help to me, but I can arrange to call at any time to suit your convenience.

I hope all goes well with you and I look forward to seeing you again.

Yours sincerely,

Enc.

APPENDIX B

Letter C

(Sent out before third interview)

The Usher Institute,
Warrender Park Road,
Edinburgh, 9.

Dear

In order to finish off the research, I am writing to see whether it would be convenient to see me for a third, and last, interview on ..... Your past help has been invaluable and I hope that you will be able to help me on this final occasion since it is only in this way that I can bring the research to a satisfactory conclusion.

As before, if you can see me in the afternoon, this will be very convenient for me, but I can arrange to call at any time during the day, and if you are still occupied, I shall be pleased to call in the evening.

Thank you once again for your continued assistance.

With best wishes.

Yours sincerely,

Appendix O.

Distributions of Questionnaire Scores

Table C1:- Analysis of scores on Heron and Cornell Inventories by Marital State - first administration only.

Heron E.M. Score	Married f	Widowed and married apart f	Single f
0	5		
1	7	1	
2	10	2	2
3	13		
4	14	2	
5	13	1	1
6	11	1	1
7	14		1
8	8	1	2
9	4		
10	4	1	
11	1		
12	3		
13	1		
	108	9	7

Table C1 (contd.)

Heron S. Score	Married f	Widowed and married apart f	Single f
0			
1	7	1	
2	9	1	
3	24	1	1
4	10	2	1
5	13	2	2
6	21	1	1
7	5	1	2
8	14		
9	4		
10	1		
	108	9	7
Cornell Score			
0-4	3		
5-9	30	4	2
10-14	20	2	2
15-19	20	2	1
20-24	12		
25-29	5		1
30-34	6		1
35-39	6		
40-44	1	1	
45-49	0		
50-54	4		
55-59	1		
	108	9	7

Table C2:- Comparison of Heron Inventory Scores at first interview between men "working", "about to retire" and "already retired".

	Working	About to retire	Already retired	
			2	3
Heron E.M. Score	f	f	f	f
0	1	1		1
1	4	1	2	1
2	8	4		
3	5	3	2	2
4	10	3	1	1
5	6	4	1	1
6	5	3	1	3
7	4	6	3	2
8	4	2	4	3
9	3			
10	2	1	1	1
11			1	1
12	1	1	1	
13	1			
	54	29	17	16
Heron Sociability Score				
0				
1	1	4	2	
2	5	1	1	1
3	15	2	2	3
4	5	3	1	2
5	9	2	2	3
6	9	7	4	3
7	3	5	1	
8	7	3	3	3
9	1	1	1	1
10		1		
11				
12				
	55	29	17	16

Table C3:- Analysis of Difference Scores - Heron Inventory

Emotional Maladjustment (a) Difference of 1st time against 2nd time

Difference Score	Working	Retired			Already Retired	
		1	2	3	2	3
	f	f	f	f	f	f
-5	2					
-4	3					
-3	4	1	2	2	2	3
-2	1	1	5	5		
-1	8		5	6	1	
0	7	1	3	3	4	4
+1	8	2	6	8	2	1
+2	6	1	1	1	2	4
+3	8		1	2	1	1
+4	2					
+5	3					
	53	6	23	27	12	13

(b) Difference of 2nd time against 3rd time

-5	1				1	1
-4	1			2	2	2
-3	3	1	3	3	1	1
-2	4		3	2	1	1
-1	7	2	1	3	3	2
0	8	2	3	4	1	2
+1	5		1	2	1	3
+2	3	2	1	1	1	1
+3		1		1		
+4	1					
+5						1
	33	8	12	18	11	14

Table C4:- Analysis of Difference Scores - Heron Inventory

Sociability (a) Difference of 1st time against 2nd time

Difference Score	Working	Retired			Already Retired	
		1	2	3	2	3
	f	f	f	f	f	f
-5	1			1		
-4	1		2	2		
-3	1					
-2	4	1	3	5	2	1
-1	11	1	1	1	1	1
0	14	1	3	3	3	4
+1	14	1	9	10	3	3
+2	5	1	3	3	3	4
+3	2	1	1	1		
	53	6	22	26	12	13

(b) Differences of 2nd time against 3rd time

-4					1	1
-3	2	1			1	1
-2		1	1	1	2	2
-1	10	1	5	7	3	4
0	8	2	4	7	2	2
+1	6	1	1	1		3
+2	5	2	2	2	1	1
+3	2					
	33	8	13	18	10	14

Table C5:- Comparison of Cornell Medical Index scores at first interview between men "working", "about to retire" and "already retired".

C.M.I Score	Working	About to retire	Already retired 2	Already retired 3
	f	f	f	f
0-4	2			
5-9	12	10	5	4
10-14	9	7	1	2
15-19	15	5		
20-24	8	2	1	1
25-29		2	4	4
30-34	1	3	2	3
35-39	4		1	1
40-44				
45-49				
50-54			3	1
55-59	1			
	52	29	17	16

Table C6:- Analysis of Difference Scores - Cornell Medical Index

(a) Difference of 1st time against 2nd time

Difference Score	Working	Retired			Already Retired	
		1	2	3	2	3
	f	f	f	f	f	f
-20 to -16					1	1
-15 to -11	6			1		
-10 to -6	4	1	2	2	1	
-5 to -1	15	2	8	10	5	7
0 to 4	15	3	9	10	3	3
5 to 9	3	1	2	1		
10 to 14	6	1	1	1	1	1
15 to 19	1			1		
20 to 24						
25 to 29					1	1
	50	8	22	26	12	13

(b) Difference of 2nd time against 3rd time

-30 to -26					1	1
-25 to -21						
-20 to -16					1	1
-15 to -11	1		1	1		
-10 to -6	3	1			2	2
-5 to -1	12	3	6	11	1	2
0 to 4	15	3	3	5	5	5
5 to 9	1	1	1	1		2
10 to 14					1	
15 to 19						
20 to 24						
	32	8	11	18	11	13

Appendix D.

Summary of Diary Analysis

Working Group. Morning (Tuesday and Friday) N = 154

		Time per head (mins.)	
Meal		31.63	Meal Total
Work	Employment	262.01	
	Housework	4.85	
	Gardening	2.37	
	Household repairs	1.36	
	Cooking	0.98	
	Shopping	1.79	
Total time per head accounted for		273.36	Work Total
Leisure at Home			
	Reading paper/resting	8.18	
	Reading books	6.14	
	Listening to wireless	4.93	
	Hobbies	0.34	
Total time per head accounted for		19.59	Leisure at home total
Leisure outside Home			
	Clubs	0.23	
	Bar	0.46	
	Park	3.41	
	Public Library	0.00	
	Elsewhere	1.51	
Total time per head accounted for		5.61	Leisure outside home total
Total time accounted for (morning)			330.19 Grand total.

Contacts			
	Workmates	43.71	
	Ex-workmates	0.23	
	Friends	2.35	
	Tradesmen	1.14	
	Others	2.95	
Total time per head accounted for		50.38	Total time contacts.

Working Group. Afternoon (Tuesday and Friday) N = 113

		Time per head (mins.)	
Meal		58.28	Meal Total
Work	Employment	257.15	
	Housework	1.46	
	Gardening	1.06	
	Household repairs	2.39	
	Cooking	0	
	Shopping	0.80	
Total time per head accounted for		262.66	Work total
Leisure at Home			
	Reading papers/resting	21.06	
	Reading books	0.40	
	Listening to Wireless	3.05	
	Hobbies	1.33	
Total time per head accounted for		25.94	Leisure at home total
Leisure outside Home			
	Clubs	0	
	Bar	0.27	
	Park	4.38	
	Public Library	0	
	Elsewhere	2.65	
Total time per head accounted for		7.30	Leisure outside home total
Total time accounted for (afternoon)			354.18 Grand total.

Contacts			
	Workmates	50.74	
	Ex-workmates	0.27	
	Friends	0.27	
	Tradesmen	1.24	
	Others	0.40	
Total time per head accounted for		52.92	Total time contacts.

Working Group. Evening (Tuesday and Friday) N = 156

		Time per head (mins.)	
Meal		25.45	Meal Total
Work	Employment	21.09	
	Housework	5.77	
	Gardening	4.23	
	Household repairs	10.75	
	Cooking	0.96	
	Shopping	0.77	
Total time per head accounted for		43.57	Work total
Leisure at Home			
	Reading papers/resting	43.69	
	Reading books	0.21	
	Listening to wireless	54.81	
	Hobbies	2.95	
Total time per head accounted for		101.66	Leisure at home total
Leisure outside Home			
	Clubs	8.14	
	Bar	2.98	
	Park	3.69	
	Public Library	1.58	
	Elsewhere	25.58	
Total time per head accounted for		41.97	Leisure outside home total
Total time accounted for (evening)			212.65 Grand total.

Contacts			
	Workmates	8.46	
	Ex-workmates	1.60	
	Friends	20.29	
	Tradesmen	0	
	Others	2.18	
		32.53	Total time contacts.

Working Group. Morning (Sunday) N = 66

		Time per head (mins.)	
Meal		30.99	Meal Total
Work	Employment	9.09	
	Housework	20.45	
	Gardening	7.26	
	Household repairs	14.09	
	Cooking	2.73	
	Shopping	0	
Total time accounted for		53.62	Work total
Leisure at Home			
	Reading papers/resting	54.55	
	Reading books	4.77	
	Listening to wireless	30.76	
	Hobbies	2.05	
Total mean time accounted for		92.13	Leisure at home total
Leisure Outside Home			
	Club	0	
	Bar	0	
	Park	4.85	
	Public library	0	
	Elsewhere	33.33	
Total mean time accounted for		38.18	Leisure outside home total
Total mean time accounted for (morning)			215.92 Grand total.

Contacts			
	Workmates	3.33	
	Ex-workmates	0	
	Friends	3.41	
	Tradesmen	0.23	
	Others	0	
Total mean time accounted for		6.97	Total time contacts.

Working Group. Afternoon (Sunday) N = 63

		Time per head (mins.)	
Meal		32.35	Meal total
Work	Employment	10.45	
	Housework	4.32	
	Gardening	4.55	
	Household repairs	2.73	
	Cooking	3.86	
	Shopping	0	
Total time accounted for		25.91	Work total
Leisure at Home			
	Reading papers/resting	65.36	
	Reading books	13.18	
	Listening to wireless	31.36	
	Hobbies	5.91	
Total mean time accounted for		115.81	Leisure at home total
Leisure outside Home			
	Club	1.82	
	Bar	0	
	Park	5.00	
	Public library	0	
	Elsewhere	29.61	
Total mean time accounted for		36.43	Leisure outside home total
Total mean time accounted for (afternoon)			178.15 Grand total.

Contacts			
	Workmates	0	
	Ex-workmates	0	
	Friends	17.96	
	Tradesmen	0	
	Other	63.64	
Total mean time accounted for		81.60	Total contacts.

Working Group. Evening (Sunday) N = 63

		Time per head (mins.)	
Meal		32.38	Meal total
Work	Employment	5.71	
	Housework	4.05	
	Gardening	0	
	Household repairs	6.67	
	Cooking	0.71	
	Shopping	0	
Total mean time accounted for		17.14	Work total
Leisure at Home			
	Reading papers/resting	18.26	
	Reading books	28.33	
	Listening to wireless	55.48	
	Hobbies	1.43	
Total mean time accounted for		103.50	Leisure at home total
Leisure outside Home			
	Club	7.14	
	Bar	0	
	Park	6.18	
	Public library	0	
	Elsewhere	31.67	
Total mean time accounted for		44.99	Leisure outside home total
			198.01 Grand Total

Contacts			
	Workmates	2.86	
	Ex-workmates	0	
	Friends	29.52	
	Tradesmen	0	
	Others	12.14	
Total mean time accounted for		44.52	Total contacts.

Retired Group. Morning (Tuesday and Friday) N = 80

		Time per head (mins.)	
Meal		24.25	Meal total
Work	Employment	7.50	
	Housework	47.88	
	Gardening	28.13	
	Household repairs	15.56	
	Cooking	2.88	
	Shopping	17.38	
Total mean time accounted for		119.33	Work total
Leisure at Home			
	Reading paper/resting	33.06	
	Reading books	10.38	
	Listening to wireless	24.25	
	Hobbies	4.61	
Total mean time accounted for		72.30	Leisure at home total
Leisure outside Home			
	Club	1.50	
	Bar	1.13	
	Park	3.75	
	Public Library	1.50	
	Elsewhere	8.50	
Total time accounted for		16.38	Leisure outside home total
			232.26 Grand total.

Contacts			
	Workmates	2.00	
	Ex-workmates	2.25	
	Friends	2.44	
	Tradesmen	1.88	
	Others	2.25	
		10.82	Total contacts

Retired Group. Afternoon (Tuesday and Friday) N = 76

		Time per head (mins.)	
Meal		27.37	Meal total
Work	Employment	7.11	
	Housework	16.45	
	Gardening	25.79	
	Household repairs	10.79	
	Cooking	0.79	
	Shopping	16.84	
Total time accounted for		77.77	Work total
Leisure at Home			
	Reading papers/resting	3.83	
	Reading books	13.88	
	Listening to wireless	33.16	
	Hobbies	3.16	
Total time accounted for		54.03	Leisure at home total
Leisure outside Home			
	Clubs	2.76	
	Bar	0.79	
	Park	3.55	
	Public Library	2.37	
	Elsewhere	27.11	
Total time accounted for		36.58	Leisure outside home total
			195.75 Grand Total

Contact			
	Workmates	0.39	
	Ex-workmates	2.50	
	Friends	9.08	
	Tradesmen	0	
	Others	0.20	
		12.17	Total contacts.

Retired Group. Evening (Tuesday and Friday) N = 73

		Time per head (mins.)	
Meal		23.22	Meal Total
Work	Employment	0	
	Housework	8.63	
	Gardening	12.12	
	Household repairs	4.52	
	Cooking	0	
	Shopping	0.82	
Total time accounted for		26.09	Work Total
Leisure at Home			
	Reading papers/resting	40.00	
	Reading books	40.14	
	Listening to wireless	58.22	
	Hobbies	7.12	
Total time accounted for		145.48	Leisure at home total
Leisure outside Home			
	Clubs	7.40	
	Bar	6.99	
	Park	1.30	
	Library	0.41	
	Elsewhere	22.19	
Total time accounted for		38.29	Leisure outside home total
			233.08 Grand Total

Contacts			
	Workmates	1.23	
	Ex-workmates	13.49	
	Friends	22.88	
	Tradesmen	0	
	Others	16.03	
		53.63	Contacts total.

Retired Group. Morning (Sunday) N = 50

		Time per head (mins.)	
Meal		28.10	Meal Total
Work	Employment	1.20	
	Housework	23.50	
	Gardening	10.20	
	Household repairs	7.10	
	Cooking	4.70	
	Shopping	1.50	
Total time accounted for		48.20	Work total
Leisure at Home			
	Reading papers/resting	51.20	
	Reading books	13.90	
	Listening to wireless	29.40	
	Hobbies	0.70	
Total time accounted for		95.20	Leisure at home total
Leisure outside Home			
	Clubs	0	
	Bar	0	
	Park	0	
	Public Library	0	
	Elsewhere	27.00	
Total time accounted for		27.00	Leisure outside home total
			198.50 Grand Total

Contacts			
	Workmates	0	
	Ex-workmates	0	
	Friends	3.60	
	Tradesmen	1.40	
	Others	0.50	
Total time accounted for		5.50	Total time contacts.

Retired Group. Afternoon (Sunday) N = 45

		Time per head (mins.)	
Meal		25.10	Meal Total
Work	Employment	0	
	Housework	2.44	
	Gardening	11.67	
	Household repairs	5.33	
	Cooking	0.67	
	Shopping	0	
Total time accounted for		20.11	Work total
Leisure at Home			
	Reading papers/resting	60.67	
	Reading books	35.78	
	Listening to wireless	33.57	
	Hobbies	0	
Total time accounted for		130.02	Total leisure at home
Leisure outside Home			
	Club	26.67	
	Bar	0	
	Park	12.00	
	Library	0	
	Elsewhere	22.67	
Total time accounted for		61.34	Total leisure outside home
			236.57 Grand total.

Contacts			
	Workmates	0	
	Ex-workmates	0	
	Friends	14.44	
	Tradesmen	0	
	Others	26.67	
Total time accounted for		41.11	Total time contacts.

Retired Group. Evening (Sunday) N = 44

		Time per head (mins.)	
Meal		25.68	Total meal
Work	Employment	5.46	
	Housework	5.57	
	Gardening	3.18	
	Household repairs	0	
	Cooking	0	
	Shopping	0	
Total time accounted for		14.21	Total work
Leisure at Home			
	Reading papers/resting	18.41	
	Reading books	42.39	
	Listening to wireless	52.50	
	Hobbies	3.41	
Total time accounted for		116.71	Total leisure at home
Leisure outside Home			
	Clubs	10.23	
	Bar	0.34	
	Park	1.02	
	Library	0	
	Elsewhere	34.43	
Total time accounted for		46.02	Total leisure outside home
			202.62 Grand Total

Contacts			
	Workmates	0	
	Ex-workmates	0.45	
	Friends	21.48	
	Tradesmen	0	
	Others	25.57	
Total time accounted for		47.50	Total time contacts.

Already retired Group. Evening (Sunday) N = 22

		Time per head (mins.)	
Meal		28.86	Meal Total
Work	Employment	3.64	
	Housework	2.73	
	Gardening	2.73	
	Household repairs	0	
	Cooking	1.36	
	Shopping	0	
Total time accounted for		10.46	Work Total
Leisure at Home			
	Reading papers/resting	39.77	
	Reading books	37.95	
	Listening to wireless	89.55	
	Hobbies	0	
Total time accounted for		167.27	Leisure at home total
Leisure outside Home			
	Clubs	0	
	Bar	0	
	Park	4.54	
	Public Library	0	
	Elsewhere	49.78	
Total time accounted for		54.32	Leisure outside home total.
			260.91 Grand Total.

Contacts			
	Workmates	0	
	Ex-workmates	0	
	Friends	13.18	
	Tradesmen	1.36	
	Others	2.73	
Total time accounted for		17.27	Total contacts.

Already retired Group. Afternoon (Sunday) N = 22

		Time per head (mins.)	
Meal		30.91	Meal Total
Work	Employment	6.82	
	Housework	4.09	
	Gardening	1.36	
	Household repairs	0	
	Cooking	0	
	Shopping	0	
Total time accounted for		12.27	Work Total
Leisure at Home			
	Reading papers/resting	75.22	
	Reading books	23.41	
	Listening to wireless	20.45	
	Hobbies	8.18	
Total time accounted for		127.26	Leisure at home total
Leisure outside Home			
	Club	0	
	Bar	0	
	Park	0	
	Public Library	0	
	Elsewhere	64.09	
Total time accounted for		64.09	Leisure outside home total
			234.53 Grand Total.

Contacts			
	Workmates	0	
	Ex-workmates	0	
	Friends	10.91	
	Tradesmen	0	
	Others	10.23	
Total time accounted for		21.14	Total contacts.

Already retired Group. Morning (Tuesday and Friday) N = 46

		Time per head (mins.)	
Meal		21.09	Meal Total
Work	Employment	12.17	
	Housework	25.33	
	Gardening	27.39	
	Household repairs	8.70	
	Cooking	6.57	
	Shopping	23.15	
Total time accounted for		103.31	Work Total
Leisure at Home			
	Reading papers/resting	34.13	
	Reading books	16.41	
	Listening to wireless	21.74	
	Hobbies	1.96	
Total time accounted for		74.24	Leisure at Home total
Leisure outside Home			
	Club	6.57	
	Bar	0.87	
	Park	3.26	
	Library	1.52	
	Other	18.26	
Total time accounted for		30.48	Leisure outside Home total
			229.12 Grand Total.

Contacts			
	Workmates	5.00	
	Ex-workmates	4.57	
	Friends	7.83	
	Tradesmen	0.98	
	Other	7.83	
Total time accounted for		26.21	Total contacts.

Already retired Group. Afternoon (Tuesday and Friday) N = 46

		Time per head (mins.)	
Meal		31.63	Meal Total
Work	Employment	17.39	
	Housework	8.48	
	Gardening	10.65	
	Household repairs	5.87	
	Cooking	0	
	Shopping	13.04	
Total time accounted for		55.43	Work Total
Leisure at Home			
	Reading papers/resting	42.28	
	Reading books	12.61	
	Listening to wireless	19.13	
	Hobbies	12.94	
Total time accounted for		86.96	Leisure at Home total
Leisure outside Home			
	Club	18.91	
	Bar	0.98	
	Park	5.23	
	Public Library	6.85	
	Elsewhere	41.96	
Total time accounted for		73.93	Leisure outside Home total
			247.95 Grand Total.

Contacts			
	Workmates	1.41	
	Ex-workmates	0	
	Friends	11.41	
	Tradesmen	0	
	Others	14.35	
Total time accounted for		27.17	Total contacts.

Already retired Group. Evening (Tuesday and Friday) N = 46

		Time per head (mins.)	
Meal		27.06	Meal Total
Work	Employment	0.65	
	Housework	5.23	
	Gardening	1.96	
	Household repairs	7.72	
	Cooking	0.65	
	Shopping	0	
Total time accounted for		16.21	Work Total
Leisure at Home			
	Reading papers/resting	36.09	
	Reading books	33.48	
	Listening to wireless	73.70	
	Hobbies	10.83	
Total time accounted for		154.10	Leisure at Home total
Leisure outside Home			
	Clubs	0	
	Bar	0	
	Park	1.96	
	Public Library	2.93	
	Elsewhere	26.74	
Total time accounted for		31.63	Leisure outside Home total
			229.00 Grand Total.

Contacts			
	Workmates	0	
	Ex-workmates	0	
	Friends	36.20	
	Tradesmen	0	
	Others	3.26	
		39.46	Total contacts.

Already retired Group. Morning (Sunday) N = 23

		Time per head (mins.)	
Meal		23.70	Meal Total
Work	Employment	0	
	Housework	16.74	
	Gardening	8.68	
	Household repairs	0	
	Cooking	7.84	
	Shopping	0	
Total time accounted for		33.26	Work total
Leisure at Home			
	Reading papers/resting	43.79	
	Reading books	91.31	
	Listening to wireless	20.22	
	Hobbies	0	
Total time accounted for		155.32	Leisure at Home total
Leisure outside Home			
	Clubs	13.04	
	Bar	1.30	
	Park	4.78	
	Public Library	0	
	Elsewhere	76.30	
Total time accounted for		95.42	Leisure outside Home
			307.70 Grand Total.

Contacts			
	Workmates	0	
	Ex-workmates	0	
	Friends	15.65	
	Tradesmen	0	
	Others	1.95	
		27.60	Total contacts.

ANALYSIS OF RETIREMENT AND MORTALITY (TOTAL)

CENSUS 1931

Sources:- Census 1931, England and Wales - Decennial Supplement
Occupational Mortality, Table 40
Census 1931, England and Wales - Occupation Tables, Table 12

Occupational Group 2 - Gardeners, Nurserymen, Seedsmen, Florists
Occn. Code 013

	45-	55-	65-	70-	75/+	
1. Total in Age Groups[1]	38,987	42,531	18,840	13,380	12,546	
2. No. in Age Group Ret.	456	1,365	2,614	4,607	7,893	
3. % (2) of (1)	1.17	3.20	13.88	34.50	62.80	
4. Mean Ann. Death R./100,000	806	1,785	3,577	6,074	14,817	
5. Ratio D.R./All Males	72	76	77	82	99	
6. Ratio R.R./All Males	52	43	44	67	97	S.M.R. 75

Occupational Group 3 - Agricultural and Gardeners', Labourers, etc.
Occn. Codes 020-023, 030, 031, 038, 039.

1. Tot. in A.G.	76,602	72,058	31,910	22,006	19,161	
2. No. in A.G. Ret.	1,096	2,486	5,088	9,411	13,922	
3. % (2) of (1)	1.43	3.44	15.91	42.70	72.85	
4. M.A.D.R./100,000	749	1,645	3,449	6,001	15,897	
5. Ratio D.R./All Males	67	70	74	81	106	
6. Ratio R.R./All Males	64	47	51	84	112	S.M.R. 35-65 69

Occupational Group 4 - Coal Hewers and Getters.
Occn. Code 042.

1. Tot. in A.G.	76,760	48,949	14,429	9,825	7,318	
2. No. in A.G. Ret.	1,141	2,723	7,827	7,894	6,550	
3. % (2) of (1)	1.49	5.54	54.20	80.25	89.50	
4. M.A.D.R./100,000	1,225	2,618	5,884	9,632	17,705	
5. Ratio D.R./All Males	110	111	126	120	118	
6. Ratio R.R./All Males	66	75	173	157	138	S.M.R. 112

[1] Occupied, unoccupied and retired.

Occupational Group 6 - Coal Mines - Conveying Material to Shaft
Occn. Code 043

	45-	55-	65-	70-	75/+	
1. Tot. in A.G.	11,240	6,521	1,388	730	446	
2. No. in A.G. Ret.	100	170	509	464	369	
3. % (2) of (1)	0.89	2.61	36.65	63.50	82.60	
4. M.A.D.R./100,000	878	1,866	4,467	6,621	10,990	
5. Ratio D.R./All Males	79	79	96	89	73	
6. Ratio R.R./All Males	40	35	117	124	127	S.M.R. 83

Occupational Group 7 - Coal Mines - Making and Repairing Roads
Occn. Code 044

1. Tot.in A.G.	14,033	14,662	4,295	2,178	1,309	
2. No. in A.G. Ret.	83	340	1,630	1,506	1,102	
3. % (2) of (1)	0.59	2.32	37.95	69.15	84.50	
4. M.A.D.R./100,000	934	1,937	4,517	8,479	17,240	
5. Ratio D.R./All Males	84	82	97	114	115	
6. Ratio R.R./All Males	26	31	121	135	130	S.M.R. 85

Occupational Group 8 - Coal Mines - Other workers below ground
Occn. Code 047

1. Tot.in A.G.	16,987	15,844	4,470	2,299	1,404	
2. No. in A.G. Ret.	173	505	1,749	1,561	1,171	
3. % (2) of (1)	1.04	3.19	39.05	68.00	83.50	
4. M.A.D.R./100,000	1,099	2,064	4,310	7,786	13,940	
5. Ratio D.R./All Males	99	88	93	105	93	
6. Ratio R.R./All Males	46	43	125	133	128	S.M.R. 95

Occupational Group 9 - Coal Mines - Other workers above ground
Occn. Code 049

1. Tot. in A.G.	15,548	14,279	4,348	2,425	1,515	
2. No. in A.G. Ret.	175	401	1,371	1,408	1,234	
3. % (2) of (1)	1.13	2.82	31.60	58.00	81.50	
4. M.A.D.R./100,000	1,194	2,556	5,221	8,976	19,050	
5. Ratio D.R./All Males	107	109	112	121	127	
6. Ratio R.R./All Males	50	38	101	113	125	S.M.R. 112

Occupational Group 11 - Stone Miners, Quarriers
Occn. Code 062

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	5,987	4,011	1,377	770	607	
2. No. in A.G. Ret.	52	124	403	470	511	
3. % (2) of (1)	0.87	3.08	29.32	61.00	84.25	
4. M.A.D.R./100,000	963	2,319	4,624	9,524	18,450	
5. Ratio D.R./All Males	86	98	99	128	123	
6. Ratio R.R./All Males	39	42	95	119	130	S.M.R. 90

Occupational Group 12 - Employers and Managers, Gas, Bricks, Chemicals, etc.
Occn. Codes 070, 080, 090, 100, 110, 120, 130

1. Tot. in A.G.	17,477	12,189	3,565	2,148	1,777	
2. No. in A.G. Ret.	307	796	651	685	884	
3. % (2) of (1)	1.76	6.55	18.24	31.84	49.75	
4. M.A.D.R./100,000	875	2,530	6,152	9,761	23,973	
5. Ratio D.R./All Males	79	107	132	131	160	
6. Ratio R.R./All Males	79	89	58	62	77	S.M.R. 91

Occupational Group 14 - Potters; Ware-Makers, Casters and Finishers
Occn. Code 095

1. Tot. in A.G.	1,614	1,350	330	204	129	
2. No. in A.G. Ret.	25	71	89	117	102	
3. % (2) of (1)	1.55	5.25	26.95	57.40	79.05	
4. M.A.D.R./100,000	1,650	3,358	8,790	9,310	20,200	
5. Ratio D.R./All Males	148	143	189	125	135	
6. Ratio R.R./All Males	69	71	86	112	122	S.M.R. 140

Occupational Group 15 - Workers in Chemical Processes
Occn. Code 111-113, 118

1. Tot. in A.G.	3,874	2,351	578	313	242	
2. No. in A.G. Ret.	31	115	280	227	206	
3. % (2) of (1)	0.80	4.89	48.50	72.55	85.15	
4. M.A.D.R./100,000	792	1,545	3,690	8,730	11,800	
5. Ratio D.R./All Males	71	66	79	117	79	
6. Ratio R.R./All Males	36	66	155	112	131	S.M.R. 65

Occupational Group 16 - Furnacemen, Rollers and Skilled Assistants
Occn. Code 140-142, 144

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	7,571	5,042	1,450	956	866	
2. No. in A.G. Ret.	53	198	624	675	760	
3. % (2) of (1)	0.70	3.94	43.00	70.50	87.70	
4. M.A.D.R./100,000	1,233	3,398	7,609	11,610	21,320	
5. Ratio D.R./All Males	111	144	163	156	142	
6. Ratio R.R./All Males	31	53	138	138	135	S.M.R. 126

Occupational Group 17 - Metal Moulders and Die Casters
Occn. Code 150-152

1. Tot. in A.G.	12,026	7,937	2,171	1,442	1,104	
2. No. in A.G. Ret.	135	306	754	988	953	
3. % (2) of (1)	1.12	3.86	34.65	68.45	86.30	
4. M.A.D.R./100,000	1,278	2,679	6,571	9,200	21,040	
5. Ratio D.R./All Males	115	114	141	124	140	
6. Ratio R.R./All Males	50	52	111	134	133	S.M.R. 114

Occupational Group 18 - Iron and Steel Foundry Furnacemen, etc.
Occn. Code 153, 154

1. Tot. in A.G.	6,288	5,112	1,467	777	474	
2. No. in A.G. Ret.	71	148	452	463	398	
3. % (2) of (1)	1.13	2.89	30.85	59.55	84.00	
4. M.A.D.R./100,000	1,585	2,960	6,294	10,940	20,820	
5. Ratio D.R./All Males	142	126	135	147	139	
6. Ratio R.R./All Males	11	8	2	1	1	S.M.R. 132

Occupational Group 19 - Smiths and Skilled Forge Workers
Occn. Code 160

1. Tot. in A.G.	21,569	18,576	6,403	4,615	4,172	
2. No. in A.G. Ret.	231	880	2,337	3,014	3,510	
3. % (2) of (1)	1.07	4.75	36.42	65.15	84.15	
4. M.A.D.R. /100,000	1,113	2,299	5,154	8,443	16,874	
5. Ratio D.R./All Males	100	98	111	113	113	
6. Ratio R.R./All Males	48	64	117	128	129	S.M.R. 99

Occupational Group 20 - Metal Machinists
Occn. Code 170

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	19,479	12,753	3,246	1,819	1,217	
2. No. in A.G. Ret.	168	455	1,227	1,197	1,057	
3. % (2) of (1)	0.86	3.57	37.75	65.90	86.90	
4. M.A.D.R./100,000	1,140	2,245	4,559	8,411	15,800	
5. Ratio D.R./All Males	102	95	98	113	105	
6. Ratio R.R./All Males	38	48	121	129	134	S.M.R. 98

Occupational Group 21 - Fitters, Mechanics, Toolmakers, etc.
Occn. Code 180-182, 184-187, 226

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	53,491	32,963	9,147	6,266	4,804	
2. No. in A.G. Ret.	896	2,130	3,686	4,272	4,062	
3. % (2) of (1)	1.68	6.47	40.40	68.10	84.65	
4. M.A.D.R./100,000	1,104	2,352	4,617	7,698	15,695	
5. Ratio D.R./All Males	99	100	99	103	105	
6. Ratio R.R./All Males	75	88	129	133	130	S.M.R. 99

Occupational Group 22 - Fitters', Mechanics', etc. Labourers
Occn. Code 183,189

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	7,728	6,354	1,683	758	398	
2. No. in A.G. Ret.	50	137	489	434	299	
3. % (2) of (1)	0.65	2.16	29.02	57.35	75.01	
4. M.A.D.R./100,000	1,057	1,993	4,060	8,047	16,160	
5. Ratio D.R./All Males	95	85	87	108	108	
6. Ratio R.R./All Males	29	29	93	112	116	S.M.R. 89

Occupational Group 23 - Boiler Makers, Platers and Iron Shipwrights
Occn. Code 192

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	7,179	5,025	1,861	1,218	1,064	
2. No. in A.G. Ret.	96	519	1,074	1,045	963	
3. % (2) of (1)	1.34	10.31	57.60	98.15	90.50	
4. M.A.D.R./100,000	1,217	2,514	5,660	8,402	15,950	
5. Ratio D.R./All Males	109	107	122	113	106	
6. Ratio R.R./All Males	60	140	185	192	139	S.M.R. 113

Occupational Group 24 - Drillers (Hand, Pneumatic or Electric)
Occn. Code 200

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	1,190	1,007	261	178	127	
2. No. in A.G. Ret.	13	70	116	144	117	
3. % (2) of (1)	1.09	6.96	44.45	81.00	92.15	
4. M.A.D.R./100,000	1,180	2,550	4,090	7,300	12,100	
5. Ratio D.R./All Males	106	108	88	98	81	
6. Ratio R.R./All Males	49	94	142	158	142	S.M.R. 106

Occupational Group 25 - Metal Grinders
Occn. Code 205

1. Tot. in A.G.	2,780	1,553	313	163	98	
2. No. in A.G. Ret.	29	34	77	74	62	
3. % (2) of (1)	1.04	2.19	24.60	45.40	63.35	
4. M.A.D.R./100,000	1,763	3,520	9,050	11,900	21,400	
5. Ratio D.R./All Males	158	149	194	160	143	
6. Ratio R.R./All Males	46	30	79	89	97	S.M.R. 150

Occupational Group 26 - Metal Glazers, Polishers, Buffers and Moppers
Occn. Code 206

1. Tot. in A.G.	2,305	1,442	323	127	63	
2. No. in A.G. Ret.	28	35	66	56	45	
3. % (2) of (1)	1.21	2.42	20.42	44.08	71.47	
4. M.A.D.R./100,000	1,837	2,982	6,600	11,300	19,000	
5. Ratio D.R./All Males	165	127	142	152	127	
6. Ratio R.R./All Males	54	33	65	86	110	S.M.R. 143

Occupational Group 27 - Plumbers (Not Chemical Plumbers)
Occn. Code 215

1. Tot. in A.G.	9,533	6,256	1,986	1,150	822	
2. No. in A.G. Ret.	119	322	600	677	661	
3. % (2) of (1)	1.25	5.15	30.21	58.95	80.5	
4. M.A.D.R./100,000	874	1,961	4,381	6,812	13,140	
5. Ratio D.R./All Males	78	83	94	92	88	
6. Ratio R.R./All Males	56	70	97	115	124	S.M.R. 82

Occupational Group 28 - Employers and Managers in Occupation Orders VIII-XXI, XXXI.
Occn. Codes 240, 250, 270, 280, 290, 300, 340, 370, 380, 390, 400, 410, 430, 440, 450, 460, 480, 482, 500.

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	62,144	44,690	13,285	7,868	6,401	
2. No. in A.G. Ret.	877	2,711	2,313	2,560	3,276	
3. % (2) of (1)	1.41	6.06	17.43	32.55	51.09	
4. M.A.D.R./100,000	1,167	2,954	7,058	12,854	33,984	
5. Ratio D.R./All Males	105	125	152	173	227	
6. Ratio R.R./All Males	63	82	56	64	77	S.M.R. 114

Occupational Group 34 - Textile Dyers
Occn. Code 328

1. Tot. in A.G.	3,881	3,259	1,015	543	316	
2. No. in A.G. Ret.	47	133	429	346	257	
3. % (2) of (1)	1.21	4.09	42.25	63.70	81.42	
4. M.A.D.R./100,000	1,537	2,976	6,798	10,560	20,780	
5. Ratio D.R./All Males	138	126	146	142	139	
6. Ratio R.R./All Males	54	55	135	125	125	S.M.R. 130

Occupational Group 35 - Makers of Textile Goods, Dress, etc.
Occn. Codes 341, 343-348, 350, 351, 357, 368.

1. Tot. in A.G.	16,099	15,412	5,084	3,300	3,019	
2. No. in A.G. Ret.	313	816	1,101	1,410	2,048	
3. % (2) of (1)	1.95	5.30	21.66	42.65	67.95	
4. M.A.D.R./100,000	1,044	2,139	4,222	6,263	10,950	
5. Ratio D.R./All Males	94	91	91	84	73	
6. Ratio R.R./All Males	87	72	69	84	104	S.M.R. 92

Occupational Group 36 - Boot and Shoe Makers, Repairers
Occn. Code 352

1. Tot. in A.G.	11,028	10,428	4,111	2,902	3,088	
2. No. in A.G. Ret.	236	565	689	1,059	1,974	
3. % (2) of (1)	2.14	5.41	16.71	36.42	63.95	
4. M.A.D.R./100,000	1,067	2,094	3,624	6,145	13,763	
5. Ratio D.R./All Males	96	89	78	83	92	
6. Ratio R.R./All Males	96	73	54	71	98	S.M.R. 93

Occupational Group 37 - Boot and Shoe, etc. Workers and Factory Operatives
Occn. Codes 353, 354, 356.

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	8,292	7,542	2,332	1,444	978	
2. No. in A.G. Ret.	89	256	512	738	734	
3. % (2) of (1)	1.07	3.40	21.95	51.08	75.00	
4. M.A.D.R./100,000	1,150	2,245	5,031	8,541	18,750	
5. Ratio D.R./All Males	103	95	108	115	125	
6. Ratio R.R./All Males	48	46	70	100	115	S.M.R. 103

Occupational Group 38 - Bakers and Pastry Cooks
Occn. Code 373

1. Tot. in A.G.	10,659	8,805	3,124	1,973	1,680	
2. No. in A.G. Ret.	301	1,008	1,190	1,337	1,415	
3. % (2) of (1)	2.82	11.42	38.00	67.65	84.35	
4. M.A.D.R./100,000	951	1,810	3,788	5,423	11,030	
5. Ratio D.R./All Males	85	77	81	73	74	
6. Ratio R.R./All Males	126	155	122	133	130	S.M.R. 78

Occupational Group 39 - Makers of Alcoholic Drinks
Occn. Code 382-388

1. Tot. in A.G.	2,366	1,900	638	436	392	
2. No. in A.G. Ret.	54	167	228	295	337	
3. % (2) of (1)	2.28	8.80	35.75	67.55	86.00	
4. M.A.D.R./100,000	1,370	3,018	4,390	8,792	18,280	
5. Ratio D.R./All Males	123	128	94	118	122	
6. Ratio R.R./All Males	102	84	114	132	132	S.M.R. 128

Occupational Group 40 - Carpenters
Occn. Code 414

1. Tot. in A.G.	44,276	29,045	12,661	9,152	8,254	
2. No. in A.G. Ret.	480	1,064	3,137	4,814	6,629	
3. % (2) of (1)	1.09	3.79	24.75	52.58	80.25	
4. M.A.D.R./100,000	860	1,892	4,015	6,643	14,502	
5. Ratio D.R./All Males	77	80	86	89	97	
6. Ratio R.R./All Males	49	51	79	103	123	S.M.R. 79

Occupational Group 41 - Lawyers and Woodturners
Occn. Code 419, 425

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	8,010	5,604	1,796	1,132	908	
2. No. in A.G. Ret.	64	185	505	664	724	
3. % (2) of (1)	0.80	3.30	28.12	58.55	79.65	
4. M.A.D.R./100,000	866	2,397	4,417	8,304	18,720	
5. Ratio D.R./All Males	78	102	95	112	125	
6. Ratio R.R./All Males	36	46	90	115	123	S.M.R. 91

Occupational Group 42 - Compositors
Occn. Code 462 & 463

1. Tot. in A.G.	6,477	6,512	1,917	1,049	751	
2. No. in A.G. Ret.	65	454	855	773	666	
3. % (2) of (1)	1.00	6.96	44.60	73.65	88.75	
4. M.A.D.R./100,000	926	2,314	4,382	7,817	16,820	
5. Ratio D.R./All Males	83	98	94	105	112	
6. Ratio R.R./All Males	45	94	143	144	137	S.M.R. 92

Occupational Group 43 - Printing Machine Minders, Printers, Rulers
Occn. Code 468-471

1. Tot. in A.G.	7,536	5,347	1,566	948	860	
2. No. in A.G. Ret.	129	338	575	644	713	
3. % (2) of (1)	1.71	6.35	36.71	67.95	82.95	
4. M.A.D.R./100,000	1,115	2,425	4,342	6,716	12,330	
5. Ratio D.R./All Males	100	103	93	90	82	
6. Ratio R.R./All Males	76	86	117	133	127	S.M.R. 102

Occupational Group 44 - Builders', Plasterers', Bricklayers', and Masons' Labourers. Occn. Codes 483, 485, 487, 491.

1. Tot. in A.G.	27,972	21,077	5,349	2,843	1,788	
2. No. in A.G. Ret.	236	489	1,264	1,594	1,409	
3. % (2) of (1)	0.85	2.32	23.65	56.00	78.90	
4. M.A.D.R./100,000	1,331	2,692	5,341	9,544	18,997	
5. Ratio D.R./All Males	119	114	115	128	127	
6. Ratio R.R./All Males	38	31	76	110	121	S.M.R. 115

Occupational Group 45 - Bricklayers
Occn. Code 484

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	24,161	15,819	5,383	4,130	3,072	
2. No. in A.G. Ret.	216	379	1,075	2,000	2,447	
3. % (2) of (1)	0.90	2.39	19.99	48.45	79.70	
4. M.A.D.R./100,000	1,014	2,158	4,508	7,514	16,786	
5. Ratio D.R./All Males	91	92	97	101	112	
6. Ratio R.R./All Males	40	32	58	95	123	S.M.R. 90

Occupational Group 46 - Masons, etc.
Occn. Code 490

1. Tot. in A.G.	9,395	7,147	2,806	2,095	1,851	
2. No. in A.G. Ret.	128	247	653	1,139	1,484	
3. % (2) of (1)	1.36	3.46	23.22	54.39	79.70	
4. M.A.D.R./100,000	1,494	2,882	5,322	8,624	17,520	
5. Ratio D.R./All Males	134	122	114	116	117	
6. Ratio R.R./All Males	61	47	75	106	123	S.M.R. 125

Occupational Group 47 - Platelayers
Occn. Code 493

1. Tot. in A.G.	10,652	8,109	2,419	1,701	1,480	
2. No. in A.G. Ret.	78	264	1,763	1,497	1,356	
3. % (2) of (1)	0.73	3.26	73.00	87.90	91.55	
4. M.A.D.R./100,000	986	2,302	5,291	8,505	19,480	
5. Ratio D.R./All Males	89	98	114	114	130	
6. Ratio R.R./All Males	33	44	235	172	141	S.M.R. 92

Occupational Group 48 - Other Workers (Navvies) in Building, etc.
Occn. Code 499

1. Tot. in A.G.	35,873	30,378	8,494	5,409	3,999	
2. No. in A.G. Ret.	143	546	1,949	2,422	2,856	
3. % (2) of (1)	0.38	1.80	22.97	44.79	71.49	
4. M.A.D.R./100,000	606	1,421	3,324	5,417	13,370	
5. Ratio D.R./All Males	54	60	71	73	89	
6. Ratio R.R./All Males	17	24	74	88	110	S.M.R. 59

Occupational Group 49 - French Polishers
Occn. Code 503

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	3,827	2,309	622	376	254	
2. No. in A.G. Ret.	56	65	118	149	175	
3. % (2) of (1)	1.46	2.82	18.98	39.62	68.95	
4. M.A.D.R./100,000	1,280	2,656	4,390	9,397	18,500	
5. Ratio D.R./All Males	115	113	94	126	123	
6. Ratio R.R./All Males	65	38	61	78	106	S.M.R. 110

Occupational Group 50 - Paper Hangers, Painters, etc.
Occn. Code 505 & 518

1. Tot. in A.G.	41,328	31,516	9,936	5,567	3,951	
2. No. in A.G. Ret.	500	1,029	2,198	2,767	3,000	
3. % (2) of (1)	1.21	3.26	22.50	49.65	76.00	
4. M.A.D.R./100,000	1,239	2,506	4,858	8,029	16,426	
5. Ratio D.R./All males	111	106	104	108	110	
6. Ratio R.R./All males	54	44	72	97	117	S.M.R. 106

Occupational Group 51 - Railway Officials, etc.
Occn. Code 590

1. Tot. in A.G.	6,188	6,621	2,315	1,538	1,320	
2. No. in A.G. Ret.	60	1,488	2,135	1,430	1,227	
3. % (2) of (1)	0.97	2.24	92.25	93.08	93.00	
4. M.A.D.R./100,000	792	1,999	3,974	6,394	14,970	
5. Ratio D.R./All Males	71	85	85	86	100	
6. Ratio R.R./All males	43	30	295	182	143	S.M.R. 79

Occupational Group 52 - Railway - Engine Drivers, etc.
Occn. Codes 591, 592

1. Tot. in A.G.	13,991	10,515	3,078	2,044	1,787	
2. No. in A.G. Ret.	82	561	2,681	1,900	1,688	
3. % (2) of (1)	0.59	5.34	87.40	92.90	94.45	
4. M.A.D.R./100,000	884	2,146	4,148	7,811	14,810	
5. Ratio D.R./All Males	79	91	89	105	99	
6. Ratio R.R./All Males	26	72	279	182	145	S.M.R. 85

Occupational Group 53 - Railway - Signalmen
Occn. Code 596

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	6,296	5,372	1,631	1,238	1,089	
2. No. in A.G. Ret.	24	183	1,475	1,175	1,011	
3. % (2) of (1)	0.38	3.41	90.40	95.00	93.10	
4. M.A.D.R./100,000	787	2,066	3,883	6,570	14,420	
5. Ratio D.R./All Males	71	88	83	88	96	
6. Ratio R.R./All Males	17	46	289	186	143	S.M.R. 77

Occupational Group 54 - Railway Porters
Occn. Code 599

1. Tot. in A.G.	12,924	9,166	2,421	1,423	1,098	
2. No. in A.G. Ret.	124	459	1,923	1,285	1,000	
3. % (2) of (1)	0.96	5.00	79.45	90.25	91.05	
4. M.A.D.R./100,000	1,104	2,218	4,926	7,472	14,180	
5. Ratio D.R./All Males	99	94	92	100	95	
6. Ratio R.R./All Males	43	68	254	176	140	S.M.R. 95

Occupational Group 55 - Road Transport - Horse Drivers
Occn. Code 615, 616

1. Tot. in A.G.	28,264	23,065	7,111	4,885	4,692	
2. No. in A.G. Ret.	373	1,200	2,873	3,461	4,077	
3. % (2) of (1)	1.32	5.20	40.39	71.00	86.95	
4. M.A.D.R./100,000	1,478	2,938	6,328	10,645	19,814	
5. Ratio D.R./All Males	133	125	136	143	132	
6. Ratio R.R./All Males	59	70	129	139	134	S.M.R. 128

Occupational Group 56 - Road Transport - Motor Drivers
Occn. Code 617, 618

1. Tot. in A.G.	43,268	15,516	2,783	1,214	692	
2. No. in A.G. Ret.	235	421	684	620	506	
3. % (2) of (1)	0.54	2.70	24.50	51.02	73.12	
4. M.A.D.R./100,000	896	1,772	3,917	5,903	9,249	
5. Ratio D.R./All Males	80	75	84	79	62	
6. Ratio R.R./All Males	24	37	78	100	113	S.M.R. 79

Occupational Group 57 - Water Transport - Dock Labourers
Occn. Code 645

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	22,834	19,186	5,175	2,773	1,541	
2. No. in A.G. Ret.	211	590	1,504	1,644	1,176	
3. % (2) of (1)	0.92	3.08	29.08	59.43	76.20	
4. M.A.D.R./100,000	1,693	3,013	5,945	9,797	18,150	
5. Ratio D.R./All Males	152	128	128	132	121	
6. Ratio R.R./All Males	41	42	93	116	117	S.M.R. 140

Occupational Group 58 - Postmen and Sorters
Occn. Code 653

1. Tot. in A.G.	18,965	10,834	2,675	1,365	879	
2. No. in A.G. Ret.	407	3,613	2,116	1,196	818	
3. % (2) of (1)	2.14	33.31	79.05	87.60	93.10	
4. M.A.D.R./100,000	926	2,194	4,324	7,204	15,320	
5. Ratio D.R./All Males	83	93	93	97	102	
6. Ratio R.R./All Males	96	450	253	171	143	S.M.R. 88

Occupational Group 59 - Messengers and Porters, etc.
Occn. Code 657-659

1. Tot. in A.G.	16,532	13,732	4,293	2,316	1,437	
2. No. in A.G. Ret.	328	834	1,202	1,204	1,022	
3. % (2) of (1)	1.98	6.06	28.05	52.05	71.40	
4. M.A.D.R./100,000	1,528	2,867	5,420	8,348	18,140	
5. Ratio D.R./All Males	137	122	116	112	121	
6. Ratio R.R./All Males	88	82	90	102	110	S.M.R. 126

Occupational Group 60 - Retail Proprietors, etc. Grocery
Occn. Code 672

1. Tot. in A.G.	19,571	15,559	5,034	3,072	3,039	
2. No. in A.G. Ret.	626	2,092	1,687	1,603	2,133	
3. % (2) of (1)	0.32	13.44	33.49	51.20	70.30	
4. M.A.D.R./100,000	1,070	2,378	4,854	8,062	16,003	
5. Ratio D.R./All Males	96	101	104	108	107	
6. Ratio R.R./All Males	14	182	107	100	108	S.M.R. 97

Occupational Group 61 - Retail Proprietors, etc., Dairy, Meat, Fish, Greengrocery.
Occn. Code 673-676

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	29,597	21,014	6,045	3,545	3,123	
2. No. in A.G. Ret.	674	1,862	1,570	1,643	2,111	
3. % (2) of (1)	2.28	8.86	25.99	46.39	67.55	
4. M.A.D.R./100,000	1,296	2,833	5,415	9,337	19,212	
5. Ratio D.R./All Males	116	120	116	125	128	
6. Ratio R.R./All Males	102	120	83	91	104	S.M.R. 119

Occupational Group 62 - Wholesale Proprietors, etc.
Occn. Code 686

1. Tot. in A.G.	19,051	14,358	4,334	2,905	2,647	
2. No. in A.G. Ret.	596	1,615	1,152	1,206	1,532	
3. % (2) of (1)	3.13	11.25	26.62	41.49	57.95	
4. M.A.D.R./100,000	1,017	2,730	5,084	9,294	17,731	
5. Ratio D.R./All Males	91	116	109	125	118	
6. Ratio R.R./All Males	140	152	85	81	89	S.M.R. 102

Occupational Group 63 - Commercial Travellers
Occn. Code 692

1. Tot. in A.G.	24,510	17,082	4,672	2,577	1,972	
2. No. in A.G. Ret.	271	943	927	1,108	1,302	
3. % (2) of (1)	1.11	5.52	19.81	42.99	66.10	
4. M.A.D.R./100,000	1,032	2,357	5,094	8,653	17,208	
5. Ratio D.R./All Males	93	100	109	116	115	
6. Ratio R.R./All Males	49	75	63	84	102	S.M.R. 94

Occupational Group 64 - Retail Salesmen, etc. - Grocery
Occn. Code 703

1. Tot. in A.G.	5,237	3,460	1,054	613	439	
2. No. in A.G. Ret.	108	227	345	374	353	
3. % (2) of (1)	2.06	6.56	32.71	61.00	80.45	
4. M.A.D.R./100,000	974	2,119	3,384	5,110	13,210	
5. Ratio D.R./All Males	87	90	73	69	88	
6. Ratio R.R./All Males	92	89	105	119	124	S.M.R. 87

Occupational Group 65 - Retail Salesmen, etc. Dairy, Meat, Fish, Greengrocery
Occn. Code 704-707

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	8,420	5,939	1,580	852	563	
2. No. in A.G. Ret.	140	305	437	471	438	
3. % (2) of (1)	1.66	5.15	27.69	55.42	77.90	
4. M.A.D.R./100,000	1,314	2,717	5,127	9,233	16,640	
5. Ratio D.R./All Males	118	115	110	124	111	
6. Ratio R.R./All Males	74	70	89	108	120	S.M.R. 116

Occupational Group 66 - Costermongers, etc., Newspaper Sellers
Occn. Codes 721, 722

1. Tot. in A.G.	14,296	11,431	4,165	2,296	1,473	
2. No. in A.G. Ret.	288	458	548	744	732	
3. % (2) of (1)	2.02	4.00	13.12	32.39	49.61	
4. M.A.D.R./100,000	1,616	2,928	4,986	7,448	15,980	
5. Ratio D.R./All Males	145	124	107	100	107	
6. Ratio R.R./All Males	90	54	42	63	77	S.M.R. 138

Occupational Group 67 - Bank and Insurance Officials
Occn. Code 731 & 734

1. Tot. in A.G.	10,885	7,946	2,206	1,501	1,097	
2. No. in A.G. Ret.	287	2,328	1,630	1,197	913	
3. % (2) of (1)	2.64	29.35	73.85	79.60	83.30	
4. M.A.D.R./100,000	799	1,644	3,762	5,929	14,130	
5. Ratio D.R./All Males	72	70	81	80	94	
6. Ratio R.R./All Males	118	396	236	156	128	S.M.R. 68

Occupational Group 68 - Civil Service and Local Authority Admin., Executive, etc.
Occn. Code 740, 742

1. Tot. in A.G.	10,071	6,845	2,398	1,650	1,297	
2. No. in A.G. Ret.	248	1,207	1,568	1,262	1,065	
3. % (2) of (1)	2.46	17.64	65.45	76.55	82.15	
4. M.A.D.R./100,000	655	1,977	3,878	6,505	14,210	
5. Ratio D.R./All Males	59	84	83	87	95	
6. Ratio R.R./All Males	110	238	209	150	127	S.M.R. 70

Occupational Group 69 - Police
Occn. Code 751

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	13,334	8,329	2,670	2,019	1,839	
2. No. in A.G. Ret.	5,474	7,431	2,553	1,951	1,766	
3. % (2) of (1)	41.00	89.20	95.60	97.45	96.10	
4. M.A.D.R./100,000	932	2,637	5,843	8,618	15,680	
5. Ratio D.R./All Males	84	112	126	116	105	
6. Ratio R.R./All Males	1,830	1,208	306	190	148	S.M.R. 91

Occupational Group 70 - Clergymen (Anglican Church)
Occn. Code 770

1. Tot. in A.G.	4,906	5,303	2,486	1,875	1,999	
2. No. in A.G. Ret.	78	356	448	633	1,177	
3. % (2) of (1)	1.59	6.71	18.00	33.77	58.95	
4. M.A.D.R./100,000	564	1,779	4,076	6,329	13,410	
5. Ratio D.R./All Males	51	76	88	85	89	
6. Ratio R.R./All Males	71	91	58	66	91	S.M.R. 69

Occupational Group 71 - Ministers of other Religious Bodies (excluding Roman Catholic)
Occn. Code 772

1. Tot. in A.G.	2,906	2,651	974	762	880	
2. No. in A.G. Ret.	35	202	339	444	680	
3. % (2) of (1)	1.20	7.62	34.80	58.20	78.20	
4. M.A.D.R./100,000	688	1,936	4,278	6,562	13,560	
5. Ratio D.R./All Males	62	82	92	88	90	
6. Ratio R.R./All Males	54	103	111	114	120	S.M.R. 73

Occupational Group 72 - Judges, Barristers, Solicitors, etc.
Occn. Code 780-781

1. Tot. in A.G.	4,438	4,284	2,115	1,422	1,397	
2. No. in A.G. ret.	271	608	531	504	735	
3. % (2) of (1)	6.12	14.20	25.15	35.38	53.40	
4. M.A.D.R./100,000	1,059	2,451	4,823	7,548	14,240	
5. Ratio D.R./All Males	95	104	104	101	95	
6. Ratio R.R./All Males	274	192	80	69	82	S.M.R. 99

Occupational Group 73 - Physicians, Surgeons, etc.
Occn. Code 790

	45-	55-	65-	70-	75+	
1. Total in A.G.	5,424	5,747	2,295	1,412	1,131	
2. No. in A.G. Ret.	230	907	764	703	744	
3. % (2) of (1)	4.25	15.80	32.23	49.65	72.00	
4. M.A.D.R./100,000	1,198	2,604	4,793	7,059	15,410	
5. Ratio D.R./All Males	108	111	103	95	103	
6. Ratio R.R./All Males	190	214	103	97	111	S.M.R. 107

Occupational Group 74 - Teachers (Not Music)
Occn. Code 800

1. Tot. in A.G.	17,829	12,630	5,105	3,166	2,220	
2. No. in A.G. Ret.	368	3,233	4,255	2,779	1,958	
3. % (2) of (1)	2.06	25.58	83.45	87.60	88.10	
4. M.A.D.R./100,000	675	1,774	3,852	5,812	13,450	
5. Ratio D.R./All Males	61	75	83	78	90	
6. Ratio R.R./All Males	92	345	266	171	136	S.M.R. 67

Occupational Group 75 - Professional Engineers
Occn. Code 810-812

1. Tot. in A.G.	8,863	6,003	1,956	1,230	1,092	
2. No. in A.G. Ret.	407	991	864	773	783	
3. % (2) of (1)	4.60	16.50	44.08	62.90	71.55	
4. M.A.D.R./100,000	936	2,282	4,056	7,344	14,530	
5. Ratio D.R./All Males	84	97	87	99	97	
6. Ratio R.R./All Males	206	243	141	123	110	S.M.R. 86

Occupational Group 76 - Domestic Servants (Indoor)
Occn. Code 850

1. Tot. in A.G.	11,110	7,888	2,602	1,693	1,381	
2. No. in A.G. Ret.	210	482	693	915	1,083	
3. % (2) of (1)	1.89	6.15	26.59	54.00	78.50	
4. M.A.D.R./100,000	1,035	2,202	4,253	6,773	13,930	
5. Ratio D.R./All Males	93	94	91	91	93	
6. Ratio R.R./All Males	84	83	85	106	121	S.M.R. 91

Occupational Group 77 - Inn, Hotel-Keepers, etc.
Occn. Code 864

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	22,835	18,789	5,488	3,174	2,525	
2. No. in A.G. Ret.	593	2,104	1,683	1,568	1,655	
3. % (2) of (1)	2.59	11.21	30.75	49.40	65.50	
4. M.A.D.R./100,000	1,791	3,561	6,074	9,284	19,868	
5. Ratio D.R./All Males	161	151	131	125	133	
6. Ratio R.R./All Males	116	152	98	97	101	S.M.R. 156

Occupational Group 78 - Barmen
Occn. Code 865

1. Tot. in A.G.	2,947	1,864	472	220	102	
2. No. in A.G. Ret.	56	100	108	112	81	
3. % (2) of (1)	2.24	5.36	22.85	50.95	79.50	
4. M.A.D.R./100,000	1,957	3,165	4,590	8,330	16,000	
5. Ratio D.R./All Males	176	134	99	112	107	
6. Ratio R.R./All Males	100	72	73	100	122	S.M.R. 163

Occupational Group 79 - Waiters
Occn. Code 866

1. Tot. in A.G.	2,902	1,803	552	300	193	
2. No. in A.G. Ret.	45	81	102	142	143	
3. % (2) of (1)	1.55	4.49	18.45	47.35	74.05	
4. M.A.D.R./100,000	1,413	3,087	5,200	9,670	18,830	
5. Ratio D.R./All Males	127	131	112	130	126	
6. Ratio R.R./All Males	69	73	59	93	114	S.M.R. 134

Occupational Group 80 - Hairdressers, etc.
Occn. Code 872.

1. Tot. in A.G.	7,867	5,364	1,306	640	461	
2. No. in A.G. Ret.	135	297	256	277	299	
3. % (2) of (1)	1.72	5.54	19.61	43.30	64.90	
4. M.A.D.R./100,000	1,411	2,722	5,743	9,271	16,780	
5. Ratio D.R./All Males	127	116	123	125	112	
6. Ratio R.R./All Males	77	75	63	85	100	S.M.R. 120

Occupational Group 81 - Draughtsmen, Costing Clerks, etc.
Occn. Code 882, 883

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	7,101	3,710	902	536	331	
2. No. in A.G. Ret.	111	342	340	310	238	
3. % (2) of (1)	1.56	9.22	37.70	57.85	71.95	
4. M.A.D.R./100,000	736	1,617	3,954	6,281	10,570	
5. Ratio D.R./All Males	67	69	85	84	71	
6. Ratio R.R./All Males	70	125	121	113	111	S.M.R. 65

Occupational Group 84 - Warehousemen and Storekeepers
Occn Code 890 & 891

1. Tot. in A.G.	27,970	22,450	6,182	3,321	2,286	
2. No. in A.G. Ret.	248	919	1,943	1,874	1,807	
3. % (2) of (1)	0.89	4.09	31.48	56.45	79.00	
4. M.A.D.R./100,000	1,046	2,428	4,934	8,682	17,381	
5. Ratio D.R./All Males	94	103	106	117	116	
6. Ratio R.R./All Males	40	55	101	110	122	S.M.R. 101

Occupational Group 85 - Stationary Engine Drivers not underground in mines
Occn. Code 901

1. Tot. in A.G.	15,690	11,488	3,347	2,067	1,509	
2. No. in A.G. Ret.	93	312	1,178	1,350	1,296	
3. % (2) of (1)	0.59	3.68	35.15	66.35	86.00	
4. M.A.D.R./100,000	1,047	2,252	4,980	9,273	18,110	
5. Ratio D.R./All Males	94	96	107	125	121	
6. Ratio R.R./All Males	26	50	112	128	132	S.M.R. 94

Occupational Group 86 - Boiler Firemen and Stokers
Occn. Code 903

1. Tot. in A.G.	12,767	8,731	2,139	1,214	662	
2. No. in A.G. Ret.	104	275	730	759	537	
3. % (2) of (1)	0.85	3.16	34.19	62.49	81.10	
4. M.A.D.R./100,000	963	2,195	4,613	8,951	17,770	
5. Ratio D.R./All Males	86	93	99	120	119	
6. Ratio R.R./All Males	38	43	109	122	125	S.M.R. 89

Occupational Group 87 - General Labourers and Labourers (so described)
Occn. Code 920, 930

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	143,238	120,289	36,097	20,831	14,117	
2. No. in A.G. Ret.	3,351	4,830	9,810	11,633	10,788	
3. % (2) of (1)	2.34	4.01	27.20	55.80	76.20	
4. M.A.D.R./100,000	1.450	2,893	6,273	10,596	23,064	
5. Ratio D.R./All Males	130	123	135	142	154	
6. Ratio R.R./All Males	104	54	87	109	117	S.M.R. 127

Occupational Group 88 - General Labourers, Labourers and other unskilled workers
Occn. Codes 920, 930 & 940.

	45-	55-	65-	70-	75+	
1. Tot. in A.G.	214,839	179,043	54,101	31,230	20,635	
2. No. in A.G. Ret.	4,220	6,981	15,874	17,751	15,928	
3. % (2) of (1)	1.96	3.89	29.25	56.80	77.10	
4. M.A.D.R./100,000	1,434	2,820	5,906	10,068	21,027	
5. Ratio D.R./All Males	129	120	127	135	140	
6. Ratio R.R./All Males	88	53	94	111	119	S.M.R. 125

ALL MALES IN OCCUPATIONS

	45-	55-	65-	70-	75+
Total in A.G.	2,302,873	1,765,509	577,970	376,480	318,397
Total Ret.	51,690	130,399	180,574	192,760	207,322
% in A.G. Ret.	2.24	7.40	31.25	51.10	65.00
M.A.D.R./100,000	1,114	2,355	4,654	7,441	14,986