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The Utilisation of, and the Attitudes of the Public
to, General Practitioner Services: a
Geographical Study in West Glamorgan

David R. Phillips, B.Sc. Econ.

Thesis submitted to the University
of Wales for the degree of
Philosophiae Doctor

July 1978

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Signed.....

Date *1st July 1978*...

Director of Studies

Date *1st July 1978*.....

SUMMARY

This thesis is a study of public attitudes to and utilisation of general practitioner medical services in West Glamorgan. A review was undertaken of geographical and social scientific approaches to the study of health service consumer behaviour and recent trends in the organisation of primary medical care were examined. These were identified as chiefly the centralisation of general practitioners into group practices with various administrative arrangements. An approach combining social geographic and social scientific methods was developed to investigate use of and attitudes to general practitioner services in the study area. An areal sampling framework based upon census data analysed by principal components analysis was employed to designate areas of known social composition with access to defined general practice facilities. In the empirical-behavioural section of the study, four pairs of survey sites were chosen and approximately fifty questionnaires conducted in each site. In three areas, high and low status sites were juxtaposed to examine the influences upon service utilisation behaviour of differences in social status and in the fourth area, two low status sites at different distances from surgery were chosen to examine the effects of accessibility. The effects of other factors identified during the literature review were also investigated, these being the age of respondents, personal mobility and previous residence. It was recognised that utilisation behaviour has spatial aspects, relating to which facility is used and behavioural aspects, relating to how frequently general practitioner services are used. Public attitudes to the distance and journey for medical care, to the recent developments in primary medical care and to the physician's 'affective behaviour' were also examined to determine levels of satisfaction with, and any differential class attitudes to, the service. Finally, certain implications of the research for planning of general practitioner services were developed.

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July, 1978.

CHAPTER ONE : APPROACHES TO THE STUDY OF
MEDICAL SERVICE UTILISATION

PART ONE: GEOGRAPHICAL APPROACHES TO THE
STUDY OF MEDICAL SUBJECTS

(1) The Purpose and Scope of Medical Geography

Medical Geography has been described as a 'borderline discipline', referring to the overlap between geographical approaches to the explanation of human health problems and medicine as a science (McGlashan, 1972).

Traditionally, it has been defined as a field of study "dealing with the geographic arrangement of diseases and with the factors relevant to the incidence and spread of diseases¹", but this appears to limit the range of the subject more than is currently accepted. Pyle (1976) points out that, over the past twenty five years, the scope of the spatial study of human health problems has been expanded from approaches bordering on geography and medicine to "several concurrent themes which overlap many disciplines". From a traditional concern with the distribution of diseases and associated factors, the subject has grown to encompass the spatial analysis of health behaviour and the planning and use of medical facilities. As geography itself has utilised many concepts in the natural and social sciences, so too has the spatial study of human health problems and within the following literature review, several natural scientific disciplines will be seen to be involved, as well as the more 'amorphous domain' of the social sciences.

The intention of this review is to examine various geographical approaches to the study of medical and health matters, progressing to a consideration of certain social scientific approaches in which health - service consumer behaviour has been highlighted. The following classification is not an excursion into taxonomy for its own sake but, through the vehicle of this literature review, it is hoped to place this current research project, which has as its focus the consumer in the health service, in perspective. The review cannot hope to be exhaustive, but it is an attempt to portray an overview of the current state of knowledge in this subject.

¹ Encyclopaedia Britannica 1968.V.10.

Within the social sciences, a number of disciplines and sub-disciplines have emerged, possibly the best defined of these being medical sociology, which has within itself a number of specific areas of study. Cox and Mead (1975) have labelled these areas the sociology of illness and illness behaviour; the sociology of the healing professions; the sociology of health service organisation and the sociology of doctor-patient relationships. These may be viewed as 'systematic' approaches which have been applied by medical sociologists to the study of certain groups or problems. For example, a gerontologist may concentrate on the ageing person and the doctor or on the elderly person's perception of illness. They are in many ways emerging specialities which have developed from general sociological areas of interest such as the study of client - professional relationships or the study of interpersonal relationships. Other social scientists have their interests in medical matters and social anthropologists, welfare economists such as Williams (1976, 1977) and social psychologists, have long concerned themselves with illness, illness behaviour and service organisation. Specialised social historians have developed interests in the history of medicine and public health and have some close relationships with the interests of early medical geographers.

Such a multi-disciplinary sphere of study leads a researcher who seeks current literature to a wide range of periodicals, for example, to those of social administration, which has a natural interest in health and welfare provision on a broad front. In the examination of the planning and location of facilities, in particular, explicit and implicit attention has been paid to spatial aspects of health care delivery, which has a considerable overlap with areas of economic and urban geography and regional planning policy (Massam, 1975).

Medical journals themselves provide a fund of information concerning

the use and organisation of health facilities, in particular the journals of the Royal College of General Practitioners and of the British Medical Association. There are also a number of international journals of health and welfare, especially those of a medical - sociological leaning, and the newcomer to the field is faced with an array of terminology for what would seem to be commonplace matters.

'Health care delivery' is a generic term used to describe the actual mechanism whereby medical attention is 'delivered' to the population. This is subdivided into 'primary' health care which means that level of care which is received from a 'primary physician', in Britain this being the family doctor or general practitioner (G.P.). 'Secondary' level care is that received within a hospital, further subdivided into in-patient care and outpatient care. For analytical purposes, emergency treatment at hospital casualty departments may be considered as a level between primary and secondary care, as a permanent attachment is not formed with the hospital concerned.

Early medical geographers were concerned largely with what Jacques May termed 'disease ecology' as he defined the concept in 1950. It was an early attempt to link process with patterns emerging, paying particular attention to natural environmental risk factors. 'Inorganic' risk factors (physical features of climate, precipitation and temperature) displayed aspects of traditional environmentalism, 'organic' environmental influences were deemed to be the cycle of interdependence between various plants and animals in so far as they influenced health and 'sociocultural' environmental features were included and implied associations between disease and behaviour in human cultures. The concept of linking these factors to disease patterns evolved gradually through to the 1960's as 'disease ecology' and May's influence is still strongly felt particularly within North American

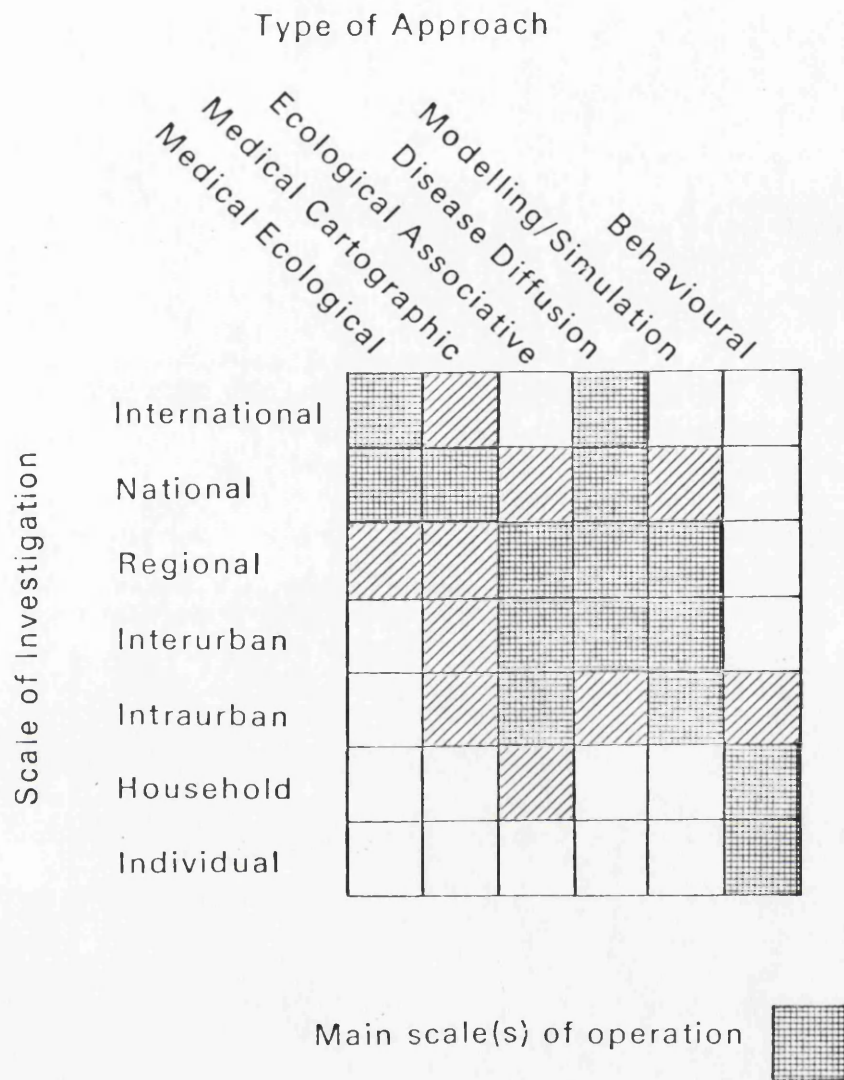
literature, although Pyle (1976) considers some aspects have evolved independently of May's original ideas and are more aligned with general trends within the discipline as a whole. In the same article, Pyle identifies five contrasting yet overlapping approaches to what he had earlier (1971) termed 'urban medical geography': environmental, genetic, epidemiological, behavioural and socioeconomic approaches are noted. Of these, he considers the environmental, epidemiological and genetic approaches to be more 'traditional' and aligned with the previously-quoted definition of medical geography. The explanation offered by such approaches is augmented by 'contemporary' approaches and all the approaches overlap and indicate the complex nature of the subject. Behavioural influences and what Pyle terms 'sociological explanations' are included as it is considered to be imperative that future medical geography includes all aspects of illness behaviour. In a more recent article, Pyle (1977) has introduced a volume of the journal "Social Science and Medicine" which concentrates solely on medical geography, albeit largely of the more traditional kind, which is to become a regular subject of the journal. In this introduction, Pyle also agrees that no single definition of the term 'medical geography' has stood the test of time and that conceptual trends have evolved over the past 25 years which are analogous to the evolution of the discipline of geography as a whole. The body of knowledge is essentially multidimensional and, drawing from a wide variety of natural and social scientific approaches, writers have utilised or developed diverse studies which fall under the heading of 'medical geography'. It is fair to say that a major theme in modern research in the field of health and welfare is the recognition that no single discipline or sub-approach within a discipline can justifiably claim to have total and exclusive explanatory power. However, a social geographer, adopting a social-scientific orientation to research, is probably

as well qualified as any academic to deal with some aspects of the subject matter, since social geographers have long been used to dealing with complex interrelations in other similar areas of study, such as the examination of crime and delinquency (Herbert, 1976). The general intention of this thesis is to present a synthesis of academic approaches to propose a method for the investigation of consumer use of and attitudes to, general practitioner medical services, at an intra-urban scale of analysis. The second part of the thesis proceeds to develop and test empirically the operation of this approach in the context of the British National Health Service, by means of a behavioural survey within one Area Health Authority.

(2) A Classification of Approaches within Medical Geography

For the purposes of this review, the literature will be discussed under a number of broad headings or approaches. The scale at which each approach operates is one possible means of ordering such a classification, since a number of the approaches operate specifically at one spatial scale. However, since many approaches overlap more than one spatial scale, as illustrated in Figure 1.1, the review was finally organised as in Figure 1.2 for presentation in the text. The first type of approach to be discussed is that of medical cartography which will be examined individually and in its relationships with ecological approaches, associative studies and diffusion studies. Attention will then be focused upon various studies which have employed modelling and simulation techniques. Finally, most relevant for this research, studies which have examined behaviour and service utilisation will be discussed and this will form the largest portion of the geographical literature reviewed. In this latter section, the evolution of behavioural studies in medical geography will be traced from other geographical consumer behaviour studies, notably those in the retail

Figure 1.1

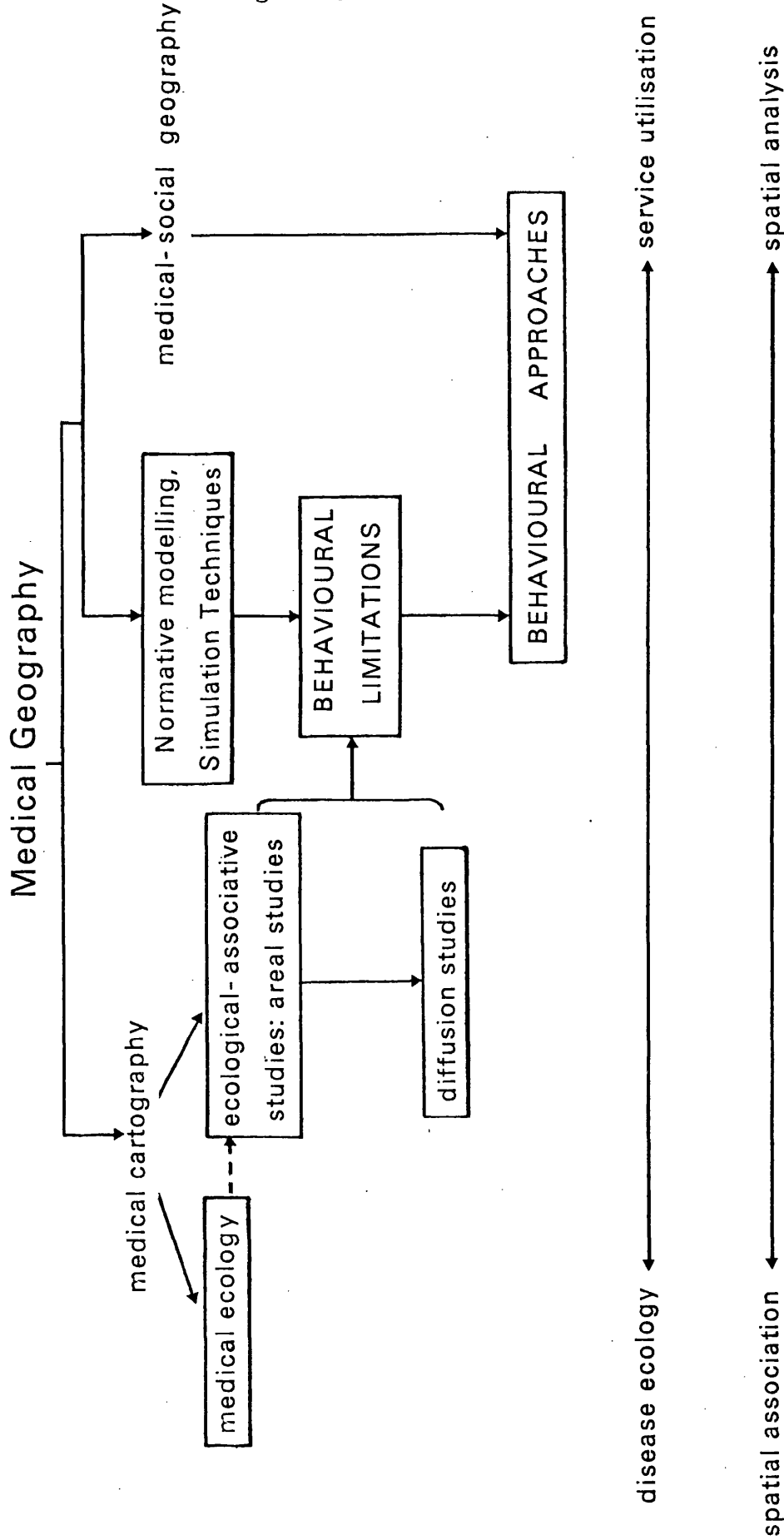


Approaches to medical geography in relation to scale

Source: Adapted from Pyle (1977)

Figure 1.2

Spatial Approaches to the Study of Medical Subjects



trade sector.

A natural division may be seen between the first approaches and 'health care' group of studies. The first approaches are concerned largely with the aetiology and distribution of diseases and their associated features, the 'ecological' approach. They are, in fact, analogous with the specialty of epidemiology in modern medicine, which has been represented as having three aims: to describe the distribution and size of disease problems in human populations; to identify aetiological factors in the pathogenesis of disease and to provide the data essential for the management, evaluation and planning of services for the prevention, control and treatment of disease (Alderson, 1976). The latter group of studies, the modelling and behavioural approaches, are different types of investigation, which have until now concerned themselves mainly with the spatial analysis of health behaviour and health service planning. As such, these groups of studies tend to ally themselves with the social scientific approaches to be described in the second part of this review. Learmonth (1978) has summarised the interdisciplinary links of the two branches of medical geography

"the medical ecology workers tend to have their interdisciplinary links with the biomedical sciences, the health care geographers with demographers and economists, and possibly sociologists and social ecologists, and tend to maintain strong links with current concerns in geography in general quantitative, theoretical and applied aspects"

(Learmonth, 1978, p.240)

There does, however, appear to be a complementary role for both branches of medical geography. This thesis deals more specifically with the behavioural aspects of use of health facilities.

In this manner, as a social perspective has been introduced upon urban geography to produce 'urban-social geography', so a social perspective upon these aspects of medical geography may lead to the scope of this thesis

being more appropriately entitled 'medical-social geography'.

Since the research will operate at the intra-urban scale, a brief comment on some current trends in urban geographical thought is of relevance. Herbert and Johnston (1978) consider a major strength of urban geography in general to be the breadth of its terms of reference, in that it is a very catholic field of study. It has as the core of its analysis a concern for the urban settlement but, increasingly, urban geographers are widening their 'intellectual brief' to encompass whatever approaches from within the social sciences advance the understanding of the phenomenon of, and of life within, the urban settlement. "From the outset, therefore, urban geography has an integrative and interdisciplinary role" and their general philosophy is that "geographical study of the urban environment is catholic in the themes which it follows, the stimuli which it reacts to from society and other disciplines, in the techniques which it employs and the ideologies within which it is shaped" (Herbert and Johnston, 1978, p.2). Recent trends in geography are said to have led to a persistent questioning of the ways in which geographical research should be relevant and for whom it should be relevant. The question arises as to whether geographers should be content to concentrate their efforts on the spatial outcomes of social problems or whether they could more profitably examine the societal structures and allocative systems which produce the problems in the first instance. Possibly nothing less than a revolutionary commitment will suffice (Harvey, 1973) and possibly, ameliorative or diagnostic research is counter-revolutionary in the absence of such a commitment (Herbert and Johnston, 1978). However, as these two authorities have pointed out, many geographers have not found it possible to adopt the personal beliefs in Marxist dogma which would accompany such an undertaking.

The present research has in fact adopted some of the more interdisciplinary stances which have accompanied the focus upon the larger scale of society, its value systems and arrangement of power and resources which has characterised the structural/radical school. However, its main purpose is to identify problem areas in empirical terms and to prescribe ameliorative action at the scale of urban locality, which may be seen as an attempt to enhance understanding for the ameliorative - evolutionary role in terms of problem solving. Harvey (1973) would certainly label such an approach 'status quo' or even 'counter-revolutionary', but in an area of such unfulfilled potential in urban geography, the more traditional approach of a behavioural perspective still undoubtedly has a significant contribution to offer.

(3) Medical Cartography, Medical Ecology and Ecological-Associative Studies

Historically in Britain, the term 'medical geography' has been used since at least 1892, when Dr. Alfred Haviland published his "Geographical Distribution of Diseases in Great Britain". Gilbert (1958) considers that medical geography was preceded in the early nineteenth century by a period of medical topography, which described the incidence of diseases. However, these writers did not include the mapping of disease distributions as part of their study until the great cholera outbreaks of the first half of last century, when the mapping of cholera as well as the mapping of population distribution was begun in England. Gilbert quotes the 'Golden Age' of geographic cartography as being between 1835 and 1855 - 'medical cartography' grew as part of this 'Golden Age', and now the illustration of the incidence of medical disorders by means of mapped distributions is a basis common to both the approaches of medical ecology and Pyle's 'associative studies'. Shannon and Dever (1974) after Doll (1959), have also referred to this approach, in so far as it maps morbid conditions,

as 'geographic pathology', which has in practice meant the construction of maps of disease distribution. In 1944, Light introduced the need for an "Atlas of Disease", to demonstrate the potential for linkages between geography and medicine

"The time seems ripe indeed for the two sciences of medicine and geography to join their resources in a coordinated program to study the influences of environment on disease, to the end that physician-scholars may pursue correctly and efficiently the geographical ramifications of their subject, aided by the profession and skill of professional geographers, especially in connection with that remarkable but highly technical medium of expression, cartography".

(Light, 1944, p.641)

To this end the Council of the American Geographical Society authorised a joint conference of medical authorities and representatives of the society to explore and define the possibilities of an 'Atlas of Diseases'. The utility of maps in locating illness and presenting a starting-place for the attack on illness was indeed appreciated long before this, being classically demonstrated in 1848 by Dr. John Snow (1813-58). As an example of a causal relationship within medical geography Snow's study is hard to better. Snow, a London anaesthetist, was largely responsible for demonstrating the water-borne origin of cholera, when he illustrated the causal link between cholera cases and a polluted water pump by plotting the 500 cholera deaths over a ten-day period on a large-scale map of Soho. Through visual analysis of the pattern of distribution of the residence of each victim, a cluster was observed around one pump, the removal of the handle from which resulted in the termination of new cholera cases. However, such "cause and effect" relationships have rarely been as spectacularly demonstrated outside the realm of purely infectious diseases but, with some justification, Snow's study is cited as "the classic study" in medical geography (Shannon and Dever, 1974, p.2).

A mapping approach has subsequently been developed by Sir Dudley

Stamp, who brought much attention to the problems of medical geography from a cartographic point of view (Stamp, 1964a and 1964b). Mapping the incidence of ailments has continued to the present, and remains an impressive method of displaying spatial variations in disease incidence locally, regionally and at a world-wide scale. Howe (1976) in "The Geography of Disease" highlights differences over a wide range of acute and chronic conditions illustrating by means of world-scale maps that although developing countries may suffer from immediately life-threatening and endemic conditions such as yellow fever, malaria, cholera and smallpox, the developed nations and some developing countries suffer from other types of disease, ailments possibly associated with stress, incorrect diets and other aspects of modern living: ischaemic heart disease, cancer, bronchitis and suicide. Prior to this work, Howe produced his "Atlas of Disease Mortality", as well as a book concerning man, environment and disease in the United Kingdom, (Howe, 1963, 1972). Considerable use was made in both these publications of detailed mapped distributions of various conditions, as well as their changing temporal incidences. The latter work (Howe, 1972) traces the historical medical geography of Britain through the ages, noting the health hazards of the human, physical and biological environments and the evolution of modern public health control. He presents as his definition "medical geography may be defined as the comparative study of the incidence of disease and the distribution of physiological traits in people belonging to different communities throughout the world and the correlation of these data with features of the environment" (Howe, 1972, p.19-20). He considers the subject is closely related to epidemiology, except that in medical geography the emphasis is on patterns of distribution and on the areal aspects of environmental relationships, which places his approach classically within the boundaries of these first

two identified, and often linked, approaches. More recently, Howe (1977) has edited a book which presents the patterns of distribution of a number of diseases of both known aetiology and of less-certain aetiology but in which the involvement of some environmental risk factors or stimuli are suspected. In his introduction to this book, Howe states that an aim is to present this volume as possibly a twentieth-century version of Hirsch's seminal work of the 1880's, his "Handbook of Geographical and Historical Pathology", at which time the aetiology of most conditions was poorly understood. Basically, Howe (1977, p.ix) states that "spatial relationships and inter-relationships of environmental and aetiological factors" have been adopted as his theme. The book is global in its approach and interdisciplinary in character, but in its presentation of a spatial overview of the ailments, this work falls into this first classification.

Conceptual differences have become apparent within the literature. Pyle (1976) has suggested that in part, these differences may be attributed to the increasing attention some geographers have been paying to the concepts of disease causation through cartographic examination, as opposed to May's increasing tendency towards viewing medical geography as a question of understanding the processes of medical ecology. Although the 'Golden Age' of the development of medical and geographical cartography may well have been during the mid-nineteenth century, contemporaneous with Snow's work, the map is still undoubtedly one of the main tools of geographical interpretation of phenomena today. This remains true even if, as Learmonth (1968) indicates, cartographic analysis is not, in itself, comprehensive enough to understand the geography of disease. Developments are still taking place within the sphere of mapping materia medica, for example, new techniques of mortality mapping have recently been discussed by McGlashan and Harrington (1976).

'Medical ecology', however, as developed by May from 1950 onwards became a question of understanding the process of disease ecology. Ecology itself is the science which treats organisms in relation to their environment and May's concept of disease ecology paid particular attention to natural environmental risk factors. 'Geogens' (tabulated in May's 1950 article)-geographical features such as altitude, temperature, wind, population density, housing, sanitation, diet, customs and income - were correlated with 'pathogens' (or causative conditions) for particular illnesses. The 'natural environmental risk factors' were subdivided into organic, inorganic and socio-cultural 'risk factors' and were applied to studies which were oriented towards specific diseases or conditions, especially in harsher areas of the world. This orientation is understandable when it is considered that May was a surgical professor in Hanoi and as such, constantly aware of the life-threatening circumstances confronting his patients. Medical ecology may therefore be seen as "the study of the web of relationships of a disease or a disease complex in its physical, biological and social environment" (Learmonth, 1978, p.15).

The link between medical cartography and medical ecology is intimate, each complements the other and their separation would in many ways be artificial and pedantic. From the earlier works of medical cartographers, thus a secondary development towards the study of disease ecology has become apparent. Both these approaches have continued and even a third related yet distinctive approach has become evident over the past ten to fifteen years. In 1966, McGlashan indicated that geographical principles of spatial analysis might shed light on the aetiology of certain diseases and this is a trend which has its counterparts throughout geography as part of what has become known as the 'quantitative revolution' in the subject as a whole. This has come about partly as a result of the

availability of better data sets (or the use of wider data bases by modern geographers) and partly due to the availability of computing machinery to perform multivariate analyses. The readiness of geographers to attempt relatively complex statistical procedures underlies this 'revolution', which has associations with earlier developments in other biological and social sciences. McGlashan considers this type of study in medical geography may best be termed 'associative'; but Johnston (1976) has indicated a fundamental distinction between various types of study and, although the terminology becomes somewhat confusing, he attempts to clarify the position by identifying two types of study dealing with aggregate data.

Concerning the analyses of social patterns in cities, two methods of study are identified (Johnston, 1976): one is termed the areal study method, the other, the 'ecological study' method. Investigations which relate the contents of social areas to behaviour of residents are termed areal studies. These studies are said to demonstrate spatial associations between two sets of variables, whilst not being able to test causal hypotheses. Therefore, their main utility is seen as a rapid indicator, which is descriptive, of the spatial distribution of social pathologies and other behaviours, so that their associations with other distribution patterns might be seen. 'Ecological studies' are proposed which may test causal hypotheses and discern the operation of certain 'structural' or 'neighbourhood' effects which occur when environmental influences (in a broad sense) are sufficient to override personal predispositions. It is possible that in this type of study, the danger inherent in relating the contents of social areas to the behaviour of residents and the 'ecological fallacy' (of inferring individual characteristics from aggregate data) might be avoided. For tests of causal hypotheses, such as mentioned by

Giggs (1975), the method of ecological study is proposed as offering the probability of greater returns than do areal studies, "within the constraints of aggregate, cross-sectional data upon which many academics and advisers to policy-makers alike must rely" (Johnston, 1976, p.122).

It may well be, however, that too explicit a distinction is being made. As mentioned, ecology itself is the science which treats organisms in relation to their environment and, as such, studies of an ecological type may always be subject to the risks of false inference and the 'ecological fallacy'. These two types of study are probably best seen as differing levels of sophistication within an ecological approach. Nevertheless, the medical-social geographer must remain aware of the basic distinction and remember that this controversy is still continuing and indeed, awaits satisfactory resolution.

A description has appeared in the literature which refers to studies which are of the ecological type and which is in reality a difference of terminology only. 'Associative studies' were indicated by McGlashan (1966) and further described by Pyle (1976) as being capable of increasing the understanding of disease aetiology by means of spatial analysis. However far this is agreed with, there is merit that even if ecological analyses cannot precisely account for associations between disease distributions or pathological disorders and other features of the urban environment, a basis may be established for research at a scale below the ecological. This is in the hope that detailed case studies (to obtain 'longitudinal data') might enlighten understanding of the processes at work. 'Associative studies' are generally characterised by an increasingly sophisticated statistical examination of patterns, which may have been demonstrated by simpler statistical or cartographic techniques in the first instance. The incidence of certain types of

conditions may be understood through an examination of the spatial diffusion process, which is in effect to employ a type of associative study with a temporal dimension and these will be mentioned at the end of this section.

Generally, studies of an associative type have become possible due to the availability of good data sets and the mechanisms for their analysis, using multivariate statistical procedures. They have evolved, as Pyle (1976) indicates, from concentration on environmental factors and man-environment relationships to incorporate understanding of the nature of urbanisation and industrialisation within a particular society and have thus expanded their horizons to include social and economic variables in their analyses. Pyle (1976) writes:

"It is critical to the future development of such studies that they consider a multidimensional approach; no singular kind of determinism seems to explain enough".

(Pyle, 1976, p.99)

There are a number of studies in medical geography which might be termed associative and McGlashan (1972) includes two of these in his volume. First, one study in Britain was made of the incidence of bronchitis symptoms, which had a strong positive association with damp overcrowded conditions, although a history of smoking amongst sufferers was of similar explanatory significance (Girt, 1972). The second study was by Dever (1972) in Buffalo, a study which suggested a positive association between overcrowding and Leukaemia rates, although the conclusions reached were again tentative and a detailed description of the research data base was not included. However, a better known ecological study (in Johnston's sense) which employed sophisticated statistical analysis is by Giggs (1973), examining the distribution of schizophrenics in Nottingham. This study is worthy of mention in some detail, in that a

respectable data-base was available and the progression from a simple spatial analysis to a more complex spatial analysis is illustrated.

Although a highly complex condition, schizophrenia diagnoses were collected and all first admissions from within Nottingham were identified for seven years from 1963-1969. Twelve variables concerning schizophrenia were identified, plotted and one kilometre rings around the city centre drawn on a map and the crude distributions obtained by a gradient analysis. Next, adjustments were made for population density and population 'at risk' in selected areal units, an average attack rate calculated for the city and a standardised Attack Ratio calculated for each enumeration district of the 1966 Census. These results were then plotted upon E.D. maps of the city, for total cases and for cases by sex. The simple spatial patterns revealed were fairly regular over most age groups and extreme variation was to be seen in the distribution of schizophrenics in Nottingham, which accorded with results from previous studies. Concentrations of schizophrenics were found in a few E.D's in the inner residential areas of the city, although with some noticeable secondary differences between male and female schizophrenic distributions.

This initial analysis became the basis for a complex spatial analysis of considerable statistical sophistication. Twentynine social-environmental variables were included in a factor analysis along with the twelve schizophrenia variables. These were grouped into five main sets, relating to population structure, socio-economic attributes, household tenure and household-housing characteristics plus one locational variable. This was considered to be a data set which would include a wide range of 'precipitating' or 'causal' factors, since previous research had involved the consideration of only a few such factors. Rotation techniques employed on the primary factor solution yielded what Giggs terms a schizophrenia variable "par excellence", and a concentration

of high schizophrenia rates was indicated, located in a single region in Central Nottingham. Lesser factors emerged as the familiar dimensions 'stage in life cycle', 'urbanism-familism', 'rented housing - housing amenities' and 'socio-economic'. The conclusions of this multivariate analysis appeared to support the views of those authorities who assert that "a congeries of powerful social and economic factors combine to form a milieu in which schizophrenia is likely to develop" (Giggs, 1973, p.70-71) and that "rates of schizophrenia are closely correlated with those for a whole set of unfavourable life circumstances, notably low social status, high unemployment and low social cohesion" - collectively assuming their greatest intensity in the inner, slum areas of the city - and that, as in other cities, there appeared to be in Nottingham "pathogenic areas which seem to destroy mental health".

Although a close correlation between schizophrenia and a large set of social and urban environmental factors was demonstrated, it has been felt by some that Giggs may have overstated his case, in view of the nature of his data. It is not possible to tell from this type of analysis of this sort of data whether the relationships displayed are a cause or an effect of the ailment investigated, as Gudgin has commented (Gudgin, 1975, and Giggs, a reply, 1975), reiterating Robinson's 1950 warnings of the fallacies of ecological inference. Giggs himself points out the need for 'longitudinal data' which would be especially useful, for example, in an investigation of the timing of occupational changes and the onset of schizophrenia. He clearly maintains that he was not attempting to differentiate between behavioural postulates, but confined his purpose to "the analysis of potential relationships between variations in the incidence of schizophrenia and attributes of the social-environmental milieu" (1973, p.60).

It is thus to be said that geographers may make significant contributions to policies with such aggregate studies, which may identify highly localised pathogenic areas as a basis for preventive policies. Provided that automatic assumptions are not made that process has been explained by such studies, their value is immense. Such a scale of research is almost an essential prerequisite for a behavioural investigation of similar phenomena, and even non-exploratory multivariate analyses of census data are valuable as bases for areal sampling, their utility having been demonstrated by Herbert (1976) in the study of crime and delinquency and by Raine (1976b) in investigation of middle-class neighbourhoods, as well as in this present research, in which a principal components analysis is used as a first stage in a sampling framework for the investigation of behavioural hypotheses at the individual level.

A final study to be mentioned of an ecological-associative type has recently been performed using data for emergency medical admissions to hospital of children in West Glamorgan (Thomas and Phillips, 1978), in which two distinct dimensions of disadvantage could be recognised. High hospital admission rates appeared to be associated with residence in areas with high concentrations of relatively low-status council housing, although such areas tend to have relatively good housing conditions, and a second type of area of sub-standard terraced housing was similarly distinguished. Although the findings reported in this study were tentative, the general approach is illustrated, which emphasises the clarification of relationships and which is a well-established methodology in urban-social geography and the social sciences. The fact that much of the research is still at an exploratory stage is due generally to a lack of data of adequate quality from which to develop definitive conclusions (although as already stated, data sources are

steadily improving) and the obscure aetiology of many social and medical conditions, especially those related to mental disorders and cancerous conditions, makes firm conclusions difficult to draw. It is still suggested that the spatial perspective of an ecological analysis may depict some useful descriptive relationships between incidences of health defects and the nature of the physical and social environment, which will be valuable to academics and health-policy makers alike.

It was previously stated that some geographers have examined the incidence of certain diseases and disorders by means of analysing the temporal diffusion of the condition. Such studies are often proposed as diffusion 'models' although they are basically of a descriptive 'areal' type, incorporating a temporal dimension. They have developed since associative studies research has in general been accomplished only at given points in time, sometimes not explaining process well enough. The statistical methods employed may suggest trends but it is a well-known occurrence in scientific research for trends to alter or even to reverse over time.

An interesting group of diffusion studies have developed. Most diffusion studies are based upon Hagerstrand's 1952 work on the propagation of innovation waves and these studies have been useful in noting the change and spread of conditions over time. Infectious diseases are particularly amenable to such study as Learmonth (1978) has described, using examples from both the developed and the underdeveloped world. The spread of infectious hepatitis, a virus infection which is one cause of jaundice, was used as an example. The condition appears to have an epidemic cycle of about five years in the developed world, possibly starting from endemic foci of immune carriers. Modern transportation might be expected to spread such conditions very quickly over areas of

the country, but actually the main epidemic moves rather slowly across the country, which is illustrated for New South Wales 1954 - 1958 (Learmonth, 1978, p.13). McGlashan (1977) has also investigated the spread of viral hepatitis, in Tasmania.

In the underdeveloped world, Hunter (1966) identifies river-blindness in Northern Ghana as being connected with the advances and retreats of settlement in riverine areas of possible infection and an explanation of cyclical advance and retreat is proposed. Howe (1976) has illustrated the diffusive spread of Cholera El Tor during the years 1961 to 1973, employing cartographic techniques.

Influenza and measles, both being highly infectious have also provided useful examples for diffusion modelling. For example, a regionally-based stochastic model for the diffusion of measles in a multi-region setting has been proposed by Murray and Cliff (1977) using data for this highly infectious condition, collected for a 222 week period. Haggett (1976) has considered the multiple-diffusion of measles within an industrial culture, proposing a hybrid model from seven alternative versions of an epidemic diffusion model. A broad epidemic wave of hepatitis has been simulated electronically by Chappell and Webber (1970), whilst Pyle (1969) has viewed historical epidemic cholera within the United States emerging urban structure, showing how waves of cholera diffusion changed over time as an urban hierarchy evolved.

In a highly-sophisticated study employing a number of approaches and techniques, Pyle (1971) indicated how the incidence of heart disease, cancer and stroke may spread slowly from central cities as suburban populations change over time, with associated changes in needs for caring facilities, which are proposed for Chicago in 1980. This study is interesting in its combination of both the study of disease incidence,

diffusion and predicted temporal change and the consideration of present and future facility location. Associative-ecological propositions are supported by statistical techniques and regression procedures were employed to build and test a 'locational efficiency model' of present and future treatment facilities for heart disease, cancer and stroke. This work was essentially building upon the earlier modelling of the Chicago Regional Hospital Study (Morrill and Kelley, 1970; Morrill and Earickson, 1969), which will be discussed in the following section.

Therefore, the development of these studies of disease diffusion is underlain by the knowledge that description of disease patterns is in itself not generally sufficient to gain a full understanding of the condition under consideration. This may thus be viewed as part of the concern within geography as a whole for the examination of process as well as of pattern.

(4) Modelling and Simulation Approaches in Medical Geography

A variety of modelling approaches have been adopted by geographers considering the problem of service location and accessibility of a served population, including the use of simulation techniques for mathematically investigating usage and possible future use of services. To Haggett and Chorley a model is "a simplified structuring of reality which presents supposedly simplified relationships in a generalised form" (in Chorley and Haggett, 1967, p.22) and models tend to be "highly subjective approximations, in that they do not include all associated observations and measurements, but as such they are valuable in obscuring incidental detail and allowing fundamental aspects of reality to appear". A catholic view of models is explicitly taken in their volume and a similar wide range of models has been employed in representing medical and

social aspects of disease distribution and facility location and utilisation.

Modelling and simulation approaches within medical geography may, in fact, be viewed as incorporating aspects of the cartographic and ecological types of study noted previously and aspects of utilisation-behaviour types of study yet to be discussed. As such, they may be considered to be something of a conceptual bridge between the two basic types of approach under consideration in this review. At the end of this section, the move away from what has been seen by some as an excess of quantification and model building will be discussed, but first, some of the modelling approaches adopted by medical geographers will be examined.

Many of the modelling studies developed through the work of the Chicago Regional Hospital Study inaugurated in 1965, and rely on the examination of the location, availability and use of health care facilities and the implications of these features for health care facility planning policy decisions. Wilson (1974) discusses utilisation of facilities in a regulated service situation, where utilisation decisions are partly made by the regulating authority through its regulations, hence to some extent modifying the spatial interaction process. The Chicago Regional Hospital Study itself has produced a series of papers concerning the locational and operational efficiency of facilities. It identifies not only the traditional allocation approach of allotting N hospital beds to a given population, but also utilises both patient variables (such as level and type of care needed, ability to pay, race and religion) and physician and hospital variables (such as physician and hospital location, and level and type of care), including aspects of patient travel-distance to facilities, economic, racial variables and

facility service areas. They have generally attempted to simulate the use and locational efficiency of facilities in the Chicago region and present useful examples of the interactance modelling and simulation approach development. Use is made of partial adaptations of the gravity model formulation, which is well known in the normative modelling of shopping behaviour in the inter-urban context (Reilly, 1931) and in the intra-urban context (Lakshmanan and Hansen, 1965).

Essentially, the Chicago hospitals studies have employed a partial adaptation of the gravity formulation. Morrill and Earickson (1968) reveal varying patterns of travel for different kinds of hospitals, illustrating behaviour by patients which conforms to the gravity-flow model assumptions. The larger, more specialised hospitals were heavily demanded and drew their patients from the widest areas and the rate of decline of demand was moderate to low (all trips were converted to frequencies per unit area or population), so thus the distance-decay expectations of the gravity model were largely fulfilled. Smaller hospitals in the hospital hierarchy experienced a faster rate of decline of frequencies per unit area and a lower extent of demand. These findings were the basis for further modelling of utilisation and locational efficiency of hospital service systems (Morrill and Earickson, 1969; Morrill and Kelley, 1970) and a modified gravity model was used for both descriptive and predictive purposes. The model was designed in two parts: first, for the trip to physician, secondly, for the trip to hospital and each of these two applications operated in 3 stages. First, patients were allocated by a gravity-type formulation from their given locations to given physicians and hospitals. This was used to represent the "desired pattern of use" and might have resulted in excess demands upon some physician or hospital locations and deficit demand in others. So,

using an iterative allocation procedure, the second stage reallocated patients from overdemanded to underdemanded locations until a balance was achieved. The third stage involved a relocation of physician or hospital capacity to overdemanded locations until demand and supply were again in reasonable balance at all locations. Comparison of these solutions then revealed how much more travel and by whom, would be entailed than would be the case if the distribution of services reflected patient demand more closely. This provided useful information for planning and evaluation of the system. The model was amenable to adaptation to vary religious, financial and racial constraints and new services or residential areas could be added to test their effect on the operation of the system.

However, the use of gravity models has not escaped criticism because, like central place theory, a theory of aggregate consumer behaviour is proposed without a sound basis in behavioural investigation. Morrill and Earickson (1969) have found the model "frustrating" because although they consider it does a 'rather brilliant' job of reproducing the structure of flows, they are not confident of what goals people have pursued and consequently feel insecure in using results for evaluative purposes. A set of prospective patients viewing the opportunities around them cannot be expected to think alike: some may consider a closest opportunity 'best', while others may view a farther one better because it is larger or somehow 'superior'. Jensen-Butler (1972) has reviewed theoretical problems, operational problems and problems of calibration and prediction associated with the use of gravity models. Additional detailed investigation of the behavioural dynamics of trips is required before the model can be judged as providing a comprehensive explanation of behaviour (Thomas, 1976). With regard to analysis of the use of medical services, Morrill and

Earickson (1969, p.273-4) state that more evidence is needed to validate their results, such as interviews with patients concerning their perception and behaviour and their consideration of the quality and viability of institutions, and disaggregation of facilities according to speciality is required. Thus, the use of these models in the past has been subject to such debate. Wilson (1974) has, in fact, suggested additional approaches for inclusion of various behavioural assumptions in the spatial interaction process, but these alternatives are still at an exploratory state at the intra-urban scale (Thomas, 1976).

Massam (1975), considering location and space in social administration, deals with the study of administrative structures and the use of location-allocation models in the public sector, including the question of differential access to services. The evolution of service districts and interaction within and between administrative districts is discussed and this volume indicates one type of inter-disciplinary research currently being undertaken. It stresses the need for methods of evaluation of alternative structures and systems, using aggregate approaches and, with its heavy reliance on modelling procedures, belongs in this section of the review. A similar social-administrative and geographical modelling view is taken in examining changing location of physicians, by Schultz (1971) in Seattle, while Sumner (1971) in Britain, adopts a more empirical approach to trends in location of primary care.

The use of spatial interaction formulations is, however, not the only application of modelling techniques in medical geography or in other studies of the use and access to services. Moyes (1977) delivered a paper to the I.B.G. proposing a simulation of surgery trips to general practitioners on Anglesey to investigate the proposition that some of the time which doctors spend visiting patients at home may be time which could be

more productively used in seeing more patients in fixed surgeries and the implications of this for local public transport policies are indicated. Again, the caveat is sounded that prediction of behaviour in such circumstances is heavily dependent on a knowledge of individual circumstances, such as car-ownership, personal mobility and the incidence of lift-giving.

Earickson (1970) has conducted what is sub-titled a 'behavioural' study of the development of the medical care system in North American context. However, his approach might more appropriately be categorised as a case-study modelling investigation, since he employs a gravity flow formulation. What is of interest in his study is the analogy he draws between patterns of shopping facility location and patterns of medical care facility location, since in the fee-for-service basis of the situation in the United States, market considerations of profit maximisation and patient ability to pay have strongly influenced the structure of the resulting system. As the medical profession is bound by codes of conduct which prohibit advertising, a good location for a physician is in a shopping centre visited by his potential patients because in the United States, in general a person is not bound to the 'list' of any single doctor as is the case in the United Kingdom. Earickson found that as a result, 83 per cent of Chicago's physicians were located in commercial centres and also more highly specialised physicians tended to locate in higher hierarchical-status centres. Similarly, this initiates a process of locational change over time which is closely analogous to commercial blight in the sphere of retailing. De Vise (1971) illustrated the drastic decline in numbers of physicians in certain Chicago suburbs 1950-1970, associated with their transition from middle-class white to low status negro communities and a related imbalance of numbers of physicians favouring the middle and high status suburbs.

Again in the North American context, a complex three-dimensional model has been constructed by Bashshur and Shannon to visually represent the spatial distribution of health care facilities in Cleveland. This model demonstrated that physician offices showed the greatest tendency to cluster together, dentists the second greatest and pharmacies were the least clustered primary health care facility. A second, apparently somewhat unexpected, result was that when racial distributions were plotted by means of this 3-D model, the peak distributions of non-whites in Cleveland were found to be quite near peak clusterings of physicians (especially specialists). A major black enclave was literally across the street from the highest peaks of physician concentration (Shannon and Dever, 1974; Bashshur, Shannon and Metzner, 1970). This is related to Earickson's findings that physicians tend to locate in higher-status commercial centres according to their degree of specialisation and blacks in the North American system often live very close to the CBD in ghetto situations in the zone-in-transition. Thus, this result should not have been entirely unexpected and it illustrates that geographical or spatial propinquity is not necessarily synonymous with social and economic ease of accessibility in a market situation or where religious, racial or financial barriers operate. This study employing a complex 3-D model used first a simpler spatial analysis (a standard deviation ellipse) to summarise the distribution of physicians, dentists and pharmacies, although it is noted that the standard deviation ellipse is more appropriate as a statistical tool than a graphic tool, since the actual extent of a spatial distribution is not shown, but rather a summary of it. This study therefore exemplifies the combination of statistical, cartographic and normative modelling devices in its analysis.

Within this modelling section, it is appropriate to note that certain geographers have applied statistical description as well as statistical modelling to the study of service location and this might be sub-titled the 'spatial statistics' approach. Massam (1975), mentioned earlier, provides a very useful overview of such techniques which include the use of standard deviation ellipses as in the previous study and spatial efficiency measures of compactness - dispersion (Massam and Goodchild, 1977; Massam, 1975). Also included is the concept of the Moment of Inertia, a measure of spatial efficiency of the location of an administrative of service centre with respect to the distribution of consumers in the administrative area. The 'centre of gravity' of distributions may also be calculated and its location compared with regard to other points; a converse of this allows a point of minimum aggregate travel to be calculated which minimises the linear distance to all points. Massam (1975) indicates the utility of such approaches employing spatial statistics for geographers examining problems such as choosing locations for service provisions and this is related to the location-allocation problem. However, he also states that spatial statistic techniques which describe the shape and spatial efficiency of service districts can only be used as a starting-point in such analyses, although these techniques hold considerable attraction for geographers who might wish to determine whether there has been a relative increase or decrease in accessibility over time to a served population.

Finally in this section, geographers who have been examining the optimal distribution of 'goods' (in a broad sense) amongst a population will be discussed. Recently, Smith (1974, 1975, 1976, 1977), has considered this optimal distribution is being achieved when a Social Welfare Function (SWF) is maximised. The Social Welfare Function is a

concept introduced to geography from welfare economics, and it is a means of accommodating community preferences. Smith (1977) presents a definition of a social welfare function from welfare economics as

"an ordinal index of society's welfare and (it) is a function of the utility of all individuals. It is not unique, and its form depends upon the value judgment of the persons for whom it is a desirable welfare function. In certain cases it may be impossible to decide upon an acceptable form for the social welfare function by common consensus; it may then have to be imposed in a dictatorial fashion. Whatever the case may be, its form depends on the value judgments of its promulgators".

(Smith, 1977, p.49)

'Welfare' is seen as having a number of different meanings, which embrace the state of society and also the policy instruments designed to alter that state. Welfare is sometimes held to be subject to spatial variations and "the general welfare" is sometimes said to be improved by certain social changes and possibly by a more even territorial distribution of 'welfare'. Thus, 'welfare' is a somewhat nebulous term, which needs to be clarified. Modern welfare economics - "the only field of inquiry in which a rigorous attempt is made to provide a basis for judging the desirability of alternative states of society" (Smith, 1975, p.33) adopt the Concise Oxford Dictionary definition of 'welfare' as "satisfactory state, health and prosperity, well-being". The level of welfare is not amenable to cardinal measurement, but might be assigned to an ordinal scale at best: better or worse alternative economic solutions might be ranked by certain criteria. The best of the alternatives would be that which maximises welfare. Much, however, rests on the value judgment of the individual or society concerned and it is an attempt to introduce some precision into what is involved in welfare that the SWF has been used: the SWF simply states what welfare is dependent on (Smith, 1975). Unfortunately, an attempt to quantify the SWF can never be value-free as to be precise requires a definite value

position which would enable the relative importance of the various individuals (or groups), the goods being distributed and the territories, to be expressed in actual weights in the SWF, and who should get what where? This brief introduction to a rather 'indefinite' measure (as the SWF has been termed by Prentice, 1976), is to indicate the direction certain geographers in this field have taken. In a cautionary note on the SWF, Prentice sees it as, at best, only an attempt to present profiles of the very complex process of authoritative allocation; a descriptive but not explanatory measure, as individual values are not included in the process. Instead, Prentice suggests that the experiences and aspirations of participants and recipients in the process of authoritative allocation and the structures that contain them, as well as the outputs of the process, are the items which should be under examination. Thus, in preference to a rather vague, difficult-to-quantify measure appears this sentiment, which is yet another recognition that actual behavioural considerations have to be incorporated into research in the sphere of consumer activities, be it in the sphere of retail trading or in the use of personal social services.

In conclusion to this section on modelling and simulation techniques, they may be thought of as valuable contributions to the body of knowledge in this field of research especially as indicators of what factors to consider in future studies. However, all propose basically aggregate theories or explanations of behaviour and do not investigate behavioural variations. The present research~~er~~ found the modelling studies to be of great value as a background against which to begin such behavioural investigation at an individual level.

The next group of studies to be examined, those adopting a behavioural approach in human geography, might therefore be seen in this light. They may not be as much a reaction against excessive quantification and

model-building but rather a recognition of the limitations associated with the use of normative techniques and of modelling aggregates. The shift towards a behavioural emphasis could be related to the shift towards phenomenology over a range of subjects. Phenomenology essentially stresses the individual, the subjective and the concept of imagery, with perceptual aspects central. The behavioural emphases have grown from this area of research, which is now, possibly, itself a sub-approach of lesser importance than other behavioural approaches. Guelke (1978, p.53) states ... "the phenomenological movement in geography can be seen as a reaction against spatial analysis ... the phenomenologists object to the level of abstraction of models and theories" ... and their underlying objective becomes to view human behaviour in terms of actual experience. 'Positivism' was the notion annexed in the 'new' geography of the 1950's and 1960's ... "which was being carried along on the wave of quantification and a belief in the value of model building and a more scientific methodology" (Herbert and Johnston, 1978, p.9). The three main strands of the positivist viewpoint are the idea of consensus in society, determinism of personal or environmental forces and scientific method. Phenomenology and the behavioural emphasis have provided one reaction against positivism, whilst some geographers have called for a conflict rather than a consensus view of society (Eyles, 1974). It is to a consideration of studies adopting a variety of 'behavioural' approaches that this review now turns.

(5) Behavioural Approaches in Medical and Service Geography

In a recent review of sociospatial differentiation and the use of services, Thomas (1976, p.40-41) points out that "the limitations associated with the aggregate behavioural assumptions of the normative models

strongly indicated the need for further research into both the nature of and motivations behind consumer behaviour". This recognition has led to research concentrating upon the micro-scale of the individual as the unit of investigation which has become known as the 'behavioural approach' in social geography. Most work has been conducted in the area of retail consumer behaviour, but considerable use may be made of postulates developed in this sphere by geographers whose interests lie in utilisation of other services and, as Thomas suggests, the extensive literature on the geography of retailing could, in the future, form the basis for a common research methodology for a range of urban services.

Three behavioural approaches have been identified. The theoretical behavioural approach is an attempt to develop a theory of consumer behaviour which includes factors suggested by Huff (1960), discussed below, which in scope may be seen as being somewhat analagous to the normative models. The empirical behavioural approach concentrates upon the clarification of effects such as residential location and social stratification (disaggregated individual characteristics), whilst the cognitive behavioural approach investigates the more perceptual aspects of consumer decision-making. Thomas (1976) discusses these various classes in detail in his review and in this literature overview it appears appropriate only to extract selected examples of each type of approach and to indicate factors which have been considered relevant to the study of differential utilisation of retailing services. Whilst doing this, it is hoped to indicate those variables whose inclusion would seem essential for this present behaviourally-oriented research on consumer utilisation and attitudes in medical care services.

Huff's suggestion that behaviour in the consumer decision-making process was the result of three compound factors, each with a partially

objective, partially perceptual facet, underlies much behavioural research (Huff, 1960). He conceptualised the consumer decision-making process with reference to these 3 factors, the first of which comprised the effects of geographical location and social differentiation, the second, the nature of the available service facilities and the third, the influence of personal mobility factors. These 3 basic factors will be used in the research design of this project but require mention at this stage. The balance in which these three factors lie may vary between services - for example, in the use of personal social services, such as the general practitioner, it is possible that the 'nature' of the service offered may outweigh considerations of geographical proximity or transportation features.

In this context, it is interesting to see Zola (1963, 1971, 1975), a medical sociologist, indicating that in their research field, attention is seldom paid to how specific individuals or groups make a decision to use a certain service and the need for a new research strategy is recognised. This is required to provide theoretical insights to enable some definition of the influential interviewing mechanisms operating between crude socio-demographic variables and specific behaviour. It is in this respect that it may be suggested that an attitudinal approach to the study of levels of satisfaction and utilisation behaviour might prove to be valuable.

(i) The Theoretical Behavioural Approach

Rushton, Gollidge and Clark (1967) in rural Iowa, demonstrated the limitations of the nearest-centre hypothesis of central place theory and attempted to develop alternative postulates from behavioural data, concepts which were subsequently applied in the intra-urban situation by Clark and Rushton (1970). An aim was to find rules for spatial choice

which "when applied to any unique distribution of spatial opportunities are capable of generating spatial patterns similar to those observed" (Rushton, 1969, p.391). This is an acknowledgement that behavioural generalisations from survey data are generally descriptions of the particular situation being examined rather than theoretical explanatory postulates capable of extrapolation beyond the scope of a unique situation. Indifference surfaces have been used to overcome this problem, but their predictive capability has not been very high (Clark and Rushton, 1970). Thomas (1976) suggests that this is because the indifference curve represents a description of the average response of the sample population and unless a substantial majority of the population responded in precisely the same way to similar shopping opportunities, the indifference surface was unlikely to be much more than a very general approximate prediction of behaviour no better than the nearest centre. As a necessary next step, this methodology will have to be at least disaggregated with respect to the social characteristics of the population which are known to be associated with behavioural variations. Commonly, as with spatial interaction theory, this approach has not yet solved the problem of explanation. The 'intermediate entities' in the decision-making process which lie between the trade-off between increased size and increased distance are still not soundly appreciated and thus the use of this approach still tends to be descriptive rather than producing comprehensive statements of consumer behaviour. Subsequent developments have concentrated on refining the method of deriving indifference curve preference structures, rather than resolving the methodological problems, but still promise interesting results provided these methodological problems can be resolved.

(ii) Empirical Behavioural Studies

Three types of study can be recognised (Thomas, 1976, p.45): the first deals with the functioning of service centres, the second focuses on the aggregate responses of consumers to existing facilities and the third investigates specific factors influencing behaviour. The first obtains information by interviewing shoppers within centres, while the latter two obtain information from sample households drawn from residential areas and a similar research technique is employed in this current research. Although it is not proposed in this review to quote extensively from any of these studies, it is relevant to note which variables have been identified as important in influencing consumer behaviour and have therefore necessarily been included in this research.

Davies (1973 p.42) supported the modified behavioural postulates of central place theory rather than those suggested by spatial interaction theory: "consumers shop either within their immediate surroundings or alternatively go to the nearest large centre to them". Shopping diaries were used in this survey, and information obtained indicated the continued importance of a strong residential location effect upon behaviour, particularly for convenience goods. Thus the effect of residential differentiation is noted in his study and also exploratory evidence is presented indicating that variations in socioeconomic characteristics of the shoppers resulted in considerable differences from aggregate responses. Lower social classes tended to shop more frequently, as did younger age groups and the largest households. The higher status groups tended to travel further to higher order centres and the least mobile were the youngest and oldest. Overall, this study "suggested that for a comprehensive understanding of intra-urban shopping behaviour, considerable attention should be paid to the spatial variations in socioeconomic

characteristics of the residential areas" (Thomas, 1976, p.48) and it is reasonable to expect that similar differences could exist for the utilisation of medical facilities.

A major difficulty in the past has been to explain emerging variations in behaviour which might be related to variations in socio-economic-demographic characteristics, to variations in service opportunities or to some combination of both. It has therefore not usually been possible to isolate the independent effect of specific factors as determinants of behaviour, but tentative descriptions have been the norm. Thus, to overcome this problem, a category of empirical behavioural studies has been developed in the British literature, using a research design whereby survey areas are designated which have access to similar facilities and differ only with respect to the factors being investigated, as far as this is possible. This is the research design which has basically been adopted in the current research project, and it will be described in detail at a later stage.

Davies (1969) investigated effects of income differences on shopping behaviour in Leeds and evidence from a survey in Greater Swansea (Thomas, 1974) supported his findings. In the Swansea survey, six survey sites were chosen which each comprised two spatially juxtaposed but socially different residential areas and thus there was a reasonably similar shopping environment available to each site. Significant differences in patterns of shopping behaviour were seen between low and high status consumers for grocery shopping, the low status groups tending to depend more on local facilities, a fact directly related to a lesser dependence on car-borne trips than the high status groups.

This was not apparent in all cases, however, nor for all ranges of goods. As in the Leeds study, the influence of the C.B.D. tended to

overcome variations in social class and car ownership for clothing and furniture shopping. Thomas also disaggregates the status groups into car-owning and non-car-owning, to attempt to assess the influence of personal mobility on behavioural variations noted and, therefore, personal mobility is another variable identified in surveys which may require inclusion in the investigation of the utilisation of other services.

Finally, the role of age in shopping behaviour was similarly discussed, although Thomas found some slight significance and Davies concluded no significant behavioural variations could be related to age structure. However, there is considerable scope for investigation of this factor, especially with regard to medical service utilisation and also the important age-related feature of stage-in-life cycle of individuals under investigation. Thomas suggests that the most significant contribution of the empirical behavioural approach has been to demonstrate the importance of the influence of socio-economic status, personal mobility and possibly, age-structure, upon the spatial behaviour of consumers, all of which are features of considerable relevance to this research.

A medical geographer who has adopted an empirical behavioural approach to the question of the effects of distance to medical practice and revealed ill-health is Girt (1973). In this study, 1400 individuals aged 20 or more living in seven rural Newfoundland settlements were interviewed to determine their attitudes towards certain aspects of the medical care process. Their distances to physicians were known and in the sample settlements, each individual used only one specific cottage hospital for his general medical consultations. In fact there was found to be no real choice available of physicians or route, as in each case only one road connected the individual's home settlement with the hospital. Responses

to stimulus statements were used to assess general attitudes to illness and, secondly, the "propensity to consult" of individuals in each settlement was measured by proposing hypothetical illnesses and asking how long the respondent would wait before seeing a doctor about each of them. Analysis of responses implied that distance had both a positive and a negative effect on consulting behaviour. Individuals were likely to become more sensitive to the development of disease the farther they lived from a physician, but those at a distance may be more discouraged about actually consulting than a person living nearby because of the additional effort involved. Girt considered that the probability of consulting at least once for a disease increased with increasing distance from a hospital until at some point it would begin to decline, although this exact point varied with individuals and with differing ailments. It was concluded that the impact of distance upon consulting behaviour is appreciable and the different distances involved in consultation breakpoints for differing conditions have considerable implications for location of treatment facilities. However, just how far findings from this sort of study may be extrapolated beyond the sphere of hypothetical illness behaviour in a rural environment is debatable, since in the intra-urban situation, not only is care nearer at hand, but domiciliary visiting in the British system may tend to reduce the actual incidence of surgery attendances for more serious symptoms. This is an example of how attitudes might require disaggregation with regard to specific conditions, but it may be suggested that the study would have been improved had respondents been disaggregated according to age or socio-economic status, as previously described. Nevertheless, this study is of considerable importance since, as with Pyle's (1971) study, possible future locations of facilities may be suggested by analysing predictable future patterns of demand for health care.

(iii) The Cognitive Behavioural Approach

Much of the work in this approach depends upon Isard's (1956) concept of individual space preferences and of the individual's perceptions of the alternatives available to him. Huff included this assumption in his 1960 formulation of the consumer decision-making process, in which he argued that an understanding of the perceptual basis of decision-making was essential to an understanding of consumer shopping behaviour. This forms the central theme of the cognitive behavioural approach but, as Thomas (1976) has indicated, substantive work has been slow to materialise. The cognitive behavioural approach is still at an exploratory stage in many ways, although certain authors such as Downs (1970) have contributed to aspects of it with the investigation of the manner in which consumers perceive the attractions of a specific shopping centre. In the sphere of medical service utilisation, this author has not found any geographical study which would fit exclusively under this heading, although certain of the studies already mentioned have implicit perceptual and cognitive elements in them. This approach has been included not only for the sake of completeness in this review, but to suggest that such aspects will necessarily be included in the present research. As will be described in the conclusion to this chapter, a significant portion of utilisation behaviour was expected to be explained in terms of personal interaction with physician and patients, whereby utilisation behaviour might be determined not solely by locational convenience but by personal preference for a certain physician's approach.

In summary, this contemporary movement from normative modelling to behavioural approaches and modes of study might in part be seen as a reaction against some of the over-deterministic aspects of quantification and use of models based on the rational 'economic man' premise (Herbert

and Johnston, 1978). It might, however, be more accurately related to a recognition of the limitations and problems associated with aggregate modelling and the lack of explanation of such approaches. As mentioned earlier, behavioural emphases can be related to the shift towards phenomenology over a range of subjects within the social sciences. In essence, phenomenology as developed in psychology (Lee, 1976) and in other social sciences, emphasises the individual, the subjective and the concept of imagery. Within human geography, the emergence of a behavioural emphasis has implied a move away from the use of aggregate statistics and the assumptions of economic man, towards the study of the individual as the initial unit of investigation, with analysis of perceived images and experiences upon which behaviour is based. This view is taken as a central theme in the current research, in the examination of service utilisation and attitudes to services, firmly rooted in individual's experience of their everyday world.

Herbert and Johnston (1978) have examined these changes which are occurring in modern geography, including the reactions against positivism and excessive zeal in model building, both of which appealed to geographers of the 1950's and early 1960's who wished to create a more scientific methodological basis for their discipline. As Haggett (1975) has suggested, it is probable that most geographers involved in this debate would now wish to adopt compromise positions, although lively academic debate is bound to be beneficial to the development of any discipline.

PART TWO: SOCIAL SCIENTIFIC APPROACHES TO THE STUDY
OF MEDICAL SERVICE UTILISATION

(1) Introduction and Classification of Approaches by Scale

The preceding section of this chapter has discussed the divisions identifiable within medical geography, tracing the evolution of studies of consumer behaviour, although these have largely been set in the context of retailing. The classifications presented need not be thought of as being mutually exclusive, but between, for example, ecological study approaches and areal study approaches will be some 'grey areas', embodying aspects of both, which confound the classification. Within the social sciences other than geography a similar situation was found during the compilation of this review, aggravated in some cases by a less rigorous use of terminology than geographers are used to dealing with. Nevertheless, from the numerous disciplines which have interests in medical care delivery and medical service utilisation, ranging from medical sociology and social medicine to social administration, a number of approaches to the study of medical care utilisation have been defined. To maintain this review within reasonable bounds, it has been confined to those approaches which have considered consumer behaviour, consumer attitudes and levels of satisfaction in service utilisation, which are those aspects most relevant to this thesis.

A review of service utilisation studies and the problems associated with the study of service utilisation was undertaken by McKinlay in 1972, in which he identifies six main approaches to the problem. These were labelled the economic, the socio-demographic, the geographical, the socio-psychological, the socio-cultural and the organisational or 'delivery system' approaches. This paper served as a useful starting point for this present literature review, although only certain aspects of his approaches were found to be relevant. This review is therefore a current version

of the McKinlay type of overview, but it is considerably re-ordered and has been expanded to include a number of additional approaches which the author has identified. The scale of investigation at which each approach operates has been adopted as an ordering reference framework, to produce a progression from those approaches employing aggregate, macro-level study to those which consider individual attributes and individual variables typical of the micro-scale study. In addition, the nature of the delivery system itself has been examined within one type of approach and, finally, an approach has been identified which has attempted to produce conceptual models which subsume the key variables included in the other approaches. In conclusion of this chapter, certain aspects of these various approaches are presented in a synthesis in association with geographical approaches to indicate the form which it is proposed this research project will take.

A number of shortcomings which McKinlay (1972) noticed in his review regarding the nature and scope of the studies included were also found by the present author, as well as a number of additional shortcomings which have recently become evident. A major problem was that discussions concerning empirical findings often lend more substance to the findings than the original results warrant. This is in part a reflection of the fact that reports of utilisation behaviour have usually been made only as subsidiary observations of main studies and have rarely been conducted for their own sake. Secondly, results to date have failed to be consistent with each other in either their direction or their strength, as will be evident when the debate regarding differential availability and utilisation of medical services is discussed shortly. Such discrepancies in conclusions have been contributed to by factors such as varying methodologies, extrapolation of results from one medical care system to another

and vagaries of interpretation of evidence. Geographical factors are often of considerable importance in service utilisation, but are rarely explicitly identified and seldom, if ever, has their influence been systematically analysed.

Thirdly, in the social sciences, a sound theoretical basis has yet to materialise in the general area of utilisation behaviour, which contrasts with the situation in geography where studies of consumer behaviour have certain theoretical underpinnings for reference to and for building upon. Finally and related to the second point, evidence has sometimes been drawn inappropriately; for example, aggregate national statistics have been quoted in support of local-scale investigation of specific services. All these features have constituted a considerable obstacle in compiling this review as, indeed, they reduce the value of work which has already been done in this area by certain social scientists. The comparability in social research which Margaret Stacey was advocating in 1969 is unfortunately still not well developed in this research area.

The following classification may be seen to follow a logical progression from the approach in which studies have considered geographical availability of services and the effects of this on the use of these services, moving then to approaches which have studied utilisation behaviour at varying scales of examination. It will be apparent throughout this report of studies that geographical features are consistently undervalued by the social scientists investigating utilisation behaviour and attitudes. The classification is a considerable revision of McKinlay's work and the present research hopes to add a strong geographical dimension to the investigation of this subject. The classification of research approaches may also be recognised as being in some way a listing of those variables which have been considered influential in

affecting utilisation behaviour, whilst in some modelling studies introduced later, attempts have been made to subsume features of the earlier approaches. The utilisation approaches are subdivided into those which investigate more macro-features of the population (the 'socio-structural' approaches, which deal with social, demographic, economic and cultural factors) and those which investigate more micro-features of respondents involved in 'social interaction' with members of their family and friends and with the providers of medical services.

McKinlay's 1972 paper is, in fact, a lone attempt to produce some order out of the vast array of medical sociological and other social science literature. This current review has, hopefully, produced a somewhat more logical ordering of approaches as well as providing a reformulated discussion of the literature as an academic research exercise in itself and as a background to the latter parts of the thesis. The approaches identified are as follows:

Social Science Approaches to the study of the consumer in the Health Service (Figure 1.3)

(A) Availability Studies

The 'geographic' approach.

(B) Utilisation Studies

1. the 'socio-structural' approaches: Macro-scale

- (i) the socio-demographic approach
- (ii) the economic approach
- (iii) the socio-cultural approach

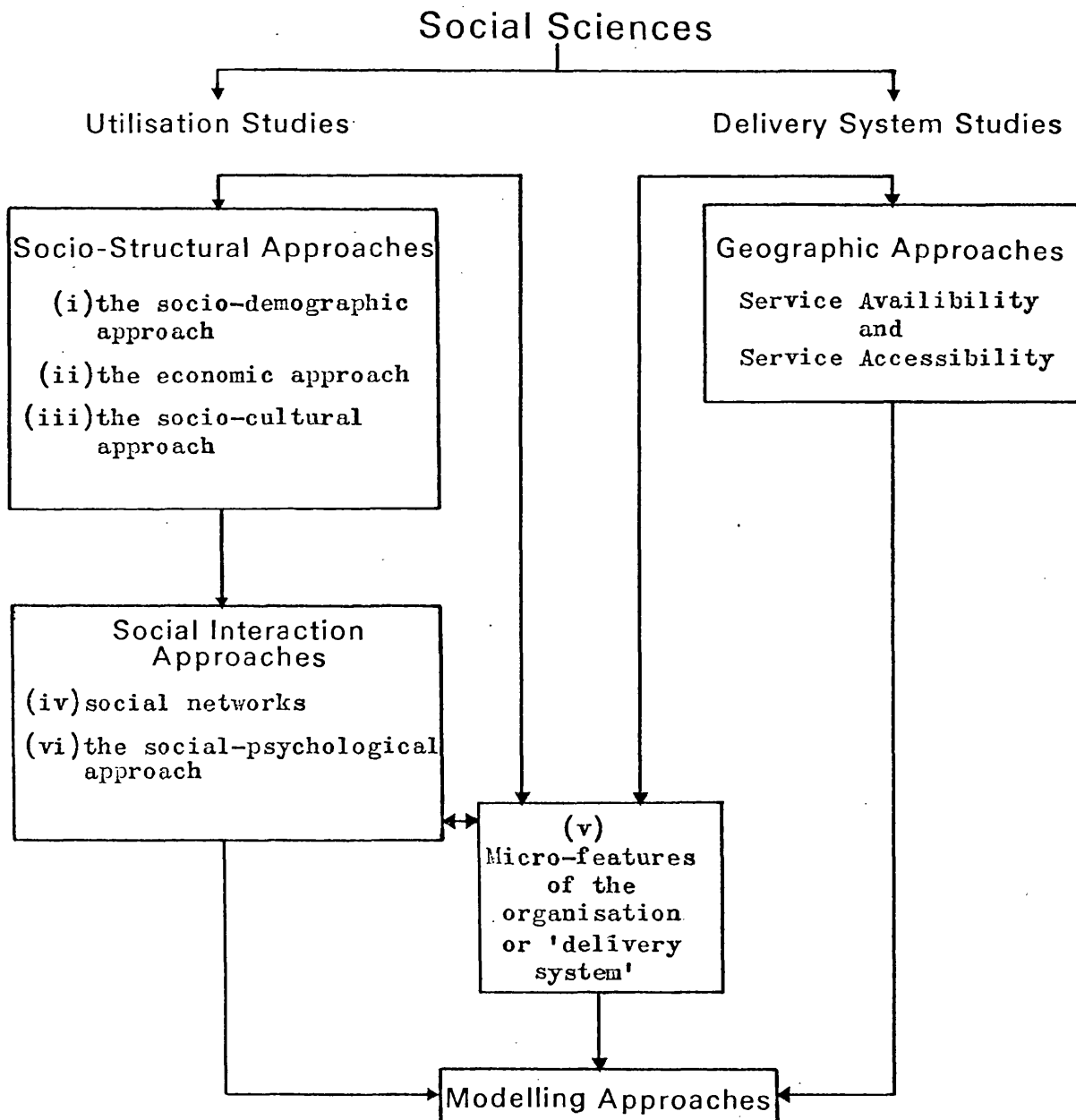
2. 'social interaction' approaches: Micro-scale

- (iv) social networks
- (v) the organisational or 'delivery system' approach
- (vi) the social-psychological approach

(C) Modelling Approaches

Figure 1.3

Social Science Approaches to the Study of Health Care Delivery and Utilisation



(2) Differential Availability and Utilisation of Services

Before the approaches identified above are discussed in detail, a group of studies will be described which exist in the social-scientific literature and around which a basic confusion has arisen regarding research methodology and research objectives. This group of studies consider, in essence, aspects of differential accessibility to and differential utilisation of, medical facilities by spatially or socially distinct sub-groups of the population. They cannot be conveniently classified into the above list of approaches since a lack of clear definition of the scale of analysis adopted within this group of studies is part of the confusion.

This 'debate' has revolved around a consideration of the effects which differing social status and differing accessibility to or availability of medical services have upon the utilisation of medical services by individuals or groups. It originates from, or was most specifically formulated in, an article by Titmuss (1968), which concluded that higher income groups make better use of medical services, receive more specialist attention, occupy more beds in better hospitals and generally receive more and better care than do lower income groups, particularly the unskilled. This conclusion was immediately challenged by Rein (1969), who was writing initially for an American audience. He went to great lengths to argue that the N.H.S. is an equitable service and that the British lower classes make as much if not greater use of physician and hospital medical services than do higher social classes and that the quality of care secured by them is of as good a quality as that secured by other social classes.

The data base to which Titmuss referred was not very convincing, however, as it related to a number of specialist or limited services (such

as the take-up of vitamins amongst middle-class mothers, varying demands for sight tests or spectacles between rural and commercial areas and social class death rates from diabetes after the introduction of insulin). The time-period from which this data was chosen also lessens its relevance, since it referred to time-periods of the very early years of the N.H.S. or even of the pre-N.H.S. era. His arguments were persuasive but an initial confusion on three counts begins to become apparent. First, a confusion is evident between the discussion of the availability of services, which is a systematic or structural feature, and the utilisation of services, which is behavioural. Secondly, data is inappropriately used, as behavioural examples are used to draw conclusions concerning structure and examples concerning service type and availability are used to draw behavioural conclusions. Thirdly, a confusion in scale of analysis becomes apparent. National death rates for social classes are discussed in juxtaposition with regional and sub-regional data for industrial and rural areas, or selected age-groups or single geographical areas are used to support general conclusions.

This threefold confusion of structure with behaviour, use of inappropriate data and combination of scales is not confined to Titmuss's 1968 paper. Rein (1969) was highly selective of examples chosen to support his conclusions and his paper was a review of previous reports with no new fieldwork. Consultation rates from a 1952 survey of sickness were used, as well as mortality rates by social class and mental hospital admission rates. These data were often inappropriately drawn and what he considered to be structural results (caused by an equitable system) could have equally been caused by behavioural variations in utilisation and attitudes of various social groups.

A more convincing case for an unequal service is made by

Alderson (1970) when seven specialist and G.P. services, including dentistry and preventive medicine, were studied. The juxtaposition of data on measures of needs and of usage brings out a case for inequality of service, with relative underusage of facilities by Social Classes IV and V, associated with an increased need for prevention or care. Alderson recognised that his conclusions relate only to the services studied, but the inclusion of dentistry and preventive services may rather over-emphasise any class-differentials, since differing class-attitudes to these two particular aspects of medicine are known to be quite strongly developed (Dickson, 1968).

The debate occasionally studies availability of services more specifically. A very useful concept has been proposed by Tudor Hart (1975), a general practitioner, who has suggested that an "inverse care law" operates, whereby the availability of good medical care tends to vary inversely with the need for it in the population served. Noyce, Snaith and Trickey (1974) demonstrate the existence of regional patterns of expenditure on community health and regional imbalances in physician supply have been officially recognised in Britain with the existence of 'designated areas'. Under this scheme, doctors who agree to work in certain 'designated areas' receive cash-aid incentives, whilst some areas are recognised as being over-supplied with doctors and are 'closed' to the establishment of new practices (Butler and Knight, 1974).

The 'inverse care law' may operate at a local scale as well as a regional scale and at this level, the current confusion in terminology and application of examples rather obscures the emergence of a clear picture. The question of whether lower social classes use their medical facilities more or less than higher social classes has not yet been resolved satisfactorily and this can only be done by a study which operates

firmly at a specified scale investigating specific services. The local scale at which areas of known social composition may be compared with each other is probably the scale most likely to yield meaningful results. At this scale it may prove possible to distinguish whether differential use-rates exist and, if they do, to determine whether they are caused by differing needs (in terms of ill-health), differing class-attitudes to care and health, or by differing availability or accessibility of care facilities.

Recently, Forster (1976) has attempted to study differential needs and considers that when need is considered (via morbidity rates) then the advantage of higher consultation rates by lower social classes, shown in the General Household Survey, is eliminated or even reversed. This is a useful study but again, one operating at a scale rather removed from the more local or regional level at which health policy is implemented. However, as Cartwright and O'Brien (1976) state, morbidity may not only reflect the need for care but may be a result of a lack of care and therefore the use of national data on this topic may not be useful in making behavioural predictions.

A review article by Stacey (1977) considers that only recently has it become evident that "disquieting inequalities" face persons of lower social class in the availability and use of health care facilities. She concludes that, on balance, the evidence presented so far in this debate suggests that the working class, in particular the unskilled, is systematically disadvantaged in terms of first, their life chances for good health and secondly, the treatment they receive when they are ill. It is a rather emotive argument and one that does not adequately distinguish in an objective, scientific manner, the various aspects which have been confused to date. "The working class get less and of less good quality" (Stacey, 1977, p.902). As will be discussed later in this chapter, it

has been considered that, concerning professional diagnoses and treatment, there are deep-seated class differences which disadvantage working class people. They receive less time from the physician and less fullsome treatment, a poorer 'affective behaviour' being displayed towards them, which is more fully examined later (Ben Sira, 1976).

Stacey (1977) continues to suggest that new health centres possibly do a disservice to lower class people by being more removed and alien from their homes than are present clinics and surgeries and that what is needed is what Brotherston (1976) calls "outreach" rather than "self-help" services. Clinics should be where they are needed - in the back streets, with services carried to the home by sympathetic health visitors. In this part of the argument, it appears that attitudinal-behavioural aspects of the service are being compared with more aggregate-type data and with structural features. This occurs throughout a recent volume "Equalities and Inequalities in Health" (Carter and Peel, 1976), although useful review articles of social class variations in health care are provided in it by Cartwright and O'Brien (1976) and Blaxter (1976).

On balance, it might be said that it is unfortunate that many of these studies mentioned fail to distinguish between the situations of differential regional availability, local availability and social class utilisation of services. They have often explicitly recognised that something is wrong in the way in which data and arguments have been presented and conclusions drawn, but the resulting conflicts in findings and loss of comparability between studies have never, to this author's knowledge, been attributed directly to the three main areas of confusion reported in this research. Therefore, throughout the compilation of this review, these three areas of confusion have been borne in mind in an attempt to clarify the picture. In summary, these were found to be

- (i) a confusion between availability of services (systematic-structural) and utilisation of services, which is behavioural
- (ii) a use of inappropriate data to examine these two aspects
- (iii) a confusion of scale of investigation - both geographically (local and national) and in terms of populations investigated (individuals, aggregates and national groups)

A final example may be cited which illustrates the rather imprecise use of terminology in this research subject, which has in the past reduced the value of certain social science studies. A recent paper entitled "Access and Efficiency in Medical Care: A consideration of accident and emergency services" (Gunawardena and Lee, 1977) stresses the central role of accident and emergency services, which it sees as similar to G.P. services as a 'cornerstone' of the N.H.S. However, in such an encouragingly-entitled article, no reference was found to geographical accessibility at any scale and the paper concerned itself instead with seeking workable definitions of accidents and emergencies and with attempting to place accident and emergency services in the primary care model. These are valid objectives in themselves but this paper, which appears at first sight to be a contribution to this debate concerning differential service availability and utilisation, ignores crucial aspects of geographic and social accessibility and confines itself to rather sterile semantic debate.

(3)

(A) Service Availability Studies - The 'geographic' approach

Within the social sciences, certain studies have investigated the availability of and proximity to medical services in a more (implicitly or explicitly) geographical manner than have been undertaken by studies

previously referred to. These are the studies which McKinlay (1972) includes in his 'geographical approach' and he considers this approach to encompass any study which has considered the influence of proximity of services to their utilisation. He is of the opinion that geographical considerations are not the only, nor the most important, determinants of utilisation. However, this concept is espoused in the United States and the United Kingdom in the form of "neighbourhood health centre policy" (McKinlay and McKinlay, 1972; Ryan, 1968; Sumner, 1971) without a sound basis, he claims. In his review he does not mention geographers who have investigated service utilisation behaviour, and rather glosses over the possible effects of service proximity and availability on utilisation, to the mind of a geographer dealing with such a topic. Stacey (1977) has challenged concepts of "health centres" on grounds that they may be 'alien' to the population who most need to be served, rather than mentioning a reduced accessibility as a possible objection. McKinlay (1972) sees the 'geographic approach' developing towards the answering of questions concerning ideas of whether a 'local community' actually exists and whether the provision of local health facilities would be able to induce clients, who have become habituated to a fragmented care system, to use those facilities differently? Are questions of confidentiality raised when local persons help run local facilities? and thus he envisages a broader 'social' base developing within a geographical approach. Although his ideas concerning geographical contributions typically oversimplify the potential use of a social-geographical approach (such as Raine, 1976, adopted on the subject of urban neighbourhoods) it is encouraging to see that the role of geographers is recognised by sociologists and other disciplines even if in a tentative manner.

A number of other examples of non-specialist geographers writing

in a geographical sense were found during the compilation of this review. Hopkins and others (1968), in the Journal of the Royal College of General Practitioners, conducted a study in their Liverpool general practice to determine whether the distant patient was a greater burden on the family doctor in that he may tend to send for the doctor rather than attend surgery. In a work-study analysis, using cartographic techniques, a basically spatial examination was carried out of frequent utilisers and those who frequently requested home visits. An unexpected result of their study was that patients living more than two miles away actually requested a home visit less frequently. This was explained by the practice of retaining on their list only selected patients outside a two-mile radius - a policy which may show the rather authoritarian manner in which the consumer in the system might be treated if he moves away.

At least two other studies which deal implicitly with geographical matters were noted in the medical literature. One study investigated the use of transport in a rural practice (Sowerby, 1969) which relates to the Moyes (1977) geographical approach regarding transport availability and possible service utilisation. Secondly, another study on dispersion of patients in urban general practice (Vaughan, 1967) considered general practices and the patients who used them, related to health-visitor districts. From these and other studies, it is evident that an implicit recognition is being paid to spatial distributions, especially by providers of services and had trained geographers been involved, more refined results may have emerged. A pleasing increase in cooperation may be beginning in the area of actual service delivery 'on the ground', which might ultimately be to the advantage of all concerned with this problem.

(B) Utilisation Studies

1. 'Socio -structural' Approaches

Of those approaches which consider utilisation of medical services as a main objective, some have examined the effects of certain population characteristics of a macro-type, such as demographic, economic and cultural factors. The substance of these studies is usually inherently sociological, since major consideration is given to social differentiation amongst study populations. Three approaches are identifiable under this scale of analysis:

(i) The Socio-Demographic Approach

Age, education, sex, religion, ethnicity and socio-economic status have all been identified as factors directly influencing utilisation behaviour by studies within the social sciences. This accords with observations made earlier within empirical-behavioural geographical studies, which have disaggregated individuals with regard to age, sex and socio-economic status. Within the social sciences, however, studies which have revealed variations in behaviour have rarely been able to identify causality, a result often related to the research designs adopted, which have not on the whole been able to distinguish between the effects of individual variables. It has already been suggested that geographers have a contribution to make in this respect with a research methodology which should at least help towards isolating effects of single variables, insofar as other factors have been maintained constant. McBroom (1970) has indicated that the much-quoted inverse relationship between socio-economic status and indicators of illness may be in fact largely due to methodological idiosyncracies in studies. In a study of three regions in the United States, he concluded that there is little or no evidence to show that lower-status persons tend to over-react or

over-report symptomatology, although this may be a trend in persons of higher socio-economic status. From this observation, it may be inferred that if differing utilisation rates are found, then this is a reflection of either differing needs (more or less ill-health) or differing attitudes to the service in question.

Cartwright (1967) included a number of socio-demographic factors in her study of patients and their doctors in general practice, in what is in many ways a classical earlier study using aspects of this approach.

(ii) The Economic Approach to the Study of Service Utilisation

This is the second of the approaches which consider structural characteristics of the population under investigation. This approach is also of the 'aggregate' type, a macro-level of study being generally adopted to differentiate between use of services by economically-distinct sub-groups. Many of the studies which would be included in this section were discussed earlier in their implicit examination of differing economic status of varying population groups (Titmuss, 1968; Rein, 1969; Alderson, 1970).

The North American literature concerning medical service utilisation is replete with examples of 'financial barriers' to receipt of care. This has been recognised by medical geographers as one of possibly three barriers, identified as racial, religious and financial barriers (Earickson, 1970), but within the United Kingdom it is probable that the value of this approach to explanation of utilisation behaviour is more limited, because a stated aim at the inception of the National Health Service was to remove the receipt of care from financial considerations and the service was to be 'free at the time of use'. However, as indicated previously, there are still numerous reports of inequalities of health care over a range of indicators to be seen in the literature and reports

persist of different utilisation by various sub-groups of the population. A present theme in the literature is the suggestion that, although the 'working-class' may use health services more, if their needs are examined, they actually appear to use them less than higher status groups (Cartwright and O'Brien, 1976; Forster, 1976). Stacey (1977) largely concurs with this opinion, considering the main division to be between the use made by Social Class V (unskilled) and the other social classes, although the break-point may be moving up the social scale. This is in reality one aspect of the earlier-mentioned debate centring on differential availability and utilisation. Probably the main point of agreement within the United Kingdom studies is that economic considerations per se - since the NHS avowedly removes purely financial barriers to utilisation - are not the only or the most important factors determining utilisation behaviour. Class attitudes to health, diseases and physicians may be as important as monetary considerations in the U.K., since in today's circumstances, lower social class workers may actually earn as much if not more than workers of higher social class. Thus, other approaches must be considered which have included investigation of other features of groups and individuals, rather than income on its own, which move from aggregate studies to those dealing with individual behaviour and preferences, such as the social-psychological group of studies to be examined later.

(iii) The Socio-Cultural Approach

This approach has been explained as being based on the notion entertained in Great Britain and the United States that 'middle-classness' is a goal worth striving for. The universality of this goal, however, has been increasingly questioned, since Goldthorpe (1969) found Luton car-workers (the 'affluent workers') did not necessarily alter their

style of life or their aspirations with financial advancement. Nevertheless, there is substantial evidence to show that various sub-groups of the population do have different utilisation behaviour and possibly differing attitudes to medical services and the examination of such differences may be called the 'socio-cultural' approach, which is yet another more normative approach within the social science literature.

Certain studies of utilisation behaviour have concentrated upon single socio-economic sub-groups or 'classes' in society, for example, on lower working-class (Social Class V) behaviour (McKinlay, 1970; Roach, 1967), or on cultural sub-group behaviour (Zola, 1966; Zborowski, 1952), in which sub-cultural variations in response to both physical and mental symptoms have been examined. Varying attitudes to pain were noted between, for example, Italian, Jewish and 'Old American' patients. Suchman (1964, 1966) has indicated a relationship between health behaviour and membership of a cosmopolitan as opposed to a parochial group. The former were more likely to display a more scientific health orientation whilst members of the parochial group were more likely to adhere to popular or 'non-scientific' health beliefs. Suchman's model, however (see later also), omitted an important factor, namely the provider of the service - the practitioner (Coe and Wessen, 1965). It has been found that differential assessments of physician value and performance exist between social groups (Kisch and Reeder, 1969) and between individuals (Ben Sira, 1976).

The latter study proposes a revised model of social interaction concerning the relationships between client and professional and will be returned to during the next sub-section, since it operates at a more micro-level.

McKinlay (1972) has included within this type of approach the study

of social networks and their influence upon utilisation behaviour. It appears rather more appropriate to include these considerations in the following sub-section, which has been broadly entitled 'social interaction' approaches, as family and kinship networks operate at a more micro-level, closer to the individual.

2. 'Social Interaction' Approaches

This sub-section includes those approaches in which studies have moved away from more macro-scale examination towards those which have worked at a more micro-scale, in accordance with the progression previously proposed. Studies in this section move to consider effects such as those an individual's friends and family may have upon utilisation behaviour and the effects which the form of presentation of the medical service may have upon individuals (or certain sub-groups). At this level, the approaches lie somewhere between the macro-and micro-scales, the latter scale being finally reached when social-psychological attributes of individuals are included in an examination of utilisation behaviour.

(iv) Social Networks

Within this section, mention will be made of the growing interest shown in the influence of family and friends upon utilisation and social behaviour, health behaviour and attitudes to services in general. This is a sociologically complex area of study and as a result, seldom have total family patterns of behaviour been considered in relation to utilisation behaviour. Specific studies of selected aspects of behaviour have been performed - for example, the use of social networks by pregnant mothers (McKinlay, 1973) and by post myocardial-infarction patients (Finlayson, 1976) but these tend to raise a large number of questions as to the possible role of the family and associated kinship and

friendship networks in the utilisation of health and welfare services and their possible supportive roles at specific times. Booth and Babchuk (1972) consider interpersonal networks are crucial to decision-making and as such form valuable 'new resources' for the use of health care facilities, especially amongst, for example, older persons who may consult family and friends before, or even in preference to, consulting a physician. Freidson (1970) envisages the whole process of seeking help as involving a network of potential consultants, from the intimate and informal confines of the nuclear family, through more select and authoritative layman until the professional is reached. This concept has become formalised in the medical sociological literature as the 'lay referral system' and in this circumstance, the geographical location and proximity of kin and friends may be crucial, as an individual may be more or less isolated from them.

Various geographers have also included the analysis of social networks in their research (Raine 1976a and 1976b, in a study of local friendship patterns) and this analysis has been undertaken in dealing with problems of a geographical, as well as a social, nature (Packham 1973). The concept of 'social network analysis' is comprehensively described by Mitchell (1969) and Boissevain and Mitchell (1973). It basically refers to the possibility of viewing the social relationships of each individual as a network, which may be represented by points, connected by lines. The points represent persons and the joining lines, social relationships. First-order relationships indicate persons with whom the primary individual is connected and second-order networks represent indirect contacts or 'friends of friends'.

Mitchell sees the 'social network' as a possible conceptual bridge between micro-sociologists, who have operated at a highly specific, individual level, and the macro-sociologists, who have presented more

generalised studies of aggregate group behaviour. Alternatively, it might be stated that the 'social network concept provides common ground between behavioural interactionists, who are interested in discussing individuals and their interpersonal relationships (as examined in the next approach) and normative structuralists, who take a broader view of relationships and structures existing between social groups and within society as a whole. In certain ways, this is analagous to the distinction between normative and behavioural emphases in social geography which were discussed in the first half of this review. Social network analysis, in its view of an individual's links with his family, friends, acquaintances and indirect contacts, presents a valuable means of bridging what otherwise tends to become a dichotomy of study - approaches. The normative-behaviouralist/macro-micro scale division is therefore recognisable within the social sciences as a whole and as McKinlay (1972) points out and as is indicated within this review, much of the work in the field of utilisation behaviour has tended to become polarised in this manner.

It is a possible research objective, albeit one more appropriate to a sociologist than a social geographer, for this field of interpersonal relationships and social networks to be examined in a systematic manner. Unfortunately, this highly complex research area may rarely adequately be covered by one researcher, or, if it is, consideration of other factors influencing utilisation behaviour may have to be omitted. When a better understanding of the operation of social networks has been gained in other areas of social research, social network analysis may well prove to be a fruitful tool of investigation for medical sociologists.

(v) The Organisational or 'Delivery-System' Approach

Continuing the progression in scale to the meso-level between

macro and micro-scales of investigation, an approach may be identified which examines the system of health care delivery and the features of the system which might affect its use and affect attitudes to it by either sub-groups within the population or individuals. An approach has therefore developed which focuses upon the organisational features of the service under consideration which may affect its utilisation by the persons or groups for which it is intended to cater and this might be entitled the organisational or 'delivery system' approach within the social sciences. Alternatively, it may be thought of as an approach which examines these features of a client-centred bureaucracy which affect the consumer of the service it provides.

It has been observed that, almost inevitably, bureaucratic factors will cause officials to develop a particular approach or attitude towards clients or types of client. Indeed, in order to maintain itself, a 'client-centred bureaucracy' (such as is any personal social service) may neglect those in greatest need and for whose benefit it was primarily established (e.g. Sjoberg, 1966; Levin and Taube, 1970).

Three sub-approaches to an investigation of 'organisational impediments' to the receipt of care have been identified (Walsh and Elling, 1968). The first of these accounts for differential utilisation behaviour by explaining the differences in social status between those persons providing the service and those receiving it, in particular emphasising that the middle-class dispensers of services have their own status-specific norms, values and beliefs and cannot fully understand, or be sensitive to, the problems and perspectives of lower working-class recipients (Sjoberg, 1966). There is still abundant evidence that the 'doctor' (itself a Social Class I profession) is recruited largely from Social Classes I and II (Tudor Hart, 1975; Royal Commission on Medical

Education, 1968; Bridgstock, 1976). For example, Social Class I (2.8% of the population) contributed 34.5% of final year medical students in 1961 and 39.6% of first year medical students in 1966, whereas Social Class 3 (49.9% of the population) contributed 27.9% of final year students in 1961 and 21.7% of first-year students in 1966. This has implications not only for the problems of providers understanding the needs of consumers, but also for the propensity of doctors to establish practices and live in less desirable parts of the country.

In addition to this, lower working class clientèle are said to perceive and verbalise their problems differently to middle-class organisers in the health and social services (McKinlay, 1968; Boyle, 1975) and as a result of these two features, lower working-class clients in particular receive differential treatment (e.g. Levin and Taube, 1970) which is not appropriate to, or is even alien to, their needs and expectations (Stacey, 1977).

The second sub-approach focuses on the way specific bureaucratic regulations come to be enforced by employees, thus limiting services to particular clients. This is especially relevant when significantly more negative attitudes towards the poor or the lower working class than to other clients have been found on the part of members of 'highly striving' occupational groups in certain organisations (Walsh and Elling, 1968). In this sub-approach definite suggestions are thus made that some clients may be treated as 'second-class citizens'. The third sub-approach concentrates on those characteristics of lower socio-economic groups which make the provision of effective health care facilities for them difficult in practical terms. The effects of old age in this respect have also been recognised (Gould, 1976). This sub-approach contains some aspects of the socio-cultural approach in that the inability or unwillingness

of certain sub-groups to carry out instructions or to 'conform' may result in the service received by them becoming of an inferior quality. This idea is embodied in the debate referred to previously, when Cartwright and O'Brien (1976) and Stacey (1977) consider that the working class receive less fullsome treatment, especially if their needs are considered.

Thus, there are a number of emerging trends apparent in the explanation of utilisation behaviour by reference to the nature of the delivery system and to the nature of the client-centred bureaucracy. This approach has an appeal for researchers in social administration and related fields and in a hierarchical, bureaucratic system such as the N.H.S., in which 'middle-class' providers control the service, the concepts of this approach need to be borne in mind. During the current research, the effects which certain organisational or 'administrative' factors have upon the attitudes to the service held by various sub-groups is to be investigated.

The investigation of the relationship between patient and practitioner is of growing interest to medical sociologists (Stimson and Webb, 1975; Comaroff, 1976; Ben Sira, 1976) and as McKinlay indicates, since there appears to be an increasing bureaucratisation and erosion of predominantly individualistic services, so the whole question of the relationship between officials and clients becomes of considerable importance in the study of utilisation behaviour. In the present research the nature of the professionals 'affective behaviour' and the efficiency with which various sub-groups could deal with a consultation was considered to be of importance in determining personal attitudes to and levels of satisfaction with the service as a whole.

Finally, some observations regarding the nature of a 'personal

social service' which differentiate it from other forms of organisation have been made (Zald, 1965). First, the 'client' does not usually buy the service, and thus the normal market operations will not be in force. Secondly, the status of the client is often different in that they tend to appear to the service agency as supplicants, without full rights or means and they are not regarded as being a full partner but rather a pawn in a situation. Thirdly, numerous breakdowns in communication seem to characterise the health and welfare client - official interaction, resulting from features of the clients and professionals relationships mentioned earlier and also in the next section. This has persuaded Haug and Sussman (1969) to refer to a 'revolt of the client' which in Britain is reflected in the establishment of organisations such as the Patients Association and Community Health Councils and the office of Ombudsman. Increasingly, professional autonomy and control of delivery systems has been questioned and challenged, on the grounds that the expertise of practitioners is inadequate and their claims to altruistic principles, unfounded. The actual organisations which they support are thought to be inefficient and insufficient and official domination over health and welfare exceeds the bounds of its jurisdiction (Freidson, 1970; Bucher and Stelling, 1969). McKinlay (1972) considers such a revolt is, however, more what seems likely to happen than what is actually happening. Stacey (1974) considers that when the low rate of success of consumer complaints about medical care is examined, the professional fear of being 'reported' is disproportionately great.

At this stage, it may be mentioned that the present research falls partially into this 'consumer attitude' approach. The effect of the administrative features in the delivery system upon consumer use and attitudes is one variable which will be considered and, although it is

not a major aim, a need is recognised that consumer opinion in a personal social service should be accurately gauged, by properly constituted public surveys, which will hopefully be a contribution of this thesis. The articulation of the voice of the consumer, not yet successfully achieved by Community Health Councils (which will later be described as 'opinion-sounding' institutions) appears to have been left largely to the efforts of individual research workers to attempt.

(vi) The Social-Psychological Approach

This approach investigates utilisation at the micro-level of the individual and as such accords with the progression from macro- to micro-level presented in this literature review. The social-psychological approach appears to be in keeping with current developments within the social sciences and geography, which adopt phenomenological emphases and other behavioural approaches in consumer affairs. As Herbert and Johnston (1978) point out, the study of human behaviour in physical space can be pursued only through knowledge of the lived-world experience within which individuals make decisions, which is reflected in recent adoption by research workers of what might be broadly termed 'social-psychological' concepts in attempting to understand behaviour (Peace, 1977; Powell, 1971).

Three main areas in which social-psychological concepts have been applied have been identified: first, the study of motivations - analysing needs as a basis for understanding behaviour; secondly, perception - the way in which persons behave is in some way related to the way in which they perceive the world; and thirdly, learning, in that man's behaviour is a function of what he has learned. Doherty (1969) has displayed these approaches diagrammatically to portray the psychological factors which operate on the way a person views reality, to provide an 'image' or

personal preference, which conditions the behaviour of the individual.

Motivation has been examined by medical-sociologists such as Rosenstock (1960) and some useful insights have been produced concerning the utilisation of medical facilities. A note of caution has been sounded that although, for example, a person of low socio-economic status may recognise or perceive a health problem, he may not realise help is available. Motivation thus relates both to need and knowledge and emphasis has been placed upon a person's knowledge of illness and ill-health as a factor in utilisation (Rosenstock, 1966; Rosenblatt and Suchman, 1964).

Recognition is needed that a problem exists to be solved but it is suggested that motivation to utilise may arise, especially in lower socio-economic persons, merely from the need to exist and to overcome current life-crises (McKinlay, 1970, 1972; Ryan, 1968; Rosenblatt and Suchman, 1964; B.M.A. 1970) and this has certain important implications. It has currently become fashionable to stress personal responsibility for health care generally and especially preventive health care ("Prevention and Health: everybody's business", DHSS, 1976 and "Priorities for Health and Personal Social Services in England", DHSS, 1976), in which individuals are told that it is their own responsibility to maintain their health through various good eating habits, exercising and the like, and that it is a personal responsibility to seek preventive care. If lower class persons can only manage to deal with current life-crises, then the organisation and forward-planning of activities which is implicit in these proposals might defeat their objectives and the wisdom of this policy has recently been questioned by some authorities (Stacey, 1977, for example). Additional attention should therefore be focused upon those 'cues' from surrounding groups which influence behaviour and these

will be mentioned in the final section when Rosenstock's model is discussed.

The actual stages in seeking some form of care have also been analysed to distinguish the decisions facing a person seeking care in an American situation (Landy, 1965), whilst Mechanic (1968) has discussed the health-seeking process in an attempt to specify the variables which may affect illness behaviour, although he does not attempt to assess their relative influence. McKinlay (1972) suggests that the lead given by Suchman (1965), Mechanic (1968) and others who have attempted to specify analytically distinct stages in the process of help-seeking may be worthy of further attention, which proposition is again referred to in the approach which deals with modelling of utilisation.

A useful study of individual reaction to physician's behaviour was referred to earlier in this review. As mentioned, McKinlay (1972) has pointed out that many forms of 'explanation' of utilisation behaviour fail to consider the provider of the services as a factor and Ben-Sira (1976) has produced a study, presented as a "revised approach to social interaction theory", which introduces valuable refinements into the examination of the relationship between a client and a professional. This relationship was introduced in the previous section.

Traditional social-interaction theory considers two persons, A and B; actor A derives satisfaction from his relationship with actor B, when B's response to A's activity is perceived by A to further A's goal achievement. Ben-Sira considers this simple model is valid insofar as A has sufficient understanding of the content of B's response and has the skills to judge to what extent the response will indeed further A's goal achievement. However, a problem arises if A is unable to understand B's response and evaluate its contribution to the achievement of his goal,

which situation is fairly typical of the professional-client relationship . In the case of the patient and the doctor, he considers that the patient is unable to judge the contribution of the content of the practitioner's activities to the achievement of his goal and therefore confines his judgment to the mode of their presentation (this is called the professional's 'affective behaviour'). Thus, since the lay person is not competent to judge the extent to which the physician's technical activities contribute to the achievement of his manifest goal (i.e. curing some ill), which is the 'content of the interaction', the criteria he uses for evaluating the interaction are those related to the degree of emotional support (mode) that accompanies the course of treatment.

Ben-Sira found the G.P.'s 'affective behaviour' was very strongly related to the layman's satisfaction with the G.P.'s response, skills and treatment. The 'affective behaviour' was found to be more highly correlated with satisfaction than were administrative factors, concession to demands and 'technical competence'. Although it was stated that the study was not able to ascertain whether such correlations imply causality, the recurrent pattern of the strength of the correlation strongly supported the proposal that the G.P.'s 'affective behaviour' was decisive in crystallising the layman's satisfaction with the service.

The 'affective behaviour' of the physician was measured by response to questions that the physician allocated sufficient Time for the patient to present any problems and to receive a response; throughout the interaction the G.P. had to show sufficient Interest in the patient's personal problems, and to demonstrate sufficient Devotion to the management of problems presented. These three items were used as measures of the G.P.'s 'affective behaviour' as perceived by the layman, and the satisfaction of the patient was measured by three items which attempted

to assess the extent to which the interaction with the G.P. had satisfied his expectations. These were the expectation that the physician possessed the required skills to cope with the problem posed, that the required treatment would be given and that as a result of the G.P.'s intervention, the required reassurance would occur.

Clearly, considerations of these types are important for a study of utilisation and attitudes. Thus, these concepts were employed in a modified format by the present author as part of the assessment of varying levels of satisfaction between consumers. Ben-Sira includes certain other aspects, such as the degree to which the G.P. concedes to patient's demands and the influence of 'administrative procedures' such as waiting time, bureaucratic procedures and the intervention of administrative staff, which in modified formats were also incorporated into the present research design. It has been suggested by a recent study that the public may react to their doctors due to the above and other factors, including a lack of confidence in their doctor's competence, an unwillingness of doctors to spend time talking to their patients (all failings in physicians' 'affective behaviour'), and factors linked with inconvenient location of physician surgeries and inconvenient hours, which may contribute to 'doctor-shopping' behaviour by the dissatisfied customer. Analogies are drawn with other areas of consumption where purchasers are encouraged to shop for the greatest satisfaction (Kasteler and others, 1976). Their study in Utah found 48% of upper income and 37% of lower income families had changed their doctor because of dissatisfaction with some aspect of care. Gray and Cartwright (1953) reported in England and Wales that only about 10% of a sample had changed because of dissatisfaction, but, all in all, an absence of rigorous studies in reasons for change, of rates of change and of reasons for

dissatisfaction was noted, a situation which it is partly hoped to redress.

The micro-level of approach has recently been presented in an H.M.S.O. publication: "Doctors talking to patients" (Byrne and Long, 1976), a study of the verbal behaviour of G.P.'s consulting in their surgeries, and explicitly examining the 'minutiae' of consultation. This study provides useful background information specifically on what goes on in the interaction process, but is more interesting as a source which may provide a clue to how consultations 'go wrong', sometimes as a result of some defect in 'affective behaviour' on the part of the professional.

To end the consideration of this approach, it is worthwhile to note that the problem of unresolved methodological issues remains in the social-psychological area. Encouraging developments in the inclusion of individual personality variables have been emerging (Irving, 1975), but problems such as the nature of the relationship between attitudes and overt behaviour (Thomas, 1971) and of aggregating individual information to a level suitable to generalisation, remain, as well as the problem of collecting responses concerning retrospective behaviour at the same time as collecting attitudinal data. These issues are of importance to this present research project and will be returned to when the research design and methodology are considered.

(C) Modelling Approaches

From the variety of approaches already discussed, a group of modelling studies have emerged, which have attempted to extract from the vast literature key features regarding population characteristics, service characteristics and other variables in an attempt to explain or predict utilisation behaviour. Thus, within the social sciences as

within geography itself, an approach to the study of service utilisation through the medium of modelling techniques has developed. A number of models have evolved which include a wide range of variables and which together provide a distinctive approach to the study of health service utilisation. At the outset, however, the point should be made that the following models are largely conceptual in nature and, although they have become refined in their inclusion of variables, they remain generally little-tested in the real world. In addition, they are not comprehensive in the range of variables they include but tend to stress specific items. However, together they present an ordering of variables which should be included in the study of utilisation of personal social services and provide a useful indication of the current state of agreement in research concerning aggregate service utilisation. It is apparent that, as within the normative models in geography, many of the same aggregate assumptions are made regarding human behaviour but, overall, they have attempted to include a considerable array of factors in their consideration of service usage. The variety of models which have been developed reflects in some respects the previously-discussed confusion in the field and they may be viewed as attempts to clarify the position at least partially. They have been included for this reason as well as to make this current review of the literature as complete as possible, since the philosophy underlying this research is an attempt to improve upon the current academic context in which studies of utilisation and service availability have been set.

Four main models have been proposed which have evolved to explain the utilisation patterns of health service consumers and they present a useful summary of the more conceptually sophisticated research in health services over the past twenty years (Veeder, 1976). A fifth

model will be discussed at the end which presents a model of accessibility to services. The models are:

- 1959-60 1. The Rosenstock Model - psychological-motivational determinants of health service utilisation.
- 1964-66 2. The Suchman Model - socio-cultural and environmental determinants of health service utilisation.
- 1968 3. The Anderson Model - family life-cycle determinants of health service utilisation.
- 1972 4. The Gross Model - Behavioural components in health service utilisation.
1974. 5. The Aday and Andersen Model - A framework for the study of accessibility to services.

A brief description of the theoretical development of each model will be given and an assessment of their empirical values and of their similarities and dissimilarities will be attempted. This review is not the place for a full description of the finer details of each model, but the essential details of each have been included. A point which will be returned to but which is useful to note regarding the models is that each is in a sense cumulative, building upon Rosenstock's early foundations.

(1) The Rosenstock Model, 1959-1960

As mentioned in the social-psychological approach, this model deals with the motivational aspects of health care utilisation. Essentially, the emotional rather than the cognitive 'beliefs' of a person are considered. A person is likely to take steps to use a health care facility if he believes himself susceptible to the disease in question, if he believes this disease could have serious consequences for him and and that its course may be prevented or ameliorated by some action on

his part and that the actual action is not more troublesome than the disease itself: (Rosenstock et al, 1960). A key concept is the 'cue' or trigger which will spur the person to an action provided the above 'psychological state of readiness' exists. The barriers to receipt of a service must not appear so great as to be insuperable and 'cues' for action must be provided. Rosenstock suggests that reducing costs, reducing distances and setting convenient service hours are ways of reducing barriers, whilst reminders from physicians and mass media announcements (preventive advertisements) may act as 'cues'.

It is interesting that two studies employing this model found accessibility to be important. Rosenstock (1959) indicated that a key factor in seeking polio vaccine was convenience or proximity of facilities and Borsky and Sagen (1959) also found convenience an important feature in obtaining preventive health examinations. Both of these studies are worth noting in the current climate of centralisation of facilities whilst still emphasising preventive medicine.

(2) The Suchman Model, 1964-1966

A sociologically-oriented model for health-seeking behaviour was proposed. The major hypothesis is "the selection of the source of care will reflect the knowledge, availability and convenience of such services, and social group influences upon the individual" and is similar to Rosenstock's model in the range of variables included, but major emphasis is placed upon the 'social group influences', placing less emphasis on a psychological state of readiness. Thus, this sociological model accords with current thinking indicated by McKinlay (1972) on the importance of social networks and Freidson's 'lay-referral' system. There is also the notion of the structural effect for the urban geographer, the 'neighbourhood effects' which may be in existence in the locality

or social area within which the individual moves (Johnston, 1976).

The level of knowledge, proposes the Suchman model, varies significantly between cultural groups, low socio-economic status and minority groups are more isolated, have related lower levels of disease knowledge, have fearful and sceptical attitudes to medical care and are dependent on lay care. In addition, a 'cosmopolitan' social structure may be related to a 'scientific' health orientation, as opposed to a 'parochial' or local structure, which is related to 'lay' or popular health orientation.

(3) The Anderson Model, 1968

This model proposes a sequence of conditions which contribute to the volume of health services used. These may be summarised as:

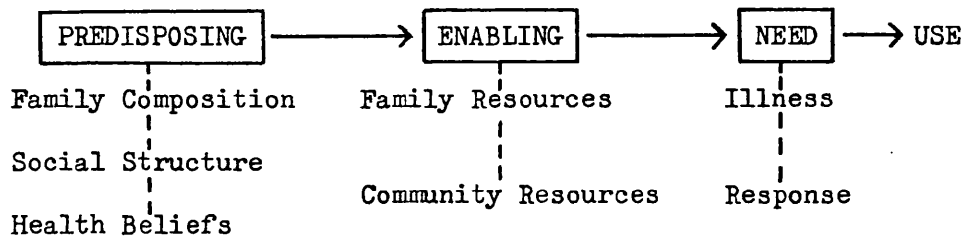
1. Predisposing factors - family composition (age, sex, marital status, family size, and age of youngest and oldest members); social structure (employment, social class, occupation, education of head of family, ethnicity); and health beliefs regarding physicians, health care and disease.

2. Enabling factors - family resources (family income, savings, insurance, regular source of care and welfare); and community resources (physician:population ratio, hospital bed : population ratio, residence and region).

3. Need factors - include illness (health level, symptoms, disability days and free care for major illness) and response (seeing the doctor for symptoms and regular-examinations).

Anderson also divides behaviour into discretionary behaviour, which involves considerable choice on the part of the family and non-discretionary behaviour, which is largely decided by the physical condition of the family member and is often decided upon by the physician.

The Anderson Model:



(after Anderson, 1968)

As proposed and summarised above, the Anderson model presents a fairly straightforward view of the utilisation process and indicates useful variables for inclusion in an explanation of differential utilisation behaviour. However it is evident that from a geographical viewpoint, a spatial component is not explicitly included. It is implicitly included under "community resources", although this part of the 'enabling factor' does not state specifically 'nearness to facility' but rather it implies a general availability of a resource. The mobility of the family likewise is not explicitly included although transport availability is implicitly covered in its links with socio-economic status (income) in the enabling component. It is probably these features which cause the Anderson model to have a less immediate attraction for geographers, despite its intuitive appeal as a process-summarising device. In testing the model, Anderson considered the 'need' variables to be the most powerful predictors and also some differences in the relationships between factors were noted for different types of services (hospitals, physicians, dentists), which should be considered for future models. McKinlay (1970) also considers that most results are service-specific, which means that caution is needed in extrapolating findings beyond the service in which they were first observed.

(4) The Gross Model, 1972

Gross has proposed a model which operates within a 'behavioural'

framework and which may be represented diagrammatically (Figure 1.4). For the geographer considering this model, accessibility factors are included as well as the predisposing, enabling and need components recognised in earlier models but, as yet, no empirical study using this approach has been published (Veeder, 1976). Gross was working from a background of health economics and medical sociology, to propose his 'behavioural model' and states "we need to know a lot more about the relative explanatory powers of the behavioural or predisposing variables, the enabling variables (including financial and spatial-temporal accessibility measures) and health level indicators on the utilisation of health services" (Gross, 1972, p.75). He delineates the following formula, using a multiple-regression model and warns of the very real problems of multicollinearity and possible reverse causality that beset the empiricist in these types of studies:

$$U = f [E; P; A; H; X] + \epsilon$$

Where

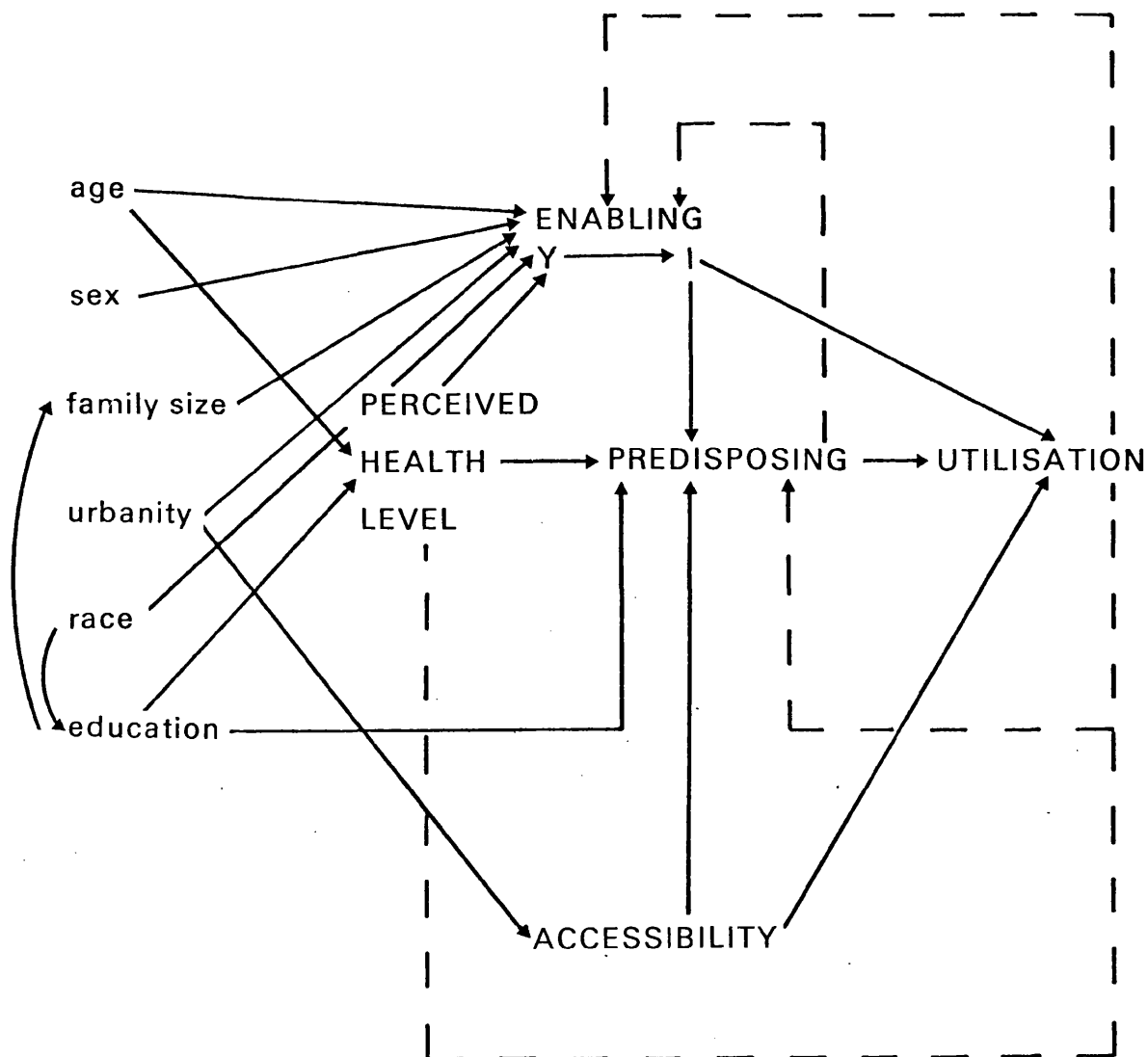
U = utilisation of various services reported by the individual interviewee.

E = enabling factors e.g. income Y; health insurance status I; family size S; occupation of head of family; sex of the head of family; education of the head of the family.

P = predisposing factors e.g. attitudes of the individual towards health care, services and physicians; health values; health behaviour when symptoms of health disorder are recognised; use of a regular source of care; knowledge of existence of various services.

A = accessibility factors e.g. distance and/or time of individual from facility; appointment delay waiting; waiting times; availability of hospital, physician and dental services at varying distances from the household; availability of a regular source of care.

Figure 1.4



“One Possible Causal Chain in Health Services Utilisation”

The Gross Model – Behavioural Components

Source: Gross, 1972

H = perceived health level of individual and/or his family assessed from health interview survey (disability days, restricted days, sick days).

X = individual and area-wide exogenous variables (age, sex, family size, race, education, location).

ϵ = residual error term.

As Gross (1972) explains, a number of discrete hypotheses are buried within this single functional relationship and certain of these ideas have been adapted into the current research, to be mentioned when the research design and methodology is discussed. He also recognises that there are possible links in which time-lags may operate and these are indicated on the diagram by dotted lines. These time-lags would limit the conclusions which could be drawn from static analyses using cross-sectional data. The static-structural explanatory nature of these four models may also be noted, in what is essentially a dynamic decision-making process (Veeder, 1976).

The models are really attempts to specify the problem, rather than attempts to resolve it. They differ most in the importance they attach to individual beliefs concerning severity and susceptibility in determining utilisation behaviour; all four models are in greatest agreement when considering social group influences and when they consider accessibility. Despite failings with these models and the few studies which employ them, including quite important weaknesses such as a lack of comparability in operational definitions and problems of quantification which have limited their usefulness, Veeder (1976) considers they hold considerable promise for more enlightened human services planning. Each model is in a sense cumulative, building upon Rosenstock's earlier work. A greater precision in definitions is developing and more utilisation

behaviour is being explained. They are certainly becoming more mathematically sophisticated - Rosenstock's is of a more conceptual, descriptive type, as is Suchman's; Anderson's model becomes more definitive of factors to be included and Gross's model presents an equation to predict and explain behaviour. If this model is successfully tested empirically a considerable advance will have been achieved. Present research concentrates not only on refining the factors which go into the decision to use or not to use a service, but also attempts to assess the factors which operate at different points in time, both of which should increase the predictive powers of these models. It is also in the refinement of such factors that normative limitations are most obvious and then behavioural approaches become more appropriate.

The final model to be noted is a conceptual framework for the study of access to medical care, proposed by Aday and Andersen (1974), which considers various difficulties in defining what is meant by access. They conceptualise the study of access, starting with basic national health policy objectives, which are implemented via the delivery system to the population at risk. The characteristics of both of these are considered (INPUTS) and they result in certain outcomes or OUTPUTS: the actual utilisation of health services and consumer satisfaction with these services (Figure 1.5). Although it is proposed as a theoretical model of access to health care, it forms a basis for investigation at the behavioural level in its emphasis on population characteristics and consumer satisfaction. These aspects may be measured by personal interviews and then related to the nature of the health care delivery system in the first place and national health and welfare policy at a higher level. This framework has considerable utility as a summary device for reference when constructing a research design and indeed, it would seem

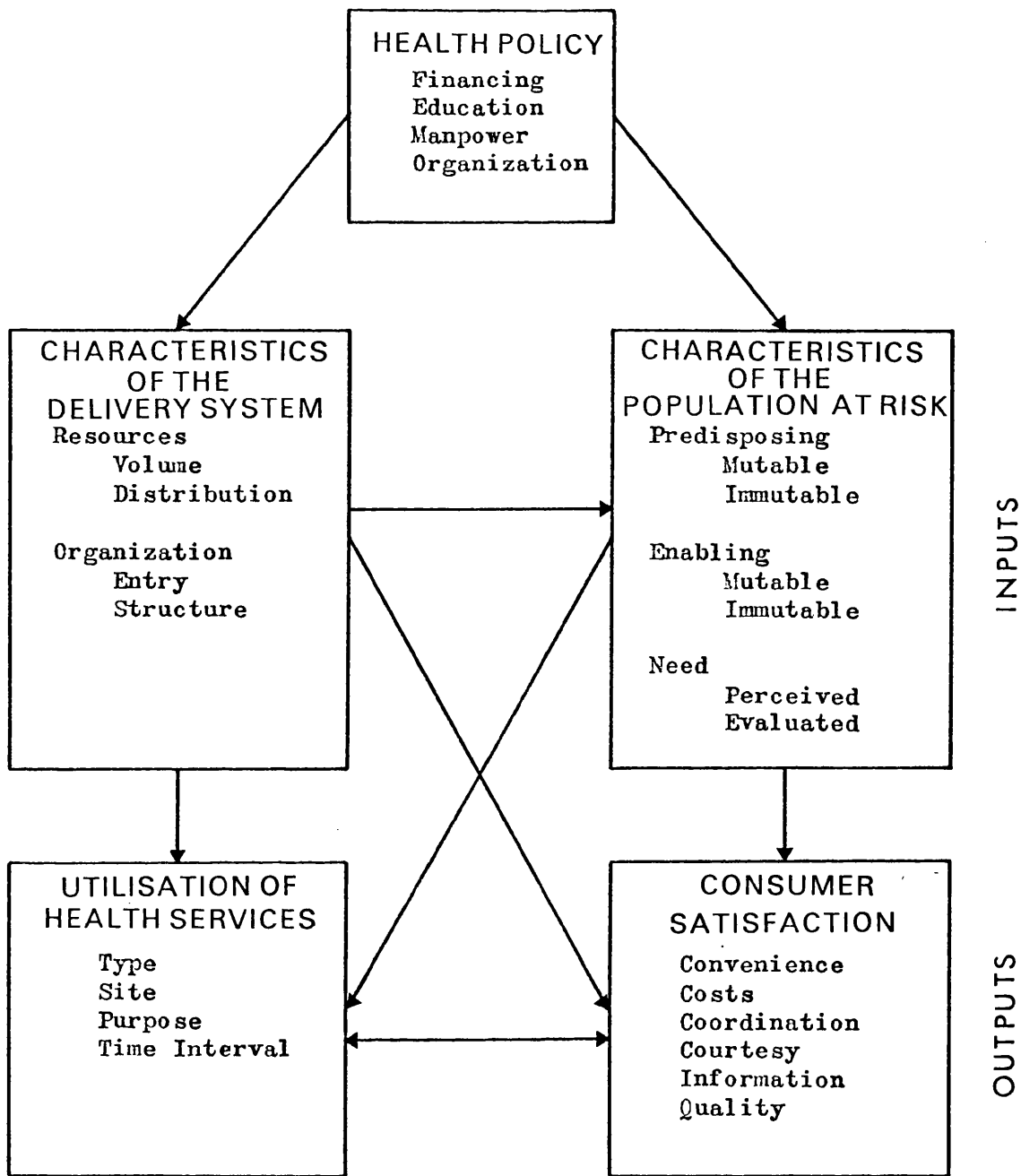


Figure 1.5

Framework for the Study of Access

Source: After Aday and Andersen (1974)

applicable in the study of many other situations which involve the use of a government-controlled and provided service.

Summary - the need for a synthesis of approaches

Overall, this review has attempted to draw together a broad range of literature from a number of disciplines in the hope of evidencing the numerous factors identified in the various approaches which have been adopted in the study of the consumer in the health care system. Just as it has been suggested that no one discipline could fairly claim to have total and exclusive explanatory power, it is now similarly proposed that no single sub-approach, be it a geographical approach or one of the social scientific approaches, can hope to be comprehensive. As a result of the overlapping spheres of interest which have been indicated during this review, it is now proposed that some form of synthesis of aspects of these approaches is necessary for a research project which attempts to sound public attitudes to general practitioner services and which hopes to investigate comparative utilisation behaviour in relation to population characteristics, service characteristics and service location.

This synthesis of approaches will operate in five stages. First, the basic contention is that accessibility to services is of paramount importance to utilisation behaviour and attitudes. This feature has been implicitly accepted as indicated in certain studies, but an explicit geographical dimension has apparently never been included. This will now be done, recognising that accessibility has both geographical and social aspects, which leads to the differentiation of the population by social sub-groups. A basic socio-spatial differentiation is therefore to be employed to investigate various degrees of differential accessibility (such as performed in other services by Thomas, 1974). Thirdly, the

nature of the system and micro-aspects of the system have to be considered, as it operates 'on the ground' (Aday and Andersen, 1974). The fourth stage is a recognition that utilisation of the service and attitudes to the service will be a result of the combined influence of the first three aspects: accessibility, population stratification and certain 'administrative factors' inherent in the nature of the system (Stacey, 1977). However, a fifth stage results since the literature proposes a residual interaction feature which may explain some utilisation behaviour and attitudes, this being the micro-level social-psychological feature of the physician's 'affective behaviour' in the doctor-patient relationship (Ben Sira, 1976; McKinlay, 1972).

As a social geographer, the author is therefore necessarily adopting a spatial view of the delivery and receipt of health care, but the above considerations other than the purely spatial are to be included. This study is of the empirical-behavioural type discussed earlier (Thomas, 1976) and will employ aspects of the social scientific approaches examined in so far as they add scope and depth to the study. In these approaches, it will be recognised that the socio-demographic approach disaggregates information regarding groups and individuals in a manner similar to that performed in some studies of consumer behaviour in geography and the socio-psychological and socio-cultural approaches also have their counterparts in geographical research. The characteristics of the organisation investigation are of great importance in the examination of what is really a rather regulated and bureaucratic service and thus certain concepts will be annexed from the organisational-delivery system approach. The characteristics of, and recent trends in the development of, the National Health Service nationally and in the study area will be discussed in the following chapter with this in mind.

Throughout the second part of this review, the scale of studies was used as an organisational framework. A recurrent theme in behavioural research, that of the problem of aggregation of data, has been connected with this feature. As Herbert and Johnston (1978, p.24) state, "one of the problems with the behavioural perspective has been its reductionism: having returned to the individual as the unit, how then does the geographer return to his appropriate level of generalisation?" This problem, of reconciling micro-and macro-scale approaches, is now recognised over the range of the social sciences and this thesis is not unique in having also to face this conundrum.

In essence, the focus of this research is easy to describe. It is an investigation aimed at determining the factors that are important in influencing utilisation of and attitudes to general practitioner services. Are geographical factors of paramount importance, or are they subordinate to other factors such as loyalty to practitioners, personal attributes of doctors or activities of ancillary staff? Do sub-groups of the population receive (or more importantly, consider themselves to receive) better or worse treatment from their general practitioners and does this appear to be systematically related to geographical or other features? These and other questions form the focus of this research. An essentially exploratory, introductory study integrating various approaches is proposed, with a secondary aim of articulating the consumer voice in a methodical manner. If the considerable literature in the field of consumer utilisation of services is any indication, then the answers to these questions may not be as easy to elicit as the questions are easy to formulate.

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CHAPTER TWO : THE HEALTH CARE DELIVERY SYSTEM

CHAPTER TWO - THE HEALTH CARE DELIVERY SYSTEM

Introduction

One of the most significant changes in the economies of western nations in a post-industrial stage of development has been the dramatic move from an agricultural - industrial employment base to a 'service economy'. The United States became the first nation in which more than half of the employed population was not involved in the production of food, clothing, houses, automobiles or other tangible goods, but was 'producing' services, which are defined to include wholesale and retail trade, finance, insurance, general government and services proper, including professional, personal business and repair services (Fuchs, 1968). In the United States, the service sector's share of employment has grown from about 26 per cent in 1870 to about 58 per cent in 1970. The United Kingdom, although experiencing her 'take-off into self-sustained growth' first of all nations, has had a slightly slower increase of service employment, but now lies not far behind the U.S.A. figure.

In the United Kingdom; in September 1975, the manufacturing sector of the British economy employed only 33% of all employees at work. Even the addition of employees in agriculture, mining, construction, gas, electricity and water (the last-named three often being thought of as semi-service industries) raises the total to only 44.5% of all employees, implying the service sector now accounts for well over half of the employment of the country, at a figure similar to the 1970 U.S. level.

Prest and Coppock (1976) date the beginning of the tendency for the service sector labour force to grow relative to the rest of the labour force at the mid-1950's, at which time the manufacturing and service sectors each employed about 42.5% of the total number of workers. Within the service sector, the main growth areas were identified as the scientific

services, particularly medicine and education. Figures from the Department of Employment Gazette (February 1976) show the numbers employed in education and medicine to rise between June 1971 and September 1975 by nearly 550,000, almost the number by which employment in manufacturing fell. Between 1959 and 1975, more than 1.4 million workers joined the educational and medical sectors. Thus, although some services such as transport and communication have become somewhat smaller (due mainly to decline in railway employment), the general tendency has been for steady growth in service employment, contrasting with the decline in virtually all manufacturing sectors.

The National Health Service itself has grown as part of this general development, to be Britain's largest single employer. In 1974, the Office of Health Economics reported that since its inception in 1948 its internal structure had become complex and services had expanded and proliferated. "It is now one of the world's largest civilian enterprises, employing about 900,000 people and spending over £3,000 million a year" (OHE, 1974a, p.6). Of these 900,000, about 60,000 in 1975 were qualified doctors, 30,500 were in staff posts in the hospital service and 25,000 were family doctors (general practitioners), with the others being employed in government administration, industry and elsewhere. This compares with a figure of about 30,000 doctors in 1949, of whom 12,000 were hospital doctors and 19,000 were general practitioners (OHE, 1974b, p.8)

PART ONE : THE HEALTH CARE DELIVERY SYSTEM NATIONALLY

(1) The National Health Service in Great Britain

Having introduced the National Health Service as the largest single employer in Great Britain and one of the largest civilian enterprises in the world, this chapter will be divided into two main sections dealing with its organisation. The first section will concern the health service nationally, briefly describing its origins and its recent administrative reorganisation; secondly, discussing general roles and current trends within the service and thirdly, considering the central role of the patient as a consumer, with related developments within the administrative structure of the service. The second section will concern the health service as it operates locally within one Area Health Authority, the study area of West Glamorgan. The first sub-section will consider the study area generally, the Greater Swansea Area; the second sub-section will describe the health system within the context of West Glamorgan and the third sub-section will analyse the extent to which the current national trends indicated earlier are in fact operating locally and to what extent these tend to prejudice or improve the position of the consumer. These features will form the background against which the thesis hypotheses will be formulated and the research design and methodology constructed.

The National Health Service: 1948 Origins and 1974 Reorganisation

The basic structure through which most health services in the United Kingdom were administered until April 1974 was determined by the National Health Service Act, 1946. This Act was part of the great burst of post-war legislative activity stemming from the 1920 Dawson report on reorganisation of health services and the Beveridge Report on Social

Insurance and Allied Services, which laid the foundation of the modern welfare state. Beveridge envisaged a national health service financed from general and payroll taxes as an essential complement to the social security measures he proposed, which were embodied in the National Insurance Act of 1946 and the National Assistance Act of 1948. The National Health Act itself came into effect in July, 1948 and aimed at removing the direct cost of medical care from the shoulders of the sick at the time of service, with the Minister of Health responsible for seeing comprehensive health services were available to everyone who needed them. Scotland and Northern Ireland were separately but similarly catered for, although an amendment to the Act in 1949 empowered the minister to introduce a charge for prescriptions and to impose charges for the use of health services by persons ordinarily resident abroad.

The four basic principles underlying the 1946 Act were:

1. Comprehensiveness - the service aimed to meet all types of recognised health needs from acute care through to care of the aged and chronically ill, to treatment of alcoholism and drug addiction.
2. Universality - the service was available to all residents (and bona fide visitors) without further qualification.
3. Collective financing from general taxation rather than user charges.
4. Professional independence.

Although there were exceptions on points of detail to these four principles, the aims of universality and comprehensiveness were well met in that all but a very small minority, of possibly two per cent of the population, used the service. It was served by almost all consultant specialists, almost all dentists and retail pharmacists and ninety-eight per cent of general practitioners and the private sector of medical care

was, and still is, comparatively very small.

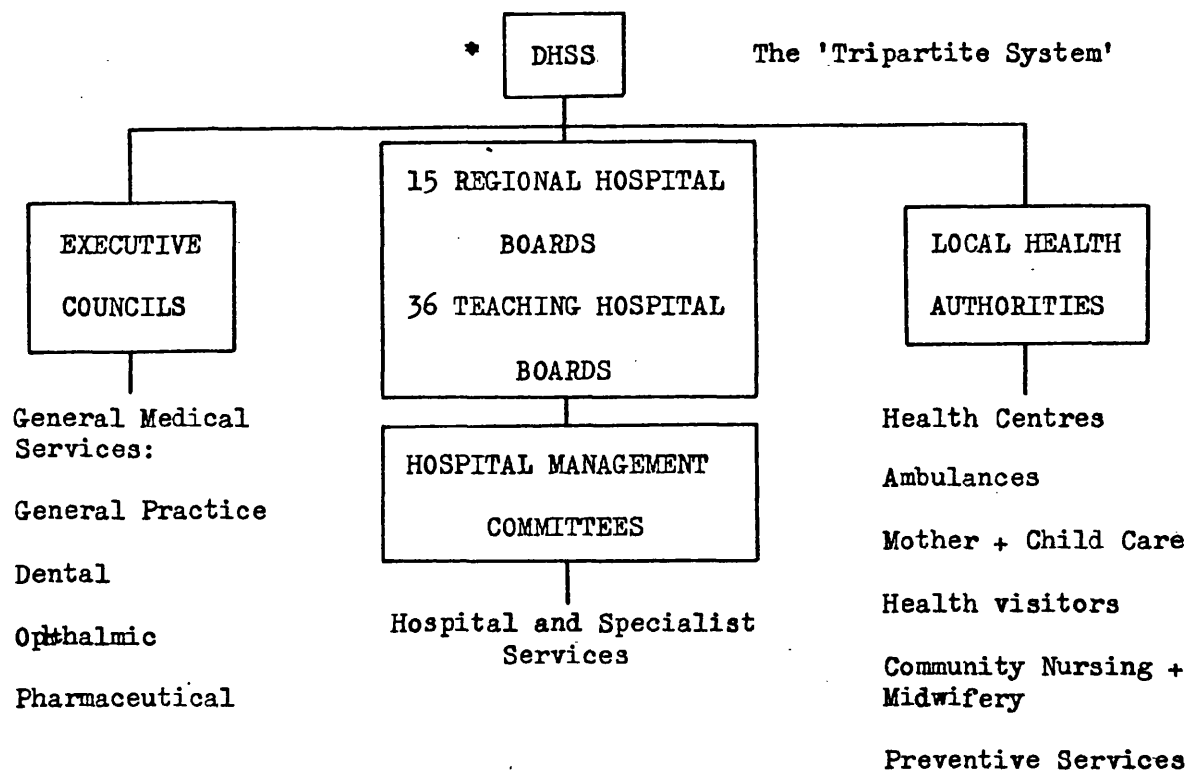
The 1946 Act represented in many ways "a skilled and workable compromise between the interests and beliefs of the various groups involved in health care planning and delivery at that time" (OHE, 1974a, p.3). Even at the start of the National Health Service's existence in 1948 it was recognised that its division into hospital, local authority and executive council services was to some extent unsatisfactory. This is what has become known as the Tripartite Structure, (Figure 2.1) which existed prior to 1974. A brief description of this early system will be given and then a resumé of the reorganisation of the service will be undertaken.

The tripartite system replaced the variety of private and voluntary hospitals and private general practitioners in existence before 1948. Hospital authorities were created to administer hospital and specialist services; executive councils to co-ordinate general practice via general practitioners in medicine, dentistry, pharmacies and ophthalmics and local health authorities to administer public health services such as preventive medicine, midwifery and community and personal services. The independent functioning of these three organisations has created certain problems of coordination which will be referred to shortly.

England was divided into fourteen regions of approximately three million for health planning and administration, and Wales constituted a fifteenth region. These regions each contained a Regional Hospital, usually associated with a University medical centre, offering the most specialised services and were controlled by unpaid lay boards designed to represent a cross-section of the community. For general operational purposes, hospital management committees, appointed by and responsible to the Regional Hospital Boards, were responsible for about 1000 beds

Figure 2.1

The Structure of the National Health Service 1948 - 1974



*In 1968, the Ministry of Health and the Department of Social Security were merged to form the Department of Health and Social Security with Richard Crossman as the first Ministerial head, as Secretary of State for the Social Services.

Source: After OHE, 1974a, p.3
Babson, 1972, p.114

and were often, therefore, responsible for several different hospitals. However, this reflection of the historical growth of the hospital sector was exacerbated by the growing demand for more specialised services and by constant staff and financial shortages. The Hospital Plan of 1962 proposed the General District Hospital to integrate all existing hospital services into single units of 1500 - 2000 beds, to serve populations of from 200,000 to 300,000 (Ministry of Health, 1962).

Although the system was very much hospital-centred, its tripartite nature meant that the services which hospitals may provide, such as home-care, facilities for the elderly and preventive services, were limited. The situation below the hospital level was rather confused. The local Executive Councils had responsibility for general practitioner services, each general practitioner serving approximately 2,500 - 3000 persons, although significant imbalances have been noticed in peripheral regions and less attractive areas, as was noted in the previous chapter. The Ministry of Health encouraged practitioners to create larger practices to serve 10 - 15000 persons and hoped they would operate from health centres to provide better facilities, diagnostic apparatus, ancillary staff, dental services and the 'primary health care team' service. Local authorities were also to be encouraged to participate in, or initiate, these health centre developments. This was hoped to integrate general practice with public provision of health services although, in practice, due to financial limitations and suspicion of central control on the part of the practitioners, developments have been somewhat slow; but these will be discussed in detail later.

One hundred and thirty-four Executive Councils in England and Wales were responsible for the administration and general management of the general practitioner services as well as for dental, pharmaceutical and

ophthalmic services. They provided personal health care for an average population of a third of a million, but with a wide range from 60,000 to more than 2 million (Kohn and White, 1976). Their boundaries were often coterminous with those of the local health authorities, although an individual general practitioner could be on the 'list' of more than one executive council, with the attendant problems of payment and control (although one executive council was usually 'responsible' for the practice).

There were 174 Local Health Authorities also serving populations ranging from 60,000 to 2 million. Their small administrative staff was headed by a physician with public health training and they provided a variety of health and welfare services, including preventive and aftercare services, maternal and child welfare, domiciliary midwifery, home nursing, health visiting and vaccination and immunisation services. They also built, equipped and maintained health centres from which general practitioners might operate and were responsible for ambulance services and administered environmental health matters that fell under the Public Health Acts rather than National Health Service Act.

Thus, a considerable confusion was seen to exist after 1948, with a dominance of hospital-based attitudes and poor liaison between staff in the community services and those in hospitals, which had led to imbalances in standards of care, particularly for the handicapped and chronically ill. Pressure for a structural reorganisation had been growing since the early 1960's and the system had naturally evolved to a certain extent during the time before 1974. The reorganisation of 1974 is best seen as part of this ongoing evolution of the 'welfare state' health services rather than as an isolated event and the system is still much in a state of change even three years after the date (OHE, 1974a; 1977).

The political background to the reorganisation of the NHS is an

absorbing story which, however, is very adequately treated elsewhere (especially by F. Stacey, 1976). Stacey does in fact point out that the system that had evolved before 1970 was internationally recognised as probably the best nationally-provided system. Many of the faults were not directly caused by the tripartite structure; for example, the lack of finance, neglect of the elderly and long-stay mental patients, but it has been argued that they were aggravated by the structure. "The presumption is that a unified service must make coordination easier" (Stacey, F., 1976, p.158). The reforming spirit that had established the Redcliffe-Maud Royal Commission on Local Government pressed for change and a unified health system. There were numerous stages, changes and objections which were undertaken whilst the reorganisation was in its formative years from 1968 when Kenneth Robinson announced its inception. The Ministry of Health became the Department of Health and Social Security that year, and there was a change of government in 1970, when Sir Keith Joseph resolved that reorganisation of the health service should go ahead.

Before April 1974, however, there was another change of government, to the Labour party which, when it took Office in March 1974, was faced with a situation in which there was less than a month to go before reorganisation. It was May 1974 when final amendments were being made to details of the plans.

A number of sources have influenced the form of management structure introduced by reorganisation. In addition to the Department of Health and Social Security itself, these include the Management Consultants McKinsey's, the work of the Brunel Health Services Organisation Unit and the influence of important pressure groups such as the British Medical Association (B.M.A):

"It is difficult to pick out any single line of thought which is consistently representative of the entire new format although throughout it there is emphasis on the concept of management by objectives"

(OHE 1974a, p.21).

An important statement was to be found in the DHSS 1971 Consultative Document, which might be seen as the philosophical background to reorganisation:

"... there is to be a fully integrated health service in which every aspect of health care is provided, so far as it is possible, locally and according to the needs of the people ..." and "... that throughout the new administrative structure there should be a clear definition and allocation of responsibilities, that there should be a maximum delegation downwards, matched by accountability upwards, and that a sound management structure should be created at all levels ..." (my emphases).

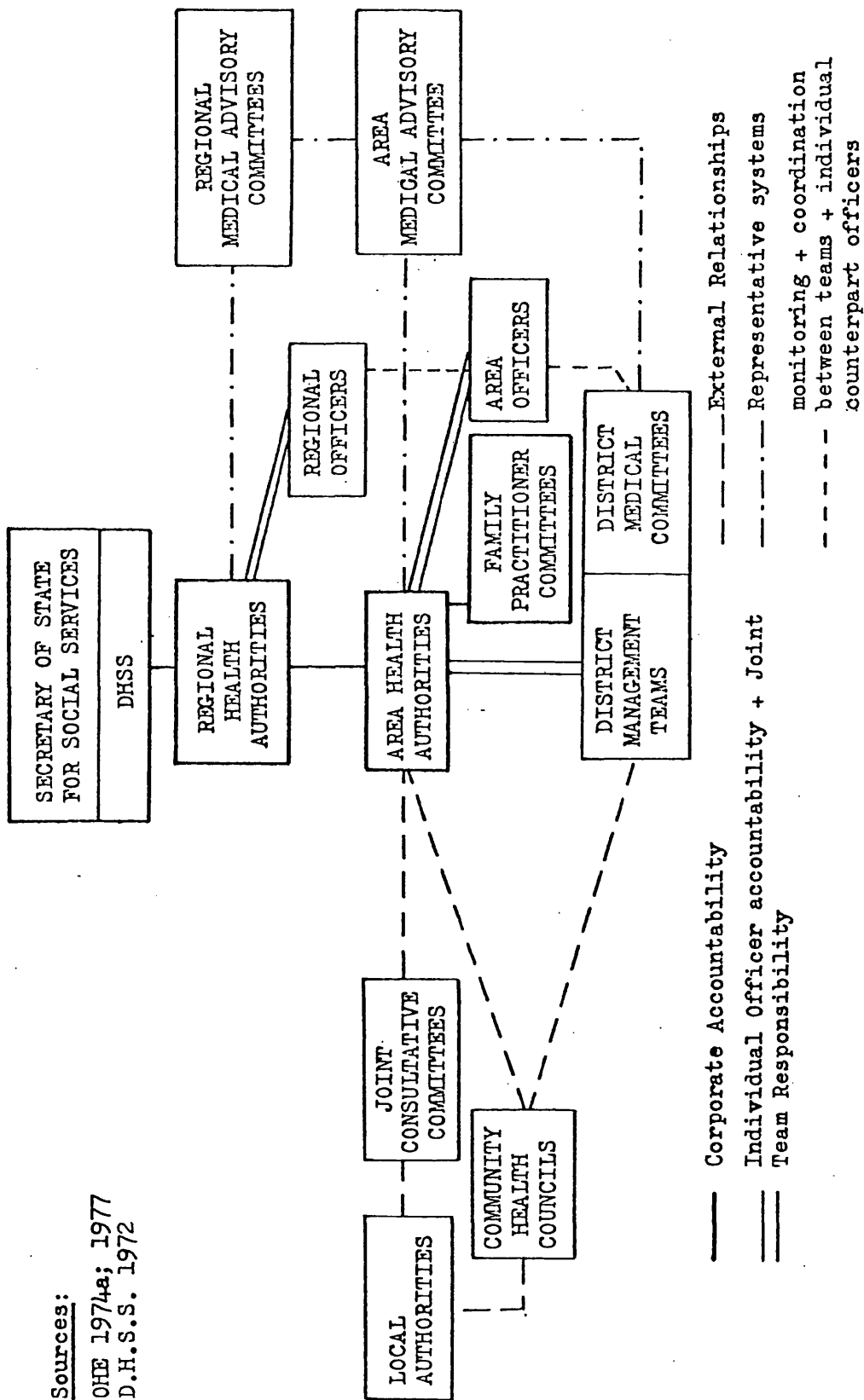
(OHE, 1974a, p.21,
after DHSS 1971).

Thus, the key was to be on a unified, integrated health service, with delegation to a local level and with consequent accountability upwards. However, this does not imply that the hierarchical distribution of 'goods' already apparent within the NHS, and likely to be strengthened in the reorganised structure, is either essential or desirable on the grounds of organisational efficiency. Thus, as Thomas (1976) indicates, the system is not without potential problems. Government-controlled services tend to concentrate on the development of an efficiently-functioning supply system, with standards of efficiency judged from the managerial viewpoint. Buttimer (1971, p.32) states "...primary attention is implicitly given to the economics and/or engineering of the supply system rather than the appropriateness of service to demand..." The consumer until 1974 was assumed to be represented by the lay members of the Boards and Committees already mentioned, but these persons combined both administrative and public opinion representing roles in an ambiguous manner. As a result, supply and demand did not always combine to provide a mutually satisfactory system, as will be discussed later when current trends are evaluated.

The framework of the new organisation structure as operating in England is illustrated in Figure 2.2. and a broadly similar system is

Figure 2.2

NHS REORGANISATION: THE ORGANISATIONAL FRAMEWORK (ENGLAND)



Sources:

OHE 1974a; 1977

D.H.S.S. 1972

operational in Wales, except Wales itself operates as a 'regional' tier. Some points of detail are different, which are mentioned below.

The key operational authorities in the reorganised NHS are the Area Health Authorities (AHA'S), which are responsible for health care in geographical areas coterminous with the new local authority metropolitan districts and non-metropolitan counties. There are now 90 AHA's in England and eight in Wales and above this level are fourteen Regional Health Authorities in England and the Welsh Office in Wales. The Regional Health Authorities (RHA'S) have the role of planning in conjunction with DHSS strategies and of deciding priorities and guidelines within which the AHA'S will be able to use their delegated powers. They will subsequently monitor the performance of the AHA'S, although it is notable that in other national divisions of the UK this administrative level has not been considered necessary.

The Area Health Authority is the lowest level of statutory responsibility within the new structure. They employ most of the NHS staff and have full operational and planning responsibilities, although the independent contractors (the general practitioners) maintain their relationship to the DHSS via the Family Practitioner Committees (FPC) which have broadly similar functions to the old Executive Councils. One of the main functions of the AHA's is to ensure that their own services and those of the new local authorities, such as personal social services, are organised in a mutually supportive and complementary manner.

The most important area of liaison is to be achieved by means of Joint Consultative Committees between Area Authorities and Local Authorities to discuss and coordinate policies on an official footing as will be noted in Figure 2.2.

Below the Areas are the district levels of authority, which are

regarded as the 'natural' units for health care. They are seen as being the practical means by which health care is planned and delivered to cater for specific needs of local populations. Members of all health professions are brought together in a team at district level and districts are seen as the smallest sized units for which substantially the full range of general health and social services can be provided, but the largest one at which all types of professional staff can actively participate in the management process. They have explicitly been defined 'naturally', with regard to the population's previous use of community and hospital services and some have overlapped two or more of the formally defined areas or regions. At district level the key features are the District Management Team, each with a nursing and finance officer and a specialist in community medicine. District Medical Committees represent hospital and community medical staff and Health Care Planning Teams are to be established by the District Teams to conduct detailed local planning for the provision of integrated individual care for patient groups.

The final district-level established bodies, the Community Health Councils (CHC'S), are of considerable importance. They are designed as public 'watchdogs' to represent public opinion, although there is a very varied interpretation of their role and a considerable dispute as to how useful or powerful they are (Klein and Lewis, 1976; OHE, 1974). As originally proposed in 1970 by Crossman, these CHC's would have been without executive powers and, as such, ineffective. It was after the reorganisation was actually effected in 1974 that Barbara Castle, in May, 1974, took some firm decisions which included strengthening the CHC's, first, in attracting good candidates as secretaries of the CHC's and also in their consultative role with regard to appointments to Area Authorities and with regard to hospital closures. They were also to have a role in

assisting dissatisfied patients to complain to Area Authorities or to the Health Services Commissioner. It still appears that this role is not interpreted by all CHC's as being a main function, so consumer help is not as emphasised as it might be (e.g. Gordon, 1977).

The DHSS remains ultimately responsible for major policy decisions affecting the future of the NHS and has specialised sections dealing with finance, personnel and research. In particular, it is important in forecasting future staff requirements and the consequent need for training places. It was noted previously that in Wales, a slightly different top tier would operate, and although the lower tiers follow largely the English pattern, a Welsh Health Technical Services Organisation (WHTSO) has been created to carry out a central organisational role in relation to the eight new Welsh AHA's (which, as will be seen from Figure 2.6, are coterminous with the new counties). Central policy guidance and coordination of the AHA's is provided through the Welsh Office, which also oversees collaboration with local authority services through a similar system of Joint Consultative Committees as is in existence in England and the Secretary of State is advised in Health Matters by the Welsh Council.

(2) General Roles and Current Trends in Primary Health Care Delivery

The previous section of this chapter examined the technical aspects of health care delivery as they operate nationally and concentrated upon the organisation and structure of administration in the NHS. The resulting structure and authorities are still very much in their infancy but certain developments have taken place since the early 1960's in the organisation of primary health care and these will now be outlined at a national scale, prior to examining their operation locally in the next part of this chapter.

A number of trends are noticeable in health care delivery generally and in primary health care delivery in particular. The 'hospital orientation' of the early NHS has already been mentioned and early general practitioners were often excluded from hospital medicine and hospital contacts, since they were considered to be 'second raters' who had 'fallen off the ladder' of advancement in the hospital sector. It is now recognised that the United Kingdom's 25,000 family doctors, together with the midwives, nurses, health visitors, receptionists and others who make up the 'primary medical team', deal with over 90 per cent of all illnesses which reach the formal structure of the health service, as well as playing a major role in generating the work of the specialist hospital sector (OHE, 1974b).

The result has been, in the past fifteen years, an increasing recognition of the importance of primary medical care and the general practitioner has been variously described as the 'backbone' and 'fulcrum' of the modern health service. The G.P. is also the key figure in that the public have no right of direct access to specialist opinion or treatment, except via 'referral' by their own family doctor. Similarly, specialist prescriptions for medicine are issued by the G.P., who retains 'care' of his patients and is ultimately responsible for their wellbeing. Thus, in order for a dissatisfied patient to change G.P.'s may involve finding another doctor who will be willing to take on this responsibility and who might well contact the previous G.P. to ascertain whether the patient has a history of being troublesome, which policy on the part of family doctors might make it very difficult for certain problem families to actually register with a doctor.

The role of health services in the post-war era has altered not only in an organisational sense, but in the range of conditions which require

treatment. Modern technology has virtually eliminated many chronic infectious conditions such as tuberculosis which were the dominant health problems of the day and the modern main generators of workload are chronic conditions such as arthritis, heart disease and mental and depressive illnesses which have not been significantly affected by therapeutic progress although their progress may be delayed and their prognosis improved. People with chronic conditions are often treatable in the community with only intermittent hospital treatment, for most of the time the primary requirement of persons with such conditions is the management of exacerbations and the alleviation of their most handicapping symptoms. All this sort of care requires community support from personnel able to appreciate medical needs in relation to their family, home and work settings, which might be best provided by a primary medical care team with social service support. With the increasing emphasis on preventive medicine, these have all contributed to what has been called the 'Renaissance of General Practice' (OHE, 1974b) and it appears imperative that in such circumstances the accessibility and approachability of the general practitioner and his team meets the needs of the consumer.

Prevailing attitudes in the 1970's mean that not only are persons more likely to attend the doctor for more 'trivial' conditions, but conditions to which previously a stigma attached are now considered suitable cases for NHS treatment, such as alcoholism, depressive illnesses and a whole range of behavioural and mental disorders. Rather than being hidden behind a physical diagnostic label, behavioural and mental disorders may be described as such and their alleviation may be possible. Such conditions, previously regarded as being outside the scope of the health service, are now accounting for an increasing proportion of workload and it is at the level of primary medical care that these services are most

appropriately provided. Thus, trends in medicine generally are seen to affect the role of general practice, to increase the importance of access to general practice and to involve the community, both as consumers of, and participants in, the care process. In the light of these factors, a number of recent developments in organisation and location of primary medical care, which are of major significance to the population served, have become apparent. These may be listed as:

- (i) The growth of group practices, and related to this
- (ii) The development of health centres.
- (iii) Growth of employment of ancillary staff and the 'primary healthcare team'.
- (iv) Use of appointment systems.
- (v) Use of deputising services.
- (vi) Changes in consultation rates and place of visits.

(i) The Growth of Group Practices

The general practitioner is responsible for persons who are registered with him (his 'list' of patients) twenty-four hours a day, all year round. To do this, the G.P. is an independent contractor, or entrepreneur, running his practice as a business, which is bound by certain ethical and legal codes. Three main systems of general practice organisation (or 'business types') may be recognised; first, the singlehanded practitioner, working alone; secondly, the partnership of two doctors, and thirdly, the group practice of three doctors or more, even up to seven, eight or nine doctors. Some other aspects of practice organisation are discussed in Appendix 6.

Table 2.3 illustrates the position in England and Wales. Table 2.3A, England, shows that for all years the trend has been distinctly away from the single-handed and two-doctor practice, and in 1975, the last year for which figures are available, the movement is away also from

TABLE 2.3

GENERAL MEDICAL PRACTITIONERS:
ANALYSIS BY ORGANISATION OF PRACTICE

(A) ENGLAND

TYPE OF PRACTICE	1961	1965	1970	1971	1972	1973	1974	1975
All Practitioners								
* Total	20,865	20,195	20,391	20,597	21,029	21,358	21,531	21,752
Unrestricted Practitioners:								
Total	18,905	18,784	19,099	19,374	19,775	19,997	20,219	20,377
Single handed Doctors	5,337	4,584	4,034	3,954	3,847	3,715	3,663	3,570
Partnerships of: 2 doctors	6,384	5,960	4,706	4,552	4,396	4,314	4,269	4,276
3 "	4,008	4,458	4,869	4,911	5,091	5,025	5,055	4,965
4 "	1,984	2,276	3,000	3,232	3,412	3,576	3,604	3,684
5 "	715	865	1,440	1,490	1,650	1,820	1,985	2,085
6 or more "	450	627	1,039	1,235	1,375	1,547	1,643	1,778

(B) WALES

	1971	1972	1973	1974	1975
All Practitioners					
* Total	1,313	1,314	1,328	1,354	1,369
All Unrestricted Principals *	1,259	1,269	1,269	1,291	1,290
Single handed	198	197	186	186	176
Partnerships of: 2 doctors	328	280	276	272	272
3 "	351	384	390	375	357
4 "	272	260	260	296	304
5 "	60	105	100	80	85
6 or more "	50	43	57	82	96

Source: (A) DHSS Personal Social Statistics for England 1976 (pub. 1977)
(B) Welsh Office Personal Social Statistics for Wales 1976 (pub.1977)

* N B This does not add up to the total figure as restricted principals, trainees and assistants have been omitted.

three-doctor groups, which indicates a trend towards the development of large groups of doctors.

Table 2.3B which is based on DHSS statistics published by the Welsh Office, unfortunately only has comparable data for the period 1971-1975. Nevertheless, the same trends exactly are illustrated. In 1975, the movement appears to be away from not only one-and two-doctor practices but away from three doctor practices although this form of organisation still employs the largest number of G.P's in both England and Wales. Current indications in West Glamorgan, to be discussed later, seem to be that these trends are not only continuing but accelerating.

It has been observed that whereas 31 per cent of practitioners worked in single-handed practices in England and Wales in 1959, this figure was 21 per cent in 1970 (OHE, 1974b, p.9). The proportion of single-handed practitioners is now about 16.2 per cent of the total. The implication for accessibility of such amalgamation of practices, retirement of single-handed practitioners and recruitment into groups of newer practitioners is that, unless branch surgeries are maintained, the distribution of practice premises may become severely restricted and 'competition' amongst various locations reduced. Some advantages for doctors in group practices are noticeable - the sharing of workloads, on-duty days and sharing of practice expenses, as well as stable groups of doctors being more likely to be allowed to take on a vocational trainee. Patients may benefit also, with the chance of second opinions within the group and a choice of doctor without changing surgery.

Against these advantages, the loss of continuity of care when patients move from one doctor to another and the reduced accessibility, have to be weighed. Allied with these trends in practice organisation is the second development, the growth of health centres.

(ii) The Development of Health Centres

Health Centres were envisaged as being government-owned surgery premises from which practitioners would work. They were proposed in the 1946 Act (section 21), (although they were suggested as early as the 1929 Dawson report), to bring together personnel from all three branches of the service (G.P.'s, dentists and pharmacists).

The B.M.A. recommendation is that 10 G.P.'s serving 25,000 persons comprise, on average, a viable Health Centre and this view is reflected by the Royal College on Medical Education, who consider that Health Centres could only begin to redefine the boundaries between community health, social care and general medical care if they had at least 12 general practitioners working in them (W. Glamorgan A.H.A., 1975). Thus they are envisaged as a coordinating and unifying effect in primary medical care, yet Ryan (1968) has indicated a number of reasons why health centres to that date had not been very numerous and to 1958 only ten such centres had been opened. Financial limitations and cautious attitudes on the part of practitioners, fearful of the possibility of local authority control and of a 'salaried' service, are quoted as being responsible. Buttimer (1971) found that by 1969, only 131 such centres were in use, 79 under construction and that few had developed the out-patient clinics or specialised diagnostic services originally intended.

Subsequently, however, developments have changed. Between 1967 and 1972, the number of health centres increased tenfold and by the end of 1972, there were 365 health centres operational in England which housed just under 10 per cent of general practitioners, but another 438 were under construction or in the active planning stage. The latest DHSS figures relate again to the year 1975, (HMSO 1976), in which the Chief Medical Officer of the DHSS reported that, despite some temporary loss

of impetus due to the NHS Reorganisation (when responsibility for providing health centres was transferred from local authorities to the new Area Health Authorities), 102 new centres were opened in 1974 and 72 new centres in 1975. A further 94 centres were under construction, and the total number of family doctors practising from health centres was about 3,500, or 18 per cent of all principals. In the present financial climate, this percentage was expected to increase by about $2\frac{1}{2}$ per cent annually.

Disquiet concerning these developments has been sounded by Buttimer (1971) and Sumner (1971) as these trends are considered to reflect largely the managerial perspective - the need to improve administrative efficiency and to provide more specialised medical services. The decision to develop health centres and the earlier decision to develop district general hospitals are both considered to reduce accessibility of medical services to the consumer, with little attention being paid to the social consequences of these actions. However, it is clear that some balance is required between medical and managerial views and the needs of the consumer and it was suggested that both the supply system and consumer demand have to be incorporated into the decision-making process if a socially-optimal spatial allocation of medical services is to be developed. A concern has recently been voiced that giant health centres, especially with group practices and ancillary staff, may be 'alien' to many persons whom they are intended to serve and thus not only may a spatially-reduced accessibility result but also a social-psychological barrier may possibly be created (Stacey, 1977). This may well be the case although, to date, little firm evidence has been produced to support these rather emotive contentions.

(iii) Growth of Employment of Ancillary Staff and the 'Primary Health Care Team'

The 'primary physician' is that physician working closest to the community (W. Glamorgan A.H.A., 1975). The primary level of care is the one where the health care system is entered and basic services received and where all health services are localised and coordinated. It is thus the mainspring of any health system and the Hospital system, emergencies apart, only begins to function at the request of the primary care system. To help improve this system, a better co-ordination and organisation of resources has been proposed to provide 'total' health care, via the medium of primary health care teams. This is a third, officially encouraged, current trend, which is closely related to the two preceding developments.

Ancillary staff may be non-medical, secretaries and receptionists, or paramedical, namely district nurses, practice nurses and health visitors. "The development of the practice team has been one of the key factors which has been expanding the possibilities within primary medical care" (OHE, 1974, p.10). This trend has made delegation of duties possible and has created the need for greater internal organisation within practices. Unfortunately, with the increasing employment of ancillary staff, comes the possibility of a further reduced accessibility to the general practitioner by 'shielding' or 'screening' difficult cases away from the doctor.

Reorganisation of practice financing in 1966 enabled doctors to recover part of the cost of employing non-medical secretaries and receptionists, with the result that the proportions of doctors employing such help rose from 66 per cent in 1963 to 97 per cent in 1969, these results being from two surveys reported by the Office of Health Economics (1974b).

As for the attachment of paramedical staff to practices, the proportion

of district nurses and health visitors working in general practices rose from 70 per cent in 1972 to 80 per cent in 1975 (HMSO, 1973 and 1975). In some areas, a shortage of nursing staff and a lack of commitment to the health care team concept has delayed its development, but "the Department remains convinced of the benefits that accrue to patients from successful team work" (HMSO, 1976, DHSS report for 1975, p.53). The disquiet voiced by some concerning the social barriers raised to patients and 'quasi-medical' diagnosis by unqualified staff is an issue which will be investigated in part by the present research, in the hope of discovering opinion on this matter. Once again, the 'official' viewpoint tends to stress the benefits to the patient through the improved workload borne by the practitioner as a result of team work, but this may be considered a further expression of the 'managerial' aspect of the engineering of the supply system rather than the appropriateness of the service to demand. It is at this stage too early to pre-judge this issue, although it is another feature of the evolving system to be borne in mind during a research project such as this.

(iv) Use of Appointment Systems

From the managerial viewpoint, it is considered that appointment systems can mean that the family doctor's time is more efficiently used. Williams (1970) in South Wales showed how their use may make consultation rates lower (and thus lower the major component of general practice workload). In the 1960's there was a dramatic growth in the use of appointment systems, from 6 per cent of practices using them in 1961 to 30 per cent in 1966 and 64 per cent in 1972 (OHE, 1974b). However, it might be expected that appointment systems requiring the use of telephones or a double attendance at surgery, could be less convenient for lower-status patients with less likelihood of possessing telephone or car, and often

with larger families requiring attention. The cause of increases in the work of hospital casualty departments has been attributed at least in part to the strict adoption of appointment systems which make it difficult or even impossible for patients to see their doctors at short notice (DHSS, report for 1971; HMSO, 1972). Once again, this is an area where firm conclusions have yet to emerge and it will be investigated later in the thesis.

(v) Use of Deputising Services

Since the mid-1960's, a service has developed whereby commercial firms employ doctors for night and weekend work who then 'deputise' for or take on, the out-of-hours calls for G.P's in certain areas. Their growth has been rapid, and in 1972 it was estimated that one-third of all family doctors used a deputising service and it has been remarked that although they provide useful relief for single-handed doctors and small practices, it is possible that the loss of continuity of care and lack of familiarity with cases might disadvantage patients (New Society, 1977; HMSO, 1973). Again, this increase in use of deputising services by large practices has been claimed because a single 'on-duty' doctor cannot cope with all the calls overnight from, for example, a group practice of six or seven doctors, who might have a total list size of possibly 15 - 18,000 patients.

This attitude might in part be a reflection of the desire for regular hours which some doctors have been demanding (Royal College of G.P's, 1976) and does indeed represent the 'managerial perspective', with little regard for the wishes of the patient. Deputising services are more numerous in the larger conurbations in the Midlands and three companies cover Greater London, but recently the services (over the past 2 - 5 years) have opened in medium to smaller sized towns such as Portsmouth, Cardiff,

incorporating Barry and Penarth, Newport-Cwmbran and Swansea. The efficiency and competence of cover has also been called into question on occasion (BMA, 1977) which raises doubts as to the quality of service the consumer receives. Conversely, however, it has been claimed that these services can sometimes provide a more efficient system of off-duty cover than a G.P. can fairly be expected to provide, in which case their use may actually be beneficial to the consumers' interests (B.M.J. 1977).

(vi) Changes in Consultation Rates and Place of Visits

Workloads in general practice are very dependent on the activities and attitudes of suppliers themselves. "The family doctor can effectively modify the demand for the services he provides" (OHE, 1974b, p.17). An example of this is in the propensity of individual practitioners to undertake home (domiciliary) visits and there is a general feeling that the number of home visits is falling (which might, in part, be a reflection of the changing disease pattern from acute to chronic conditions). Although evidence is difficult to obtain on this particular subject, there are indications that the number of visits per year to the doctor by individuals is falling: the Royal College of General Practitioners consider an average reduction of 15 per cent in consultation rates took place between 1949 and 1951. Morbidity statistics from general practice also tend to support this view (HMSO 1974). Evidence presented showed a reduction from 374 consultations per 1000 patients in the year 1955-6, to 301 consultations per 1000 patients, 1970-71. This drop of about 20 per cent tends to support the contention that the G.P. sees his patients less often at present than in the 1940-50's. A mean trend reduction of 60 per cent in annual home visits recorded from a number of studies between 1949 and 1971 was reported (Royal College of G.P's, 1973).

Many of these above trends have been considered disquieting - at a

time when the maximum benefit might be being reaped from the 'new' general practice, it is suggested that, in some practices, workload is being minimised, to the detriment of both consumers and efficiency of health services. Therefore, a number of points are worthy of emphasis in summary. Definite trends towards larger and more centralised practice organisation have been evidenced, with the attendant possibilities of a reduction in accessibility for the consumer. A number of administrative features such as the employment of ancillary - receptionist staff and the use of appointment systems have also been highlighted, with their possible detrimental effects upon the service received by the consumer. Finally, changes in the nature of consultation rates and places of visits to the doctor and changes in doctors seen during out-of-hours periods have also been noted, with the suggestion that these elements also require investigation during the course of this research. All these points indicate the evolving nature of the service being provided and it might well be that certain of the trends are of benefit to health service consumers although most suggestions to date, other than official, tend to have been of the opinion that this is not the case. To state more than this at the present stage of the research would be to prejudge the issue.

(3) The Central Role of the Patient as Consumer

Health services have as a central aim the prevention and treatment of ill-health in the community and the promotion of social well-being through minimum loss of normal functioning because of illness. Within a Nationalised health service, it is in some ways erroneous to speak of the patient or use of health services as a 'consumer' in the economic sense of the word, although as M. Stacey (1976) has pointed out, this

term has become fashionable because of the application of an economic industrial model (with 'producers' and 'consumers') to the health service and because of the current consumer movement. The patient is in a sense more than a consumer, but may also be a 'producer' of 'health' and it is possible to view the relationship between doctor and patient as something like a partnership.

This notion appears rather over-optimistic, for, as a partnership, it is certainly not an equal one, as the professional will always tend to be in the stronger position. This point brings this section to the last major trend which has affected the health service in recent years: the definition of patients officially as consumers. This notion was applied to cut patients out of the formal management in the N.H.S. Reorganisation by designating the patients to Community Health Councils which, as mentioned earlier, had watchdog powers attributed to them but very little real executive power. As Stacey (1976) observes, the remarkable delay in getting C.H.C.'s 'off the ground' suggests the low priority and low status attached to patient affairs. Now the Health Service is officially divided into 'managers' and 'consumers'. The 1972 White Paper on Health Service Reorganisation described C.H.C.'s as "bodies to represent the views of the consumer", which would be made up of "people with particular interest in health services". During the second reading their basic function was stated to be "to represent the interests of the public in each district" (Klein and Lewis, 1976). The practical implications of this change in wording are that the interests of NHS consumers are not necessarily identical with those of the public as a whole and, also, should CHC's include persons from organisations which were specifically involved with Health Services or should any organisation's members be eligible? A new institution was being invented to perform a rather

ill-defined range of functions, with vaguely-defined powers.

Opinions regarding the nature of tasks suitable for CHC attention are various (Klein and Lewis, 1976; Gordon, 1977). The original modest conception of their voicing the views of the community has been expanded, at least theoretically, to include other matters on which the CHC's might wish to turn their attention, such as the effectiveness of services being provided; the planning of services; share of resources between patients who are unable to protect their own interests; waiting periods; and monitoring the volume and type of complaints received about a service or institution. The potential range of their activities is considerable, but what appears to be lacking is a sound basis on which to work concerning actual levels of satisfaction with specific services and attitudes to specific services, on the part of the public as a whole. If this knowledge were to be systematically related to certain known facts about the location of services, their type and organisation, then a sound basis for informing official departments of 'grassroot' opinion, to be taken into account in facility planning and personnel training, would be possessed. This is a function which CHC's would appear eminently suited to perform, but which has never been fulfilled and one to which a research thesis of this type, albeit adopting an academic role, might be able to contribute.

The functions of a Community Health Council has been summarised by one Council as:

1. to ensure that the public is properly represented in the affairs of the Health Service.
2. to discover from individuals and organisations any shortcomings in local health care facilities.
3. to press for the best possible standards of health care in a locality within available resources.

4. to help establish priorities for future health services in a district.

(Exeter and District CHC, Annual Report, 1975-6).

It was suggested in the previous chapter that, within the social sciences, approaches which have been developed during the study of retailing might form the basis of a common methodology for the study of a range of additional urban services (Thomas, 1976). The traditional focus of attention of some geographers, the shopping system, has in certain circumstances been demonstrated to display significantly similar patterns of use to those found in medical services. This is especially noticeable if cross-cultural comparisons are to be made. For example, in the United States, the locational behaviour of physicians and their use by consumers conforms largely to expectations for retail services. This is because the medical system in the United States is that, largely, of fee-for-service and the best location for a physician's practice (who is ethically-bound not to advertise), becomes a shopping centre frequented by his potential patients. As a result, Earickson (1970) found that 83% of physicians in Chicago were located in commercial centres and there was a noticeable tendency for more specialised doctors to locate in centres of higher hierarchical status.

In the British situation, this present research was entering new ground for a social geographer but, by using the methodologies indicated earlier, it was hoped that the study would prove fruitful. Although the study may be considered to be essentially exploratory in nature, there is still the requirement of presenting well-formulated hypotheses relating to the broad range of literature discussed previously and these will be specified at the end of this chapter. Prior to this specification of the working hypotheses relating to the general and local system and

attitudes, utilisation and levels of satisfaction with general practitioner services in West Glamorgan, the present system of health care in this county will be described. This will include the examination of temporal changes in practice distribution and organisation and of the effects of the trends in primary health care delivery as they have come about within the study area.

PART TWO: THE HEALTH CARE DELIVERY SYSTEM IN THE STUDY AREA

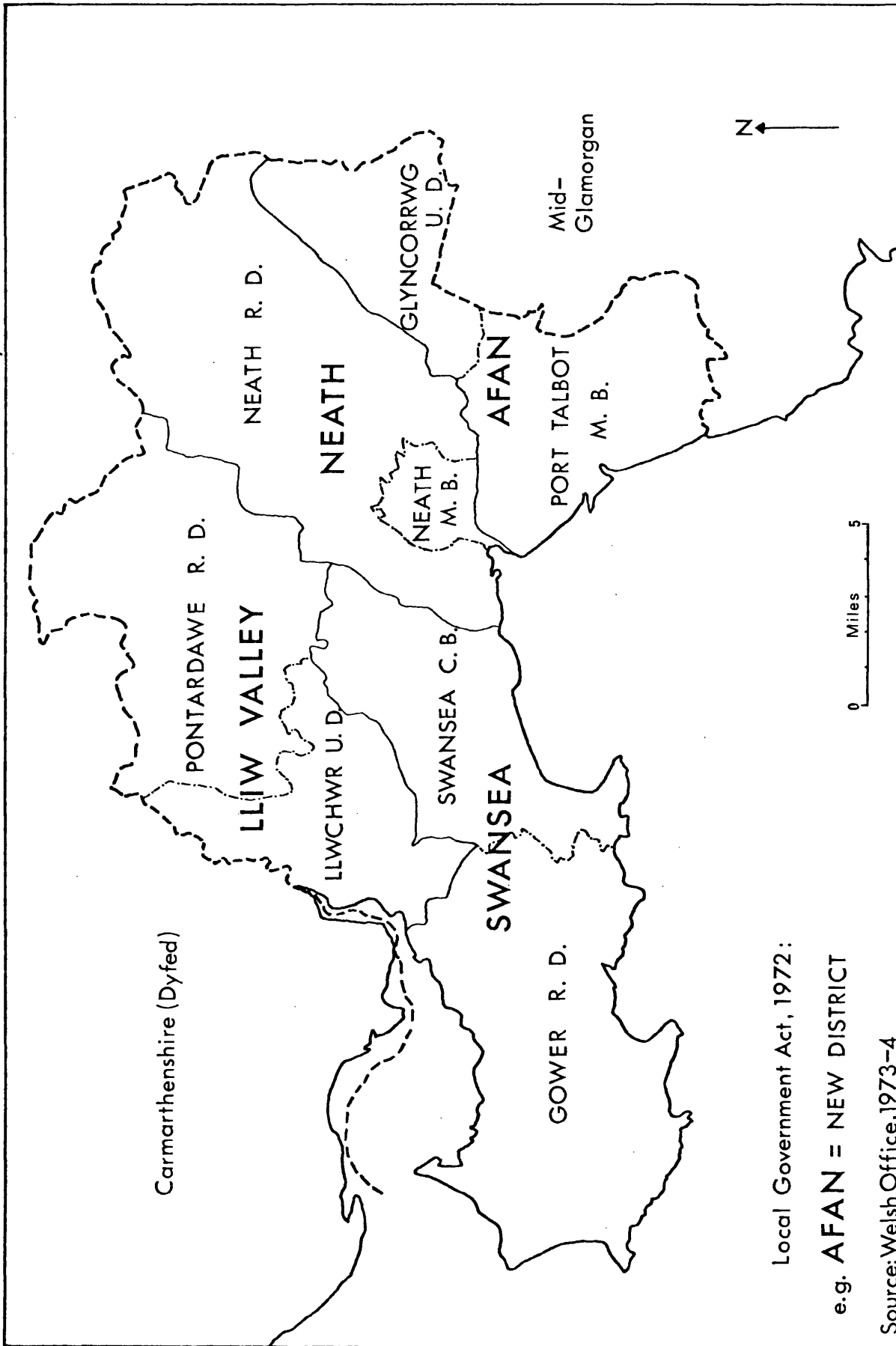
(1) The Study Area

This section of Chapter two will examine the primary health care delivery system as it operates within the West Glamorgan Area Health Authority, which is areally co-terminous with the County of West Glamorgan. The administrative unit of West Glamorgan conforms very nearly with the Greater Swansea Area, the area which is oriented towards the principal service centre of Swansea (Davies, 1972). West Glamorgan, with a population of 375,000 (of whom 173,000 are in Swansea City) accommodates about one-seventh of the people of Wales (Figures 2.4a and 2.4b).

The physical background of the area displays considerable variation, but a number of sub-regions may be recognised. To the west is the Gower Peninsula, largely agricultural land, lying between 50 and 150 metres. To the north-east of this area lies the western extremity of the South Wales Coalfield, which is bounded in the north by the Black Mountain and Fforest Fawr, at elevations between 200m. and 400m. The southern portion of this Pennant Sandstone area has high plateaux, which are divided into three main blocks by the troughs of the Neath and Tawe valleys. The Loughor river lies on the far west and the Afan on the east (Figure 2.4a). The southern flank of the Pennant plateaux is a dissected south facing escarpment, which rises to 224m. in the east and forms the cliffed

Figure 2.4b

WEST GLAMORGAN: ADMINISTRATIVE AREAS, 1974



Local Government Act, 1972:

e.g. **AFAN** = NEW DISTRICT

Source: Welsh Office, 1973-4

back-edge to the coastal plateaux of the Vale of Glamorgan. This feature is seen from Port Talbot, across the mouth of the R. Neath to Swansea, directly behind the coastal flats. It then swings westwards as the 183m. Townhill ridge and extends across the neck of the Gower peninsula, where it has been bevelled to about 120m. The relatively narrow coastal plain extends around Swansea Bay, where much coastal settlement has taken place.

This physical background has been of considerable importance in the development of the built environment of the area, although the industrial history has also been of great significance. At the beginning of the 18th century, West Wales between the Afan Valley in the east and the Gwendraeth Valley in the west was agricultural, with the bleak, hilly interior given to sheep rearing and the more fertile coastlands to agriculture. Increasing demands for iron and the shortage of woodlands in England were leading to the establishment of a charcoal iron industry by the early 18th. Then, as this trend continued, there was a steady change in favour of industry in the second half of the eighteenth century, which was to accelerate during the next one hundred years and especially after 1850. By 1900, this essentially agricultural region had been transformed into one of Britain's most important industrial areas (Davies, 1971). At first, its bases were coal and copper, but other non-ferrous metals, as well as tinsplate, became increasingly important. By the end of the 19th century, this area produced 90 per cent of Britain's copper and 75 per cent of its tinsplate.

Population increase began after 1750 in the South Wales Coalfield, although the Western region, concerned with here, grew more slowly than the eastern. Glamorgan's population grew from 70,900 in 1801, to 126,600 in 1831, to 511,400 in 1881 and 859,900 in 1901. Immigration was a

chief reason for this growth and in the Western area of Glamorgan, Swansea was considerably more influenced by immigration than other settlements.

The channelling of the coal trade into several valleys, each with a port at its mouth, militated against centralisation and the development of one completely dominant centre. Instead, the coastal nodes expanded along the tide-waters and coalesced with the early industrial settlements in the lower valleys. Swansea County Borough, for example, was formed by amalgamation of the industrial service centres of the lower Tawe Valley and the medieval service centre and resort of Swansea. This had grown along Swansea Bay to absorb Oystermouth by the early twentieth century. Even today, Rosser and Harris (1965) note that sociologically, the administrative unit of Swansea is more a cluster of settlements than one integrated urban unit.

Excessive historical detail will be avoided, since excellent accounts appear in "Swansea and its Region" (Balchin, 1971) but the urban settlement patterns of the twentieth century will be discussed. By the beginning of the 20th century, the general pattern of settlement was well established. The valley settlements in the Swansea region are intimately connected with the coastal towns and the regional cohesion has strengthened during the twentieth century by an increasing focus on Swansea Bay. During the industrialisation period, employment prospects near to places of residence, limited transport and mobility and local foci such as non-conformist chapels, tended to promote a multiplicity of local communities. Although these have to some extent persisted into this century, a major feature has been the increased mobility of wider sections of the population, clearly demonstrated in the increasing frequencies of short-distance movements to shop, work, visit and use services. As employment can no

longer be so localised, the acceptance of a longer journey to work has become a characteristic of this century.

The pattern of residential differentiation over the county will be briefly introduced here, to be more fully examined in chapter three, when a principal components analysis is employed to produce an areal sampling framework.

Internally, this region is divided into higher-status areas in the south and west, mainly along the coast but extending westwards into Gower Peninsula, with extensions to this area being found in some relatively high status residential developments in the more accessible South Gower villages such as Bishopston, Pennard and Reynoldston (Figure 2.4a). The character of the Gower has still remained largely rural and agricultural, despite increasing pressure for residential development, tourism and recreation. In Swansea itself, much of the remainder of housing is lower-status private and local authority owned. The lower Swansea Valley has had concentrations of industry, especially copper and railway workings, associated with nearby housing for workers and a similar situation exists in the coastal plain to the east of the town. Hafod, Landore and Morrison, in the lower Swansea Valley, have large areas of terraced housing of early nineteenth century vintage, while to the north - west of the town and on Townhill - Mayhill are extensive areas of council housing, built since 1919. The remaining settlements near the coast are largely industrial in character and much early development had been based on coal mining with some metal working, such as developments at Pontardulais, Gorseinon and Gowerton, in the west of the County and in the larger historic settlement of Neath, on the R. Neath. There are also major concentration of heavy industry at Port Talbot. In this area, modern petrochemical firms at Baglan Bay and steel works at Port Talbot are now

major employers, so, essentially, the nearby settlements are for industrial workers. In addition, there are smaller sections of higher-status housing for professional, managerial, supervisory and service staff, especially in the eastern area of Baglan, lying to the North of Aberavon and in Cimla to the north-east of Neath. Over the rest of the coalfield area are traditional linear developments along valley floors, nineteenth-century terraced dwellings, near to coalmining and metallurgical industries, for example at Cwmavon, where blast furnaces and tinplate works were developed as early as the eighteenth century to supplement the Taibach copper works. A feature in some of these areas has been loss of population due to the contraction of basic industries, so that newer housing is often confined to that provided by local authorities or the National Coal Board, who developed similar estates (such as at Penllergaer), sometimes to settle workers displaced from other mines in the area or even nationally.

The development of a belt of coastal industry and housing has encouraged the use of the term 'Swansea Bay City' (Humphrys, 1972,p.178) although Davies (1972) prefers to view the Greater Swansea area as a conurbation and a city region. In land-use terms, a distinctive coastal conurbation can be recognised, but economic, structure and interaction patterns tend to make it more appropriate to regard 'Swansea Bay City' as the core of a city region in which the interior coalfield communities represent a periphery (Figure 2.4a).

The emergence of such an area, West Glamorgan, as the Swansea 'city region' might be attributed to the combined influence of increasing personal mobility, affluence and leisure time, to technical advances in industry, agriculture and communications and to the consequent 'mass culture' of people with urban values looking towards a common centre for

their services. Examination of journeys to work and to shop led Davies (1972) to view the urban core of the region as the coastal conurbation rather than Swansea City alone and, despite the fact that independent clusters of commuting areas within the overall unit could be distinguished, the coherence of the shopping pattern led to the use of the term 'city region' as an overall description. The core of the city region was seen to be linked by intimate functional ties to a periphery that was often stagnating in economic and demographic terms. This leads to a brief description of population distribution and change within the county as a background for discussing health service availability.

Table 2.5 shows intercensal variations in population from 1951 to 1971 within areas now comprising the administrative county of West Glamorgan (Figure 2.4b). Swansea C.B. (1971 population 173,000) is still the dominant centre by population, but a closer examination of the figures illustrates the trends already discussed. Between 1961 and 1971, all the population increase within the county took place in Gower R.D., Llwchwr U.D. and Swansea C.B., which illustrates the contention that all population growth was in the west of the country, in the rather more attractive areas. The industrial areas of the Swansea Valley, Neath M.B. and Port Talbot to the east, have all lost population to a greater or lesser extent, as have the settlements around Glyncoirwg. Neath R.D. itself was the most 'stable' in population terms, with the least increase or decrease of the administrative areas. The implications of these population changes will be mentioned again when the county-wide component structure is discussed in the following chapter.

TABLE 2.5

West GlamorganPopulation 1951, 1961 and 1971 and Intercensal Variations

All figures relate to the areas as constituted in 1971, and refer to areas included in West Glamorgan, 1974 (see Figure 2.4b)

CENSUS	1951	1961	1971	1961 - 71 Increase or Decrease
<u>Administrative Area</u>				
Swansea County Borough	160,988	167,322	173,413	+ 6,091
<u>M.B's and U.D.'s</u>				
Glyncorrwg U.D.	9,240	9,368	8,647	- 721
Llwchwr U.D.	25,882	25,013	26,864	+ 1,851
Neath M.B.	32,284	30,935	28,619	- 2,316
Port Talbot M.B.	44,115	51,322	50,729	- 593
<u>Rural Districts</u>				
Gower	11,743	12,656	16,440	+ 3,784
Neath	41,579	40,870	40,835	- 35
Pontardawe	32,581	30,687	29,448	- 1,239
TOTAL POPULATION	358,412	368,173	374,995	+ 6,822

(2) Health Care Delivery in West Glamorgan

West Glamorgan itself constitutes one of the new Area Health Authorities established in 1974 (Figure 2.6). Within the Area Health Authority are two district authorities, Swansea and Lliw Valley District to the west and Neath and Afan District to the east. One Family Practitioner Committee has been established to provide administrative services for the independent contractors to the NHS (who are mainly G.P.'s). A Community Health Council has also been established for each of the two health districts within the AHA. The 1975 estimated population included within the Area Health Authority was 371,700, of whom 248,300 were living within the Swansea District Health Authority and 123,400 within the Neath District Health Authority. This is the administrative position of the County since the reorganisation of the health service, the organisational structure of the system 'on the ground'. The remainder of this chapter proposes to analyse how the nationally-observed trends discussed previously have operated locally.

The Growth of Group Practices and Development of Health Centres

The Family Practitioner Committee in West Glamorgan was able to supply lists of doctors operating within its area from 1974 onwards and, to ascertain the position prior to this date, the old Executive Council lists for Swansea and Glamorgan were consulted, extracting from these lists the locations of doctors whose practices lay within the area of present-day West Glamorgan. The F.P.C. and Executive Council lists also provided very useful information concerning the number of patients for whom each general practitioner was responsible which were also able to give additional insights on the operation of the system.

Statistical and cartographic analysis of this information was carried out. The tabulations of practice types, Table 2.7, indicate the crude

Figure 2.6

HEALTH AUTHORITIES IN WALES SINCE THE REORGANISATION OF THE N.H.S.

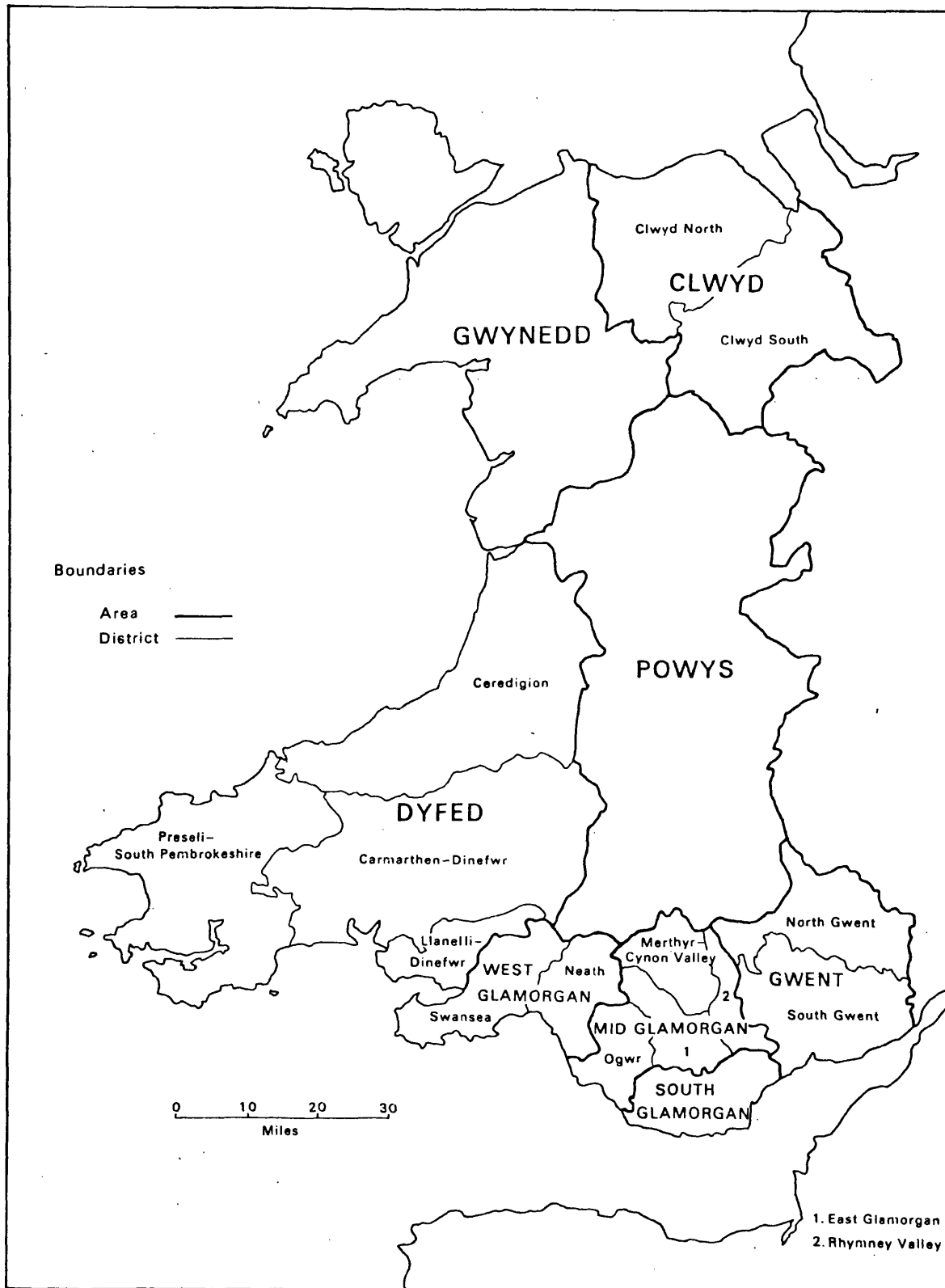


TABLE 2.7

Practice Size and Organisation : West Glamorgan

(A)

1960	OWN PREMISES		HEALTH CENTRE		TOTAL	
	No. of Doctors	Percentage Of Class Of Total	No. of Doctors	Percentage Of Class Of Total	No.	%
(1) Single Handed	36	100%	20.6%	Nil	36	20.6%
(2) 2 Doctor Partnership	82	100%	46.8%	Nil	82	46.8%
(3) Group of 3 or more	57	100%	32.6%	Nil	57	32.6%
Total	175		100%	Nil	175	100%

1970

(B)

(1) Single Handed	20	90.9%	12.1%	2	9.1%	1.2%	22	13.3%
(2) Partnership	50	92.6%	30.3%	4	7.4%	2.4%	54	32.7%
(3) Group	78	87.6%	47.3%	11	12.4%	6.7%	89	54.0%
Total	148		89.7%	17		10.3%	165	100%

1977

(C)

(1) Single Handed	9	81.8%	5.3%	2	18.2%	1.2%	11	6.5%
(2) Partnership	16	47.1%	9.5%	18	52.9%	10.6%	34	20.1%
(3) Group	80	64.5%	47.3%	44	35.5%	26.0%	124	73.4%
Total	105		62.1%	64		37.9%	169	100%

Sources: Glamorgan Executive Council Medical List, 1 April 1960+1970 } Tables
 Swansea Executive Council Medical List, 1 April 1960+1970 } A + B
 West Glamorgan Family Practitioner Committee Medical
 List, 1 April, 1977 - Table C.

distributions of principals by type and size of practice : as previously, assistants and trainee doctors are omitted. Table 2.7 presents tabulations which are divided into two 'premises categories', depending upon whether the G.P. practice operates from its own premises or from an officially-owned health centre. The tabulations are also subdivided by size of practice (according to whether the practice is single-handed, a partnership of two doctors or a group of three or more doctors) and by the number of doctors within each form of organisation, together with overall percentages. Therefore, six basic types of service may be identified - a single-handed practitioner operating from his own premises; a single-handed practitioner working from a health centre, and the same for a partnership and for a group practice of doctors.

A slight decline in the total number of G.P.'s in the county was observed between 1960 and 1970 (from 175 G.P.'s to 164 G.P.'s) with a recovery to 169 G.P.'s by 1977. As the total population of the county had grown by 7,000 persons between 1961 and 1971, this means each practitioner would, on average, have had a slightly increased list size of this period, although with the predicted stabilisation (or even slight decrease) in the county's population by 1975, this trend would by now largely have been counterbalanced.

In 1960, no practice was operating from a health centre and 21% of practitioners were organised in single-handed practices, with a further 47% organised into partnerships of two doctors. Thus, more than two-thirds of the area's general practitioners were in what might be termed 'traditional small-scale practices. In 1960, there was not any group consisting of more than four doctors in the county; indeed, of those doctors actually organised into groups, only three practices consisted of four doctors, the rest being in groups of three doctors. Consequently, in 1960, no 'giant'

group practices existed.

By 1970, the nationally-observed trend of a reduction in single-handed practices and an increase in doctors organised in groups was apparent locally. From 21% of doctors operating single-handed in 1960, the percentage had fallen to 13.3% in 1970, of whom 2 doctors (1.2% of total) were operating single-handed from health centres. The percentage of doctors operating in partnerships of two fell from 46.8% to 32.7% between 1960 and 1970, whilst the percentage of doctors operating in groups of three or more rose dramatically from 32.6% in 1960 to 54.0% in 1970, of whom, 12.4% (or 6.7% of total doctors) were operating from health centre premises supplied by the local authorities. However, in 1970, only 10.3% of the total number of doctors in the county were working from health centres - a similar proportion to that noted nationally in 1972 (10%). In 1970, there was only one 'giant' practice in the county, a group of six doctors operating in West Swansea and one practice of five doctors in Port Talbot, so thus the trend towards larger practices was beginning, if not yet well-established.

Intervening years between 1970 and 1977 (not tabulated, for clarity) witnessed the national trends developing in West Glamorgan. In 1975, 32.9% of doctors in the county were working from health centres, the proportion of single-handed practitioners had fallen to 9.3%, and of partnerships to 23.6%. Thus, barely one-third of the County's G.P.'s were still practising in small-scale practices of one or two doctors, a similar proportion to that which had been operating single-handed fifteen years earlier. 1977 saw the trends extrapolated yet further. Only 6.5% of doctors in the county still work on their own, compared with a national figure of about 16%. Similarly, only 20% are still in partnerships of two doctors, whereas the vast majority of doctors are now organised in groups

of three or more - 73.4% of the total, and over one-third of doctors are in large groups of 5 doctors or more, more than five times the number who were in such groups in 1970.

An interesting point to emerge during analysis was that a single-handed practitioner was also more likely to have a smaller list size than were group practice doctors: (Table 2.8)

Table 2.8

Average List Sizes per Doctor : West Glamorgan		1 April 1977	
Single-handed practitioners	2,032 patients (average List)		
Partnerships of two doctors	2,082	"	"
Groups of three or four doctors	2,161	"	"
Groups of 5 or more doctors	2,313	"	"

Source: Calculated from West Glamorgan F.P.C. Medical List, 1 April 1977. (Only doctors whose entire lists fell within West Glamorgan AHA included in this tabulation).

These figures would tend to imply that one and two doctor practices might have more time on average to devote to each patient, as well as being more likely to have a personal knowledge of cases. On the other hand, it is possible that a group practice is more likely to employ the ancillary staff to enable it to cope with larger list sizes, if not in such a personal manner.

Such descriptive statistics are useful to illustrate the local situation in practice organisation, but from the geographer's viewpoint, an examination of the spatial distribution of practices was expected to prove fruitful. The location of main surgeries in the three years to which Table 2.7a, b and c refer were plotted in relation to the built-up

area (1974) and these are shown in figures 2.9, 2.10 and 2.11. An immediate feature to become apparent was the reduction in actual offerings of practices : in 1960, there were 93 individual main surgery premises in use in the County, of which, thirty-three were in the central area of Swansea and along the Lower Swansea Valley. By 1970, this total of 93 surgeries was reduced to only 71, with 29 still in the central area, but by 1977, the total number of surgeries was only 49, barely half of the 1960 figure. It does not appear possible to view the G.P. any longer as a 'local' service which is provided conveniently to the consumer, and the fears which Summer voiced in 1971 appear to be all too likely to occur. The reduction in number of service-offerings is thus accelerating and if a similar proportion of surgeries 'close', or are rationalised together during the next ten years, the county could expect to have between twenty and thirty surgeries only left by the mid-1980's.

The spatial distribution of main surgery premises displays a dramatic change between 1960 and 1977 (Figures 2.9, 2.10 and 2.11) although the intervening year of 1970 indicates the beginning of the move towards group practices. Most notable is the declining dominance of the central city of Swansea, which in 1960 housed 14 surgery premises around and along one main roadway and most of these were small one-and two-man practices. This number of surgeries was reduced to 7, of which only two were one-doctor practices. In the Lower Swansea Valley area, from Hafod, through Landore to Morrison, there is now only one single-handed practitioner and one partnership of two doctors, where previously there were nine practices.

The large council-housing area of Foresthall - Blaenymaes - Portmead on the North-west city boundary has had its smaller practices replaced by a health centre, built about 1969, which houses two group practices of

Practice Type and Location, West Glamorgan, 1960.

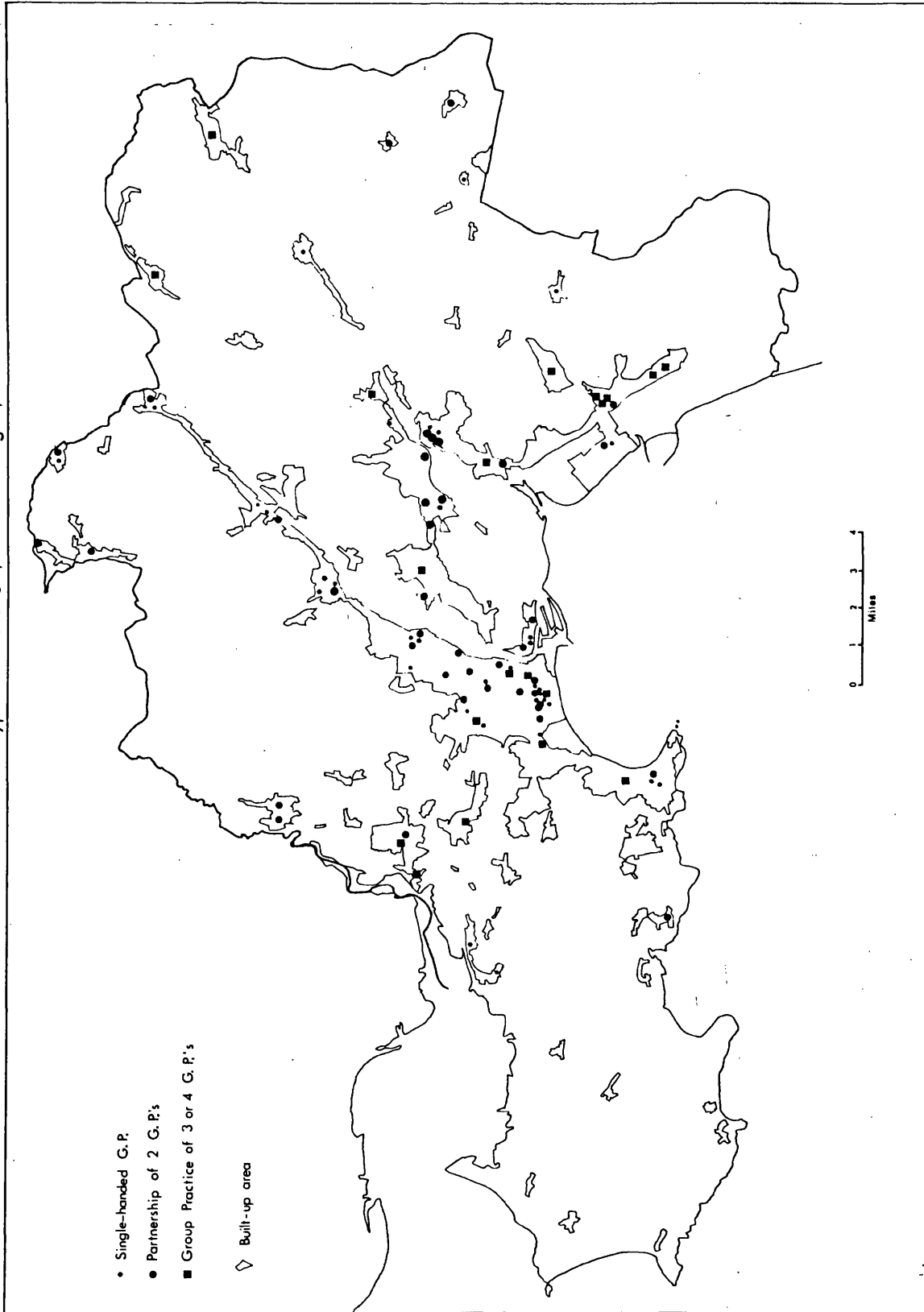


Figure 2.10

Practice Type and Location, West Glamorgan; 1970.

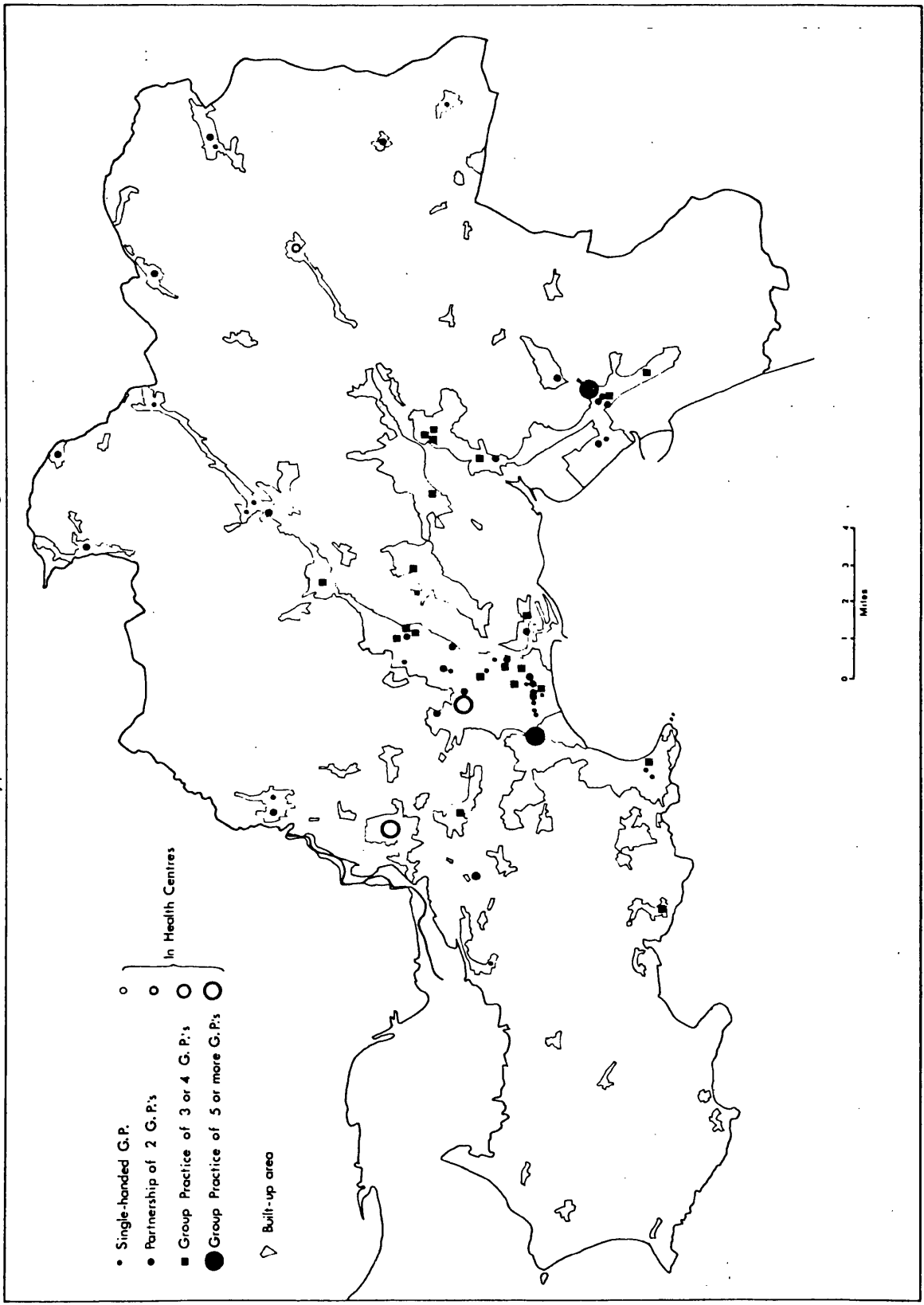
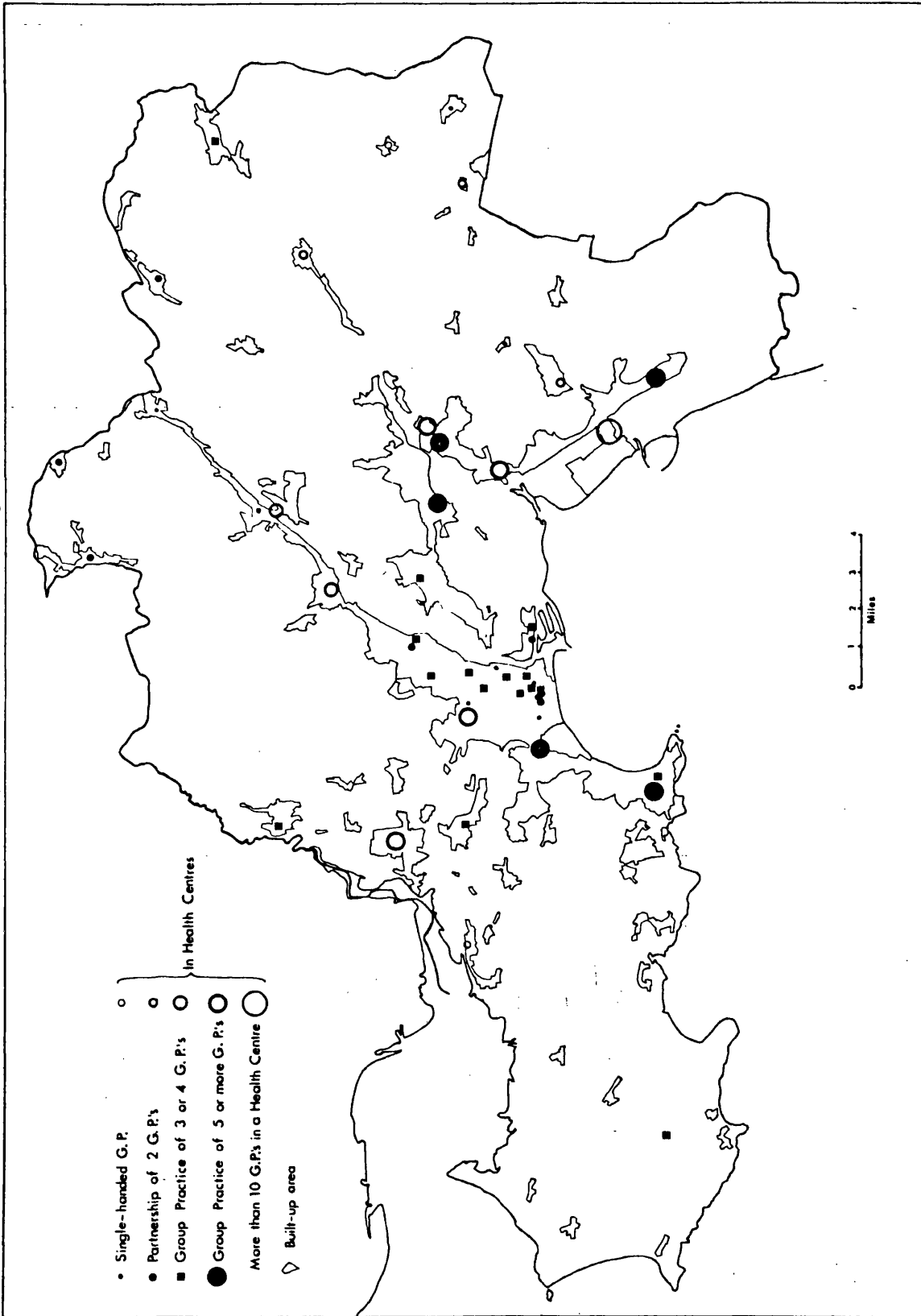


Figure 2.11

Practice Type and Location, West Glamorgan, 1977.



doctors.

Outside the C.B. itself, the reduction in availability of surgeries is noticeable higher up the Swansea Valley. Both Clydach and Pontardawe now have their doctors housed in a single location of a health centre, apart from one single-handed practice in Pontardawe. Gorseinon and Loughor now similarly have a health centre, housing two group practices, of G.P.'s, whereas in 1960 there were three separate practices, one of which was in Loughor, to the west of the present health centre location.

In Neath, three two-doctor practices and two single-handed practices were reduced to three group practices by 1970 and, by 1977, two large surgeries, one of which was a health centre housing two smaller practices, were established. Briton Ferry suffered a similar reduction in the number of locations; two surgeries evenly spaced in the town were both located in one modern health centre between 1975 and 1976. However, the region in the county which has witnessed the greatest change is in the industrial town of Port Talbot - Aberavon.

In Port Talbot - Aberavon in 1960, eight practices served the population, (two practices in Aberavon, four in central Port Talbot, and two in the southern area of Taibach - Margam, about two and a half miles further along the main road; Figure 2.4a). Up to 1970, one practice had grown to include five doctors and another to include four. By the 1974 reorganisation, however, this situation had changed. From a fairly equitable spatial distribution of surgeries, one health centre housing all practices, except one in Taibach, had been built, located between Aberafan and Port Talbot. From this health centre, fourteen G.P.'s were operating, which was considered to constitute a great reduction in accessibility to primary health care services. This was a very good example of a 'centralised' service, in the exact manner which Sumner (1971) and Buttimer (1971) were discussing and

the overall picture for the county in the development of health centres is summarised in Table 2.12.

The Area Medical Officer for West Glamorgan noted in 1975, with regard to the range of services provided from each health centre, that "the functions are unique to each individual centre and have not been established as part of a framework of comprehensive health care" (p.2). Despite this, the health centre is seen as being the focal point for primary health care within the county, with hospital backup and they would hopefully be manned 8.0 am - 10.0 pm. The concept of health centres within West Glamorgan is intended to be used as the mainstay of a positive health care programme and since the very benefits to the community of such a concept are still in question, it is time that this should be fully investigated.

Table 2.12

Health Centres in West Glamorgan

(As at 3 April 1975)

Health Centres	No. of Doctors	No. of Patients	Dental	Family Pl.	Ophthalmic
Aberavon	14	32,887	Yes	Yes	No
Clydach	3	10,996	No	No	No
Cwmavon	3	6,274	Yes	No	No
Cymmer	2	3,875	Yes	Yes	No
Fforestfach	10	19,449	Yes	No	No
Glyncorrgwg	1	2,087	No	No	No
Gorseinon	8	17,970	Yes	Yes	No
Neath	6	17,592	Yes	Yes	No
Pontardawe	3	8,864	Yes	Yes	Yes
Resolven	2	4,272	No	Yes	No
(subsequently opened:)					
Briton Ferry	5	9,706			

From this tabulation (Table 2.12) it is evident that few of the 'health centres' come near to the B.M.A. recommendation that 10 G.P's, serving 25,000 people, should, on average, comprise a viable Health Centre and the

advantages which could accrue from such centralisation (such as provision of dental, ophthalmic, social care, community care and general medical care) are thus not gained, but the disadvantages which are attendant with such centralisation (such as lack of accessibility and increased bureaucracy) might well exist.

The Growth of Employment of Ancillary Staff and the use of Appointment Systems

Detailed information concerning the employment locally of ancillary staff was not available on a county-wide basis. Rather, it was noted that a number of group practices had attached to them district nurses, or in some cases, shared a district nurse, and many employed a practice nurse. During the course of the questionnaire interviews, it was found that all persons who made an appointment to see the doctor spoke first to a receptionist, and therefore, the use of an appointment system (which is officially encouraged, although formal approval to employ an appointment system is theoretically needed), entails the employment of a receptionist-secretary, with the attendant possibility of reducing personal accessibility to the G.P. In the past, there have always been surgeries which have employed secretary-receptionists, but it is the modern trend of delegating quasi-medical duties to lay staff which has been a cause of comment.

Concerning the proportions of surgeries employing appointment systems, one was in use in all the new health centres, and in most of the larger group practices. However, when a branch surgery was used by patients, the arrangements were sometimes more flexible and a 'first come, first seen' system was occasionally used.

Use of Deputising Services

Since October 1975, a B.M.A.-approved deputising service has been operating within West Glamorgan, run by a private commercial company. Cover is provided for G.P.'s between 7.0 pm. and 7.0 am. on weekdays and

from 12 noon Saturday to 7.0 am. on Monday, so therefore, in effect, all 'out-of-hours' calls to doctors who make use of this service may be met by a deputy doctor rather than by the practitioner himself. The service in West Glamorgan is not provided on a county-wide basis but extends over an area approximately five miles in radius from the central area of Swansea, where a control office is located. Settlements outside this radius are also included by arrangement: Gorseinon, Clydach and part of Skewen are covered on many weekends, which has caused some consternation locally. The Community Health Council has voiced anxiety over unfamiliar deputies taking a long time to answer calls, but the deputising service has responded that it answers calls faster and more efficiently than many G.P.'s in a busy practice can, by use of radio-controlled cars. Most criticism centres on the delegation of duties to outside doctors by family doctors, and the further erosion of continuity of care and personal service.

Of the eligible G.P.'s within the area covered, every practice has, on occasion, used the service. The large health centres within the area use it every weekend and two large group-practices use it on average one weekend per month, plus one night per week. Several smaller groups use the service every evening and all weekends, as do the five single-handed practitioners in the area (all the eligible single-handed practitioners) (unpublished figures, B.M.A. Deputising Service, Swansea, 1977-1978). The implications for the public of these levels of use of the deputising service have not, therefore, escaped the notice of both consumers individually, nor of the C.H.C.'s, which have been critical (but helpless) in the face of G.P. determination to use the service for out-of-hours cover.

The Research Objectives

It has been the aim in this chapter to detail the primary health care delivery system as it is organised nationally and the way in which it operates within the study area. As was indicated in the literature review, a major contention of this thesis is that the form of delivery, the location of surgery, distance, and organisation within practice, will be a major explanatory variable affecting utilisation behaviour and satisfaction with the service. A synopsis of current trends within general practice has been undertaken and it has been illustrated that most of these trends can be seen, often in a very clear form, operating locally within West Glamorgan. Since the background to the research and the subject of the research have been discussed it is now appropriate to indicate the working hypotheses which have been formulated to guide the investigation. After this has been completed, the following chapter will consider the research design and methodology and will include a description of the questionnaire constructed to obtain data to investigate the research objectives. The chapter will also consider the sampling framework used to delimit areas in which to carry out the survey work which was the major data-generating section of the research project.

The underlying aim of this research is to undertake an investigation of the utilisation of primary medical care facilities and associated attitudes to and levels of satisfaction with the service. The first basic aim will therefore be to examine utilisation behaviour. This has two facets; the first concerns which surgery is attended and the second, how frequently the service is used (for both surgery visits and domiciliary visits). The next aim will be to investigate attitudes to various features of the service. These features may include spatial factors such as the location of the surgery and the distance travelled to surgery; 'administrative' factors

such as the behaviour of receptionists and length of time allocated for consultations, or micro-scale aspects relating to the behaviour of the doctor himself. These attitudes will be accompanied by an overall level of satisfaction with the service, which it will form part of the research to assess.

The review of the literature presented in chapter one suggested the explanatory significance to utilisation behaviour of variations in a number of features. Possibly four main features may be identified. First, the geographical location of the respondent and of the facility attended may be of importance. Second, social status and related levels of mobility and third, age-structure will vary between respondents. Finally, the type and organisation of the practice attended may vary.

All of these four features have strong geographical connotations. The central question of explaining behaviour and possibly highlighting any recurrent weaknesses and problems with the service will be investigated within a context of controlling for these four variables as closely as possible, in order that the effects of each individually may be recognised. It is, of course, a recurrent problem within the social sciences that the effects of individual variables upon behaviour may be difficult to isolate. Therefore, a research design mentioned earlier may be adopted. In this design, spatially juxtaposed sites of known social composition are chosen, so that a similar range of services is available to the residents in each site. This may avoid the pitfall of results from social surveys becoming merely descriptive of unique situations, from which no general explanatory or predictive conclusions may be drawn. The gross population-structures of these sites may be determined at the outset from census data, whilst detailed socio-demographic variations may be isolated, given sufficient numbers of subjects in each site.

The effects of these socio-demographic variations (social class and age structure), geographical location and certain other characteristics which may emerge as being relevant will be related to actual surgeries attended in the first empirical results chapter (chapter four).

From this more macro-scale of investigation of utilisation behaviour, the effects of these features on attitudes to the service will be examined. In addition, this section will investigate the effects of certain more micro-features upon attitudes. These are features such as the behaviour of the doctor to his patient, as it has been suggested by certain articles in chapter one that in a personal social service, these features may be critical in determining attitudes and levels of satisfaction. Attitudes to other features of the service such as attitudes towards receptionists, or towards different surgery premises and towards the travelling involved will also be tested. Any differences found between sites may then be related to known features of the respondents (age, social class and the like) or to known features of the service (such as practice organisation). Some of the hypotheses tested in this section may become essentially exploratory in attempting to discover whether attitudes to any particular features differ significantly between groups of respondents. An overall assessment of levels of satisfaction with the service will be attempted (chapter five).

Finally in the empirical section, chapter six attempts to investigate the effects which the features of differences between respondents and differences in accessibility to services have on actual attendance rates, including out-of-hours calls. This might be seen as an attempt to clarify the debate introduced in chapter one concerning differential usage made of medical facilities by various sub-groups of the population, since no satisfactory conclusions have been reached concerning this question to date.

A number of problems may be encountered in an investigation of such topics. Attitudes and levels of satisfaction may be influenced by numerous factors operating at various scales, not all of which may be successfully controlled by the research design. It is impossible to escape completely from such a problem in any empirical-behavioural investigation. Therefore, an underlying aim of the research must be to feed to and to augment the body of knowledge concerning consumer behaviour in the setting of a personal social service, rather than to seek a theoretical explanation. Another problem is that an individual research worker is constrained by limited resources, personal and financial, and can only hope in an exploratory analysis to hypothesise what factors might influence behaviour and attitudes. The research design adopted was used in the belief that inferences could be drawn regarding the hypothesised effects of distance, social class, practice organisation and other micro-features such as physician's attitudes, upon behaviour and attitudes.

Therefore, the basic aim will be to investigate and to explain behaviour and to highlight any recurrent trends, weaknesses or problems in the service. It is evident that the type of data which was collected for a descriptive or a planning study would be of a similar type to that collected during the course of this research, but with the constrained research design, it is hoped that the information and explanation emerging could help in the building of a model or theory of health care utilisation behaviour. In other words, predictive and, possibly, prescriptive power might be obtained. Hopefully the major influential variables and their relative importance may be identified and thus they might be included in future conceptual models of the type presented earlier. The fact that this research project is an exploratory undertaking is stated not as a weakness but as a recognition of the fact that at the present state of understanding of consumer behaviour

in the field of medical service utilisation, it must necessarily include a broad range of possibilities and not pretend to aspire to total explanation.

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CHAPTER THREE : RESEARCH DESIGN AND METHODOLOGY

CHAPTER THREE - RESEARCH DESIGN AND METHODOLOGY

Introduction

As this stage the research design and methodology employed in this thesis will be introduced. This section of the thesis will be in two main parts : the first will consider social areas within West Glamorgan, as a background for an areal sampling framework (Part 1A), and will examine the problems associated with sampling in social investigation and then will describe the nature of the survey sites delimited (Part 1B). The second part will consider the use of questionnaires in social research and will then describe the questionnaire used in this thesis in detail, in relation to the research aims previously discussed.

A research design is "the arrangement of conditions for collection and analysis of data in such a way that they are relevant to the research purpose, as free as possible from bias and as economical as possible to obtain" (Halloran, 1967, p.140). It follows from this definition that there is not, and cannot be, one 'best' research design; rather, that various possible designs are appropriate for various research purposes. In this research, as in many other social-geographical research projects, the problem was to delimit areas in which to administer personal questionnaires to test behavioural hypotheses. Thus, two scales of investigation are immediately involved. First, the ecological scale is involved, in which the social environment of the study area is defined and, from this, a sample of areas is chosen for the second level of investigation, that of the individual scale, the behavioural level, in which questionnaires are employed to generate data relevant to the current 'research purpose'. The individuals whose attitudes and levels of satisfaction are being measured are the housewives in family households, or the single person in single-person households.

Halloran also describes four major 'research purposes', which may be seen broadly as being:

1. to explore a phenomenon so as to gain greater insight into it and to be in a position to propose new hypotheses.
2. to describe the qualities of persons, or situations, accurately.
3. to establish the frequency with which certain events or relations between events occur.
4. to establish causal relationships.

The first 'research purpose' he considers to be explanatory, the second and third, descriptive and the fourth experimental. However, it might be more correct in current social-scientific research to regard the progression of research purposes to be from description (Halloran's second category) to analysis (his third category), then moving to prediction (rather more explicitly than does his fourth category). From predictive studies, which attempt to explain and extrapolate future events and behaviour from a knowledge of particular phenomena, may be drawn prescriptive inferences. In such prescriptive research, the solutions or answers to particular questions are sought in the light of results found and predictions made on their bases.

At the beginning of the sequence, however, exploratory, hypothesis-generating studies are often described as such as an apology and they are sometimes regarded as suitable for novices. In reality, however, they are often the most difficult to perform adequately. It is a commonplace observation but nevertheless true, that one of the most difficult problems of research is the formulation of appropriate, testable hypotheses and questions. The three major functions of research design, those of relevance, check against bias and economy of effort, are controlled in this type of investigation only by the conscience of the investigator. In the subsequent types of research purpose, external props and points of

reference are more numerous.

The relevance of this discourse is to explain that, although in many ways the current research is of the 'exploratory' or descriptive-analytical type, it does include many aspects of the later stages of prediction and prescription. The questionnaire information discussed later in this chapter will be used to investigate these facets. First, however, the analysis at the ecological scale will be presented, from which a sampling framework will be constructed using the knowledge derived of social areas of West Glamorgan.

PART ONE: SOCIAL AREAS AND SAMPLINGPART ONE A1. Social Areas in West Glamorgan

The study of residential differentiation and of social patterns in cities is one of the most well-established fields of research in social geography. Recently, a feature of the analysis of these patterns has been the adoption of a more quantitative approach and the application of multivariate techniques but, more importantly, it is recognised that more traditional terms of reference need to be widened and that social organisation must form part of any spatial model. This thesis used a multivariate technique employing aggregate data as a basis for a descriptive sampling framework.

Two aspects of social areas as 'homogeneous neighbourhoods', in the sense used by Blowers (1973) present themselves. The emphasis is upon the internal homogeneity of each unit, first, in terms of the built environment of housing type, size and physical condition and secondly, in terms of the social environment represented by the characteristics of its inhabitants. Geographical approaches to the definition of urban sub-areas, as these emerging internally-homogeneous areas are sometimes called, have evolved from a position where social organisation was virtually ignored to one in which it has become central and there has been a shift away from the built or morphological character of areas being given primary consideration. The concept of the urban sub-area implies that there exist within the residential areas of the city, comparatively homogeneous subdivisions, which are characterised by an internal consistency and 'personality' which distinguishes them from other parts of the city. Timms (1971) uses the term 'urban mosaic' to describe this feature of cities and in many ways, these sub-areas are the natural neighbourhoods

or quarters of cities which emerge as distinctive districts over time.

To attempt to define such sub-areas will raise the issue of 'regionalisation', which exists in the subject of geography as a whole. Lines on a map may appear to be more precise than divisions truly are and their accuracy depends on the initial input of data. However, if these warnings are borne in mind, the first section of this chapter may be seen as an investigation into the nature and patterns of residential differentiation in West Glamorgan. Researchers are becoming increasingly aware of the value of such studies in their own right, as well as of their value in enabling a high degree of objectivity to be introduced into the choice of survey areas in areal sampling frameworks.

2. Research Methods for Identifying Urban Sub-Areas

Early studies of residential differentiation within cities as a rule involved the plotting of single variables which were claimed as diagnostic - that the pattern they produced could be used to infer other qualities. Rents or 'Gross Rateable Value', for instance, provide not only an indication of housing quality and size but allow for inferences to be made concerning the socio-economic status of residents. However, such differentiation as is produced by a single variable is accurately meaningful only in terms of the measure chosen.

Certain procedures have evolved incorporating, at first, three or four characteristics instead of a single one. One of the earlier such sophisticated approaches to the definition of urban sub-areas, Social Area Analysis, was offered by Shevky and Bell (1955), who attempted to combine certain variables to form 'composite factors' or 'dimensions'. Their model is based on three postulated major trends within industrial societies: changes in the range and intensity of relations, differentiation of function and complexity of organisation (Johnston, 1976). The three

basic constructs derived from this trend of 'increasing scale' were social rank, urbanization and segregation (although Bell preferred the terms economic status, family status and ethnic status). It was theorised that urban differentiation could be attributed to these three dimensions and a theory of social differentiation was proposed, identifying variations in social space which could then be translated into geographical space. Since their census tracts actually had locations, an interpretation in geographical space was possible. Although it was evolved as a theory of social differentiation, a major application has been its ability to classify sub-areas in a city, and some commentators have chosen to describe it as a typology or classificatory device, rather than a theory. A strength has been the recurrence of the three dimensions in the North American situation, although the theoretical basis and choice of variables to measure the dimensions has been criticised (Udry, 1964). Hawley and Duncan (1957) have also argued that there is no way of relating social differentiation, a product of 'increasing scale', with spatial differentiation at the census tract level. Perhaps because of the initial debate on its value, the Shevky-Bell methodology has not been widely used and, indeed, as a research procedure, social area analysis has virtually disappeared (Johnston, 1976). Nevertheless, it has provided a general framework within which most recent studies of intra-urban residential differentiation have been set and the approach has opened the way for other multivariate techniques, as well as lending its name to the whole research field which seeks to study such residential differentiation.

Technological advances, to a considerable extent, made Social Area Analysis redundant and wider interest in the application of quantitative methods and availability of high-speed computers have had enormous impact upon the study of residential differentiation. Factor analysis models are

the most widely used and this generic term covers a range of models. 'Factorial ecology' is the term coined by Sweetser in 1965 to include those studies which use factor analysis to study city structure. Many more variables than the six or seven included in Social Area Analysis may be input and the methods of factorial ecology have been applied very widely over the past ten years to cities in every continent (Rees, 1972, provides a comprehensive catalogue) and, despite an abundance of studies, followed by a certain amount of curtailment, "factorial ecology demonstrably offers a widely accepted approach to identification of underlying determinants of intra-urban residential patterns" (Johnston, 1976, p.203) and many geographers appreciate the flexibility, increased objectivity and practicality of factor analysis models for the definition of urban sub-areas.

At one level, factor analysis can be described as a summarising device which examines the interrelationships amongst the set of input variables and identifies a series of factors which are diagnostic of the input and to which may be attributed measurable amounts of the initial variation exhibited by the data. In contrast to Social Area Analysis, which deductively identified three dimensions in society and attempts to represent them by using particular variables to characterise the derived constructs, factor analysis derives factors by an objective statistical procedure and makes no such initial assumptions. As many or as few initial variables as are hypothesised to be relevant may be included and the technique derives a set of factors (or 'compound variables') which are independent dimensions exhibited in the initial data input. Often, the three dimensions of Social Area Analysis have been vindicated, although this may reflect, in part, the input data used, but in certain cross-cultural comparisons, non-western city factorial ecologies have demonstrated the existence of other significant

dimensions.

Despite various fallibilities of the technique (which is discussed in detail in Appendix IA), many users have been content to regard factor analysis as a rigorous technique which yields valid interpretations of urban structure and it certainly possesses a number of attractions. It can handle large amounts of data simultaneously, studying patterns of interrelationships and from these patterns, it acts to summarise or simplify to main dimensions the characteristics of the input. The deductive thinking of Social Area Analysis is thereby replaced by objective statistical calculation, although it certainly cannot claim to remove subjectivity entirely. At several stages of any factor analysis, subjective decisions must be taken which might be of significance to the patterns emerging and to their interpretation. Nevertheless, it was felt that since the solution would not be used in a predictive sense in the present study but as a grounds for choosing areas with known and measurable attributes, a factor analytical technique would be appropriate for the study of sub-areas in West Glamorgan.

3. The Choice of Technique

Under the generic heading 'Factor Analysis' are a number of related but different factor analysis models, so an early choice is which model is most appropriate for use in a specific circumstance. A division is made into 'Q-mode' or 'R-mode' models according to the form of input data.

'Q mode' models seeks to isolate similar units, individuals or communities and aggregate them, whilst 'R mode' models seek correlations between variables themselves and derives composite factors by which the observations may be classified. Thus, the R versus Q type is a major option to be decided at the first stage of the analysis, the preparation of the correlation matrix. Factorial ecologies frequently involve the use of an R-mode model (the more common variety) to distinguish the underlying

dimensions and to derive factor scores for each unit of observation. Subsequently, a classification of these scores, often using a cluster analysis technique, may be undertaken.

In many social scientific studies, no a priori hypotheses are proposed and therefore a 'search' procedure which generates its own is more appropriate. The two factor analytic procedures which have found widest geographical application are principal components analysis and principal axes factor analysis. Principal components is the more general of the two, as, at the correlation matrix stage, it retains unities along the diagonal instead of substituting communalities to reduce the amount of variance. Principal components analysis thus deals with total variance rather than a reduced amount. Detailed technical aspects of the analysis have been reserved for Appendix IA, to which the reader will be referred on occasion. Certain features will, however, be discussed as they arise during the examination of the chosen model, the principal components solution.

4. Choice of a data source and the selection of input variables for the Analysis

A second consideration after the choice of technique is the question of data source from which to extract input variables for the subsequent analysis. Naturally, this is a crucial decision, since if the basic data source is either unreliable or a poor indicator of the subject under investigation, then the results obtained will be a correspondingly poor reflection of the subject.

One major source of basic data for planners and other social scientists is the census and indeed many investigations of residential differentiation rely exclusively on decennial and quinquennial censuses for their data. Thus, the policy of the collecting bodies - usually government departments - will determine the nature and quality of those data. Other published data

sources available to the social scientist are fairly limited and, as Herbert and Evans (1974) point out, the fact remains that for many basic information needs, the locally-organised survey is the only alternative to the census. The main advantages of the census are that it is comprehensive in coverage, occurs at regular intervals and it may be used as a benchmark for planning and research. Its drawbacks, however, must be noted. First, although the 1971 Census offered more detailed breakdowns of occupation, education and mobility than its predecessors, many sensitive subjects (such as racial origins and religion) have in the past been and are still largely avoided or collected in a roundabout manner. The 1971 Census collected population and housing information on a 100 per cent basis, whilst economic information was collected on a ten per cent sample. The quinquennial censuses have also been collected wholly on this ten per cent sample basis.

The range of information collected is, however, very wide, but there are other shortcomings which may reduce its value in studies of residential differentiation. Following the above point, the census records information as at a particular date and the tabulations often take at least two years to appear, whilst certain information takes even longer to process and publish. Since certain data may not be revised for a decade, after a while its accuracy may be questioned. Secondly, due to the wide range of interests and purposes for which the statistics are collected, they may often be of a general nature, or be presented in a form inappropriate for a current project. Demographic details might be submerged in large age-groupings, or occupational details lost by certain classification conventions. Thirdly and significantly for the classification of areas, statistics are now available by area only (not by household or street level). The Enumeration District (E.D.) in the United Kingdom is the smallest level

at which information is currently published and these may vary in size and in internal homogeneity. Often, the design of the enumerator's district pays little heed to the social pattern on the ground and census authorities vary in the extent they work with local interest to produce 'relevant' sets of areas. In Britain, since an enumeration district is defined according to the area one enumerator can cover, the E.D's tend to be fairly small (especially when compared with U.S. Census Tracts) and therefore more likely to be relatively internally homogeneous. In 1971, the average census E.D. contained about 150 dwellings with a population of around 500 and thus are small enough not to distort or blur main patterns of residential differentiation.

As Johnston (1976) states, the fact should be borne in mind that studies of urban residential differentiation are generally based on census data and are thus, to some extent, subject to external decisions concerning the nature and quality of their data. Nevertheless, despite its shortcomings and drawbacks, the census provides a basic informational context and is a valuable benchmark to which other statistics can be related (Herbert and Evans, 1974).

Having determined to use the census as a source of data for input to a Principal Components Analysis, the choice of variables to be extracted from the numerous alternatives is of paramount importance for the resultant dimensions. Unfortunately, there is little agreement on the precise variables for inclusion, since this largely depends upon the purpose for which the analysis is intended. The balance between variables is also matter of choice and, as Mather points out:

"... the choice of variables is the crux of the issue. It is easy to select a large number of variables simply because they happen to be available. The variables should, as far as possible, cover the 'domain' of interest, and should not be concentrated upon one or two easily-measured facets ..."

(Mather, 1976, p.239).

A study by Edwards (1970) in Birmingham included 96 variables, whilst Herbert (1970) used 26 and a previous study in Swansea employed 40 variables (Evans, 1973). It appears that the majority of factorial ecologies have used less than forty variables, usually extending over a range of subjects such as socio-economic features, demography, ethnicity and housing tenure and conditions and in this present study it seems desirable to include a set of variables at least comparable to these. However, few factorial ecologists have subdivided their variable list into a broad range of categories so that the relative dominance of different types of variables may be assessed. Davies and Lewis (1973) emphasise that the emergence of certain dimensions relates very much to data spread - for example, Rees (1970) included 20 out of 57 variables as ethnic and religious, so it is hardly surprising that five out of the ten major factors were concerned with race, national origin or religion.

Another distorting feature may be that factorial ecologies in Britain have tended to deal with the administrative city only, isolating it from its sphere of influence and thus the predominantly middle-class areas which lie on the 'fringe' (often beyond the administrative boundary) may be excluded from consideration. A major strength of the components analysis employed in this research was felt to be in the fact that it took into account an entire functional city-region as described earlier and the balanced whole could, as a result, be examined. Had only Swansea C.B. itself been included, a number of high-status areas on the Gower and to the north-west would have been excluded from the analysis. Naturally, such a comprehensive coverage is not achieved without a considerable expenditure of time in collecting and processing a large data matrix.

Overall therefore, it would appear that it is not the actual number of variables included in the analysis which is of importance, but it is

their spread which is crucial. For example, one or two variables of substandardness (such as percentage of households without a fixed bath or with no inside w.c.) are as illuminating as the whole range of variables which measure similar features (and the British census contains a considerable number of these, such as percentages sharing amenities and percentages without hot water). "Measures of housing substandardness, the most commonly used index of a deprived physical urban environment, are diverse in detail but tend to identify broadly similar spatial patterns" (Herbert, 1975, p.367). Similarly, it is also unhelpful and, in a sense, misleading, to include variables which between them encompass the whole range of a feature - for example, households with no car and households with one or more cars - since they will only reflect each other. This principal components analysis was intended for use as a sampling framework and, being employed without any a priori hypotheses, it attempted to include a broad spectrum of variables, grouped under general headings. Bearing the above considerations in mind, twenty-six variables were finally chosen for input over 739 enumeration districts in the County of West Glamorgan. These were as follows, grouped under broad descriptive headings used in Table 3.3:

(From Table 3.3)

(1) Population Structure

Age structure was considered to be a crucial feature in determining both the use of and attitudes to medical services and, whilst not formalising this into a hypothesis prior to the components analysis, it was felt to be wise to include a range of age-measures and four variables were selected to indicate the variations in age -structure over the county. Percentages of population aged 0 - 4 years and aged 5 - 14 years were included to illustrate areas which might have high demand for paediatric

and natal services. Conversely, those areas with a high proportion of elderly persons, aged over 60 years (females) and over 65 years (males), might be expected to have the increased contact with their doctors that possibly comes at a later stage of life. These four variables would thus represent pre-school age, school age and retired sections of the population. The variable 'percentage of households with one or more child' was included to indicate those areas with young family households.

'Ethnic Status' in the population structure would be measured by two variables concerning place of birth of respondents to the census and that of their parents, the latter variable which might give a more accurate picture of immigration and racial composition than the birthplace of individuals. Although a port, Swansea itself does not have a very large immigrant population born in the Commonwealth or elsewhere which tends to live in geographically confined areas, although in the past, the Irish population has been a significant feature. The situation in the rest of the county was not anticipated ^{to be very different} and thus these variables were included for the sake of comparability with other studies.

(2) Socio-economic Status

Socio-economic status is generally considered to be a composite of income, education and occupation and in this study, two measures of occupational ranking were included, the percentages of economically active and retired heads of households in S.E.G's 1, 2, 3, 4 and 13 and in S.E.G's 7, 10, 11 and 15. Under such groupings, these S.E.G's are generally accepted as being useful surrogates for Social Class I and II (employers, managers and professional workers) and for Social Classes IV and V (semi-skilled and unskilled manual occupations and personal services). As a further index of socio-economic status/income, and of personal mobility, the variable 'percentage of households with no car' was used. Proportions

of persons in the various social classes in Great Britain, England and Wales are displayed in Table 3.1 for comparative purposes.

(3) Tenure of Dwellings

Four standard variables were incorporated, as in many previous studies, to cover the main sections of the housing market - owner-occupiers, local authority council dwellings and the privately rented, furnished and unfurnished, sectors.

(4) Households - size and conditions

The 100 per cent household information census data provides a great deal of detail concerning variables of substandardness, overcrowding and house-size (in room-terms and in terms of numbers of persons in households). The official index of overcrowded living conditions was included, the percentage living at greater than 1.5 persons per room and percentages of households of 1 to 3 rooms and of 7 or more rooms were included as measures of house size. Subdivided housing was indicated by percentages of households in shared dwellings and single person households was included under this heading although it also reflects aspects of population structure and the marital status of the adult population. To indicate standards of amenity provision, percentages of households with no inside w.c. and sharing or lacking a fixed bath were included.

(5) Economic Activity and (6) Residential Mobility

The percentages of economically active males and females over 15 years of age were used as an index of economic activity, and for residential mobility at an inter-urban scale, the percentages of people moving into the local authority within twelve months and within five years of the date of the census were used. The latter two variables, as with variables of socio-economic groupings are, in fact, based on a ten per cent sample in the 1971 census.

These twenty-six variables formed the input for an 'R' mode principal components analysis of the County of West Glamorgan, the results of which will now be discussed.

Table 3.1:

Percentages of E.A. and Retired Males of 15 years or more in Each Social Class

SOCIAL CLASS	GREAT BRITAIN	ENGLAND & WALES	WALES
I Professional etc occupations	4.7%	4.75%	3.66%
II Intermediate occupations	17.06%	17.27%	16.94%
III N. Skilled-non-manual	11.30%	11.49%	8.90%
III M Skilled-manual	36.54%	36.40%	38.51%
IV Partly Skilled occupations	17.22%	17.04%	17.34%
V Unskilled occupations	8.17%	7.95%	9.87%
Not Classified	5.0%	5.09%	5.15%

Source: Calculated from 1971 Census of England and Wales

Tables 29 and 30.

5. Interpreting the Principal Components Solutions

The principal component version of factor analysis was used since it is generally considered to be an appropriate form if the intention is simply to describe patterns of statistical association between a set of variables (Child, 1970; Johnston, 1976). The first stage of the analysis correlates each of the twenty-six variables with every other using the product moment correlation coefficient. The resulting correlation matrix (Figure 3.2) indicates a general impression of the inter-correlations between variables and clusters of variables but the size of the matrix makes it impractical to comprehensively decipher the underlying relationships which exist. Thus, the analysis proceeds to the next stage at which the strongest cluster of inter-correlated variables are combined and expressed as a first principal component (compound variable) which summarises the greatest amount of variation in the original data matrix. This procedure is repeated, the second principal component being produced, which is by definition uncorrelated with (orthogonal to) the first and summarises a smaller proportion of the total variation. This procedure is continued until all the variation in the original data matrix has been accounted for. This process has the effect of summarising a large proportion of the variation between variables into a relatively small number of components which are considered to adequately describe the most significant facets of the original patterns of variation.

(i) The Primary Component Solution

The first interpretative decision to be made is, therefore, the specification of the eigen value size at which point the computer program will cut off and produce no further components. As specified in Appendix IA, the eigen value, or 'latent root', represents the sum of the loadings squared for each component and its value decreases with the number of components

Table 3.2

CORRELATION MATRIX

WEST GLAMORGAN, 1971

Variable Nos. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

1	100																									
2	256	100																								
3	498	617	100																							
4	577	679	822	100																						
5	551	695	682	785	100																					
6	065	095	028	079	082	100																				
7	026	118	005	975	085	649	100																			
8	012	066	018	033	029	009	174	100																		
9	040	159	096	145	096	008	080	398	100																	
10	232	054	176	249	306	145	038	601	423	100																
11	095	343	309	266	094	041	002	398	380	572	100															
12	014	450	393	378	227	115	156	369	361	417	908	100														
13	122	336	318	337	290	267	230	004	018	222	106	476	100													
14	190	262	082	180	266	373	428	154	166	036	000	252	245	100												
15	166	228	089	192	199	300	318	020	084	150	046	171	285	664	100											
16	400	499	502	695	665	267	279	074	054	414	002	202	337	536	416	100										
17	136	333	385	358	347	162	052	302	127	413	176	366	524	164	172	371	100									
18	087	294	282	307	304	236	181	178	098	332	211	450	626	293	265	414	808	100								
19	095	277	379	326	287	070	038	311	155	393	201	331	481	063	002	242	942	749	100							
20	099	257	196	230	088	045	088	186	226	268	328	267	023	171	128	016	075	110	024	100						
21	062	137	018	129	234	251	329	052	016	270	301	120	106	628	466	584	102	198	081	365	100					
22	221	256	313	346	232	170	260	091	320	320	440	535	283	319	285	206	083	166	016	144	030	100				
23	467	444	708	632	559	247	171	091	169	162	156	284	330	242	175	489	280	238	242	159	103	362	100			
24	077	242	427	416	284	065	030	129	188	049	298	297	104	006	023	228	197	130	212	117	027	300	373	100		
25	167	058	077	060	047	061	169	294	178	313	237	254	043	196	082	057	100	040	133	033	061	271	048	029	100	
26	255	029	111	134	130	056	188	462	265	522	338	311	046	179	016	123	179	091	206	064	035	287	088	051	588	100

N.B. Negative Values Underlined

Numbers multiplied by 100, for convenience of presentation.
Variable Numbers refer to variables listed in Table 3.3.

derived. There are some differences of opinion as to what are the best grounds for determining the eigen value below which components should be disregarded and, in the final instance, the decision is left very much up to the researcher's judgment. Kaiser (1958) has suggested a practical basis for finding the number of common factors which are necessary, reliable and meaningful for explanation of the correlations amongst variables and he states that the number of common factors should be equal to the number of eigen values greater than 1.0 on the correlation matrix (with unities in the diagonal). He found this number to run from a sixth to about a third of the total number of variables included. There is undoubtedly a subjective element to this choice, although certain rule-of-thumb methods have been advanced (Davies and Barrow, 1973), but the principle of extracting components with eigen values above one is widely accepted.

It may be considered unscientific, however, not to examine the complete picture in the first instance and then, perhaps, to select a cut-off point appropriate to the components emerging in the particular context of the study requirements. Thus, initially, a cut-off point of 0.50 was specified for eigen values in the first runs of the program. The program used was the Principal Components Analysis program "FAC-2", compiled by Dr. P. Mather of the University of Nottingham. The initial run of this program included 26 variables, 739 cases and an eigen value of 0.50, which produced twelve components above this value, together accounting for 86.7 per cent of the total variance in the matrix.

On examination, it was apparent that some of the smaller components were highly specific, loading only on one or two variables, and contributing little to the total variation. The latter four of these twelve initial components contributed only between 2 and 2.5 per cent each of the total explanation and even those above an eigen-value of 0.8 were still only

contributing between 3 and 4 per cent each. A break was apparent at an eigen-value of 1.03 and also well above unity, at 2.4, above which value lay four components, together contributing 63.2 per cent to the overall picture. Thus, these four or five components seemed to be the most appropriate summary of the broad patterns of residential differentiation in the county and although a number of solutions were interpreted, only a later one, in which an eigen value of 1.0 was specified, will be dealt with.

The primary components solution may be seen in Table 3.3 and this indicates that the first five components account for 67.79 per cent of the variance in the twenty-six variables. The structures of these components may also be interpreted from this table by reference to the component loadings. A loading of ± 0.50 for a component indicates that 25 per cent of the pattern of variation of that variable is associated with that particular component. For this reason, component loadings of ± 0.50 can usually be considered to have reasonable interpretive significance. Most studies have previously claimed that intuitive levels may be used, or general breakpoints have been designated (such as by Davies and Lewis, 1973, who chose ± 0.3 to 0.49 as low, ± 0.5 to 0.59 as medium and ± 0.70 to 1.0 as high loadings). However, it appears that as less important components are reached, lower loadings might have to be included in order to interpret the component. On the above basis of ± 0.50 as being of reasonable significance, the first primary component exhibited a very large number of significant loadings, on 11 variables in all. If ± 0.4 is regarded as a significant loading, 16 variables are included.

Primary Component I loads on variables which suggest that the component is a relatively strong bi-polar age structure and tenure/condition of housing dimension. Rented unfurnished and older age structure, variables 13, 3 and 4, load relatively high - negatively although it should be mentioned that in absolute value, the variable of rented unfurnished housing

Table 3.3

Negative Values Underlined
(Values X100)

Component Loading Matrices

Variable Name	Component					No.	
	I	II	III	IV	V	I	II
PRIMARY							
<u>Population Structure</u>							
1. % Population aged 0-4	475	176	103	526	<u>147</u>	613	044
2. % Population aged 5-14	717	<u>129</u>	128	153	108	756	<u>216</u>
3. % Population Males aged 65+	<u>767</u>	017	<u>360</u>	278	<u>007</u>	<u>827</u>	239
4. % Population Females aged 60+	<u>830</u>	<u>010</u>	<u>236</u>	<u>356</u>	031	<u>898</u>	189
5. % Households 1 or more child 0-14	<u>763</u>	<u>132</u>	109	370	130	<u>865</u>	<u>152</u>
6. % Both parents foreign born	<u>308</u>	<u>047</u>	522	151	614	<u>045</u>	<u>135</u>
7. % Born outside U.K.	<u>285</u>	<u>106</u>	626	112	459	<u>023</u>	036
<u>Socio-Economic Status</u>							
8. % Heads of household in S.E.G. 1, 2, 3, 4, 13.	<u>042</u>	740	145	<u>145</u>	051	<u>001</u>	<u>265</u>
9. % Heads of household in S.E.G. 7, 10, 11, 15.	161	<u>581</u>	<u>041</u>	152	024	087	183
10. % Households without a car	<u>256</u>	<u>862</u>	<u>037</u>	<u>022</u>	018	<u>253</u>	294
<u>Tenure of Dwellings</u>							
11. % Owner-occupied	<u>340</u>	718	<u>318</u>	285	<u>044</u>	<u>147</u>	289
12. % Rented from L.A.	<u>583</u>	<u>615</u>	<u>138</u>	<u>386</u>	009	<u>222</u>	<u>498</u>
13. % Rented unfurnished	<u>607</u>	<u>067</u>	055	<u>406</u>	169	<u>203</u>	<u>668</u>
14. % Rented furnished	<u>467</u>	<u>072</u>	718	<u>036</u>	<u>162</u>	<u>144</u>	983
<u>Households: size and condition</u>							
15. % Households in shared dwellings	<u>415</u>	<u>047</u>	592	<u>005</u>	<u>090</u>	095	148
16. % Single person households	<u>760</u>	<u>229</u>	265	<u>240</u>	<u>153</u>	<u>658</u>	186
17. % Households with exclusive use of all amenities	641	336	188	<u>567</u>	082	225	<u>898</u>
18. % Households sharing/lack fixed bath	<u>640</u>	<u>235</u>	010	607	<u>053</u>	<u>134</u>	876
19. % Households with no inside W.C.	<u>544</u>	<u>330</u>	<u>375</u>	587	<u>032</u>	<u>197</u>	892
20. % Living at over 1.5 persons per room	122	<u>380</u>	392	170	<u>357</u>	346	116
21. % Households with 1-3 rooms	<u>289</u>	<u>255</u>	698	<u>134</u>	<u>356</u>	<u>122</u>	<u>042</u>
22. % Households with 7 + rooms	<u>473</u>	<u>539</u>	134	<u>027</u>	<u>096</u>	<u>221</u>	<u>123</u>
<u>Economic Activity</u>							
23. % E.A. Males aged 15+	703	<u>030</u>	097	305	<u>218</u>	677	<u>128</u>
24. % E.A. Females aged 15+	405	<u>212</u>	283	094	<u>193</u>	346	<u>100</u>
<u>Residential Mobility</u>							
25. % Moved into L.A. within 12 months	<u>021</u>	508	289	155	<u>259</u>	018	<u>021</u>
26. % Moved into L.A. within 5 years	<u>051</u>	668	281	158	<u>220</u>	116	<u>109</u>
% Total Explanation	26.004	16.127	11.764	9.264	4.636	18.144	14.052
Cumulative %					67.794		

is a small proportion of the housing stock (mean value 2.2%, standard deviation 3.8 per cent). At the other end of the scale, young age structure is seen to be associated with local authority housing, and exclusive use of all amenities, as well as a relatively high proportion of economically active females (.41). There is a fairly strong association between the older age, rented section and poorer amenities in households. However, this component does display the highly general features to be expected from a first primary component (Davies, 1971) which, although in this case fairly easy to interpret from its loadings, is less useful for a sampling framework due to its very general nature.

Primary Component II is another bi-polar dimension, which loads positively on owner-occupiers, high socio-economic status and mobility. This dimension, with its negative loadings on low socio-economic groupings, percentages living in council tenancies and no car households, is easily recognisable as a socio-economic status component.

Primary Component III loads only positively and on variables which indicate small rented accommodation, often in shared dwellings and overcrowding is almost significant (loading 0.39). Here too are seen certain numbers of foreign-born, although the percentages involved are small in the variables included (mean for variable 6 is 0.2 per cent, standard deviation 0.7 per cent, mean for variable 7 is 2.3 per cent, standard deviation 2.4 per cent), and despite its lack of association with sub-standardness variables, this component would appear to be indicative of the zone-in-transition type of environment. However, such a zone has not become well-developed in West Glamorgan, as demand for this type of accommodation has yet to exceed the supply and the very poor conditions which tend to be associated with in-migration, pressure on housing and rapid sub-division in cities larger than Swansea have not markedly developed.

Primary Component IV is still more specific, loading negatively on areas in which households lack baths and have no inside w.c. and is recognisable as a housing condition or amenities substandardness dimension.

In this case it is not significantly related to overcrowded or subdivided accommodation, but would relate equally to older terraced rows of single-family dwellings in the older industrial areas in the Valleys, Port Talbot, Neath and Central Swansea.

Below primary component IV the percentage contributed to the total variation declines and components V, VI and VII together barely contribute 10 per cent to the explanation. They tend to be highly specific, loading on ethnic variables in component V (which again means only very small percentages are involved), migration (component VI) and females at work (component VII). Although these latter components provided no great problems of interpretation, the difficulties in interpreting clearly the most important components suggested that the examination of a rotated solution might prove helpful.

(ii) The Rotated Component Solution

The details of the rotation procedure involved are listed in Appendix IA and at this time it is sufficient to indicate that a varimax rotation procedure was used, which retains the orthogonality constraint imposed in the primary component solution. A rotation technique may be adopted to overcome the problem that, in extracting the maximum amount of variance from the data matrix, more than one cluster of intercorrelated variables may be associated with a component and for the purpose of precise interpretation generally the major components may possess too general a structure. Rotation techniques have been developed by which components are more closely related to specific clusters of variables, so that the relationships indicated in the data are more easily interpretable. Child (1970) describes

the Varimax rotation, which aims to maximize the fit of hybrid variables to original variable clusters by producing as many high (close to 1.0) loadings and as many low (close to 0.0) loadings as possible, at the expense of the moderate loadings. The resulting solution is a summary of a similar amount of the original variance but it produces components which may be named with rather more precision than in the primary analysis.

This procedure was applied to the first five components in the original solution, resulting in a considerable improvement in clarity of their interpretation. Table 3.3 summarises the loadings for the first five rotated components compared with the first five primary components. Their structures and spatial distributions are now discussed in detail.

VARIMAX COMPONENT I

Age Structure:

Var. No.	Variable Description	Loading
5	% households with 1 or more child aged 0-14	+ 0.865
2	% population aged 5-14	+ 0.756
23	% E.A. males aged 15+	+ 0.677
1	% population 0-4	+ 0.613
4	% females 60+	- 0.898
3	% males aged 65+	- 0.827
16	% single person households	- 0.658

(Approx) Percentage of Total Explanation : 18.14%

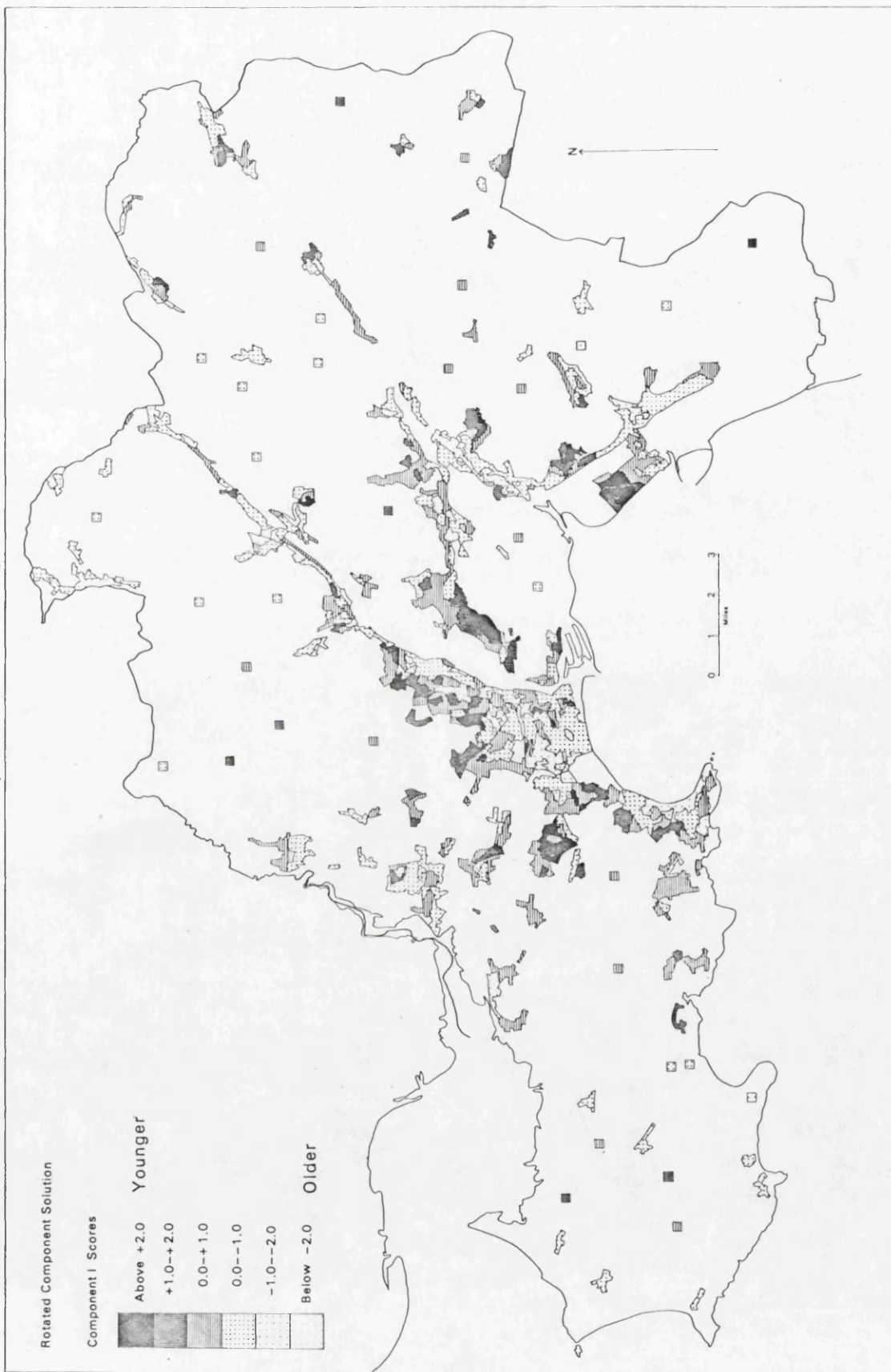
With the above seven variables proving to be significant on the first varimax rotated component, the dimension was easily recognisable as an indicator of the age-structure of the county. It was a strong bi-polar

component, with high negative loadings on "percentage of females aged over 60 years" and on "percentage of males aged over 65 years", as well as on "percentage of single-person households", which, when negatively-associated with young-family areas, might be expected in areas with a high proportion of older, retired and often widowed residents; high positive loadings were recorded for percentages of population aged 0-4 and 5-14, for households with one or more child in these age groups, and for economically active male adults. 'Stage in life-cycle' is another way of describing this component, which is recognisable as a variation of the classical 'family status' or 'urbanisation' dimension of social area analysis studies but without its strong associations with women-at-work. It has emerged as a very useful component in its own right, not confused as in an earlier comparative study of three South Wales towns by its association with tenure, in which study it appeared as a second component (Evans, 1973).

After eigen values and component loadings, the third main output from factor analyses is that of scores, which enable the geographer to determine patterns of differentiation for each component over the areas referred to in the initial data set. The scores are derived in unrotated solutions by summing the products of the original standardised variables and the component loadings (weighted by the reciprocal of the eigen value). The result is therefore a range of scores which has the attributes of a normal curve, and a similar method may be used to derive scores after rotation, although an alternative method is available (Johnston, 1976). In this case, with normally distributed scores having a mean value of zero and a standard deviation of ± 1.0 , the plotting of scores according to their values is equivalent to plotting scores by standard deviation. These component scores are mappable data, and provide a cartographic representation of areal

Figure 3.5

Varimax Component I: Age Structure



differences within the spatial unit investigated, and are thus of great value to geographers. Figure 3.5 shows the distribution of scores on Varimax Component I, over the built-up areas of the county. Small squares have been used in certain rural areas to represent the scores for enumeration districts of dispersed settlement, in which the shading of the entire district would appear visually misleading. Ward and parish names may be seen by referring to Figure 3.4.

The distribution of scores on this component is of considerable interest for this study, since areas with high proportions of persons at either end of the age-range, young and old, might be expected to be areas which would place higher than average demands on their medical and health facilities. Areas with high positive scores (areas with high proportions in young age groups) within the city boundaries of Swansea are both young, owner-occupier areas, as well as younger municipal estates. To the north-west of the city, in Penderry Ward, many E.D's have over 50 per cent of households with one or more child, as might be expected in a post-war municipal housing area, where a high proportion of families with young children is to be seen. This also occurs in the Sketty council housing area and high positive scores are to be found in the new private estates of West Swansea, particularly in the Killay - Dunvant - Gowerton area, Newton and Sketty. Over the remainder of the county, higher status areas in Port Talbot, where new housing developments have taken place in East Baglan, score highly, as well as low status areas of Aberavon and Birchgrove near Skewen (locations may be seen from figure 2.4a). Negative scores are to be seen in the central parts of Neath and in Briton Ferry and are especially noticeable in the northern reaches of the county, up the Swansea Valley towards Ystradgynlais and in the Amman Valley settlements. Areas which have a fairly high proportion of single persons as well as those areas

with a less fixed population (to be found amongst student housing areas, for example, such as the Mumbles and Brynmill - Uplands area of Swansea) and the older council estates which have fewer young children, score neutrally to negatively on this component. In these older estates, the family whose children have left home is more common.

VARIMAX COMPONENT II

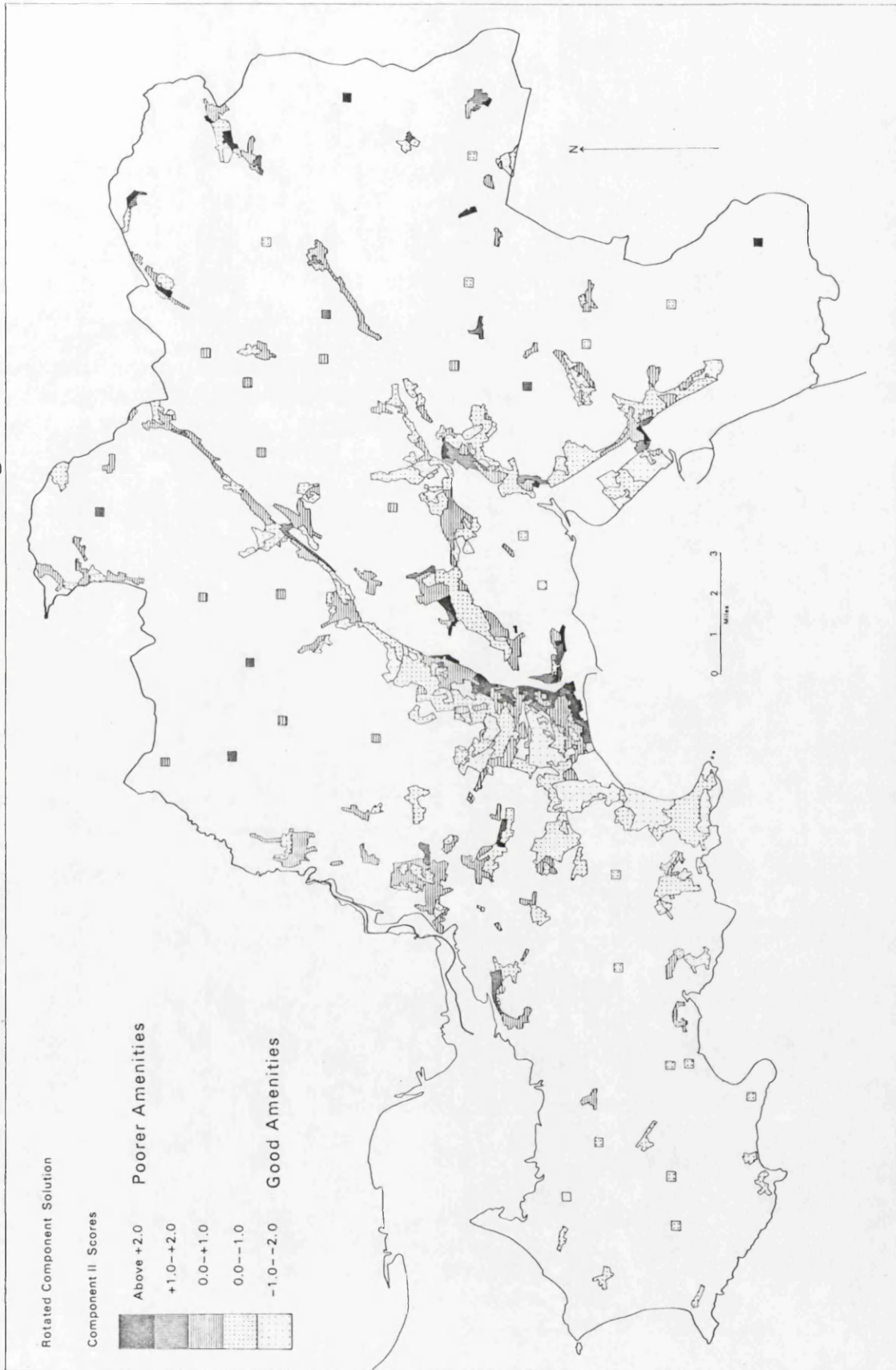
Housing Amenities:

Var. No.	Variable Description	Loading
19	% households with no inside w.c.	+ 0.892
18	% sharing/lack fixed bath	+ 0.876
13	% rented unfurnished	+ 0.668
17	% households with exclusive of all amenities	- 0.898
12	% rented from local authority	- 0.498
Approx. Percentage of Total Explanation:		14.05%

This component loaded significantly on five variables and was interpretable as an indicator of housing conditions, with specific reference to substandard provision of the normal amenities that have come to be expected in Britain in well-appointed housing. Negative scores indicate not only the better privately-owned housing, but also the more modern municipal estates and, indeed, there is to be seen an association between rental from local authority and exclusive use of all amenities. This is a usual association, since modern council housing is built to a high standard of amenity provision and whilst there are some older, substandard houses in council ownership, these tend to be fewer in number than the estate houses and they tend not to be concentrated in any areas. It is evident that the older council-estates of inter-war age score slightly less highly on this component but

Figure 3.6

Varimax Component II : Housing Amenities



the modern municipal dwellings nearly all have inside w.c's, hot and cold water on tap and a fixed bath in each household. Conversely, the associations between private rental and shared or lacking amenities is also not unexpected.

The areal distribution of scores on this component is as in figure 3.6. In Swansea itself, the highest positive scores, indicating areas of housing deficient in amenities, were clearly to be seen in the older, terraced, pre - World War I houses of the western bank of the River Tawe, in the areas of Hafod and Landore in the Lower Swansea Valley and on the eastern bank of the river at Kilvey, Foxhole and St. Thomas. Like many industrial towns in Britain, Swansea has significant areas of substandard housing, located near to old industrial sites, although considerable clearance in the Dyfatty - Waun Wen area of the city has tended to create other problems. These are the replacement of older physical slums with slums of a new 'social' kind, in the form of high-rise council flats which although frequently possessing a poor social fabric, do not score highly on deficiency of household amenities. The western areas of the city, both privately and publicly owned, all score neutrally to negatively on this component: Mumbles, Sketty, West Cross and Killay, whilst the central, Sandfields and Victoria area of the city, lying between the Guildhall and the prison, is an area of older, terraced dwellings. Certain of these are being modernised, but many are rented privately or are in the poorer owner-occupier category and still lack good amenities.

County-wide, this component picks out the older terraced properties in the Swansea and Neath Valleys and central areas of Port Talbot. The older industrial valley settlements such as Glyn Neath, Seven Sisters, Resolven and Glyncoerrwg all have scores which indicate their sub-standard housing stock, connected with their industrial pasts, which present a strong contrast to the western areas of the county, the Gower Peninsula

in particular, which almost without exception score well on this component.

VARIMAX COMPONENT III

Socio-Economic Status:

Var. No.	Variable Description	Loading
11	% owner-occupiers	+ 0.808
8	% in S.E.G's 1, 2, 3, 4 and 13	+ 0.606
18	% households with 7 or more rooms	+ 0.521
12	% council owned	- 0.760
10	% households with no car	- 0.749
9	% in S.E.G's 7, 10, 11, 15	- 0.684
20	% living at over 1.5 persons/room	- 0.448

Approx. Percentage of Total Explanation: 13.58%

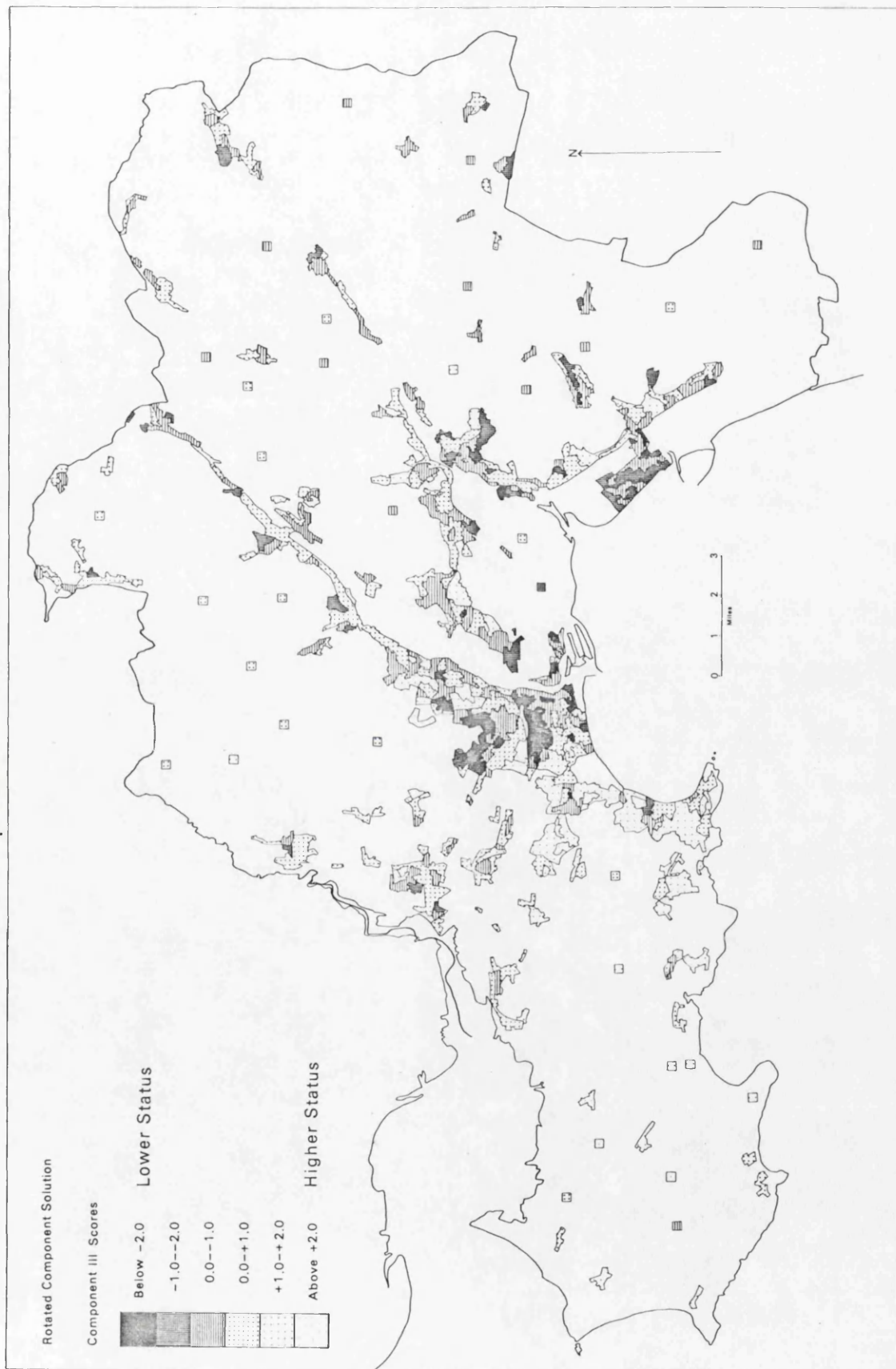
The seven significant variables emerging in the third component once again produced a bi-polar structure which was interpretable as 'socio-economic status'. Owner-occupancy and council ownership emerge with their usual correlates of higher and lower socio-economic groupings respectively. In this study, as in previous cases, there is seen to be a strong relationship between those areas of council-owned dwellings, low occupational status and low rates of car ownership. An element of overcrowded versus spacious living conditions is evident, although with less significant loadings than on those variables which directly indicate this component as an index of socio-economic status.

The spatial arrangement of scores on this component is of great importance to this study, as it has as one focus of investigation the influence of social class on utilisation behaviour and attitudes.

The following patterns are exhibited. As in other British cities, municipal housing makes up a high proportion of total housing stock - over one-third in many cases and this effect is exaggerated since the housing tends to be concentrated in areas of one hundred per cent council ownership. At the 1971 census, 31.5 per cent of the 122,500 separate households in West Glamorgan were in council-owned dwellings. Within Swansea C.B. itself, five major areas of council housing are visible: West Cross, Sketty Park, Mayhill - Townhill, Portmead - Blaen-y-maes and Morryston (Clase). The first two areas are the most highly demanded council locations, of newer, post-1960 vintage, whilst Townhill estate, albeit with panoramic aspects over Swansea Bay, is an interwar municipal estate. Portmead - Blaen-y-maes is the least-demanded council housing area (especially its northern fringes), although it is mainly post-war in age. Finally, Clase in the Morryston area is of intermediate popularity. As Herbert (1972) notes, the effect of public sector interference in housing is complex, but in some ways it can be said to maintain socio-economic status as a criterion of differentiation, since municipal housing is allocated to tenants principally on the basis of income and occupation. An interesting observation, however, is that the poorest sectors of the community often fall through the council-housing 'net' into zone-in-transition areas, since they frequently lack the length-of-residence qualifications or the stability to gain council accommodation. As noted during the discussion of the primary solution, the zone-in-transition is not very well developed in Swansea but may be seen in a less well-defined form. Local authority influence has led to the juxtaposition of high and low status areas both, in Swansea and in the county as a whole. A long history of Labour control of councils has meant that prime residential sites have been pre-empted from the private market, such as at West Cross

Figure 3.7

Varimax Component III : Socioeconomic Status



and Sketty Park and private development has taken place in juxtaposition with local authority building. From figure 3.7, high status developments are evident adjacent to areas of low scores on component III; a feature of great importance in the current research design.

High status areas lie to the west of Swansea Bay above the Mumbles at Caswell, Langland, Newton and at Sketty and West Cross. Smaller enclaves of high status housing remain on The Uplands hills at Ffynone and at Cockett. The western high status sector clearly extends into the Gower in village developments (Bishopston, Pennard, Parkmill, Reynoldston, Ilston and Oxwich).

Over West Glamorgan itself, high concentrations of municipally-owned dwellings are to be seen in Afan, where 46.6% of households live in council-owned housing. This is clearly to be seen in the Port Talbot, Taibach, Cwmavon and Baglan areas and in Baglan the juxtaposition of council and privately-owned dwellings is well illustrated. In the Swansea Valley at Clydach and from Pontardawe to Ystradgynlais, council ownership is not as marked, although these areas tend to be of an intermediate social status, with areas of housing without good amenities as shown on Component II. Component III itself will be referred to again in the following section when the choice of survey areas and sites is discussed in detail.

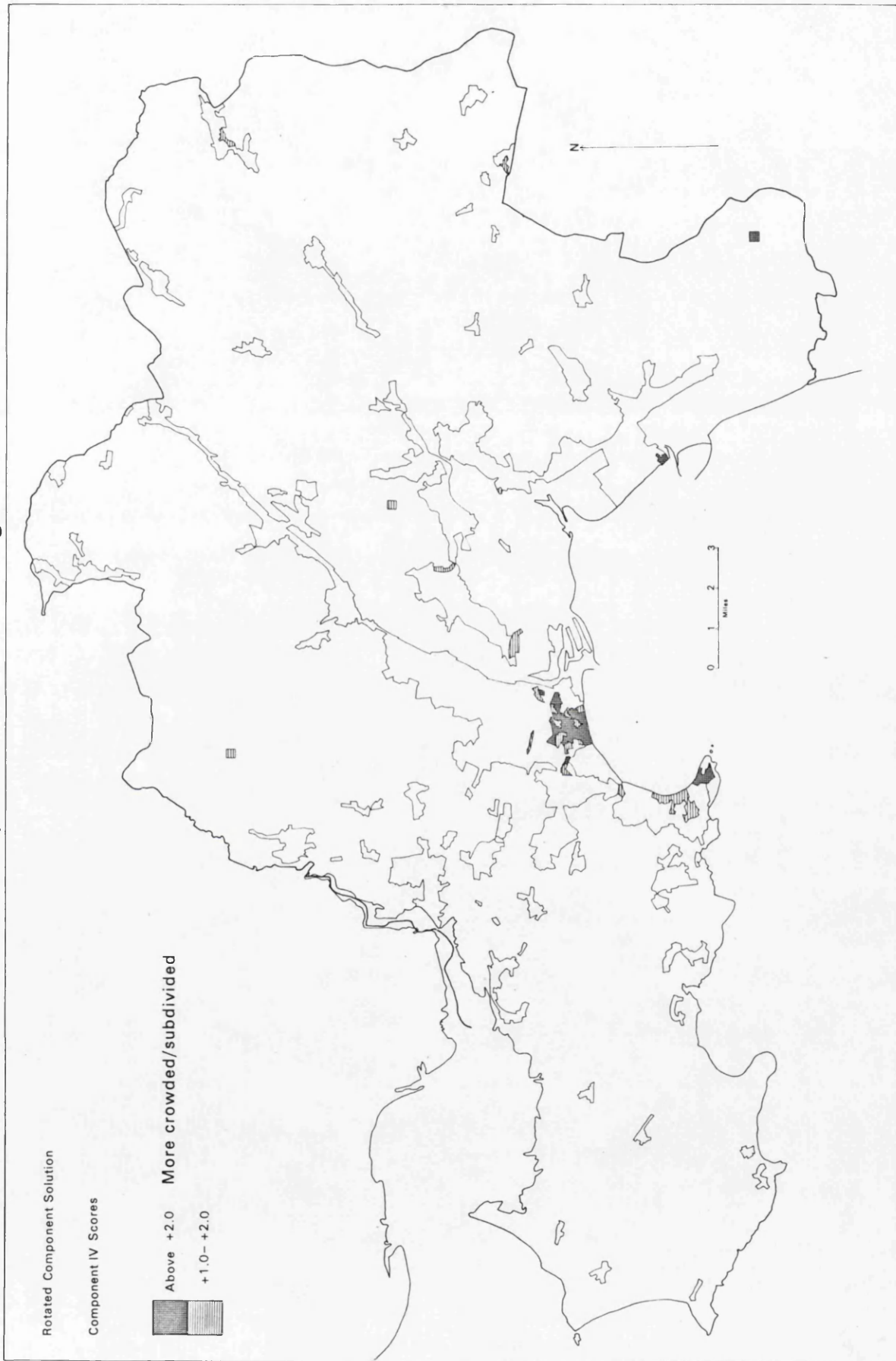
VARIMAX COMPONENT IV

Housing Subdivision:

Var. No.	Variable Description	Loading
14	% rented furnished	+ 0.826
21.	% households with 1-3 rooms	+ 0.824
15.	% households in shared dwellings	+ 0.750
16.	% single person households	+ 0.544
20.	% living at over 1.5 persons/room	+ 0.413
Approx. Percentage of Total Explanation:		10.70%

Figure 3.8

Varimax Component IV : Housing Subdivision



This component loaded positively on five variables which specifically picked out the rented furnished sector of the housing market. These high positive loadings are on variables which tend to indicate older residential areas in which the houses are being sub-divided into smaller, non-self-contained accommodation, in which overcrowding may be a feature. It is similar in composition to primary component III although it is not associated as strongly with foreign-born persons or persons with foreign-born parents, however, there is still a slight positive association with such variables. Again, therefore, this component suggests conditions reminiscent of the 'zone-in-transition', but not in a fully-developed form, for the reasons mentioned previously.

In geographical terms, spatial patterns for Varimax Component IV (figure 3.8) are highly concentrated in the older, formerly high status wards of West Swansea, relatively near to the city centre and now developing as 'bed-sitter land', as Evans (1973) calls it. Areas in Ffynone, St. Helen's and Victoria wards, as well as a few E.D's in Mumbles, score highly-positively on this component, areas which are often rented out to students and other persons seeking accommodation of the cheaper, smaller rented kind. Over the remainder of the county, very few enumeration districts score positively on this component and there are no concentrations of such conditions to even the extent seen in central Swansea.

VARIMAX COMPONENT V

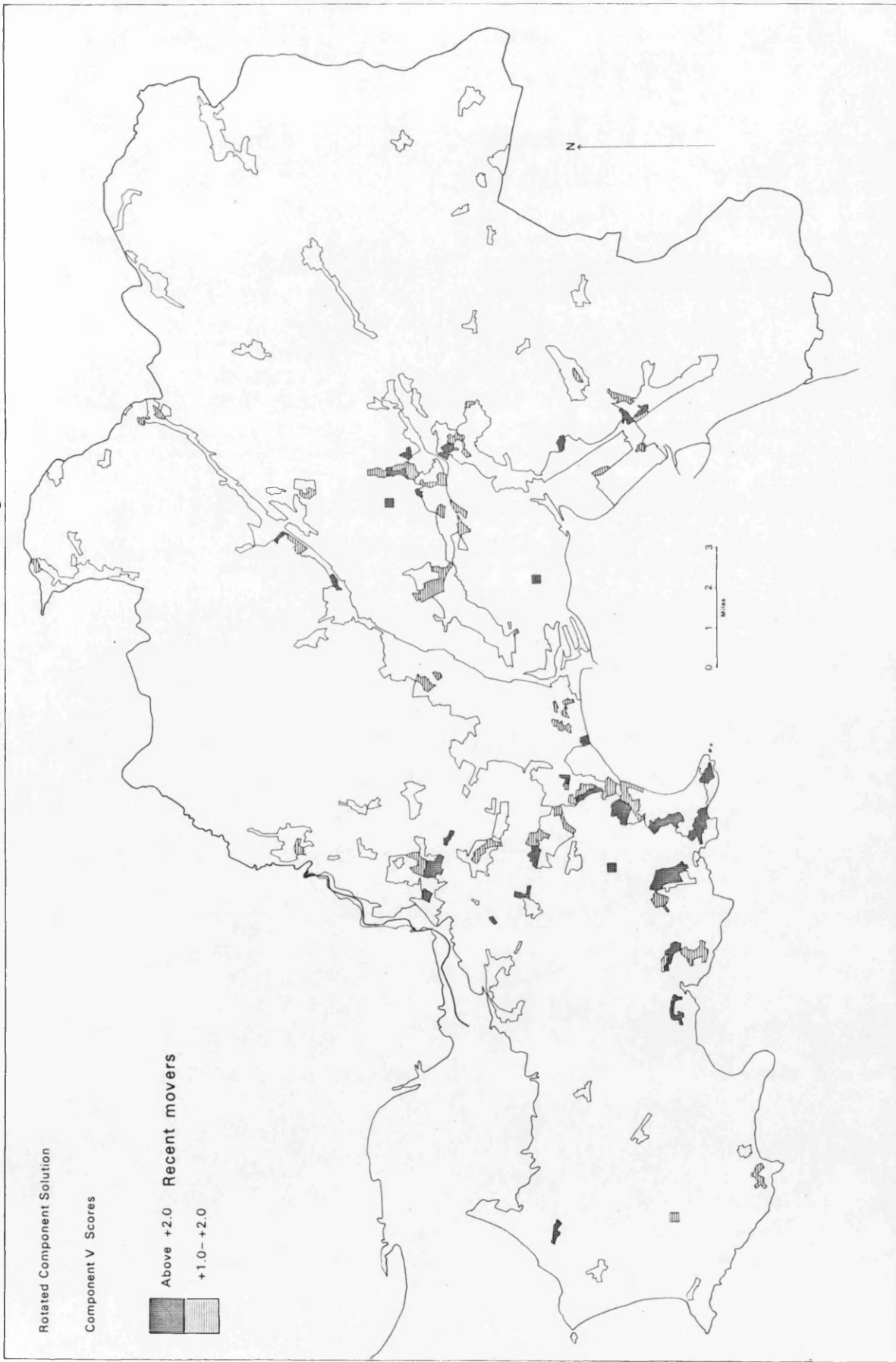
Migration:

Var. No.	Variable Description	Loading
25.	% moved into L.A. within past 12 months	+ 0.872
26.	% moved into L.A. within past 5 years	+ 0.777
Approx. Percentage of Total Explanation:		7.05%

The two variables which load significantly on this component indicate

Figure 3.9

Varimax Component V : Migration



that it is a dimension concerned with movement of families prior to the census. There are slight positive associations with young children, S.E.G's 1, 2, 3, 4 and 13, and owner occupancy, so possibly it has overtones of young family mobility and higher social status. Migrants into the local authority are more likely to be higher status persons, compared with within-local authority mobility, at which scale both council tenants and private householders might be involved.

Figure 3.9 showing spatial patterns for this component, highlights areas in the higher-status western parts of Swansea (Mumbles, Sketty and Bishopston and other Gower villages) whilst across the county, areas of recent new housing tend to be picked out. Some parts of Aberavon and Neath North in the east and of Loughor in the west of the county are thus identified. The main areas of mobility in the west of the county illustrate the point introduced in chapter two, which described the western areas as being the main 'growth' areas in terms of population increase (Table 2.5).

6. Cluster Analysis: Patterns of Residential Differentiation in West Glamorgan

The principal components analysis provides a rigorous means of identifying areas of the city according to a set of important but different individual components, but it does not indicate how far areas exist which are relatively homogeneous in terms of different aspects simultaneously. Some form of cluster analysis, however, is able to classify each unit of the study area in terms of the five main components emerging in the principal components analysis and in spatial terms, one single map rather than five separate maps is provided, which depicts the pattern of residential differentiation and the 'homogeneous neighbourhoods' of West Glamorgan. This map would act as a convincing comparison and reference for choice of areas for interviewing in the following section.

Every classification depends upon at least two subjective judgments - first, the choice of criteria upon which classification is to be made and

secondly, the choice of how many groups would be most suitable in the classification. Johnston (1968, p.588 after Lambert and Dale, 1964) warns that although the actual methodology employed may be based upon objective, numerical techniques, the nature of the data to be collected, the form of the analysis and the exact parameters to be used, are all subjective decisions, made either on the basis of past experience or with some foreknowledge of the type of phenomena to be expected. Cluster analytic techniques do not claim to remove this inherent subjectivity but do at least provide some means of dealing with it. Cluster analysis includes under its heading a variety of actual types, the strengths and weaknesses of which are more fully discussed in Appendix IB, but the basic mechanisms of one group of procedures, which Johnston (1968) calls 'agglomerative techniques' and which are most suitable for the present situation, may be presented here.

'Agglomerative techniques' take a population of individuals and, by one of a number of routines, proceed to group them into classes. This is distinct from another form of classification, which is the logical subdivision of a population into groups according to stated criteria, often the presence or absence of specified attributes. This study began with a 'population' of 739 individual units (the E.D's) and a value (score) was known for each variable (component) for each of these units. Thus, there were 739 'clusters' at the outset, each containing one individual, and a 'similarity matrix' was compiled, from which those two individuals were selected which were the most similar in terms of all the components - in accordance with their similarity in multi-dimension space, the dimensions of which were determined by the scores recorded for each item. These two units were 'fused' together and the resulting union (cluster) was subsequently re-labelled as one unit and a certain 'loss of detail' is recorded (as a

coefficient). The second step re-examined the matrix, now comprising N-1 (738) units and the next most similar pair was chosen, fused together and recorded as one unit. The process continues until the entire matrix consists of only one group, which in itself contains every original unit, and hence, in terms of the original input, is completely generalised.

At some stage between 739 units (complete detail) and one unit (complete generality) is to be found a stage of fusion which results in a picture or solution which is suitable for the requirements of the study. It is the determination of this 'optimal level' of generality that clearly retains the great element of subjectivity, but most cluster analysis processes offer some assistance in this task by the calculation of the above 'coefficient' or 'index' of the loss of detail with each fusion in the matrix. At points where large increases occur in this index, it may justifiably be concluded that very different types of classes are being fused, and that the resulting classification is becoming too generalised. The construction of a 'dendrogram' or linkage-tree diagram is a graphical means of depicting this fusion process, from which visual observation of incompatible clusters may be made. Additionally, or alternatively, a graph may be constructed to help show when the index is growing at the fastest rate. Thus a considerable degree of objectivity may be introduced to the subjective task of defining an appropriate number of clusters for the classification.

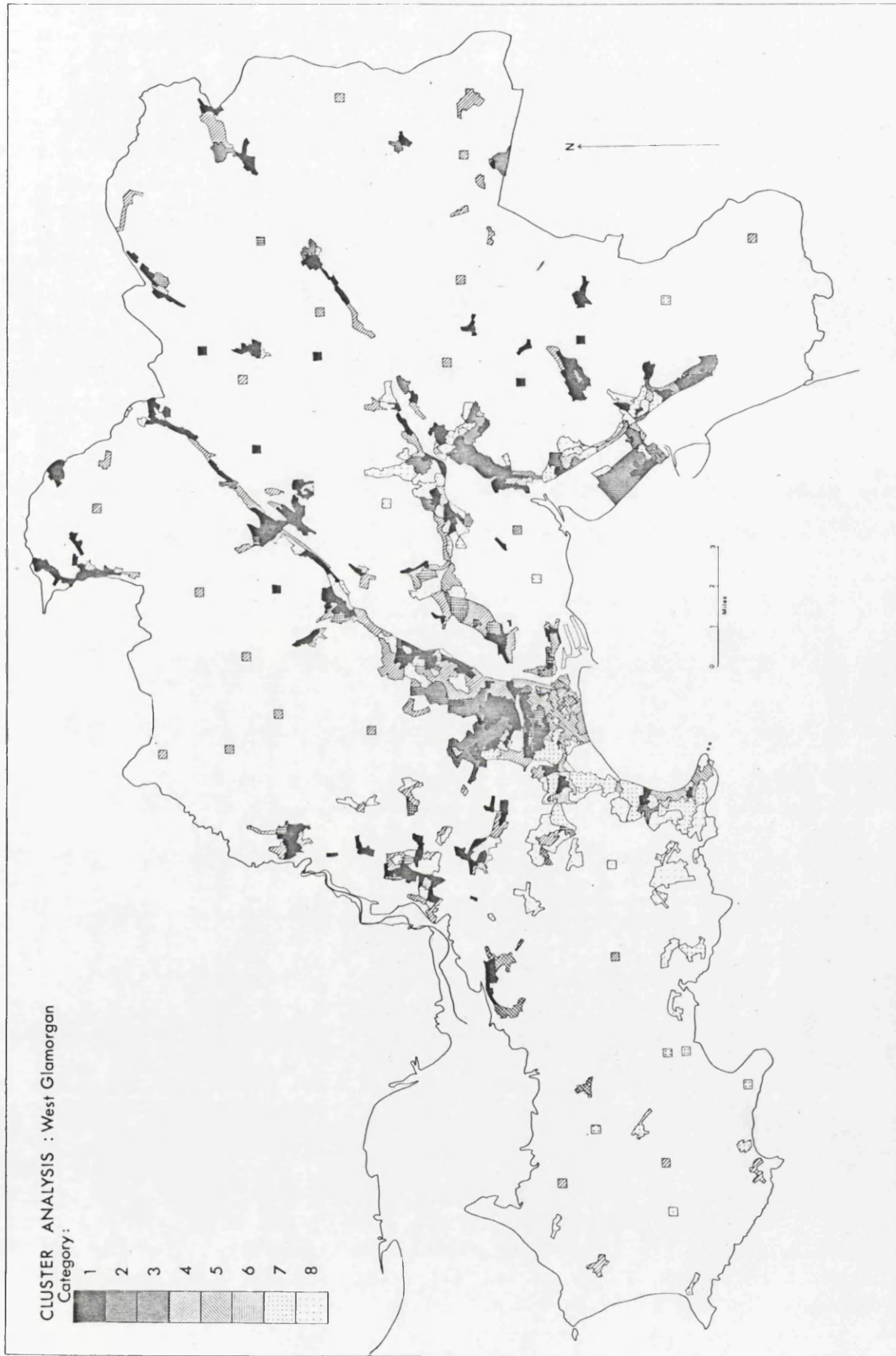
The cluster analysis program used in this study was the Clustan IA program, constructed by Wishart (1969, 1970) and the manual states that the fusion process, although left up to the user, "may be stopped when a significant discontinuity in the fusion coefficient value is observed" (Wishart, 1970, p.37). By the examination of this coefficient, and the printed 'dendrogram table' from which the dendrogram may be drawn, numerical

and visual examination may help determine the number of clusters to be decided upon. It is the method of computation of the similarity matrix that creates the variety of types of agglomerative techniques and Wishart (1970, p.40) lists eight types of agglomerative techniques (which are specified in Appendix IB), of which Ward's method is described as "possibly the best of the hierarchical options". Ward's method (Ward, 1963) employs the "error sum of squares" method, by which, at each step in the union, every possible pair of items is considered and the two units whose conjunction leads to the minimum increase in the error sum of squares are fused together (see Appendix IB). The use of this method has become fairly widespread and it was used in the present study.

With a large number of fusions to be undertaken in this study, even at the 727th step, there are still twelve distinct clusters left and the loss of detail is still only 19.4%. This loss of detail, however, approximately doubles to 36.7% at seven clusters and increases to 48.4% at six clusters, which suggests a suitable level of generalisation may be found between 6 and 12 clusters. The form of the dendrogram illustrated the 'natural' clusters which tend to remain distinct until the final stages and an examination of some of the clusters illustrates they are still rather specific and hence inappropriate for a 'generalised' study. Thus, eight groups were finally selected, as the ninth group was highly specific, referring to a small area in Fforestfach, which was absorbed into the eighth cluster. The main characteristics of these categories of areas will now be briefly discussed, the clusters being numbered as in Figure 3.10.

Category 1: A considerable number of areas and households were included in this cluster. A main feature of such areas was a high proportion of municipally-owned dwellings, although this was not as uniformly high as found in Category 2, and with associated low socioeconomic status. Large

Figure 3.10



tracts of Central - Northern Swansea fell into this category, Mayhill, Townhill and Penlan areas, as well as areas in Neath and Port Talbot - Margam. Household amenities were generally above average and the age-structure of these areas was somewhat older than the following group.

Category 2: This is the second category in which large proportions of the housing stock was municipally-owned, up to 100% in some E.D's, but the age-structure is younger than in the previous category. More households have children and there is a higher proportion of economically-active residents and a lower proportion of retired persons. In both these categories, household amenities tend to be good in physical provision, although socio-economic status is low, as are associated rates of car ownership. Areas in this category are to be found in Blaen-Y-Maes/Foresthall in northern Swansea and in Margam, Baglan and Aberafan near Port Talbot.

Category 3: This class includes a smaller number of areas such as some districts of Penclawdd, Port Talbot, St. Thomas and Victoria Ward in Swansea. Houses were mainly owner-occupied and these areas tended to score neutrally on both socioeconomic status and age-structure components, which indicates their mixed housing and social nature.

Category 4: This category comprises areas in the Lower Swansea Valley from Castle Ward to Murryston and also some areas higher up the Swansea Valley as well as parts of Port Talbot and Loughor. The areas are typified by smaller terraced-style housing although owner-occupancy is a characteristic. The areas are also socially-mixed: some older-aged residents of longer standing live in them as well as some young families buying in the cheaper end of the private housing market. Overall, however, their age-structure is somewhat older than average and housing in this category tends to score less well on the housing amenities component II.

Category 5: Such areas score similarly to areas in Category 4 on age-structure but they are distinguished by considerable proportions of rented accommodation. In this category are areas in the Mumbles and in the Brynmill-Uplands areas of Swansea, near to the University, where single person and student demands for rented housing are met. The houses themselves are usually of the larger terraced type, often sub-divided into a number of furnished and unfurnished flats and bed-sitters. Since there has not been the rapid subdivision associated with pressure upon such housing as becomes characterised by a 'Zone-in-Transition', these areas are not extensively developed in Swansea and amenities are also not normally very poor. Not surprisingly, areas in this category are to be found almost exclusively within Swansea C.B. itself as there have not been demands for this type of accommodation elsewhere in the county. Social class is variable in these areas, associated with such conditions, and some owner-occupiers at the cheaper end of the market have purchased property in these areas. However, generally these areas score positively on component IV, a housing subdivision component, with up to 50% of dwellings in some E.D.'s consisting of 1 to 3 rooms and having a large proportion of single-person households. In some E.D's, between one-third and one-half of households are in shared dwellings.

Category 6: Comprised a very small number of dwellings in Castle and Sketty Wards and in Port Talbot. These were usually of a terraced type, somewhat substandard in amenity provision, with medium to low socioeconomic status and a slightly younger age-structure than found in areas in Category 4.

Category 7: This category and Category 8 include the high status areas of Western Swansea - the high status areas of the Mumbles, West Cross and the Gower villages. In addition are included high status areas in Penllergaer, Neath and Baglan. These areas are distinguished by large

proportions of heads of households being in S.E.G's 1, 2, 3, 4 and 13 (usually over one-third and often over 60%), high rates of owner-occupancy and of car-ownership and nearly all dwellings have exclusive use of all amenities (usually 97% - 99% of households). Some of the large, prestigious housing areas of Ffynone in Swansea itself fall into this category, where professional families have maintained areas of 'town houses'.

Category 8: Areas in this category are similar in type and in spatial distribution but the main difference between this category and Category 7 is that this category covers the areas of newer housing, usually of equally good amenities, in West Cross, Caswell, Baglan and some Gower villages. Socioeconomic status and car ownership rates were uniformly high and the main differentiating feature between these areas and those in category 7 was a higher proportion of recent in-migrants (indicated by high positive scores on component 5). Age-structure was correspondingly somewhat younger on balance than in category 7 areas, with low negative scores on housing subdivision indicating these are areas of family housing.

These categories or 'clusters' provided additional information upon which to base objectively the subsequent choice of survey areas. The distinctiveness of 'housing areas' has again been suggested in this analysis and some authors have termed these 'homogeneous neighbourhoods' in themselves (Raine, 1976). However, a study of attitudes and of service utilisation requires the organisation of small-scale, locally-based surveys and for this purpose, the analyses presented so far are of considerable use in providing the sampling framework upon which such a survey may be based. It is to a consideration of this topic that the chapter now turns.

PART ONE BTHE USE OF URBAN SUB-AREAS AS A
SAMPLING FRAMEWORK FOR THE SURVEY1. Sampling in Social Research

Sampling may be seen as a usual and necessary part of most social surveys, for a number of reasons. The obvious underlying aim is to reduce the number of individuals within a population who need to be investigated, whilst maintaining the quality of being representative of the whole and this is usually done to save money, labour and time. Rather than detracting from accuracy, a sample coverage may often permit a higher overall level of accuracy than a full enumeration, by allowing more detailed and elaborate information to be collected for each case and by enabling more precise and accurate checks to be carried out both on the work of the field staff and on the data itself since more care may be given to editing and analysing a smaller number of cases. The first rigorous applications of modern sampling methods to social surveys in Britain were in the first quarter of this century and, since then, a number of tried and tested methods of sampling have evolved. This section of the chapter considers the sampling method by which suitable areas were chosen in which to conduct the survey to be subsequently described and also gives a brief account of the character of the areas and respondents chosen, as a background to the survey.

In this research, carefully defined areas were to be selected, the aim being that a comparable medical-service environment would be available to the residents in each area so that, locally, two juxtaposed sites would have available either the same or similar services. Studies of locally-based activities have in the past commonly been conducted by selecting a number of respondents from various locations within a pre-defined area and then aggregating individual responses to form a composite picture. This approach might be useful for the investigation of certain phenomena, but

a requirement of this research was that areas would be of a known social composition and of a set distance to a known type of primary medical facility. Thus, a number of pairs of small-areas would be chosen as survey sites, since a strong measure of standardisation would be introduced in that a similar environment was available to all respondents. This basic design was regarded as being crucial to the methodology of the research in the opportunities it offered for explanation of behaviour rather than its mere description.

Three basic types of random (probability) sampling may be recognised. "A 'random' method of selection is one which gives each of the N units in a population to be covered a calculable (and non-zero) probability of being selected" (Moser and Kalton, 1971, p.80). For most research surveys this principle of randomness is essential in selection of a sample. The three types of probability sampling are 'random sampling', 'systematic sampling' and 'stratified sampling'. With simple random sampling, each possible sample of n different units has an equal chance of being selected, and 'systematic sampling' is sometimes employed when lists are involved since lists are generally not drawn up in a 'random' fashion but in some order - alphabetically, by seniority or by some other criterion. Systematic sampling is sometimes used in that a sampling fraction may be determined and every 'kth' individual chosen. Thus the selection of one sample member is dependent on the selection of a previous one, although it is evident the element of chance remains very strong. When the feature by which a list is arranged is not related to the survey, selecting at regular intervals from a list can be regarded as approximately equivalent to simple random sampling and is sometimes called quasi-random sampling.

The third type of random sampling is more sophisticated, since particular attributes which are desired in the final sample are incorporated

into the first stage. In this type of sample, the subject is first divided into a number of groups or strata and then an independent random or systematic sample taken from each stratum and thus implies no departure from the principle of randomness. Stratification has the advantage of allowing a more even representation of sub-groups within a heterogeneous population.

A critical decision in forming a stratified sample concerns the basis upon which stratification is to take place. Generally, detailed information is not known regarding the population and thus a random stratified sample is usually not obtainable from major sampling lists. In this situation, an approach to stratification through the use of areas instead of lists has been developed, particularly in America where there is an absence of adequate population lists (Herbert and Evans, 1974). Areal sampling is a form of multi-stage sampling in which maps, rather than lists or registers, form the frame. Geographers have become increasingly appreciative of the utility of such an approach and within urban geography, social-area maps of cities such as those discussed previously offer the opportunity to select comparable social areas from each of which independent samples of individuals, with broadly similar social-status origins, may be drawn. When one type of area is required, for example, high status areas or immigrant areas, the location of these may be noted from social area maps and from these areas, random sampling procedures could establish a final set of respondents to be questioned. Conversely, high and low status areas may be defined from which can be chosen representative sub-areas.

Thus, it will be evident that a number of stages are involved in such a sample design and this approach referred to above is known as 'multi-stage sampling'. Moser and Kalton (1971, p.107-8) discuss an example in which 2000 respondents are required to represent the adult population of

Britain. The country may be stratified proportionally, for example, the South West may have seven per cent of adults, so thus 140 out of 2000 individuals would be selected from this region. From this stratification by region, to concentrate the interviewing, a sample of administrative districts in each region may be chosen and a sample of individuals selected from each chosen district. Thus the country is the primary sampling unit (PSU), the region the second level sampling unit and the district the third stage, whilst the household would be the fourth stage sampling unit. Clearly, one needs a frame of the second-stage units only for those PSU's which have been selected at the first stage.

In this research, a similar multi-stage sampling design was adopted, although the 'Primary Sampling Unit' was the County of West Glamorgan, from which urban sub-areas of certain characteristics were chosen and the third stage involved selection of households from within the selected units. The selection of the types of areas from the basic framework was influenced by the decision to keep the enumeration district as the unit for detailed social survey investigation. A number of reasons encouraged this decision. First, the E.D. is a unit for which a great deal of census information exists and survey results may therefore be seen in a more general statistical context. Secondly, the E.D. is a well-defined areal unit which may be related to facilities located on the ground. Thirdly, on average an E.D. contains about 150 households, so a sample of about 50 respondents from each of these districts represents a reasonable sample proportion.

Certain drawbacks are worthy of note in the use of E.D's as sampling units. Some E.D's may be diversified in terms of housing and population types and such E.D's have limited use in statistical terms or as units for survey and thus have to be discarded as possibilities in the selection process.

This information was gained from local knowledge and from detailed field checks of some E.D's, as well as from census statistics. As Herbert and Evans (1974) point out, only internally consistent E.D's should be considered, which allows the assumption that the E.D. is representative of the larger 'neighbourhood' within which it is located, these 'neighbourhoods' having been identified by the earlier principal components and cluster analyses. Also, with the aims of the research in mind, only certain E.D's presented themselves in a suitable situational context with regard to location of desired types of medical service. From these factors, it was possible to select a number of survey sites, which will be now discussed.

2. The Selection of the Survey Sites (E.D's)

For general stratifications of urban residential area, the cluster analysis-derived Social Area Map (Figure 3.10) is a very valuable source, but for this research, which required more precise knowledge of the demographic structure and socio-economic composition of E.D's, it was decided to make use of first, varimax-rotated component III (an index of socio-economic status, Figure 3.7) and varimax component I (age-structure, Figure 3.5) and then to make reference to cluster groupings after a number of possible sites had been delimited. As mentioned earlier, the research design specifically called for juxtaposition of survey sites (not necessarily contiguous, however) and these would be ranged together to have access to the same services. The basic comparisons were to be between two sites designated in what might be termed one 'survey area'. Therefore, the general situation was to be:

one survey	{	low status site (i)	juxtaposed to maintain access
'area'		high status site(ii)		to services constant.

Three such areas were designated, composing six separate sites to be

chosen. A fourth area was designated specifically to test the hypothesis that distance variations were more important than social class variations and thus two low-status sites in a similar social area were chosen, but which had a marked difference in accessibility to the same medical facilities. Low social status areas were designated as it was felt that they were more likely, on average, to be affected by a lack of personal mobility than were higher-status respondents and, as a result, more definite variations in use and attitudes might be attributable to accessibility.

In order for social status differentials to be of a reasonable order, it was decided to select as higher status areas those scoring over + 1.0 on component III, as it will be remembered that areas scoring high positive were areas of higher social status. Conversely, for areas of lower socio-economic status it was determined to select sites scoring at least below - 0.5 on this component and on this basis a number of survey areas with suitable juxtaposition were delimited.

To maintain comparable age structures in the survey sites, reference was made to varimax component I. It was decided to choose sites as nearly similar in component I scores as possible, and the original survey sites were examined with this in mind. On this basis, and with the juxtaposition of service criterion, at least eight areas presented possibilities: areas in Sketty, West Cross, Gowerton, Gorseinon, Morriston, Baglan, Neath and Penllergaer. For the selection of an area of low status with sufficient differential in distance between sites to similar facilities, opportunities were less plentiful, but areas were found in the Blaen-Y-Maes - Foresthall area of North Swansea, in Townhill - Mayhill, and in Port Talbot. It is evident that these are three areas of largely municipal housing. The number of potential survey areas which could be included at this stage of sampling was naturally fairly restricted by the very precise and demanding

requirements of the research design.

Having determined the possible areas, three pairs of sites were chosen under the first requirements of being adjacent but of contrasting social composition. These were in West Cross, Penllergaer and Baglan, which gave a reasonably balanced picture over the county. In these three areas, the high status sites were all in Category 8 of the cluster analysis and the low status sites belonged to Category 2. Under the second requirement of a socially-similar area with sites of differing accessibility, Blaen-Y-Maes - Foresthall was selected. Both of these low status E.D's in this area were in Category 2 of the cluster analysis.

Visual comparisons of the eight selected enumeration districts spread over the four main survey areas are given in terms of some of the census variables, which helped to shape the original components, in Figures 3.11 and 3.12 and their locations are shown in Figure 3.13. Basic socio-demographic details have also been tabulated (Table 3.14).

3. Comparisons of the Survey Areas, Survey Sites and Respondents

The inclusion of a large amount of descriptive detail concerning the characteristics of the selected enumeration districts has been avoided by the inclusion of the summary histograms (Figures 3.11 and 3.12). However, as an essential background to the research findings, the service characteristics of the selected survey areas and the general characteristics of the respondents in each of the sites must be discussed. As much demographic detail as possible will be summarised but, for the ensuing survey analysis, a detailed knowledge of the medical service 'infrastructure' available in each area is required and this will be presented separately for each of the four areas. Each pair of sites will be considered under the four areal headings (see Figure 3.13):

Figure 3.11

Comparison of the Eight Enumeration Districts

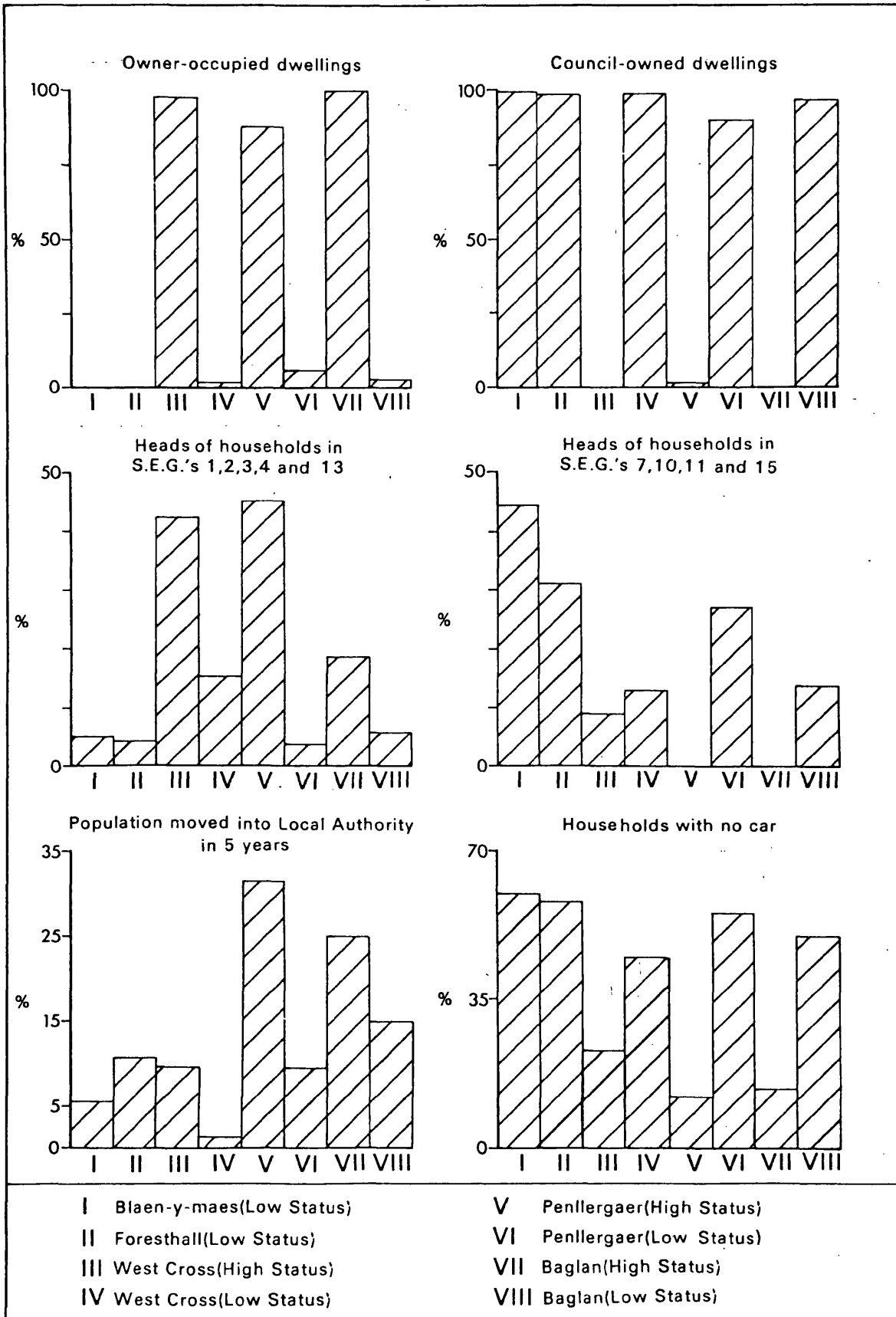


Figure 3.12
Comparison of the Eight Enumeration Districts

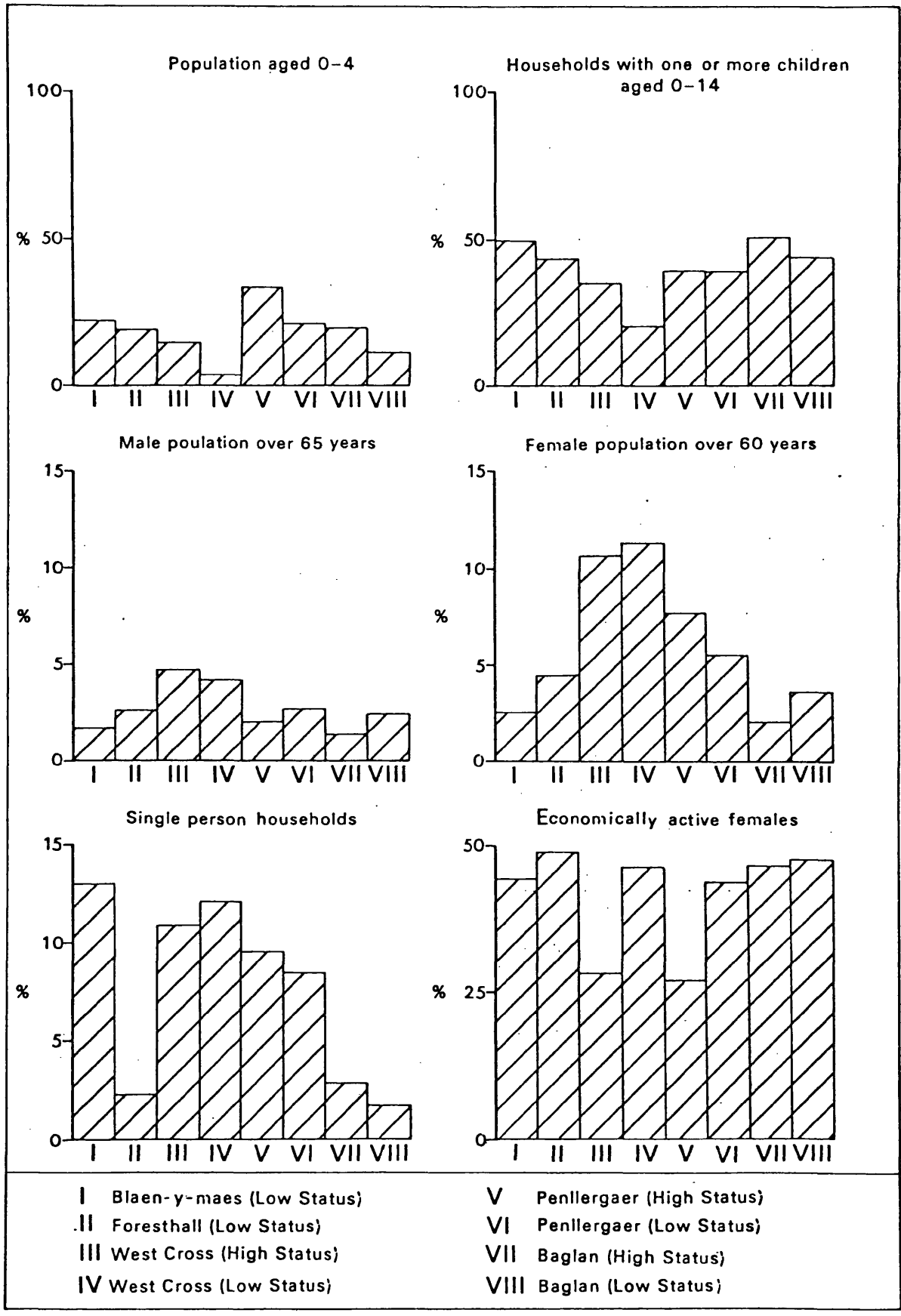
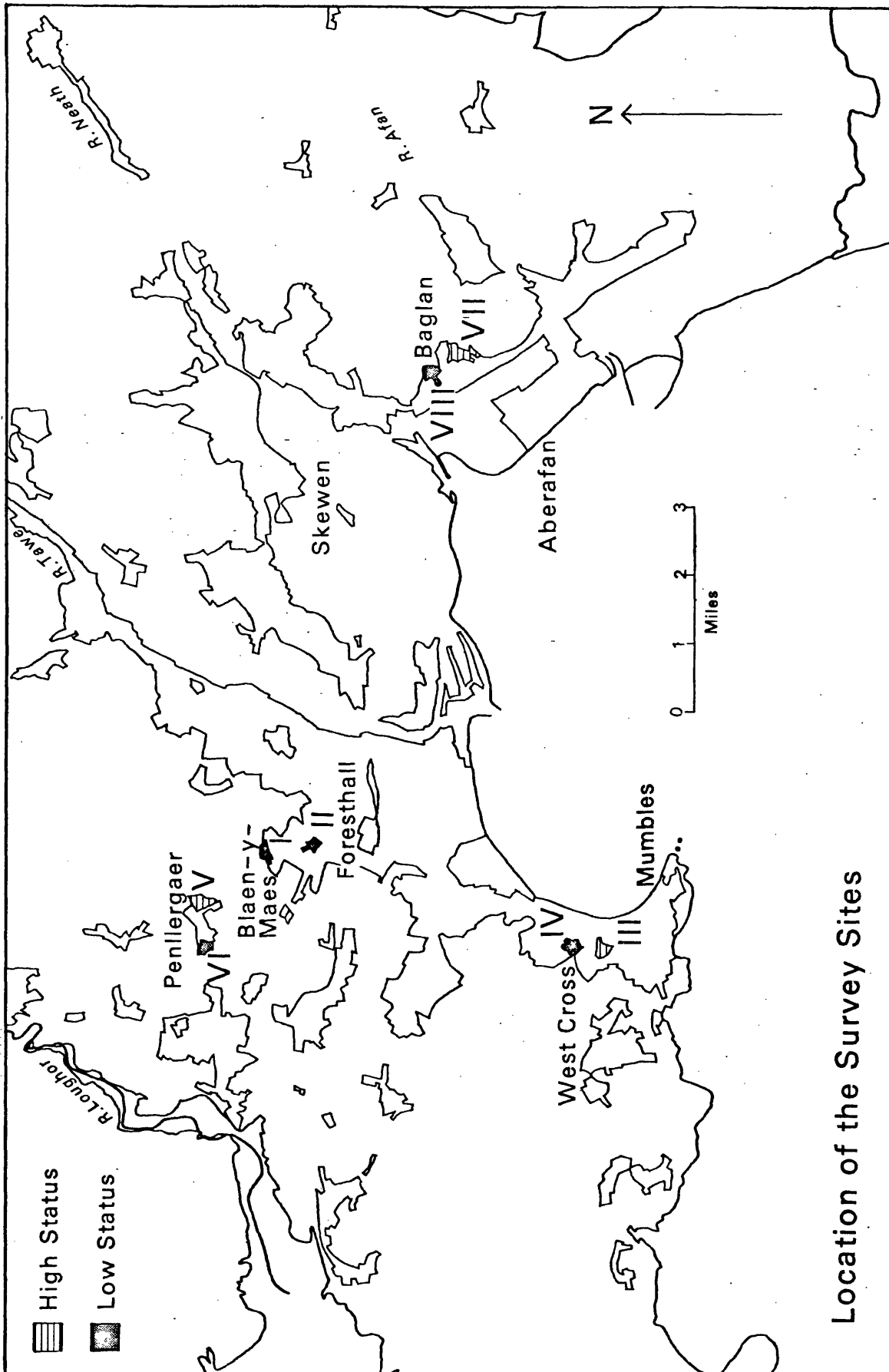


Figure 3.13



Location of the Survey Sites

Socio-demographic Features of the Sample

H.S. = High Status

L.S. = Low Status

Table 3.14aSocial Class of Head of Household for the sample population:

Area	Site	<u>Social Class %</u>						$(x^2$ for Social Class between sites)
		I	II	III _{nm}	III _m	IV	V	
Blaen-Y-Maes - Foresthall	L.S. 1	-	-	8.0	48.0	28.0	16.0	$x^2 = 1.83$
	L.S. 2	-	-	8.2	36.7	40.8	14.3	d.f. = 2
								P. = 0.50 > P > 0.10
West Cross	H.S. 3	26.4	41.5	9.4	22.7	-	-	$x^2 = 47.5$
	L.S. 4	-	9.6	9.6	38.5	36.5	5.8	d.f. = 4, p = 0.001
Penllergaer	H.S. 5	20.8	50.0	12.5	16.7	-	-	$x^2 = 65.5$
	L.S. 6	-	2.0	2.0	29.4	51.0	15.7	d.f. = 4, p = 0.001
Baglan	H.S. 7	8.7	41.3	13.0	37.0	-	-	$x^2 = 41.4$
	L.S. 8	-	4.3	10.6	34.1	25.5	25.5	d.f. = 4, p = 0.001

Table 3.14bAge Structure: Age of Respondent% of households with pre-school child(ren)

Area	Site	18-25	26-35	36-45	46-55	56-65	66+	
Blaen-Y-Maes Foresthall	1	20.0	36.0	10.0	12.0	12.0	10.0	46.0%
	2	2.0	26.5	20.4	22.5	18.4	10.2	18.4%
West Cross	3 H.S.	5.7	20.8	11.3	22.6	20.8	18.9	17.0%
	4 L.S.	2.0	9.6	11.5	32.7	28.8	15.4	15.4%
Penllergaer	5 H.S.	0.0	27.1	20.8	22.9	18.8	10.4	14.6%
	6 L.S.	5.9	25.5	21.6	15.7	19.6	11.7	29.4%
Baglan	7 H.S.	6.5	43.5	23.9	17.4	6.5	2.2	39.1%
	8 L.S.	12.8	14.9	10.6	36.2	19.1	6.4	21.3%

<u>AREA ONE:</u>	Blaen-y-Maes-Foresthall	Site 1. Low status; distant from facilities
		Site 2. Low status; near to facilities
<u>AREA TWO:</u>	West Cross	Site 3. High status
		Site 4. Low status
<u>AREA THREE:</u>	Penllergaer	Site 5. High status
		Site 6. Low status
<u>AREA FOUR:</u>	Baglan	Site 7. High status
		Site 8. Low status

AREA ONE: Blaen-y-Maes-Foresthall
(Figure 3.16: Plate 1 Blaen-y-Maes; Plate 2 Foresthall)

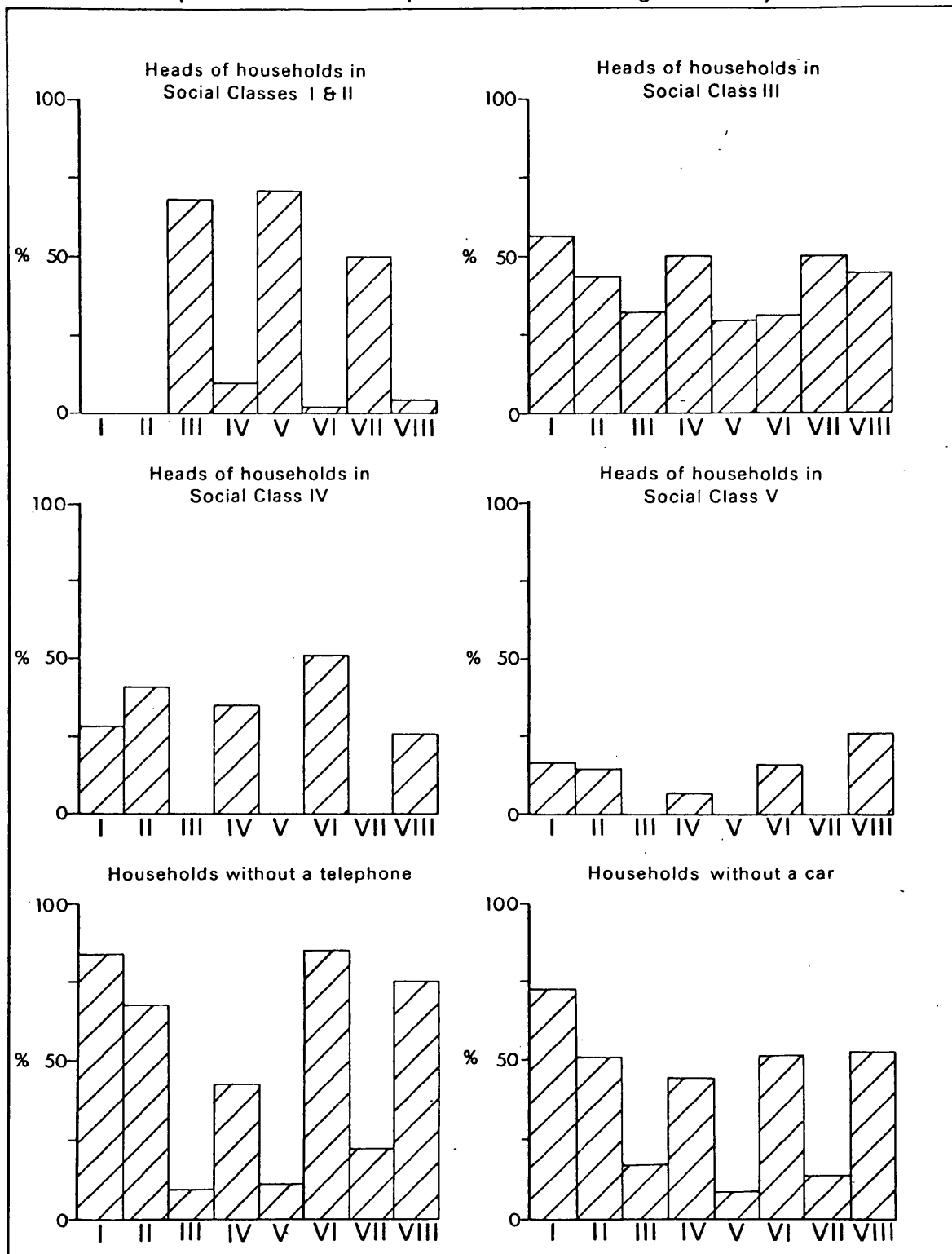
This area lies on the northwest of Swansea C.B. and is a large area of council-owned housing of varying ages. The two selected E.D's are of considerably differing accessibility to their nearest G.P. facility, the furthest E.D. (in Blaen-y-Maes), is one and a quarter miles from the Fforestfach Health Centre, whilst the nearer of the two (Foresthall) is less than a quarter of a mile from this Centre.

The Blaen-y-Maes site consists of mixed local authority housing, some being semi-detached dwellings of immediate post-war age and others are terraced and flatlet houses built in the early 1960's. The site in Foresthall consists of similar mid-1960's terraced housing and semi-detached dwellings, but also contains some houses along Middle Road and Rhoddfa'r Brain built in the immediate post-war era, after 1946-7. The respondents in both these sites were of a low occupational status, Blaen-y-Maes and Foresthall had 28% and 41% in Social Class IV, and 16% and 14% in Social Class V respectively.

Table 3.14b - there were some differences in the age-structure of these two sites, although both had similar percentages of over-55 year olds (22.0% in Blaen-y-Maes and 28.6% in Foresthall) but the Foresthall site had a somewhat larger proportion of respondents in the middle age

Figure 3.15

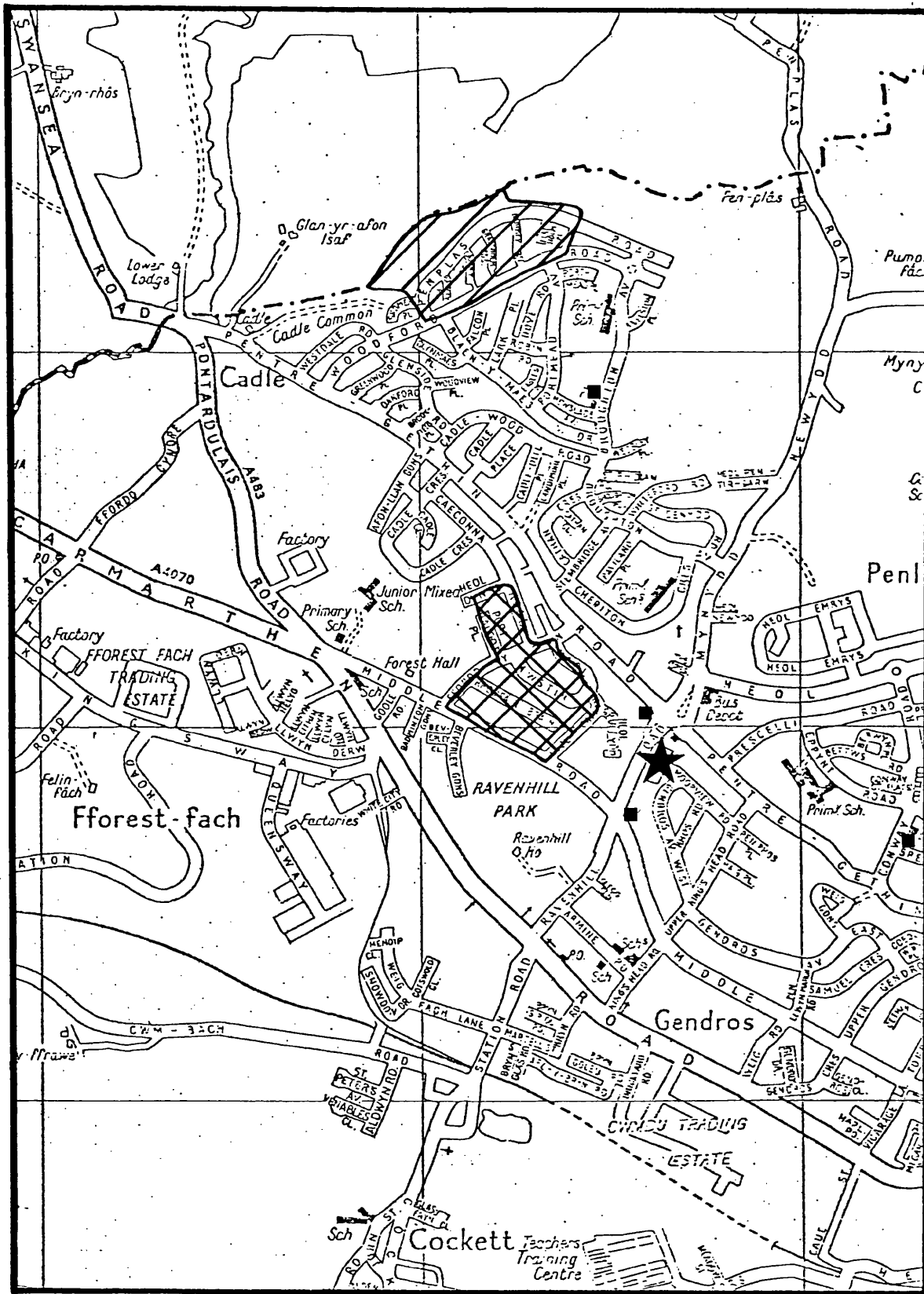
Comparison of the Respondents in the Eight Survey Sites







- I Blaen-y-Maes (Low Status)
- II Foresthall (Low Status)
- III West Cross (High Status)
- IV West Cross (Low Status)

- V Penllergaer (High Status)
- VI Penllergaer (Low Status)
- VII Baglan (High Status)
- VIII Baglan (Low Status)

Figure 3.16
 Survey Sites: Blaen-y-Maes - Foresthall



- | | | | |
|---|---|---|-----------------------------|
|  | <p>I
 Blaen-y-maes
 Low Status
 Distant from facilities</p> |  | <p>Health Centre</p> |
|  | <p>II
 Foresthall
 Low Status
 Near to facilities</p> |  | <p>Chemist (Dispensing)</p> |

AREA ONE : BLAEN-Y-MAES/FORESTHALL



SITE 1 Blaen-y-Maes
PLATE 1 Local Authority housing; low status



SITE 2 Foresthall
PLATE 2 Local Authority housing; low status

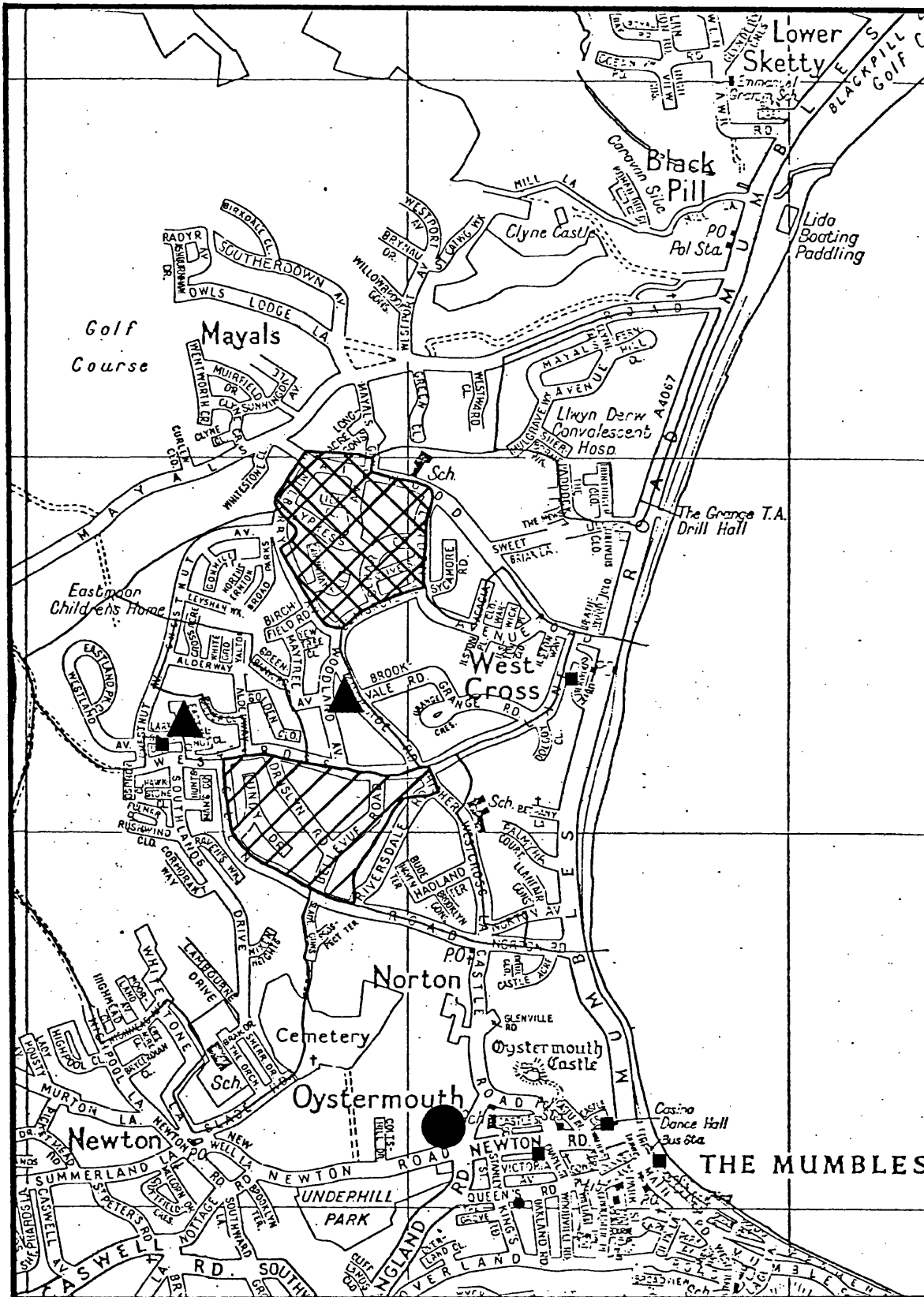
categories (between 36 years and 55 years: 42.9% compared with 22% in Blaen-y-Maes). The Blaen-y-Maes site respondents had a large proportion of respondents (56%) under 35 years, which was a feature of the site which was to be borne in mind during the ensuing empirical analysis. Similar proportions of respondents were divorced or separated in both sites (14% in Blaen-y-Maes and 12.2% in Foresthall) as well as similar proportions widowed (10% in Blaen-y-Maes and 14.3% in Foresthall).



The Fforestfach Health Centre houses three G.P. practices of four, three and two doctors in each and was opened in 1970, serving approximately 18,000 patients. Previously, a singlehanded G.P. had operated very near the more distant Blaen-y-Maes site, who is now in the health centre and the other two practices had also been located in the area, so a district centralisation of facilities is evidenced in this first-survey area. Two chemist shops operated nearby the health centre, whilst a third was located in an area of shops lying between the two sites.

AREA TWO: West Cross
(Figure 3.17: Plate 3 High Status; Plate 4 Low Status)

The two selected sites in the West Cross area lie approximately one-third of a mile apart, across two main roads, which broadly divide council and privately-owned property (West Cross Avenue, Moorside Road, then a line westwards). West Cross itself is situated on a steadily-rising site, steep in parts, with good access to the main Mumbles to Swansea road and to main 'bus routes. The private sector lies to the south of the divide and newer houses lie higher up the hill. The council sector lies to the north and most newer building (recently since the 1971 census) has taken place in the form of flatlets lower down the hill, whilst above these lie dwellings, of post-war age, some of which are of the 'prefabricated' type and others of the more permanent type, built some 24 years ago (circa 1953). Some dwellings which were included in the chosen E.D. were built

Figure 3.17
Survey Sites: West Cross



- | | | |
|---|--|---|
| <p>III
  West Cross High Status</p> <p>IV
  West Cross Low Status</p> | <p>● Surgery 5 doctors</p> <p>● Surgery 1 doctor</p> | <p>▲ Branch Surgery (Limited Opening Times)</p> <p>■ Chemist (Dispensing)</p> |
|---|--|---|

AREA TWO : WEST CROSS



SITE 3
PLATE 3 High status private housing.



SITE 4
PLATE 4 Low status Local Authority housing.
Prefabricated houses. High status housing in background.

in the early to mid - 1960's (Sunnybank Cl.), but most were of the immediate post-war era, up to the mid - 1950's. (The houses in Cedar Crescent were built from Nov. 1947 onwards and those in Cypress Avenue during 1952-3).

The high status E.D. chosen also had a similar range of housing age, although a number of those along Bellevue Road were of inter-war and were large detached and semi-detached houses. Further up Glen Road and at Lundy Drive are more modern detached and dormer houses, built in the early and mid 1960's. Of the high status site respondents, over 66 per cent were in Social Classes I and II, a high proportion, whilst of the lower-status site, respondents, 9 per cent were in Social Class II, and 50 per cent in Social Class III, (10 per cent non-manual), this slightly higher than usual bias in council-housing being a reflection of West Cross estate being the most highly demanded municipally-owned site in Swansea, with rather more residentially select tenants. However, despite this, 40 per cent of respondents were still in Social Classes IV and V, well above the national figure of 25 per cent (1971 Great Britain; Table 3.1).

The age-structure of these two sites, as may be seen from Figure 3.14b, is very similar, with the only differences noticeable as a slightly younger bias in the 26 - 35 age group in the high status site, reflecting the higher-status movers to housing of the mid 1960's age and a slightly larger proportion of low-status respondents in the 46 - 65 age group. This again is a reflection of the age of the council housing since many of these respondents had moved into their housing as the first tenants when the houses were built during the late 1940's and early 1950's. Both sites had similar proportions of respondents of over 65 years of age (18.9 per cent of high status and 15.4 per cent of low status respondents) and both sites had a similar proportion of households in which respondents' families

included a child of pre-school age (17.0 per cent of high status and 15.4 per cent of low status respondent households).

The general practice facilities available locally to residents in this area were two branch surgeries, one belonging to a group of five doctors whose main surgery was in Mumbles and the other being a branch of a surgery which is linked with St. Thomas. A feature of branch surgeries is that they generally offer very restricted opening hours; the first surgery was only open for an hour each weekday morning, the other was open each weekday morning for an hour and a half, and most afternoons for two hours. These two branch surgeries were conveniently located between both survey sites (Figure 3.17), whilst the main practice of the Mumbles was half a mile away from the high status area and three-quarters of a mile from the lower status area. One single-handed practitioner was operating in Mumbles also, at a slightly further distance from both sites. Thus, locally, respondents in both survey sites had available to them a variety of types of practice, but both had access to the same range of facilities.

AREA THREE: Penllergaer
(Figure 3.18: Plate 5 High Status; Plate 6 Low Status)

The two survey sites designated in this area are shown in Figure 3.18. They lie approximately half a mile apart, across the main Gorseinon to M4 road and presented a great contrast both in social composition and in housing environment. The high status area has some houses of inter-war age, some detached and some semi-detached, but most of the housing is in post-war, modern bungalow, detached houses and dormer bungalows (Plate 5). Of the respondents in the high-status area, seventy per cent were in Social Classes I and II, only ten per cent of households had no telephone and only eight per cent had no car (Figure 3.15).

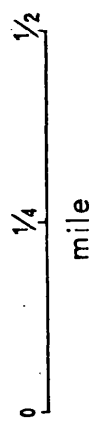
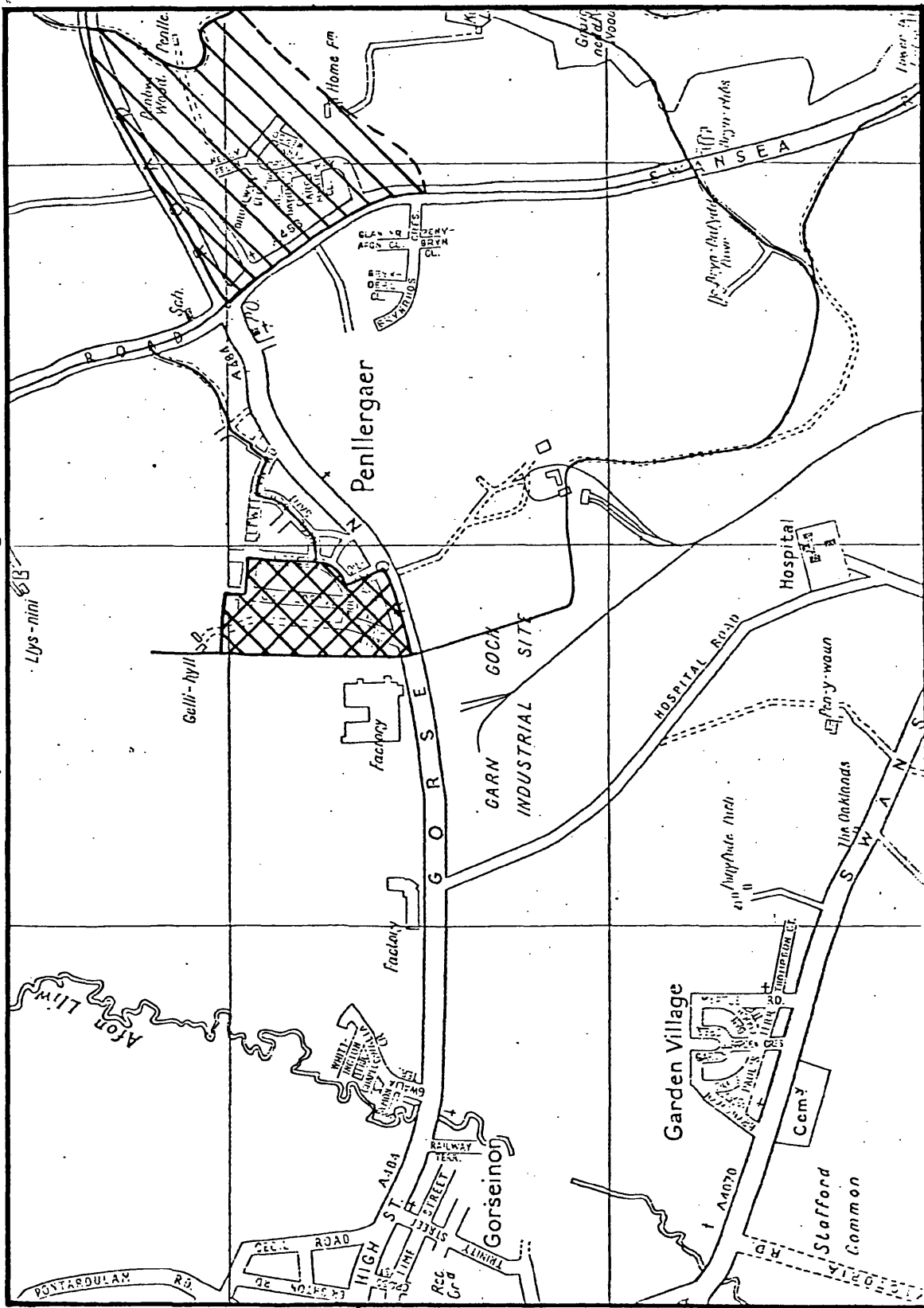
The low-status site provided a considerable contrast to this privately-owned site and a degree of local rivalry between the two was mentioned on

Figure 3.18

V Penllergaer High Statu
 VI Penllergaer Low Statu



Survey Sites: Penllergaer



Health Centre
 1/2 mile

AREA THREE : PENLLERGAER



SITE 5
PLATE 5 High status private housing.



SITE 6
PLATE 6 Low status Local Authority housing

several occasions (the high status area was referred to as "top hat road" and its inhabitants considered to be snobs by a number of respondents). This site was part of an estate of approximately 450 dwellings, the majority of which are post-war in date but a certain number are of the older inter-war style, built about 1932. Although now entirely owned by the local authority, a fact to emerge was that the newer portion of the estate (on the western edge) was built by the N.C.B. to house workers in the nearby mines and especially to rehouse certain miners moved down from pit closures elsewhere in Britain (notably from the Durham area), these being built 13 years ago (1964). In between these two eras of housing were some 1949-54 'prefabricated' buildings, built by the council post-war. Thus the social class of the respondents were determined by their being in a variety of colliery jobs and other lower-status local employment. The majority of respondents fell into Social Class IV, which was caused by a proportion of NCB workers who were not faceworker miners and who thus fall into a lower social class (51 per cent of respondents in Social Class IV and 16 per cent in Social Class V). So a rather low-social class sample was recorded overall, considerably below the national averages quoted earlier (Table 3.1).

Table 3.14b showed a remarkably similar age-structure between the two survey sites, although the lower status site had rather more respondents' households with a pre-school child.

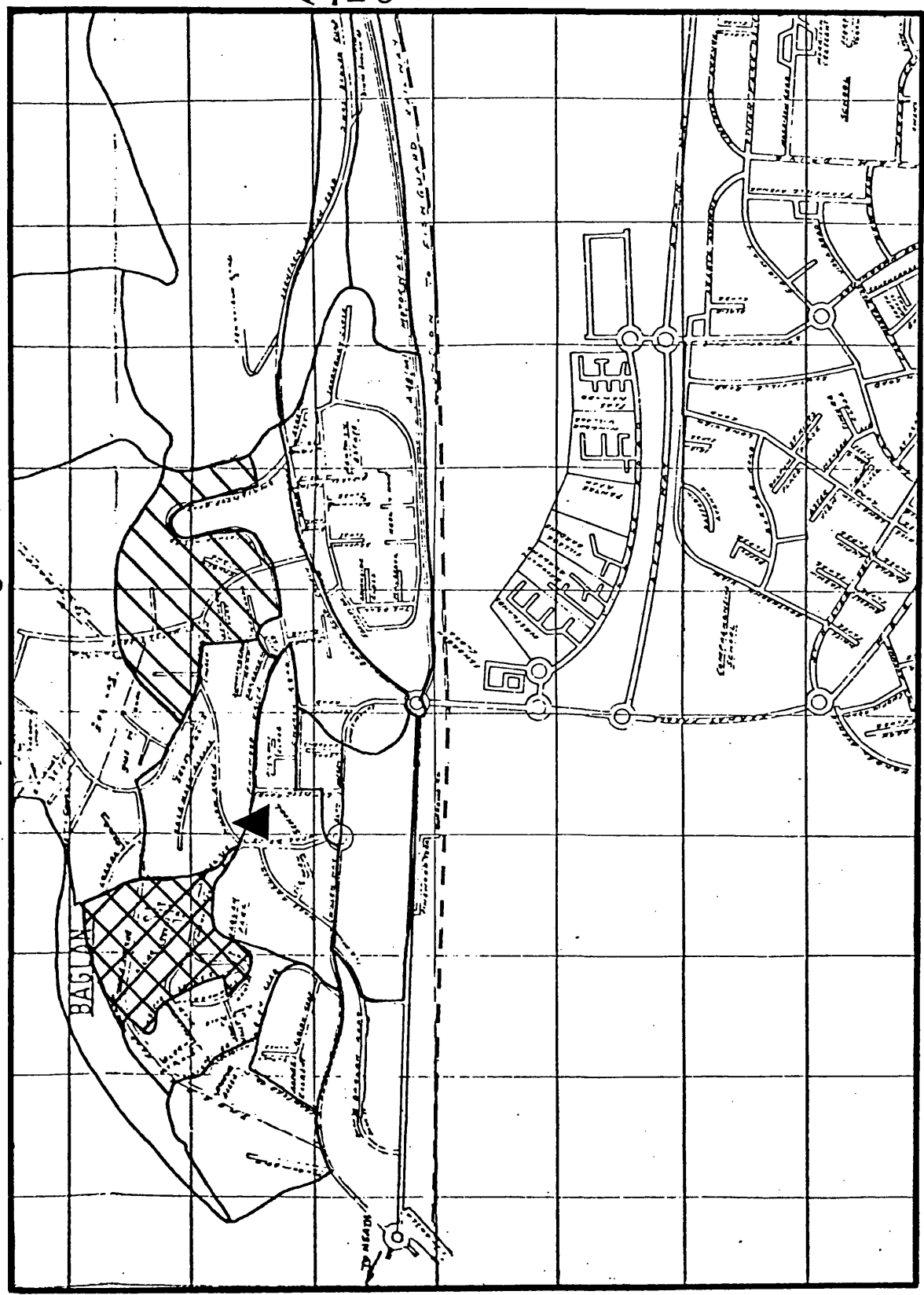
This area proved to be very useful in that virtually all respondents, high and low status, attended one large health-centre situated in Central Gorseinon, some one and threequarter miles away (only one low-status respondent and eight high status respondents attended elsewhere). Thus, any class differences in attitudes or utilisation behaviour could be related in some way to the effects of the journey, or of micro-level factors such

as physician or ancillary staff behaviour. A second interesting feature about this area was that, when the questionnaire was administered, it was found that in the early 1970's, when the large Gorseinon health centre housing two group practices of four and five doctors was opened, a small branch surgery situated on the green between the two sites had been closed, much to the annoyance of many respondents and a fact much disapproved of by elderly persons and young mothers alike. One 'bus route served this area, from the roundabout at Gorseinon road near the high status site, downhill past the low status site, to within about three or four minutes walk of the new Health Centre. The feature of a local branch surgery closing, despite protests, on opening of a new facility, appears to reinforce the arguments of Sumner (1971), who feels that scant attention is paid to the social implications of the changing locations of physicians. The route to Gorseinon, although involving a journey of under two miles, was along a main road running through a busy industrial site. Thus a rather unpleasant walk or the use of public or private transport would be necessitated to attend at the health centre.

AREA FOUR: Baglan
(Figure 3.19: Plate 7 High Status; Plate 8 Low Status)

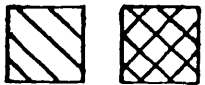
Baglan is a residential area lying to the north-west of the heavy industrial developments at Aberafan and Port Talbot, which has a selection of housing, both privately and municipally owned. The private residences cater for the professional and administrative staff connected with local industries and services whilst the municipally owned property caters for workers who generally find employment in the local heavy industries and associated services. As in West Cross, this residential area is also built on steeply rising ground, looking out across Swansea Bay. The lower-status areas tend to lie to the north-west of Baglan, whilst to their south-east lie privately owned dwellings which become of a newer age,

Survey Sites: Baglan



Abera
Health
Centre
1 mile

- VII Baglan High Status
- VIII Baglan Low Status



▲ Branch Surgery (Limited Opening Times)

Briton Ferry Health Centre
1 mile

0 1/4 1/2
mile

AREA FOUR : BAGLAN



SITE 7
PLATE 7 High status private housing.



SITE 8
PLATE 8 Low status Local Authority housing

higher price and higher status as the higher levels of the hillside are reached.

Both of the sites chosen have fairly high proportions of respondents in Social Class III (Table 3.14a), associated with the skilled manual and supervisory occupations of the local steelworks and oil refinery. However, 50 per cent of the high-status respondents are in Social Classes I and II, whilst in the lower-status site, just over 50% of respondents are in Social Classes IV and V. The municipally owned housing in the selected low-status enumeration district is largely of the immediate post-war era, dating from approximately 1948-1953, although some housing was built in the early 1960's. The private housing includes a number of large dwellings also dating from the early 1950's but a considerable amount of building has also been undertaken in the 1960's and, as St. Iltyd's Drive is climbed (see Figure 3.19), there are many even newer modern houses, built on steep sites overlooking the Bay.

Some age differentials were expected, although these were not as great as might have been the case, since some younger council tenants had moved into the low status sites during the past ten years. However, 27.7 per cent of low status respondents and 50 per cent of high-status respondents were aged between 18 and 35. There was a generally more mature bias in the low status site although proportions of retired persons over 65 years of age were not high in either site (2.2 per cent of high status and 6.4 per cent of low status respondents fell into this age category). Associated with the younger age bias of the high status site was a higher proportion of respondents' households which included a pre-school-age child. Again, with the importance being attached to age as a variable in the investigation of attitudes and utilisation, this feature was to be borne in mind during the subsequent analysis.

The primary medical facilities available to these two sites were again the same. Locally, there was only a branch surgery run by some of the doctors from the large health centre in Port Talbot, operating on a limited opening hours basis. (Opening for one hour, morning or afternoon, on certain days. However, since not all the Port Talbot doctors attended this branch surgery, some patients inevitably had to make the journey to the main health centre). Other than this branch clinic, there were three basic choices available since the health centre in Port Talbot opened in 1974 and amalgamated most individual practices into one location.

These choices were to attend the health centre at Port Talbot, a journey of about two miles. Secondly, to attend a group practice in Taibach (5 doctors), about three miles away, which would involve travelling through Port Talbot, or thirdly, to attend a new health centre at Briton Ferry, approximately two miles away. However, in this case, transport routes from Baglan tend to orient more towards Port Talbot than Briton Ferry. In the Briton Ferry health centre, six doctors work from this location, organised into two group practices of three doctors. The health centre in Port Talbot has fourteen G.P's working from it. Three of the practices are of two doctors, one is of three doctors and one of five doctors. Therefore, all the main primary health facilities available to the area are in health centre organisation or group practice and all involve a two-mile journey or longer. As mentioned earlier, Baglan itself is situated on a steeply rising site and this could make travel difficult for residents without personal transport.

This completes the introduction to the study areas. The second part of this chapter now moves to an examination of the questionnaire employed during the research.

CENTRALISED FACILITIES

PLATE 9 The Health Centre at Fforestfach (9 G.P.'s)



PLATE 10 The Main Clinic at Mumbles (5 G.P.'s)

CENTRALISED FACILITIES (CONT'D)



PLATE 11 The Health Centre at Gorseinon (8 G.P's)



PLATE 12 Port Talbot - Aberavon Health Centre (14 G.P's)

SMALLER FACILITIES



PLATE 13 Branch Surgery at West Cross



PLATE 14 Branch Surgery at West Cross

SMALLER FACILITIES



PLATE 15 Branch Surgery at Baglan Clinic



PLATE 16 Mount Surgery, Taibach - Old Style Surgery

PART TWO: THE USE OF QUESTIONNAIRES IN SOCIAL SURVEYS

Part one of this chapter considered the manner in which the required areas and sites were defined in which to conduct detailed questionnaire surveys. The second part of this chapter now examines the questionnaire employed and discusses the general subject of the use of questionnaires in social research. Despite the many shortcomings of questionnaire surveys, in research concerning behaviour, opinions and attitudes, there is not a better way of gaining the detailed personal information necessary. There is no equivalent published material at the household level comparable with the census data discussed previously, which may be used reliably for this sort of investigation and the generation of such data is usually the most important and also the most time-consuming aspect of social research.

Sociological researchers have often adopted an approach whereby repeated personal acquaintances have been made with their subjects and in many cases, a formal questionnaire is not applied, but a 'structured interview' conducted. Such an approach is useful when detailed information is required but it has certain drawbacks, not the least of which is the possibility that repeated contacts with subjects may lead to them modifying the very behaviour which it is wished to investigate. Secondly, as this type of approach is very time-consuming, the number of respondents who may be interviewed is often only very small (less than fifty in many cases) which imposes severe restrictions upon the types of data analyses which are possible and also raises doubts as to the generality of conclusions reached.

A second method used in some social research of generation of data is the compilation of activity diaries by respondents. These have been successfully used for a number of studies such as those of consumer

behaviour (Davies, 1973) and the advantage of this method is that, provided the diary is maintained conscientiously over a sufficient time period, a highly detailed account is available of, for instance, a typical week's activities. It will be obvious, though, that for less-regular events, such as the attendance at the G.P.'s, and in the examination of utilisation behaviour and attitudes, such a diary will be of little relevance to any but a few regular patients, who it was not the aim of this survey specifically to seek out. Also, there is likely to be difficulty in persuading enough people to complete a confidential account of their daily lives without running the risk of the sample being biased in favour of types of persons who 'cooperate' in such projects. Another problem is that when cross-class samples are required, levels of literacy within the population to be researched may be different. It has been suggested that for the purposes of filling out even simple written questionnaires, at least ten per cent of the U.S. adult population is illiterate (Selltiz et al, 1967). Although this may not be directly comparable to Great Britain, it might be expected that any such illiteracy would be over-represented amongst the lower social groups, which could lead to bias.

This point also affects the use of postal questionnaires. Not only is one unable to confirm by personal observation certain household features, but the quality of responses is difficult to judge from postal questionnaires. Response-rates in postal questionnaires also tend to be low, although Kish (1965) notes that response-rates are not always as poor as some researchers have claimed. Nevertheless, when a sample in each site of around 50 respondents is sought, even a non-response rate of 20% would reduce the sample to an unacceptable degree. A good review of this problem is given by Morgan (1974), who suggests that research workers should not dismiss postal questionnaires out of hand, provided the problems of

non-response are borne in mind.

Thus weighing these alternatives and remembering the consideration that all approaches to survey design should ideally elicit as high a response rate as possible in order to minimise bias, it was decided to employ a personal, one-time interview, since this method has invariably invoked the highest response rates where the questionnaires have been carefully designed and structured. Its distinct advantages are that the 'one-shot' or 'one-off' interview is cheapest and produces the most data quickly for analysis. It would be unfair to pretend this method is perfect, however, and Moser and Kalton (1971) summarise a number of possible sources of response errors. Interviewer effects might bias response-rates and there is the well-known problem of respondents attempting to present an acceptable image or response to the interviewer. In a short time it may be difficult for interviewers to circumvent this problem, but it was felt that in a lengthy questionnaire such as the one intended such 'acceptable responses' might be reduced. A danger inherent in a researcher administering his own questionnaires is that his own opinions might communicate themselves to the respondents and influence their answers. Thus it is important to ask each question as straightforwardly and as similarly as possible to each respondent. However, it was felt that by one researcher asking the questions, any bias from this source would be minimised (or at any rate, be consistent) and, in consideration of time and resources available, the use of a questionnaire administered by the author was the only appropriate method of data collection.

Having determined to use a personally-administered questionnaire, the decision whether to use standardised questions or whether to be able to word questions according to individual cases remained to be made. In the

interests of reliability, comparability and removal of interviewer bias, it was decided to employ the same standardised question for each respondent, since the basic principle of measurement and comparability from case to case would be retained. McKinlay (1970) considers that an 'open' but structured interview ('focussed interviewing') yields the most useful research information, but this is a highly debatable conclusion, since the possibility of bias being introduced is too real to ignore.

Lazarsfeld (1944) considers the appropriateness of open or closed questions to depend upon a large number of situational factors, not the least of which are the degree of knowledge the respondent has, or might be expected to have, about the subject in question and the extent to which the respondent's situation with regard to the subject (his attitudes, motivation, ability to communicate) is known to the interviewer in advance of the interview. The danger of 'closed' attitudinal questions is that of forcing a statement of opinion about which respondents have no clearly formulated opinions, and the range of alternatives may be inadequate for the responses. The dangers inherent in 'open' questioning, however, far outweigh these drawbacks, in that errors of omission, loss of comparability and interviewer bias may be introduced, as well as in surveys conducted by numerous interviewers, a very detailed knowledge and training concerning the subject of investigation would be required on the part of the interviewer.

Thus, an author-administered questionnaire employing closed questions (but with room for comments by the respondents) was decided upon. In this type of research, largely exploratory and in which the full range of possibilities was largely unknown at the outset, adequate pre-testing of questionnaires was essential. This was done first by detailed discussions with colleagues within Geography, Medical Sociology and the Local Authority

Research and Intelligence Unit who had considerable experience of questionnaire design and construction and behavioural research; secondly, a number of local G.P.'s were asked their general opinions of the questionnaire and, thirdly, a pilot study of 20 questionnaires was administered to the public. These three sources resulted in a number of refinements and alterations being incorporated into the final questionnaire and this is now presented in the form as used for the research.

The Questionnaire Employed (Included in Appendix 2)

The questionnaire schedule was arranged in three main sections, the first concerning basic household and personal information of each respondent, such as housing type and tenure, age group, length of residence and previous area of residence, occupancy of household, marital status, personal mobility (car ownership and availability, and ability to drive) and telephone ownership. Background information of this type is common to most social surveys and no particular problems presented themselves in this section.

The second section concerned information about the general practitioner attended and a blend of factual information, cognitive information and opinion was sought. This section required a considerable amount of research into the local alternatives available, in order to pre-code questions.

Information concerning the particular doctor and particular surgery attended was asked, also length of attendance with the practice and any recent changes of doctor (within the past five years). Reasons for changes were probed for, and reasons for dissatisfaction of any sort would also be elaborated upon. A cognitive element was introduced, by enquiring if respondents knew whether their surgery was the nearest to their home and, if it was not, the reasons for not attending the nearest surgery.

Alternatives for the interviewer to code were included for size of practice and surgery premises type and attendance rates for surgery visits and for domiciliary visits were asked. These were to be important in later analysis of class variations in utilisation and so considerable lengths were taken to ensure accuracy. A number of alternative reasons for choice of practice and doctor within a partnership or group were given and the length of time taken to reach surgery and transport mode were requested. Earlier it was suggested there might be social class differences in attitudes to administrative factors such as appointment systems and receptionist staff behaviour, so details of the systems operating in each surgery were asked, as well as which surgery (morning or afternoon) was attended, and the incidence of multi-purpose trips (combined with shopping and visits to chemists) was questioned. Finally in this second section, knowledge of the G.P.'s out-of-hours cover was asked and the frequency of requests for visits outside normal surgery hours. Thus this section provided mainly a detailed factual base to which later attitudinal results could be related.

The third main section was that which sought to measure attitudes to the service and aspects of satisfaction with it. This was the longest section of the questionnaire to administer and also the most important from the point of maintaining an equal delivery of questions to each respondent. During the construction of this section, a number of alternative methods of attitude-testing were considered. Appendix 4 discusses the use of attitude-measuring techniques in geographical research, especially checklists, attitude-scaling by means of Likert scaling and methods of scoring used in this research. Details of the construction of such scales are discussed in Oppenheim (1966), Moser and Kalton (1971) and in a number of basic texts.

An underlying question in such research is "what is being measured?" There is no one universally accepted definition of 'attitude' to be found in the psychological literature, but most of the definitions include aspects of Allport's formulation: "An attitude is a mental or neural state of readiness, organised through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations to which it is related" (Allport, 1935, reprinted in Thomas, 1971, p.19). The elusive nature of the concept is evidenced in this definition, but it also emphasises the wisdom of including some measure of attitude for researchers investigating 'behaviour' in a broad sense. 'Attitudes' appear to possess learned aspects, perceptual aspects and behaviour-influencing aspects. It is fortunate, therefore, that within social psychology there exist a number of established procedures for attitude measurement which may be applied directly or in a modified format by researchers who are not specialist psychologists, but who are utilising questionnaire interviews at some stage or other of their work.

A fundamental method of attitude-measurement is 'attitude scaling', under which heading are the Thurstone, Guttman and Likert techniques. An attitude scale consists of from half-a-dozen to two dozen or more 'attitude statements' with which the respondent is asked to agree or disagree. They are thus devices which place people on a continuum in relation to one another, in relative and not absolute terms. They count how many people choose to express certain views or opinions and are thus very useful devices for measuring differences in attitudes between sub-groups of the population.

These 'attitude statements' act as 'stimuli' for the respondent and their construction requires great care. In a survey such as that in the present research, the underlying stimulus will be 'the G.P.'. Separate

'stimulus statements' were formed to test attitudes to the various sub-facets, such as distance to surgery, administrative procedures and 'affective behaviour', which were previously hypothesised to have possible influence upon opinions, behaviour and levels of satisfaction.

Table 3.20 shows the composition of the stimulus statements and the order in which they were asked:

Of the stimulus statements which were finally included, the first four concerned the travelling distance and delay on arrival before seeing the doctor, attempting to determine any differences in attitude to the distances involved by class or accessibility. Statements 7, 8, 9, 10 and 30 concerned the 'administrative procedures' faced in the receptionists and time seeing the doctor, whilst statements 5 and 6 concerned the state of surgery waiting room (whether it was spacious enough and clean enough). Statement 30 sought to discover any variations in attitudes to the use of appointment systems.

For a number of the subsequent statements, the model of the physician's 'affective behaviour' referred to earlier was adopted (Ben Sira, 1976). It will be recalled that this stated that the physician's behaviour (the degree of emotional support) was more important in such a professional-client relationship than the actual content of a professional's response. The administrative procedures, as mentioned above, were considered as important factors in crystallising the patient's satisfaction with medical service (Freidson, 1961) but Ben-Sira proposed the physician's affective behaviour would be even more important.

'Affective behaviour' as defined in chapter one was "the type of behaviour directed by the physician towards the patient as a person rather than a 'case'". The physician would therefore have to allocate sufficient time, show sufficient interest and demonstrate sufficient devotion. These

Table 3.20STIMULUS STATEMENTS IN ORDER ASKED

Consider the following statements and indicate how far you agree or disagree with each:

1. It is a long and involved journey to get to the doctor's surgery.
2. If I thought I could get on the list of a more conveniently located practice, I would change.
3. If I really need to visit the surgery, the travelling does not discourage me from attending.
4. When you arrived at the surgery, there is often a considerable delay before seeing the doctor.
5. The waiting room is spacious enough.
6. The waiting room is well-kept.
7. The receptionist staff at my surgery tend to be rather unhelpful.
8. The receptionists appear intent on protecting the doctor from his patients.
9. I do not think sufficient time is allocated per patient for seeing the doctor.
10. The receptionist staff at my surgery are generally polite to patients.
11. My doctor is a most approachable person on all medical matters.
12. The doctor often appears to lack interest throughout a consultation.
13. I find the doctor is always willing to spend sufficient time in his examination and does not hurry you.
14. My doctor is always polite to me.
15. The doctor does not seem to be very devoted to his patients or interested in their problems.
16. My doctor is very good with children.
17. At times, I have felt the doctor is not telling me all I ought to know about a condition.
18. The doctor always does all he can for a person.
19. The doctor seems genuinely concerned about the outcome of an illness.
20. The doctor is often brief and hurried in his explanations.
21. I am always confident that the doctor is giving the correct and best treatment.

Table 3.20 (contd)

22. I am certain my doctor would send me for tests or a second opinion if it were necessary.
23. My doctor, due to his profession and training, could be a correct person to approach on a matter that was not strictly medical.
24. I am usually reassured as a result of seeing the doctor.
25. I would be happy to see any of the doctors of my practice.
26. On the whole, I am very happy with my present doctor and would not consider a change.
27. Doctors are too eager to give prescriptions for medicines whenever you see them.
28. I have never considered complaining about any aspect of the general practitioner services.
29. It is time the health service got away from health centres and giant practices back to the days of the one-and two-man 'family doctor' practices.
30. I think an appointment system is very useful.

were tested for by stimulus statements:

sufficient time : statement 13
 sufficient interest : statement 12; concern 19
 sufficient devotion : statement 15

additionally, how 'approachable' the G.P.'s manner made him was measured by statement 11 and his 'politeness' by statement 14.

Whether people were having details explained to them well enough or clearly enough was measured by statement 20, which also includes aspects of the time factor.

Satisfaction was measured by the extent to which respondents felt that the G.P. knew how to handle their problem (skills), that the required or necessary treatment was given (treatment) and that as a consequence of the G.P.'s intervention, reassurance was received. These were measured by stimulus statements:

skills : statement 16 (children) 22 (to recognise need
 for second opinion)
 treatment : statement 21
 reassurance : statement 17, statement 24

Overall satisfaction was measured by the likelihood of a patient changing G.P.'s because of dissatisfaction : statement 26. Whether a patient had considered complaining (officially or unofficially) was measured by statement 28. (If a complaint had been lodged this was discussed later . Conversely, any reasons for not complaining if dissatisfied were discussed).

Finally, five statements measured general satisfaction with the health service. The first was a measure of how readily a G.P. could be approached on a non-medical problem (statement 23). Secondly, a patient's inclination to see any doctor of a group was asked (statement 25), and thus these are micro-level questions. The remaining three statements were more general,

considering whether doctors are too eager to give medicines and the respondents attitude to amalgamation into group practices in health centres was tested (statement 29).

The questionnaire overall therefore took a respondent through a typical 'journey' to the G.P's, investigating the effects of distance, of administrative procedures, of G.P's behaviour and of the health care delivery system generally. The final section of the questionnaire was merely an extension of the first two: information was gained as to the social class of the household by asking for as much detail as possible concerning the occupation of the head of household and the occupation and level of education of the respondent (these being placed at the end of the questionnaire to avoid any possible aggravating effect) and, finally, information relating to frequency of use of hospital services was requested, in the hope that this would highlight any respondents with a more serious chronic disorder in the household.

This was the questionnaire (Appendix 2) to be administered to housewives in the selected households, or to the head of household in single-adult households. The areas in which the questionnaire was to be employed having been decided upon, a sample of approximately fifty respondents was determined. Although not a very large sample, it is in total four hundred respondents over eight sites, which is as large a sample as was practically possible within the limitations of cost and time. Secondly, conclusions drawn from findings were to be based on statistical inference, which relates results to standard probably ^{it} limits, so that conclusions drawn will be discussed within the normal significant limits appropriate for the sample size. Thirdly, since detailed personal information was being sought, only lengthy and confidential interviewing could be sure of eliciting reliable responses and, indeed, each interview took on average 45 minutes to complete,

and sometimes over an hour. Placed in this context, the completion of approximately four hundred interviews was considered adequate, and from them an indicative picture of attitudes and utilisation behaviour was able to be built.

The interviewing was begun in December 1976 and finished by June 1977. In cases where a housewife could not be contacted after two recalls, or refused to cooperate, another dwelling was chosen to complete the number of responses from that site. In most cases, the respondents were generous and enthusiastic in their responses and appeared to be interested in the research and its objectives.

The slightly different totals of respondents in each case is a function of the number of useful completed questionnaires obtained in the time from each site. The composition of the final sample was as follows:
(Table 3.21)

Table 3.21FINAL SAMPLE OF RESPONDENTS

Area No.	Site		Site No	No. of Refusals No.	%	No. of Respondents
1	Blaen-y-Maes	Low Status	1	6	12.0%	50
	Foresthall	Low Status	2	3	6.1%	49
2	West Cross	High Status	3	4	7.6%	53
	West Cross	Low Status	4	2	3.8%	52
3	Penllergaer	High Status	5	4	8.33%	48
	Penllergaer	Low Status	6	5	9.8%	51
4	Baglan	High Status	7	3	6.5%	46
	Baglan	Low Status	8	2	4.3%	47
Total No. of Respondents:						<u>396</u>

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CHAPTER FOUR : SPATIAL PATTERNS OF UTILISATION BEHAVIOUR

CHAPTER FOUR - SPATIAL PATTERNS OF UTILISATION BEHAVIOUR

Introduction

The research now moves to investigate basic patterns of utilisation behaviour, as proposed at the end of chapter two. This forms the fundamental information to which other aspects of behaviour and attitudes are related. Medical sociologists have generally considered 'utilisation behaviour' to be embodied in the frequency of attendance at the general practitioner. Rarely, if ever, has the place of attendance been regarded as a variable. Thus, two aspects of utilisation behaviour are of interest to the social geographer, first, the location of the facility used by a respondent and, secondly, how that facility is used. This chapter investigates the first of these aspects and a later chapter will examine the second. The possibility that a relationship exists between the two is suggested by earlier studies of consumer behaviour in the intra-urban situation and this will form an additional feature of the ensuing analysis.

The first section of this chapter considers actual surgery locations attended, from data obtained in the questionnaire survey. As far as possible, the analysis will proceed by investigating variations as they occur over all areas and sites, rather than investigating each area separately and inter-site differential usage will be related to the socio-demographic attributes of the residents of sites. Visits to the doctor will naturally not compete in terms of numerical frequency with visits to other urban services, notably to shopping facilities, but spatial patterns of attendance will be of utmost importance since much planning of medical facilities is carried out on the assumption that they will be used by a majority of local residents. The personal circumstances under which visits are made to the G.P. would also ostensibly incline to encourage use of a nearby rather than a distant facility, especially for less mobile persons. A primary consideration

therefore becomes "Which are the surgeries attended by respondents in each survey site"? as a precursor to an examination in the latter part of this chapter of whether these spatial patterns of utilisation behaviour differ significantly between the status sites. Having examined the surgery destinations attended in trips to the doctor, some possible causes for differences are proposed followed by an introductory analysis of individual factors which contribute to the behavioural variations described.

(1) Spatial Patterns of Medical Service Utilisation

Classical Central Place Theory would propose that, for goods or a service of the 'convenience' type, as is represented by general practitioner services, the most conveniently located suitable outlet supplying the goods or offering the service would be used. Suppliers would be located to provide a service for a local market large enough for the service to be viably offered. The consumer would normally travel to the nearest centre within whose 'range' he happened to live, to minimise the time and cost expended to obtain the service. However, such behaviour relies upon the consumer making 'rational' or economic decisions, based on the possession by the consumer of full knowledge of alternatives and costs involved. Pred (1967) suggests that this reliance is the most significant weakness of central place theory - as suppliers and consumers are more likely to be 'boundedly rational satisficers', not in possession of complete information relating to the range of spatial economic opportunities. The explicit assumption is that, for a particular type and grade of service, a consumer will tend to use the nearest centre offering such a service. In the case of general practitioner services, the nearest surgery with room to accommodate the would-be patient would thus be attended. However, it has been demonstrated that such an assumption may be erroneous for both shopping behaviour (Day, 1973) and medical attendance (Morrill, Earickson and Rees, 1970).

In spite of this, it was noted in chapter two that it is an official policy to encourage the use of local facilities and a G.P. may refuse to accept a new patient upon his list, or to retain a person on his list, if the distance of the patient from the surgery is considered to be too great. Much has been made of the need for local services to be situated 'within walking distance' of the population they are intended to serve (Hillman and Whalley, 1977; Buttiner, 1971) and the G.P. is amongst those personal social services for which such a claim is made. Therefore, to examine how far this is actually the case, an initial working hypothesis was that the majority of respondents would make use of the nearest service available in their area.

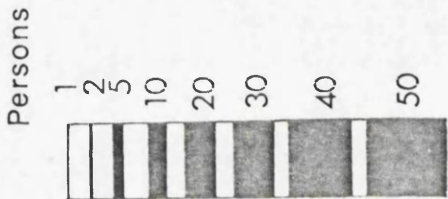
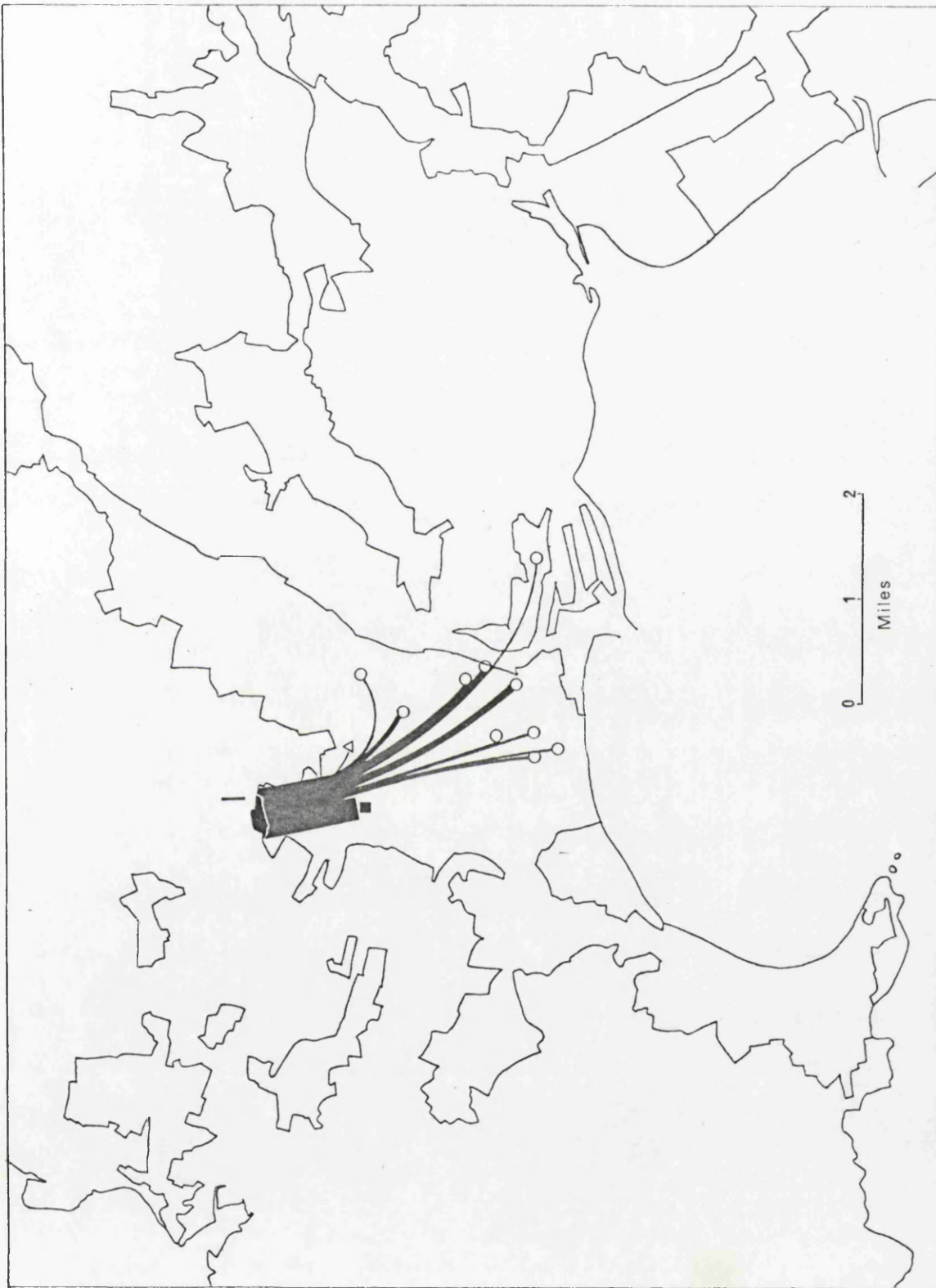
In the first instance, flow-line diagrams were constructed to show the surgeries attended by respondents in each site (Figures 4.1 to 4.8) and these provided a useful visual representation of their spatial behaviour. In this context, certain cartographic features may be noted, in that a long flow-line, possibly accounting for only a small number of respondents, may look to be of greater importance than a shorter flow-line containing a larger number of respondents, and this comment may be remembered when examining these flow-diagrams. The distances travelled to surgery by respondents in each site and proportions attending their nearest, second nearest and third or more distant surgery are tabulated (Tables 4.9 and 4.10) and the flow diagrams themselves present an 'aggregate' picture of utilisation behaviour. The results displayed in the flow diagrams were surprising, if not totally unexpected, in a number of features, which will now be briefly described prior to comment being made upon them.

AREA ONE: BLAEN-Y-MAES/FORESTHALL

Considering the sites by area-pairs, Blaen-y-Maes (site 1) and Foresthall (site 2) displayed a broadly similar pattern of surgeries attended, although on closer examination, differences were noticed in detail. In Foresthall (site

Figure 4.1

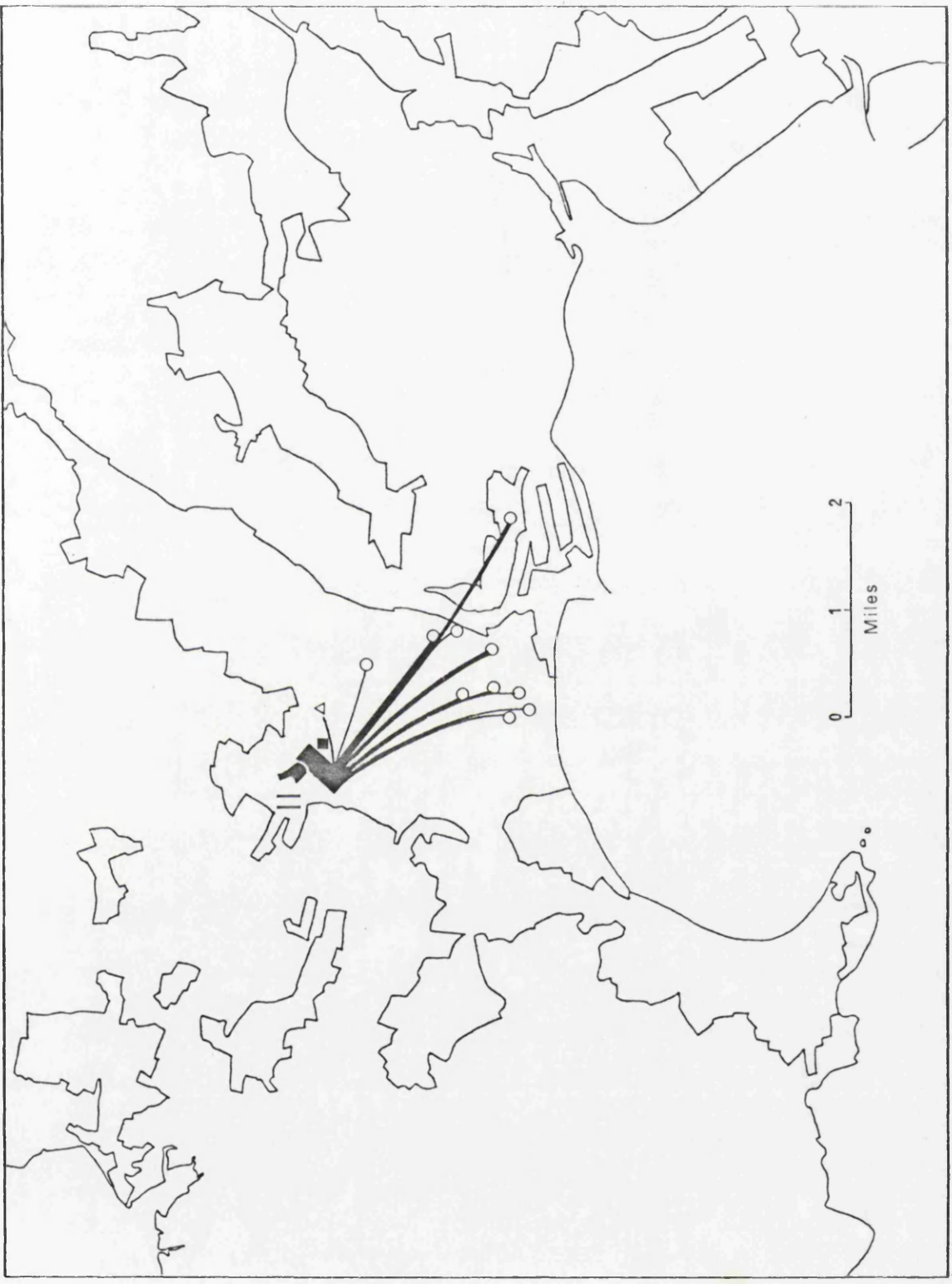
Surgeries Attended : Blaen-y-Maes (Distant from facilities)



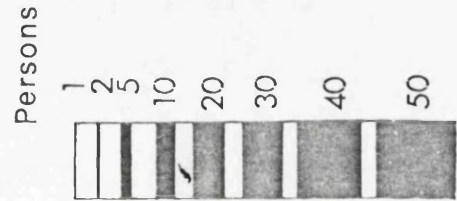
- Health Centre
- Surgery
- △ Branch Surgery

Figure 4.2

Surgeries Attended : Foresthall (Near to facilities)



- Health Cent
- Surgery
- △ Branch Surgery



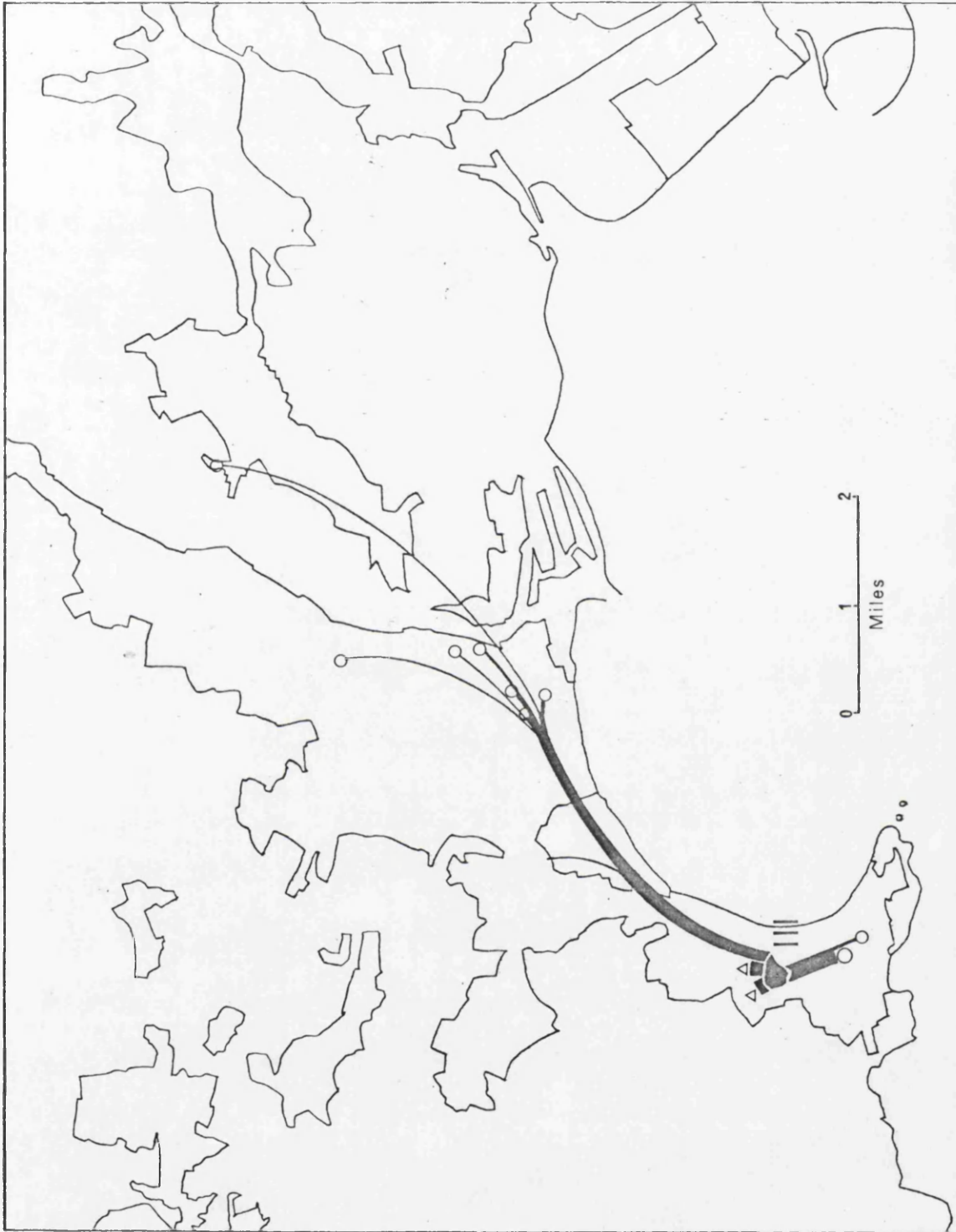
which, it will be remembered, was close to the large health centre in Fforestfach, 57.2% of respondents attended this nearest facility (Figure 4.2; table 4.10) whereas the percentage of respondents from the more distant Blaen-y-Maes site who attended this centre fell to 38.0% (Figure 4.1). In both cases only 2% attended the second nearest facility, which happened to be a single-handed practitioner approximately half a mile beyond the health centre and hence this was a rather limited-capacity second-nearest service. Apart from this surgery, there were two further surgeries just over a mile beyond the health centre and then the vast majority of surgeries available to respondents lay in Central Swansea, over two and a half miles by road beyond the health centre. It was the proportions attending these rather distant surgeries that provided a first unexpected result: from Blaen-y-Maes (site 1), 59.2% of respondents travelled beyond the first two surgeries whilst from Foresthall, only 40.8% did so. An initial 'aggregate' explanation of such utilisation behaviour suggested itself that, when a service is very conveniently located, a majority of persons will use this facility, regardless of other factors (such as personal likes or dislikes). However, when this service moves beyond the immediately accessible (that is, beyond the easily walkable distance of up to approximately one mile), persons may be likely to make use of some further service point possibly beyond this, which may be more to their liking for some reason. Possibly, as Davies (1969) found with regard to shopping behaviour, the availability of main 'bus routes would be influential, or the surgery attended might be near to a previous home in which a respondent had lived. At this stage of analysis, these suggestions could not be tested and a more detailed behavioural analysis was to follow. However, it is worthy of note that the nearest-centre hypothesis of central place theory adopted as a working hypothesis was not providing an adequate prediction of behaviour at this level.

AREA TWO: WEST CROSS

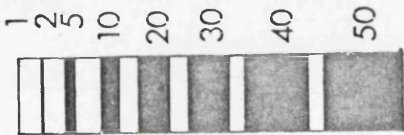
High Status site 3 and Low Status site 4 in West Cross also presented interesting results in a number of respects (Figures 4.3 and 4.4 respectively). In chapter three, it was noted that a large group practice of five G.P's had been established by the amalgamation of several local practitioners some years previously and this was located half a mile from the high status site and two-thirds of a mile from the low status site. In between the two sites (Figure 3.15), only 200 - 300 yards from each, was a small branch-surgery run by this practice, on a limited opening-hours basis. This was therefore the nearest and most convenient service facility and one which needed no appointment for attendance. Slightly more conveniently located for the high status than for the low status site was a second branch surgery run by a group-practice from St. Thomas in East Swansea on a similar limited opening-hours basis. A major finding was that 50% of low status respondents reported attending their nearby branch-surgery as opposed to the main group practice clinic (which was known locally as a 'health centre'), which itself attracted only 4% of respondents. A further 7.7% of respondents attended the second branch surgery, their second-nearest surgery, whilst a surprising proportion of low status respondents attended surgeries beyond these two: 42.3%, with 34.6% attending surgeries outside West Cross - Mumbles altogether. Although high status respondents attended the two branch surgeries almost equally (20.8% and 26.4%) a further 24.5% attended the main group practice and only 26% attended surgeries outside the West Cross - Mumbles area (compared with the 34.6% of low status respondents). This was an unexpected result considering the fact that lower-status persons are generally thought to be less personally-mobile and this suggested that factors other than pure spatial proximity were to be considered in seeking an explanation of these patterns of utilisation behaviour. It appeared possible that the

Figure 4.3

Surgeries Attended : West Cross High Status



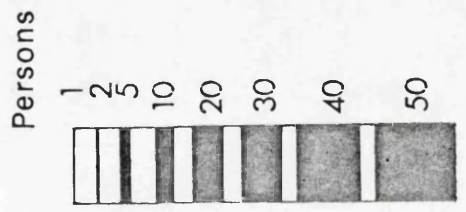
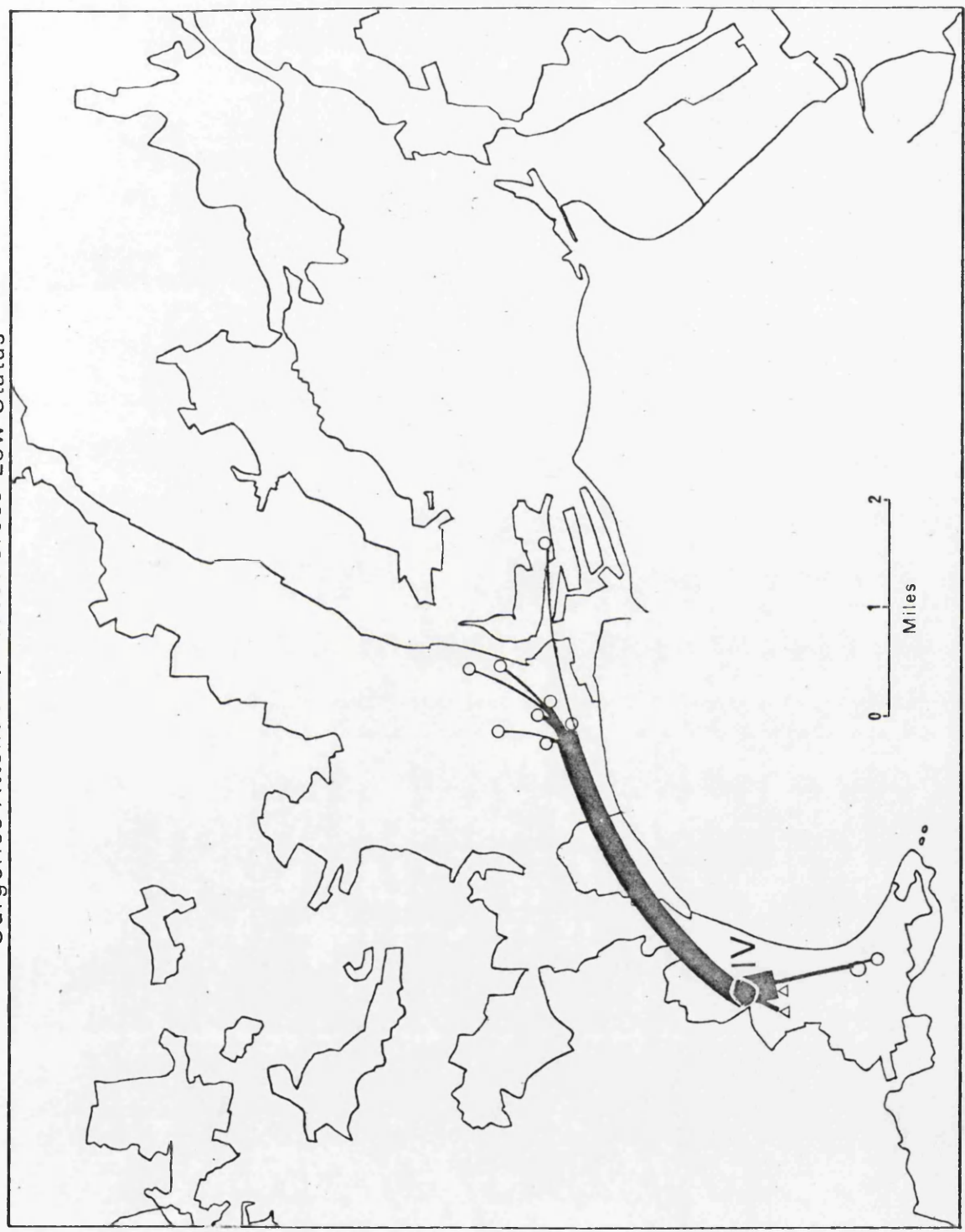
Persons



- Health Cen
- Surgery
- △ Branch Surgery

Figure 4.4

Surgeries Attended : West Cross Low Status



- Health Centre
- Surgery
- △ Branch Surgery

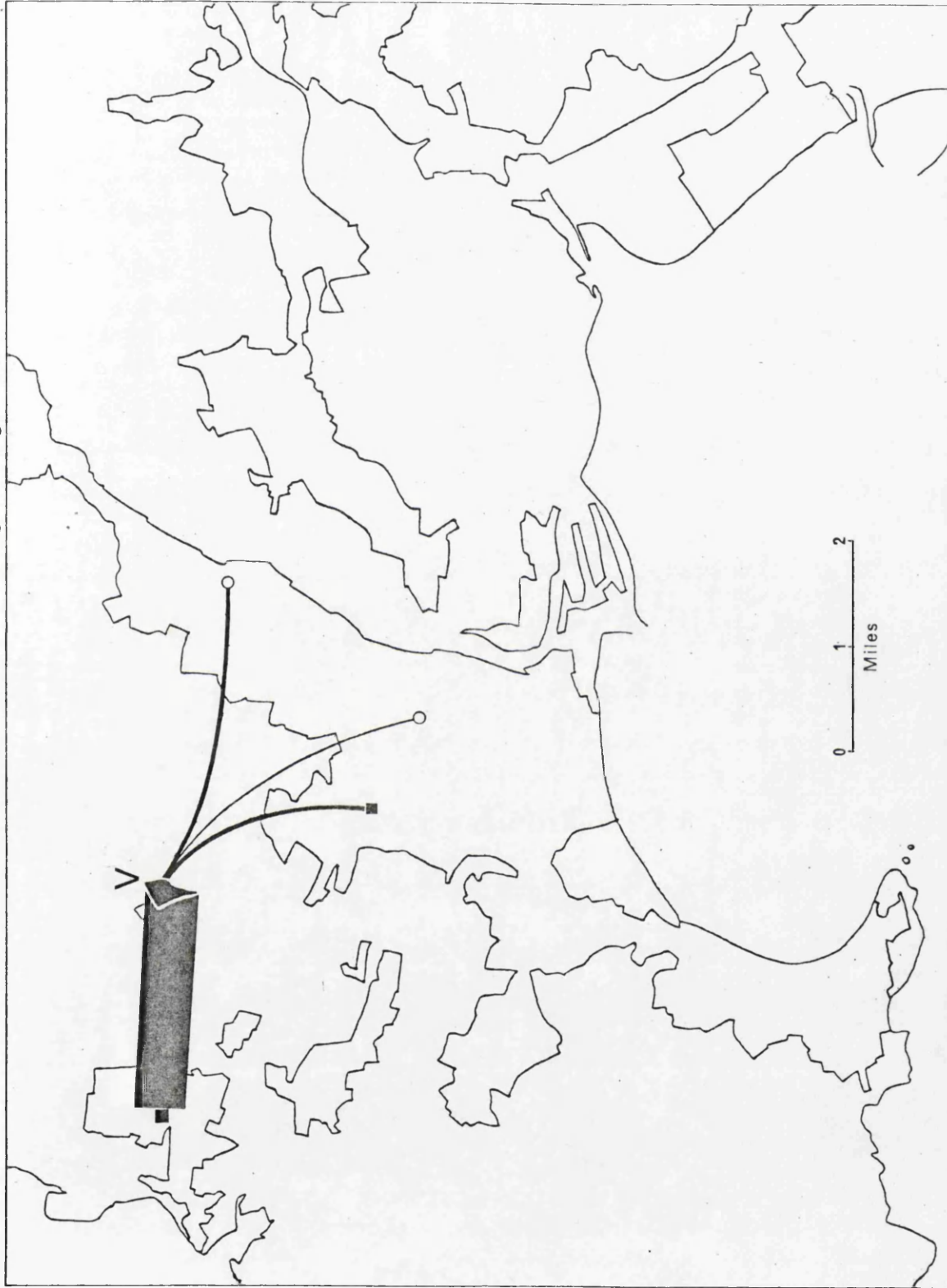
availability of 'bus routes along the main Mumbles to Swansea Centre road would be of significance, as would the location of previous areas of residence. The high status variable behaviour could be seen in terms of the greater choice afforded them by higher levels of personal mobility, whilst a restricted pattern of utilisation by some low status respondents could be explained in terms of their lower levels of personal mobility. The low status respondents who attend more distant facilities could possibly do so only as long as good public transportation is available, as has been noted in the sphere of retail behaviour (Davies, 1969; Thomas, 1974).

AREA FOUR: BAGLAN

Similar results were found in the High status (site 7) and Low status (site 8) sites in Baglan (Figures 4.7 and 4.8). Again high status respondents were far more likely to attend the largest nearby surgery (the main Aberafan-Port Talbot Health Centre) and 67.4% of high status respondents as opposed to 35.6% of low status respondents attended this surgery. More low status respondents frequented the local branch-surgery which lay nearby the two sites and 20% of low status compared to only 2% of high status respondents used this branch surgery. Additionally, a larger percentage of low status respondents were attenders at the Briton Ferry Health Centre, which is a smaller, newly-opened surgery, although links for work, shopping or schools would be more naturally towards Port Talbot from Baglan: 33% of low status and 13% of high status respondents used this centre. Thus, this survey area provides additional support for the findings from West Cross that, where a smaller or branch surgery is conveniently located, it is used in preference to the larger, less conveniently-located facilities by a considerable proportion of low status respondents. Attendance in large numbers at a main health centre appears to be behaviour which might be expected more from higher-status respondents. These contentions were to be examined later

Figure 4.5

Surgeries Attended: Penllergaer High Status

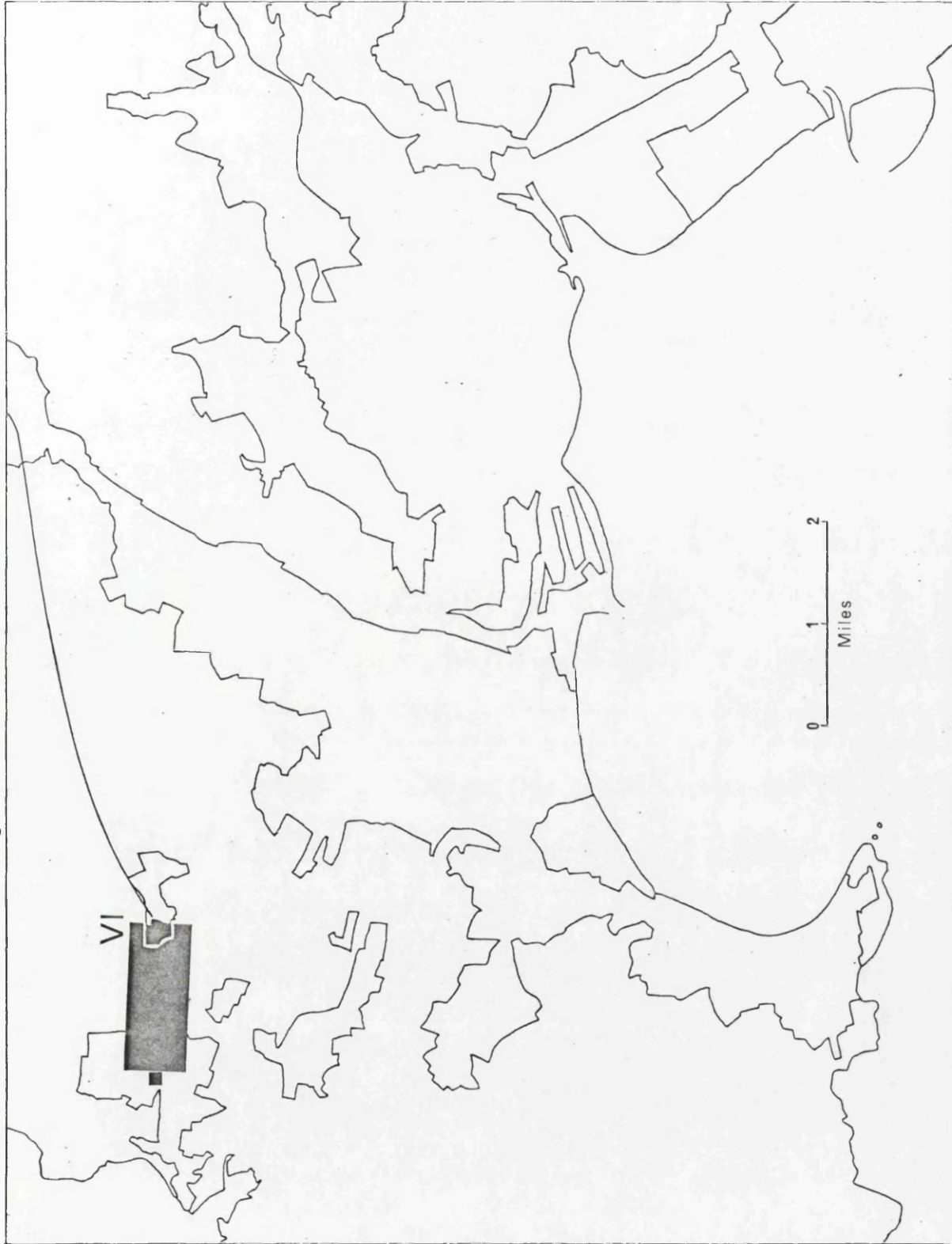


- Health Centre
- Surgery
- △ Branch Surgery

- Persons
- 1
 - 2
 - 5
 - 10
 - 20
 - 30
 - 40
 - 50

Figure 4.6

Surgeries Attended: Penllergaer Low Status



Persons

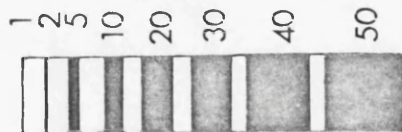
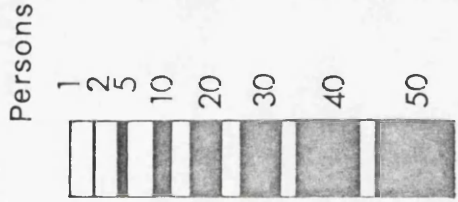
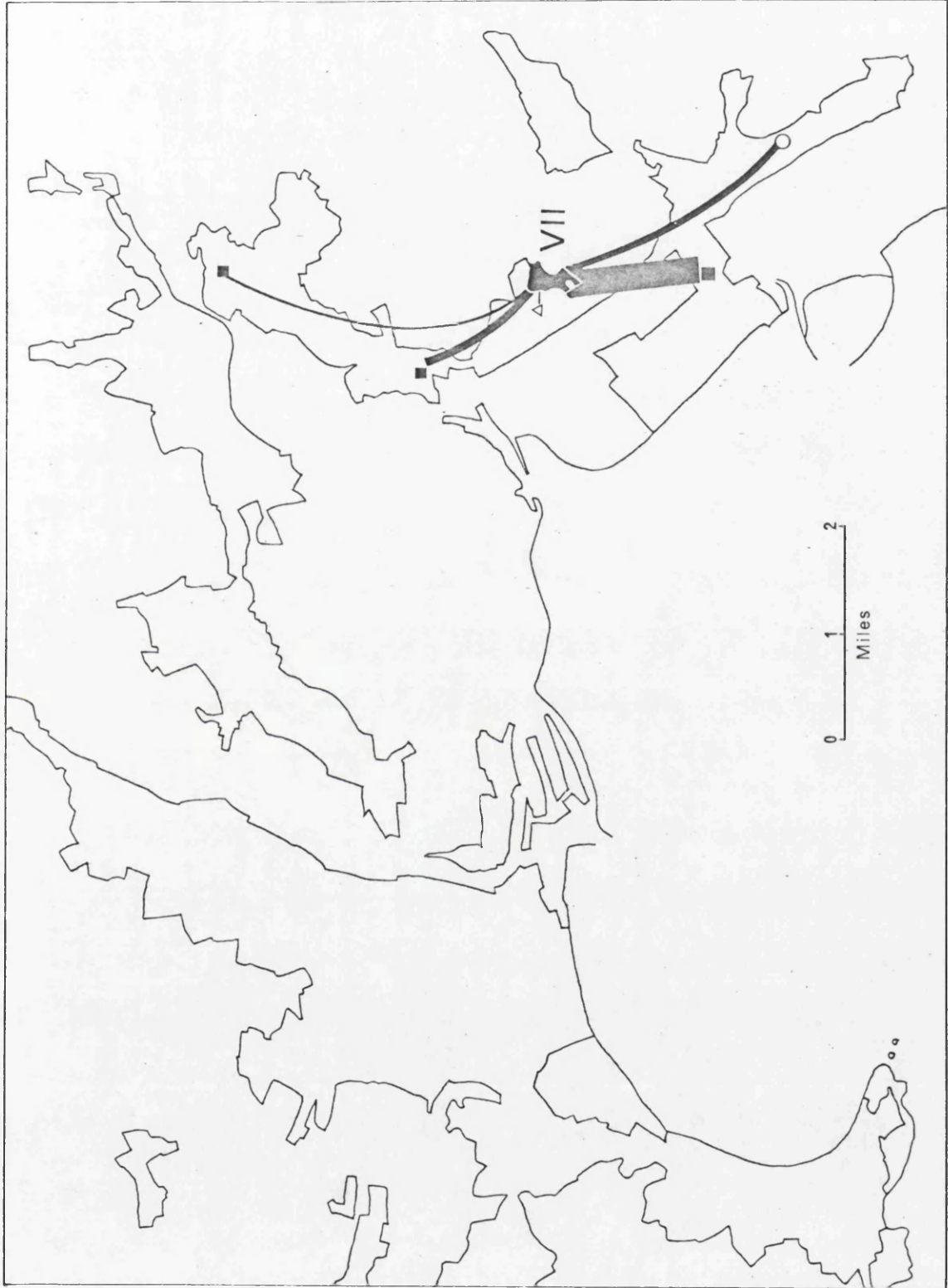


Figure 4.7

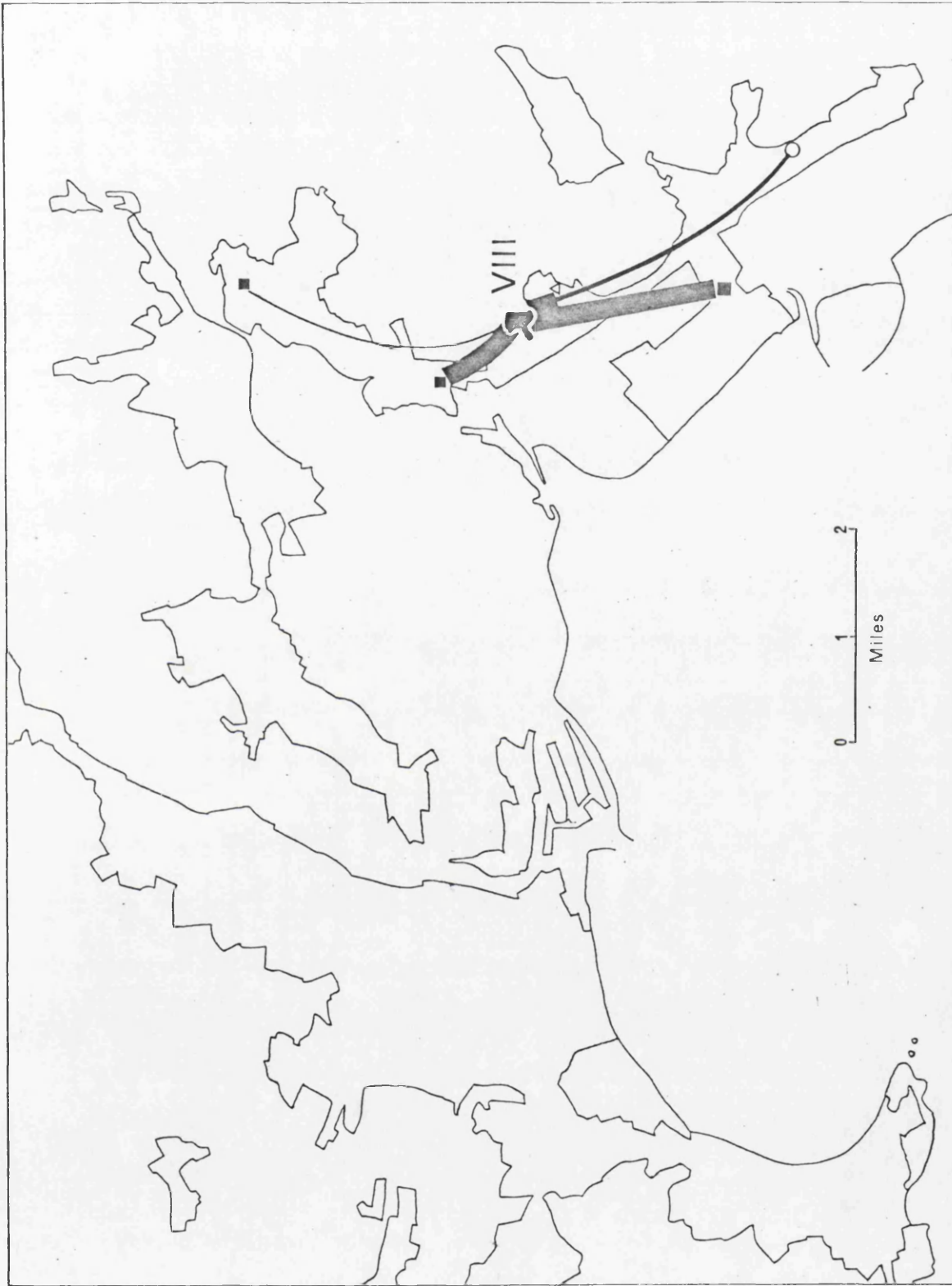
Surgeries Attended: Baglan High Status



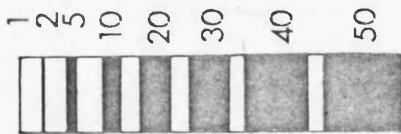
- Health Centre
- Surgery
- △ Branch Surgery

Figure 4.8

Surgeries Attended: Baglan Low Status



Persons



- Health Cent
- Surgery
- △ Branch Surgery

taking cognisance of individual variations between respondents.

AREA THREE: PENLLERGAER

Finally, the Penllergaer area, Figures 4.5 and 4.6, (High Status site 5 and Low Status site 6) provided somewhat of a contrast to the three previous areas. This area, lying outside the Swansea C.B. boundaries, has a large health-centre housing two group practices, located in Gorseinon, approximately one and a half miles away. No other alternative surgeries were available within the vicinity of these two sites since a branch surgery on the green between them was closed some years ago. Of the low status respondents, all except one (98%) attended the Health Centre in Gorseinon, whilst some variation is exhibited by high status respondents, of whom 16.7% attended surgeries elsewhere, outside the Gorseinon area. The fact that these high status respondents are able to attend elsewhere is statistically significant (Sig. 0.05, Table 4.10) but in numerical terms, it does not suggest a substantial deviation from the situation of most respondents attending the health centre. However, in the light of findings over the previous three areas, it might have been expected that a wider variety of surgeries would be attended. An initial explanation was proposed that respondents from the Penllergaer area would not be permitted to register newly with a G.P. elsewhere because of local restrictive arrangements between G.P's. The original place of residence of respondents provided an additional clue to explain the apparent anomaly of a lack of variety in use of services. It was decided to test subsequently whether most respondents were either from the Penllergaer area originally (or from the Gorseinon area and later moved to Penllergaer) and thus would have no choice of G.P. other than the two practices now operative from the health centre (chapter 4, part 4).

The position over the four survey areas can be summarised (Table 4.10). The Penllergaer area provides an example of a near-monopoly situation in

Table: 4.9

DISTANCES TRAVELLED TO SURGERIES

(Percentages of Respondents)

Distance to Surgery	<u>Blaen-y-Maes/Foresthall</u>		<u>West Cross</u>		<u>Penllergaer</u>			<u>Baglan</u>		
	<u>Site 1</u>	<u>Site 2</u>	<u>Site 3</u>	<u>Site 4</u>	<u>Site 5</u>	<u>Site 6</u>	<u>Site 7</u>	<u>Site 8</u>		
	%		H.S.	% L.S.	H.S.	% L.S.	H.S.	% L.S.		
No Doctor	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0-½ mile	0.0	57.1	47.2	57.7	0.0	0.0	2.2	19.2		
½-1 mile	0.0	0.0	30.2	0.0	0.0	0.0	0.0	0.0		
1-2 miles	42.0	4.1	0.0	7.7	0.0	0.0	0.0	0.0		
2+ miles	56.0	38.8	22.6	34.6	100.0	100.0	97.8	80.8		
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		

Table: 4.10

(d.f. = 2)

THE SURGERIES REGULARLY VISITED BY RESPONDENTS

Surgery attended	<u>Blaen-y-Maes/Foresthall</u>		<u>West Cross</u>		<u>Penllergaer</u>			<u>Baglan</u>								
	<u>Site 1</u>	<u>Site 2</u>	<u>Site 3</u>	<u>Site 4</u>	<u>Site 5</u>	<u>Site 6</u>	<u>Site 7</u>	<u>Site 8</u>								
	H.S.		L.S.		H.S.		L.S.									
	No.	%	No.	%												
Nearest Surgery	19	38.8%	28	57.2%	11	20.8%	26	50.0%	40	83.3%	50	98.0%	1	2.2%	9	19.1%
Second Nearest	1	2.0%	1	2.0%	14	26.4%	4	7.7%	3	6.3%	0	0.0%	37	80.4%	15	31.9%
Third or more distant	29	59.2%	20	40.8%	28	52.8%	22	42.3%	5	10.4%	1	2.0%	8	17.4%	23	48.9%
Total	49		49		53		52		48		51		46		47	

$$\chi^2 = 3.38 \quad (\text{d.f.} = 2) \quad \chi^2 = 12.35 \quad \chi^2 = 6.7 \quad \chi^2 = 22.956$$

$$\text{Sig.} = .5 > P > .1 \quad \text{Sig.} 0.01 \quad 0.05 > P > 0.02 \quad \text{Sig.} .001$$

which respondents have no choice other than to attend their nearest facility, the health centre. This circumstance could not have been easily foreseen prior to the survey. Elsewhere, in the status-different sites of West Cross and Baglan, the following behaviour is displayed. Low status respondents in these sites generally attend either their most local, nearest surgery, or otherwise appear to go beyond any intervening surgery to a far distant facility. This behaviour was clearly seen amongst both the West Cross and Baglan low status respondents.

High status respondents in West Cross and Baglan areas displayed significantly different patterns of surgery attendance to those of their low status neighbours (Table 4.10). These respondents usually attended local facilities but not necessarily the nearest; their behaviour might be described as 'local-variable' surgery attendance, not going beyond their immediate area or main nearest-facility very often.

Finally, between two low status sites in Blaen-y-Maes and Foresthall, the critical effects of distance were displayed, when the respondents nearest to the health centre in Foresthall were more likely to attend this facility. However, both these low status sites showed utilisation behaviour of a similar type to that found in West Cross and Baglan low status sites. Namely, when they went beyond their nearest facility they tended not to display 'local-variable' attendances, but would go beyond the facilities offered in their local area, often to the town centre of Swansea.

This was the position found over the four survey areas with regard to surgeries attended by respondents of differing social status or differing proximity to services. Differences in status between sites did appear to provide a considerable degree of explanation of this behaviour, although the intra-areal differences found between sites of varying status suggested that differences in behaviour might be more strongly linked to more specific

socio-economic and demographic characteristics of the respondents than purely social class differences.

The following sections of this chapter move towards an explanation of the patterns illustrated. In chapter one, it was discussed that earlier behavioural studies have emphasised the need to examine the effects upon consumer behaviour of, in particular, personal mobility (Thomas, 1974), and age-structure (Raybould, 1973), especially with regard to the spatial restriction of shopping behaviour caused by concentrations of old age pensioners and very young children. The effects of the availability of public transport have also been suggested, in that nearness to good 'bus routes may allow lower status persons to travel further afield than they would otherwise be able (Davies, 1969). With regard to age-structure, Peace (1977) in her study of the elderly in an urban environment, has suggested that old-age may become a leveller of spatial mobility and that factors influencing mobility during youth and middle age (such as socio-economic status differentials and attitudes) may cease to be as meaningful. Finally, Nader (1968) has indicated that previous residence may affect the behaviour of a recently-mobile population. It was felt that this factor might be influential in the use of medical services, since the flow-diagrams were suggestive that 'previous area of residence' might be a major variable in determining spatial patterns of utilisation of G.P. services. This was felt since many respondents gave us a main reason for their choice of surgery that it had been the most convenient to their previous place of residence (Appendix 6). The following attempt at explanation of the patterns found centres around the influences of these three parameters: personal mobility, age structure and previous residence.

(2) The Influence of Personal Mobility on Patterns of Utilisation Behaviour

"The capacity that a person possesses for getting around in his daily life constitutes his level of personal mobility" (Hillman, Henderson and Whalley, 1973, p.2). It is reasonable to expect that some variations in patterns of spatial behaviour will result from individual variations between respondents, those behavioural attributes which include variations in levels of personal mobility. Personal mobility, especially as reflected by the possession of a car by a household is, of course, very closely linked with socio-economic status, as was demonstrated in the factorial ecology and by the descriptive histograms in chapter 3. However, in the past, the possession of a car by a household has been assumed to give mobility equally to all members of that household. This is manifestly not so, and Hillman and Whalley (1977) state that one-third of the population may live in a non-car-owning household but a further 3 in 5 adults in a car-owning households cannot drive and many more do not have access to a car during the daytime. All of these are highly significant features which imply that aggregate figures for "percentage of car-owning households" may not be particularly realistic as far as the availability of a car to attend a day-time facility is concerned.

A considerable proportion of people in all areas are not very 'personally mobile' and public transportation is considered as very much a 'third mode' of transportation after walking, so Hillman and Whalley (1977) claim that it should not be assumed to be a substitute for the car. As suggested, however, public transportation does offer non-car-owners greater flexibility than they might otherwise possess in choice of services to attend. The easy accessibility of a main 'bus route may be of great importance in enabling lower status persons (in particular) to utilise more distant facilities.

During this survey, information was collected concerning the ability

of respondents to drive (possession of a driving licence) and further data concerning levels of car availability (Table 4.11). From these figures, it is very clear that over the low status sites usually over 70% of respondents lived in non-car owning households or had no access to a car at all. The possession of a driving licence and, especially, a car always being available or constant access to a car for surgery visits, was clearly linked to high social status (Table 4.11). In West Cross, 58.5% of high status respondents always had available a car compared with only 28.8% of low status respondents. Corresponding percentages in other areas were Penllergaer H.S. 50.0%, Penllergaer L.S. 5.9%; Baglan H.S. 69.6%, Baglan L.S. 23.4%). Additionally, the survey collected information concerning the mode of travel to surgery which is perhaps a more meaningful measure by which to assess comparative ease of attendance at surgery for respondents, since a special effort may be made to secure a lift to surgery on a specific day.

If 'convenience of accessibility' was a main reason for the use of or retention of a surgery, then it might be expected that the use of a more distant surgery might be related to the possession of 'mobility'. The flow-diagrams previously presented represent a picture of the combined influences of social status and personal mobility, so this section proposes to take the analysis a step further. To do this, additional tabulations were compiled incorporating sub-divisions into households with cars available to the respondents and those without cars available (Table 4.11); the second set of tabulations compiled were of distance to surgery against a modal split of means of attendance at surgery (Table 4.12). To present this information as clearly as possible and to relate it to the facilities available in each area, the following sections of analysis have been presented area by area where this is appropriate.

Table 4: 11

SURGERIES ATTENDED SUBDIVIDED BY CAR AVAILABILITY

	Nearest Surgery		Second Nearest		Third or more distant		Total No.
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	
(1)							
<u>Blaen-y-Maes</u>							
Car available	2	(40.0%)	0	(0.0%)	3	(60.0%)	5
Car unavailable	17	(38.64%)	1	(2.27%)	26	(59.09%)	44
(2)							
<u>Foresthall</u>							
Car available	3	(33.33%)	0	(0.0%)	6	(66.66%)	9
Car unavailable	25	(62.5%)	1	(2.5%)	14	(35.0%)	40
(3)							
<u>West Cross H.S.</u>							
Car available	6	(19.35%)	8	(25.81%)	17	(54.84%)	31
Car unavailable	5	(22.72%)	6	(27.27%)	11	(50.00%)	22
(4)							
<u>West Cross L.S.</u>							
Car available	6	(40.00%)	1	(6.66%)	8	(53.33%)	15
Car unavailable	20	(54.05%)	3	(8.11%)	14	(37.84%)	37
(5)							
<u>Penllergaer H.S.</u>							
Car available	18	(75.0%)	1	(4.17%)	5	(20.83%)	24
Car unavailable	22	(91.66%)	2	(8.33%)	0	(0.0%)	24
(6)							
<u>Penllergaer L.S.</u>							
Car available	2	(66.66%)	0	(0.0%)	1	(33.33%)	3
Car unavailable	48	(100.0%)	0	(0.0%)	0	(0.0%)	48
(7)							
<u>Baglan H.S.</u>							
Car available	0	(0.0%)	26	(81.25%)	6	(18.75%)	32
Car unavailable	1	(7.15%)	11	(78.57%)	2	(14.28%)	14
(8)							
<u>Baglan L.S.</u>							
Car available	1	(9.09%)	4	(36.36%)	6	(54.55%)	11
Car unavailable	8	(22.22%)	11	(30.56%)	17	(47.22%)	36

Table: 4.12

MODE OF TRANSPORT TO SURGERY BY DISTANCE TO SURGERYAREA ONESite 1 Blaen-y-MaesSite 2 ForesthallDistance to Surgery

Mode of Transport	0-2 miles			2+ miles			Mode of Transport	0-2 miles			2+ miles		
Walk	4.8	1	0.0	0	1	1	Walk	85.7	24	0.0	0	24	
Public Tr.	80.9	17	89.3	25	42	42	Public Tr.	10.7	3	68.4	3	16	
Private Tr.	14.3	3	10.7	3	6	6	Private Tr.	3.6	1	31.6	6	7	
	100%	21	100%	28	49	49		100%	28	100%	19	47	

(1 dr. always calls)

$\chi^2 = 1.55$ N.S.

$\chi^2 = 33.31$

Sig. 0.001

AREA TWO
WEST CROSSSite 3 High StatusSite 4 Low Status

Mode of Transport	0-2 miles			2+ miles			Mode of Transport	0-2 miles			2+ miles		
Walk	60.0	24	0.0	0	24	24	Walk	81.8	27	0.0	0	27	
Public Tr.	2.5	1	8.3	1	2	2	Public Tr.	9.1	3	52.9	9	12	
Private Tr.	37.5	15	91.7	11	26	26	Private Tr.	9.1	3	47.1	8	11	
	100%	40	100%	12	52	52		100%	33	100%	17	50	

$\chi^2 = 13.44$ sig. 0.01

$\chi^2 = 30.26$ sig. 0.001

AREA FOUR
BAGLANSite 7 High StatusSite 8 Low Status

Mode of Transport	0-2 miles			2+ miles			Mode of Transport	0-2 miles			2+ miles		
Walk		1	0.00	0	1	1	Walk	88.9	8	13.2	5	13	
Public Tr.	0.0	0	28.9	13	13	13	Public Tr.	0.0	0	52.6	20	20	
Private Tr.	0.0	0	71.1	32	32	32	Private Tr.	11.1	1	34.2	13	14	
	100%	1	100%	45	46	46		100%	9	100%	38	47	

$\chi^2 = 21.12$ sig. 0.001

(d.f. for whole table = 2)

(N.B. Grand Total in sites 1, 2, 3 and 4 are not the same as in Table 4.13 since the doctor always attended certain respondents at their homes).

Area 1 - Blaen-y-Maes/Foresthall

Table 4.11 shows percentages of respondents with cars available to them whilst Table 4.12 shows a modal split of means of transport used to reach surgery. The pair of low status sites in this area provided insights into the effects of distance and personal mobility upon facility usage. In Site 2 (Foresthall, near to the health centre), 62.5% of those respondents without a car available attended the health centre which is within easy walking distance. 85.7% of the respondents who actually made the journey to the doctor at the health centre (as opposed to be always being attended at their home) walked to the surgery, whilst 10.7% used public transport for the short journey up a hill to the health centre. Only 1 respondent attending this nearby facility used private transport. This provides a very significant difference with the respondents attending a more distant surgery. Table 4.12 shows that no respondent walked to a surgery beyond two miles, whilst of the respondents attending such a facility, 68.4% used public transport and 31.6% went by private transport.

This contrasts with the behaviour of respondents in Blaen-y-Maes (Site 1) which was over a mile away from the health centre. Only one respondent walked to this nearest facility, whereas 81% used public transport. This was a main difference between the two sites. Additionally, fewer respondents in this site had cars available to attend a distant facility and 89% of respondents travelling more than two miles to surgery used public transport.

It was previously shown that 60% of respondents from the more distant Blaen-y-Maes site attended a surgery in Swansea, which suggested that once the length of the journey exceeded comfortable walking distance, necessitating the use of public transport, an even more distant surgery might be used. This appears to confirm the findings of Davies (1969) and Thomas (1974)

which suggested the availability of public transport routes permitted low status persons to make a greater use of more distant facilities than might reasonably have been expected. Indeed, this seems to explain the wider scope of travel of low status respondents relative to high status respondents.

Area 2 - West Cross

The West Cross high status group had been found to display variable usage of local facilities whilst the low status group had been found to have a dual attachment to both local and distant facilities. This behaviour was found to be to some extent related to the availability of a car; 62.2% of low status respondents without a car available to them travelled to local facilities, whilst only 37.8% of these persons attended beyond the first or second most convenient surgery. Walking was an important mode of transport to local facilities for both low and high status respondents and 60% of high status and 81.8% of low status respondents attending a nearby facility went on foot.

The availability of a car for high status respondents was associated with travel to a third or more distant surgery, even if this was not more than a two mile journey (Table 4.11), and 54.8% of high status respondents with a car available travelled to such a surgery. This was also found amongst low status respondents (although fewer respondents actually had cars available).

Very few high status respondents (3.8% of the total) attended surgery by public transport, whether it was to a nearby surgery or to a more distant one, yet 41.5% of total high status respondents reported that a car was normally unavailable to them. This suggests either a special effort was made to secure the use of a car on the day a surgery was to be visited or, additionally, a higher incidence of lift-giving amongst higher status respondents. Few high status respondents without a car available to them

reported attending the most convenient facility (22.7%) compared with 54% of low status respondents, which also tends to emphasise that such a lack of a car being generally available is not a great deterrent to attending a more distant surgery, since lifts or other special arrangements could be made. The importance of public transportation for low status respondents to enable them to attend more distant facilities is emphasised in this area as in the previous area, with 52.9% of low status respondents who attended a surgery further than two miles away doing so by 'bus (Table 4.12).

Area 4 - Baglan

There were fairly high rates of car availability in the high status site in Baglan, although barely a quarter of low status respondents were in households in which a car was always available to them. As reported earlier, only one high status respondent attended the nearest branch clinic and all the rest travelled beyond two miles to surgery. The main mode of transport to this more distant group of surgeries was the car; 71.1% of such respondents went by car (Table 4.12). Only 34.2% of low status respondents travelled by car such a distance, whilst 13.2% actually reported walking (mainly to the Briton Ferry health centre which was just over two miles away). 52.6% of low status respondents travelling to distant surgeries went by public transport, as opposed to 28.9% of high status respondents. Therefore, in this area also, the importance of public transport to low status attenders is again emphasised. Of the low status persons attending the local branch surgery, 88.9% walked and only one respondent used the car to travel this distance (Table 4.12).

Area 3 - Penllergaer

Although the Penllergaer area did not provide a great variety in surgeries attended, it again emphasises the importance of public transportation to low status respondents. Whilst 50% of high status respondents

had a car available at all times, only 5.9% of low status respondents did and 84.3% were dependent upon public transportation and 9.8% walked to the Gorseinon health centre. Of the few high status respondents (8 in all) who travelled beyond this health centre, 75% went by car: the high-status respondents who did not actually have a car available always to them usually attended the health centre (91.7%)(Table 4.11).

In conclusion, this section has emphasised the importance of differing transportation availability between the status groups, in particular, showing how public transport can, to some extent, substitute for private transportation and allow low status respondents a greater flexibility to attend distant facilities. The differences in behaviour displayed, however, rather marked undertones of social status related factors. The low status non-mobile were more likely to attend at local facilities when these were within walking distance. Once this was exceeded, then public transport could enable them to travel to more distant facilities and it was the aim of the following sections of this chapter to explain if these patterns were related to any other characteristics of the respondents. The retailing literature suggested that age might be an explanatory variable, whilst empirical evidence during interviewing suggested that previous residence might be of significance.

(3) The Influence of Age Differentials

Since it has been proposed that, with increasing age comes decreasing personal mobility, in a physical sense as well as in low rates of availability of personal transportation, an hypothesis was formed that respondents in older age-groups would be more likely to attend their local facilities and, conversely, that younger respondents (being more mobile) would be more likely to seek alternative surgeries. However, it was borne in mind that Raybould (1973) found that concentrations of both old persons and of very

young children tend to cause spatial restriction of shopping behaviour patterns. Therefore, in this research, not only had information about the age-group into which respondents fitted been collected, but details were also asked about any children in the household. In particular, the numbers of pre-school age children in households were asked (children under the age of 5 years).

To test the above hypothesis, cross tabulations were prepared to display age-groupings and surgeries attended (Tables 4.13 and 4.14) and additional tabulations were prepared of numbers of pre-school children in households against distances travelled to surgeries (Table 4.15). For the former tabulations, owing to the small numbers which would have been involved in some cells of the contingency tables had all the age-categories been used, these were combined into the following groups: 18-35 years; 36-55 years and 56 years or older. These groupings are broadly compatible with the life-cycle stages of young family (pre-child and child-bearing), the stabilised family of child rearing and child launching and the mature stages of post-child and widowhood (Sabah et al., 1969).

At the first examination, tabulations were prepared for each individual site over the four survey areas, but in all cases except one (Site 2, Foresthall), the differences in surgeries attended by the various age-groups were not significant at any level, and the differences in site 2 were only significant at the 5% level (Table 4.13).

In order to test whether there were any other significant differences at all, the status groups in each area were combined and new cross-tabulations performed with the larger numbers of respondents. Areas were still tabulated separately to maintain the spatial constraints of comparability between facilities available to respondents in each area which it had been aimed to establish by the research design adopted (Table 4.14).

Table 4.13

AGE GROUPINGS AND SURGERIES ATTENDED
SURVEY SITES

AREA ONE

1. Blaen-y-Maes

2. Foresthall

Percentages of Respondents

Surgeries Attended

Age Group	Nearest or Second Nearest	Third or More Distant	Age Group	Nearest or Second Nearest	Third or More Distant
18 - 35	55.00	55.17	18 - 35	20.69	40.00
36 - 55	25.00	20.69	36 - 55	37.93	50.00
56+	20.00	24.14	56+	41.38	10.00
	100.00	100.00		100.00	100.00
	n = 20	n = 29		n = 29	n = 20
$\chi^2 = 0.180$. Not Significant			$\chi^2 = 6.35$ Sig. 0.05 level		

AREA TWO
WEST CROSS

3. High Status

4. Low Status

Age Group	Nearest or Second Nearest	Third or More Distant	Age Group	Nearest or Second Nearest	Third or More Distant
18 - 35	28.00	25.00	18 - 35	10.00	13.64
36 - 55	28.00	39.29	36 - 55	50.00	36.36
56+	44.00	35.71	56+	40.00	50.00
	100.00	100.00		100.00	100.00
	n = 25	n = 28		n = 30	n = 22
$\chi^2 = 0.76$ Not Significant			$\chi^2 = 0.99$ Not Significant		

(d.f. = 2 for whole of table)

Table 4.13 (Cont'd)

AGE GROUPINGS AND SURGERIES ATTENDED
SURVEY SITES

AREA THREE
PENLLERGAER

5. High Status6. Low StatusPercentages of RespondentsSurgeries Attended

Age Group	Nearest or Second Nearest	Third or More Distant	Age Group	Nearest or Second Nearest	Third or More Distant
18 - 35	30.23	0.00	18 - 35	32.00	0.00
36 - 55	39.54	80.00	36 - 55	36.00	100.00
56+	30.23	20.00	56+	32.00	0.00
	100.00	100.00		100.00	100.00
	n = 43	n = 5		n = 50	n = 1

$\chi^2 = 3.34$ Not Significant

AREA FOUR
BAGLAN

7. High Status8. Low Status

Age Group	Nearest or Second Nearest	Third or More Distant	Age Group	Nearest or Second Nearest	Third or More Distant
18 - 35	44.74	75.00	18 - 35	33.33	21.74
36 - 55	44.74	25.00	36 - 55	50.00	43.48
56+	10.52	0.00	56+	16.67	34.78
	100.00	100.00		100.00	100.00
	n = 38	n = 8		n = 24	n = 23

$\chi^2 = 2.67$ Not Significant

$\chi^2 = 2.36$ Not Significant

(d.f. = 2 for whole of table)

Table 4.14

AGE GROUPINGS AND SURGERIES ATTENDED
SURVEY AREAS

Percentages of Respondents

AREA ONE: Blaen-y-Maes/
Foresthall

AREA TWO: West Cross

Surgeries Attended

Age Group	Nearest or Second Nearest	Third or More Distant	Age Group	Nearest or Second Nearest	Third or More Distant
18 - 35	34.70	48.98	18 - 35	18.18	20.00
36 - 55	32.65	32.65	36 - 55	40.00	38.00
56+	32.65	18.37	56+	41.82	42.00
	100.00	100.00		100.00	100.00
	n = 49	n = 49		n = 55	n = 50
$\chi^2 = 3.154$ Not Significant			$\chi^2 = 0.073$ Not Significant		

AREA THREE: Penllergaer

AREA FOUR: Baglan

Age Group	Nearest or Second Nearest	Third or More Distant	Age Group	Nearest or Second Nearest	Third or More Distant
18 - 35	31.18	0.00	18 - 35	40.32	39.39
36 - 55	37.64	83.33	36 - 55	46.78	36.37
56+	31.18	16.67	56+	12.90	24.24
	100.00	100.00		100.00	100.00
	n = 93	n = 6		n = 62	n = 33
$\chi^2 = 4.852$			$\chi^2 = 2.113$ Not Significant		

(d.f. = 2 for whole table)

The chi-squared values calculated for each area (Table 4.14) showed that only in Area 3 (Penllergaer) did differences in surgery location attended vary nearly significantly with age. The Penllergaer area was in an unusual position in that there was a virtual monopoly by one health centre, referred to earlier. Therefore, only one cell of the tabulation contributed to this value and the statistical significance was only at the 10% level, which is beyond the conventional level of significance. This point has been mentioned to introduce a note on statistical validity when there are small expected frequencies in contingency tables and the problems associated with the use of the χ^2 test when small numbers are involved is discussed in detail in Appendix 3. Thus, a conclusion was reached that the surgeries attended by different age-groups within areas and between sites did not appear to vary significantly and thus could not explain variations in utilisation behaviour when analysed at this level.

In addition, in this section the effect of the possession by the household of a child of pre-school age was examined. Tabulations were prepared to show distances travelled to surgery and numbers of children under 5 years, for each site (Table 4.15), omitting the Penllergaer area for the reasons already stated. Earlier, it was stated that the age-structure of the sites might prove to be important in the choice of surgeries and other utilisation behaviour, but this did not appear to be the case. In none of the sites did the possession of a pre-school age child appear to lead to significantly different utilisation behaviour of medical services. Even in the Blaen-y-Maes site in which 23 households had a child under 5 years of age, no significant differences were seen between the distances travelled to surgeries by these households and by households without a young child in them. The West Cross sites were very evenly balanced with regard to numbers of households with a pre-school

Table 4.15

PRE-SCHOOL AGE CHILDREN IN HOUSEHOLDS AND
DISTANCES TRAVELLED TO SURGERIES

AREA ONE

SITE 1: Blaen-y-Maes

SITE 2: Foresthall

Distance to Surgery

No. of Children Under 5 years	0-2 miles		2+ Miles		No. of Children Under 5 years	0-2 miles		2+ miles		No.	
	No.	%	No.	%		No.	%	No.	%		
0	11	52.38	16	55.17	27	0	25	86.21	15	75.0	40
1, 2 or 3	10	47.62	13	44.83	23	1, 2 or 3	4	13.79	5	25.0	9
	21	100.00	29	100.00	50		29	100.00	20	100.0	49
$\chi^2 = 0.038$ Not Significant					$\chi^2 = 0.99$ Not Significant						

AREA TWO
WEST CROSS

SITE 3: High Status

SITE 4: Low Status

Distance to Surgery

No. of Children Under 5 years	0-2 miles		2+ miles		No. of Children Under 5 years	0-2 miles		2+ miles		No.	
	No.	%	No.	%		No.	%	No.	%		
0	33	80.49	11	91.67	44	0	26	83.87	18	85.71	44
1, 2	8	19.51	1	8.33	9	1, 2 or 3	5	16.13	3	14.29	8
	41	100.00	12	100.00	53		31	100.00	21	100.00	52
$\chi^2 = 0.82$ Not Significant					$\chi^2 = 0.03$ Not Significant						

AREA FOUR
BAGLAN

SITE 7: High Status

SITE 8: Low Status

Distance to Surgery

No. of Children Under 5 years	0-2 miles		2+ miles		No. of Children Under 5 years	0-2 miles		2+ miles		No.	
	No.	%	No.	%		No.	%	No.	%		
0	0	0.00	28	62.22	28	0	6	66.67	31	81.58	37
1, 2	1	100.00	17	37.78	18	1, 2 or 3	3	33.33	7	18.42	10
	1	100.0	45	100.00	46		9	100.00	38	100.00	47

$$\chi^2 = 0.97 \text{ Not Significant}$$

(d.f. = 1 for whole of table)

child and here, again, no significant differences were found. A possible reason for these results could be that, since a G.P. is usually attended for a number of years, the addition to a household of a young child could be viewed as an event which only temporarily increases need for visits to the doctor, in which case no significant alterations to spatial behaviour might be made. This contrasts with the situation in shopping behaviour in which short-term adjustments to behaviour may be made more easily.

So far, social status and related levels of mobility and the age of the respondents have been analysed to determine their effects upon patterns of surgery attendance. Social status appeared to be a variable which distinguished a number of patterns of such behaviour and considerations of personal mobility also provided some explanation, although this was not the case with age-structure. Therefore, as suggested previously, it is now proposed to take the analysis a stage further by examining the effects of previous residence upon surgery attended.

(4) The Influence of Previous Areas of Residence on Surgery Attended

The effects of previous area of residence upon patterns of shopping behaviour are generally not very well marked, although they may be seen especially in a recently-mobile population who might visit facilities in the area in which they previously lived (Nader, 1968). More recently, Lloyd (1977), in the North American context, has investigated changes in consumer behaviour that are related to intra-urban migration. On migration, it was proposed that movers would reassess the utility associated with establishments that they normally patronised, which could result in a total or partial change in a recent migrant's activity patterns. He points out that the relationship between migration behaviour and consumer behaviour has received little explicit attention. A conclusion reached is that, on migration, affiliations with low-order functional nodes (such as gasoline

stations) will be 'broken' first whilst higher-order nodes (such as department stores) will be 'broken-with' later or as distance increases. It is, however, difficult to place the G.P. in such a hierarchy of functions, since, although the doctor is a personal service almost of the 'convenience goods' category, it is still felt desirable to build up a personal relationship with him. This is usually based on a longstanding mutual knowledge and many respondents cited as a main reason for attendance at a certain surgery that it had been the nearest when living at a previous address or 'had since childhood'. Therefore, an historic element appeared to be a possible major explanatory variable concerning surgery used, but it is well-known that mobility at the intra-urban and inter-urban scales frequently involves different groups of people.

Herbert (1972) has illustrated that higher-status persons are more likely than lower-status persons to be mobile at an inter-urban scale and in the present research in Swansea, the highest rates of inter-urban mobility were found in the higher-status western areas and in some of the newer suburbs (chapter three). This sort of mobility, from one town to another, tends to be career-linked, with mobile professional persons frequently being non-local in origin. Conversely, low rates of inter-urban mobility were found in the central and eastern parts of Swansea, reflecting constraints upon movement at this scale amongst low-income groups and, in particular, the constraints upon inter-city movement amongst residents in local authority estates whose tenancies are not normally transferable from one city to another.

Mobility at the intra-urban scale is much more complex in pattern. High rates occur both in local authority estates and in several high-status areas of Swansea. The pattern has been described as 'bi-modal' (Herbert, 1972 and 1976), with life-cycle factors producing high movement rates in

local authority estates and as families move within the private sector (again, the latter may be career linked as promotion enables more expensive housing to be purchased). However, even at the intra-urban scale, higher-status moves tended to be of a longer distance than lower-status moves, which were often from older central city redevelopment areas to more peripheral council estates.

Therefore, it appeared possible that, at both inter-urban and intra-urban scales of mobility, movements by high status persons may be of too great a distance to enable them to retain a previous G.P., whereas for lower-status movers over a shorter distance, the option of retaining a previous G.P. might be available.

To test the hypothesis that 'area of previous residence' (and associated residential mobility) might be a major explanatory variable, two items were proposed. First, contingency tables were prepared to examine the relationships between previous area of residence and location of G.P. surgery attended (Table 4.16) and, secondly, as a follow-up, the question had been asked in the survey, "How did you choose your present practice?", which is presented in Appendix 6, as well as tabulations of length of residence in the area of respondents in each site.

The contingency tables should be examined in conjunction with the flow diagrams (Figures 4.1 to 4.8) and it is apparent that certain broad groupings were required, such as 'Central Swansea' as a location both of previous residence and of G.P.'s. This proved to be a satisfactory method of dealing with the problem of 'regionalisation' into areas of residence and G.P. areas, because Swansea has well-defined residential areas and, as shown in the distribution maps in chapter 2 (Figures 2.9, 2.10 and 2.11), G.P. surgeries themselves tend to display distinct clustering.

Initially, detailed matrices were compiled to show previous area of

Table 4.16

AREA OF PREVIOUS RESIDENCE AND
LOCATION OF SURGERY ATTENDED

SITE 1 : BLAEN-Y-MAES

Area of Previous Residence

G.P. Surgery	Local Area	Swansea North	Swansea Central	From Outside Area	Total				
Local G.P.	10	76.9%	2	11.1%	3	23.1%	5	100%	20
Swansea North	1	7.7%	14	77.8%	0	0.0%	0	0%	15
Swansea Central	2	15.4%	2	11.1%	10	76.9%	0	0%	14
Total	13	100%	18	100%	13	100%	5	100%	49

SITE 2 : FORESTHALL

G.P. Surgery	Local Area	Swansea North	Swansea Central	From Outside Area	Total				
Local G.P.	17	89.5%	3	20.0%	2	25.0%	6	85.7%	28
Swansea North	0	0%	8	53.3%	0	0%	0	0%	8
Swansea Central	2	10.5%	4	26.7%	6	75.0%	1	14.3%	13
Total	19	100%	15	100%	8	100%	7	100%	49

SITE 3 : WEST CROSS HIGH STATUS

	Local Area	Swansea Central	Swansea Elsewhere	From Outside Area	Total				
Mumbles/West Cross G.P.	22	100%	6	40.0%	5	62.5%	8	100%	41
Swansea G.P	0	0%	9	60.0%	3	37.5%	0	0%	12
Total	22	100%	15	100%	8	100%	8	100%	53

SITE 4 : WEST CROSS LOW STATUS

	Local Area	Swansea Central	Swansea Elsewhere	From Outside Area	Total				
Local G.P.'s	26	96.3%	4	19.0%	3	100%	1	100%	34
Swansea G.P.'s	1	3.7%	17	81.0%	0	0%	0	0%	18
Total	27	100%	21	100%	3	100%	1	100%	52

Table 4.16 (Cont'd)

AREA OF PREVIOUS RESIDENCE AND
LOCATION OF SURGERY ATTENDED

SITE 5 : PENLLERGAER HIGH STATUS

Area of Previous Residence

	Local Area		Swansea Central		Swansea Distant		From Outside Area		Total
Local G.P.'s	9	90.0%	5	50.0%	10	100.0%	16	100.0%	41
Swansea G.P.'s	1	10.0%	6	50.0%	0	0%	0	0%	7
Total	10	100%	12	100%	10	100.0%	16	100.0%	48

SITE 6 : PENLLERGAER LOW STATUS

	Local Area		Swansea Central		Swansea Distant		From Outside Area		Total
Local G.P.'s	27	52.9%	1	2.0%	4	7.8%	19	37.3%	51
									100%

SITE 7 : BAGLAN HIGH STATUS

Surgery Attended	Aberafan/ Port Talbot	Taibach & Margam	Briton Ferry/ Neath	Baglan	Outside Area	Total					
H. Centre Aberafan	17	94.4%	0	0%	0	0%	6	100%	8	72.7%	31
Taibach Surgery	1	5.6%	4	80.0%	0	0%	0	0%	1	9.1%	6
Briton Ferry & Neath	0	0%	0	0%	6	100%	0	0%	2	18.2%	8
Baglan Clinic	0	0%	1	20.0%	0	0%	0	0%	0	0%	1
Total	18	100%	5	100%	6	100%	6	100%	11	100%	46

SITE 8 : BAGLAN LOW STATUS

	Aberafan/ Port Talbot	Taibach & Margam	Briton Ferry/ Neath	Baglan	Outside Area	Total					
H. Centre Port Talbot	8	61.5%	0	0%	2	33.3%	6	33.3%	2	50%	18
Taibach-Margam	1	7.7%	3	50.0%	0	0%	0	0%	0	0%	4
Briton Ferry/Neath	1	7.7%	1	16.7%	4	66.7%	9	50.0%	1	25%	16
Baglan Clinic	3	23.1%	2	33.3%	0	0%	3	16.7%	1	25%	9
Total	13	100%	6	100%	6	100%	18	100%	4	100%	47

residence and actual surgery attended in a detailed manner but, for statistical analysis, these have been amalgamated into the groupings tabulated in Table 4.16. These are now examined by survey areas.

Area 1: Blaen-y-Maes and Foresthall

This pair of low status sites display a marked relationship between area of original or previous residence and the location of surgery attended. The flows depicted earlier to G.P.'s in North and Central Swansea are to lower-status residential areas in which respondents previously lived and this situation is to be seen in both the sites. A number of respondents reported being re-housed from these areas during the post-war years when demolition and redevelopment have been undertaken. Table 4.16 illustrates the relationship between area of previous residence and attendance at a surgery in that area. This may be seen from the high percentage values on the diagonals in each table for these two sites (and a similar relationship will be noted in the other sites later). From these tables it may be seen that few respondents who were originally from the local area chose to go outside the area for a doctor : only 3 respondents did so from Blaen-y-Maes and 2 from Foresthall. This could be explained in terms that the attraction of central city doctors is not sufficient to overcome the travelling involved to visit them but, additionally, persons originally from the survey areas would be unlikely to give up a local G.P. to attend a more distant G.P. unless some considerable stimulus caused such a change. This will be more fully investigated in chapter five, when attitudes and satisfaction are discussed. There is evidently a large degree of inertia involved in the choice of surgery attended, as illustrated by the proportions of respondents originally from outside the area who retain a G.P. in their previous place of residence. It is interesting to note that, of those few persons originally from the survey areas who did travel to a Swansea G.P.,

at least 2 had been forced to look elsewhere than the local area following a disagreement with the health centre doctors, and this point concerning changes of G.P. due to dissatisfaction is discussed in chapter five.

These two low status sites actually show fairly high rates of intra-urban mobility within the local authority housing structure and from redeveloped private residences. Inter-urban mobility rates are, as expected, lower.

Area 2: West Cross

The rates of inter-urban mobility found in the previous survey area are not, in fact, much lower than those found in the West Cross High Status site, although they are lower than were found in Baglan and Penllergaer. The West Cross High Status site does actually contain a fairly high proportion of long-term residents for a high-status residential area, which has also been noted in earlier studies in the area (Peace, 1977). 54.7% of the high status respondents had lived in the West Cross area for over ten years and 26.4% had lived there for over 20 years.

The effect of previous residence in Central Swansea is especially noticeable in the low-status site, in which 17 out of 21 respondents who formerly lived in Central Swansea still attend Swansea G.P.'s as opposed to a G.P. in West Cross or Mumbles. Conversely, only one low status respondent originally from West Cross attends a Swansea G.P., whilst none of the low status respondents who came from further away than Central Swansea have retained their original G.P.

These effects are not as well marked in the high status site, although all respondents who originated from outside the Swansea area are now attending a West Cross or Mumbles G.P. A larger proportion of high status respondents originally from Central Swansea have now registered with a local G.P. - 40% of those respondents in this category have done so, whilst

only 19% of low status respondents have. The effects of a longer-distance move are seen when 62.5% of high status respondents previously living 'elsewhere in Swansea' (other than Central Swansea) now attend a local G.P. In both low and high status sites, 100% of respondents from outside the Swansea area have registered with a West Cross or a Mumbles General Practitioner.

Area 3: Penllergaer

It was previously suggested that the Penllergaer area and in particular the low status site, provided somewhat of an anomaly in that 98% of low status respondents attended the local health centre and only one respondent went elsewhere. However, an examination of the places of origin of the low status respondents provides an almost total explanation of this pattern. 52.9% of total low status respondents were from the local area of Penllergaer-Gorseinon originally and had attended the health centre practices since childhood or since the practices had been established. 19 respondents (37.3% of total) were from 'elsewhere' outside Swansea or the Penllergaer-Gorseinon area. This unusually-high rate of inter-urban mobility in a low status area is largely the result of the re-employment of mineworkers made redundant in England. These persons had no choice on arrival but to register with a local G.P., as did the remaining 9.8% of respondents in this site who came from Swansea areas. All these respondents, therefore, moved too great a distance to be retained by their original G.P's and thus, area of previous residence does enhance an understanding of how these patterns of attendance have been maintained (in conjunction with the monopoly situation of the health centre). Thus, what might appear in comparison with the other three areas to be an anomalous case of utilisation behaviour may also in part be explained in terms of place of previous residence.

The high status site at Penllergaer (site 5) did provide a small number

of persons who had originated from Central Swansea (12 respondents), and half of these had remained with their original G.P's. In precise terms, however, these people were from the Morrleston and Fforestfach areas of Northern Swansea, which are not much further distant from Penllergaer than is the Gorseinon health centre and they have thus been able to maintain the links with their previous G.P's. 33.3% of the total respondents in this high status site had moved to Penllergaer from outside the area, which is an expected proportion considering the high status bias of the site, and many of the respondents reported career-oriented moves. Conversely, few respondents (only 20.1%) were local in origin. 100% of the movers to this site from elsewhere were registered with the Gorseinon health centre, as were 90% of these originally local respondents. Thus, this site provides additional support for the importance of place of origin as a determinant of surgery attended.

Area 4: Baglan

The patterns already discussed are broadly repeated in the Baglan sites. A large number of respondents originating from the Port Talbot, Aberafan and Margam areas, who might therefore be considered to be virtually 'local' in origin, are found in the high status site (Site 7). In some respects, this area is similar to the West Cross high status site, as both are areas to which 'locals' have moved when able to afford better private accommodation. Their local origins are reflected in high levels of attendance at the Aberafan health centre (Port Talbot) and the Taibach surgery (in Margam). Noticeably, however, only 2% of the total of high status respondents attend the local Baglan clinic, whereas 50% of these respondents attend the large Aberafan health centre which may be regarded as the main nearby service. Of the respondents in the high status site who came from outside the area, 72.7% attend this health centre and 18.2%

the Briton Ferry or Neath centres, which are at only a slightly further distance, confirming the high status tendency discussed previously to attend local facilities variably. There was a considerable tendency amongst high status respondents for them to favour the health centres, with their long opening hours and attendance by a large number of doctors, rather than the local branch surgery.

This contrasts with the behaviour of respondents in the lower-status site; here, 17% of respondents attended the Baglan clinic which was conveniently located and only 40% attended the Aberafan health centre. Of those low status respondents originally from Briton Ferry or Neath, 66.7% attended the Briton Ferry health centre, which was a smaller and convenient centre. The Briton Ferry practice had previously operated a branch surgery in a house actually on the low status site. Therefore, this attendance at Briton Ferry health centre could also be explained in terms of residence in Baglan and a 'hangover' effect of the previous operation of the branch surgery in this site.

Similar high levels of dependence upon Port Talbot itself for a high status sample of respondents in Baglan was found in a study of retailing behaviour (Thomas, 1977). 44% of high status respondents reported grocery shopping in Port Talbot and only 39% in nearby neighbourhood centres or corner shops. Of the low status Baglan respondents in the survey, only 11% were found to go to Port Talbot for grocery shopping but 80.4% attended their nearest neighbourhood centre or corner shops. Therefore, the current study of attendance at medical facilities appears to find broadly similar patterns of utilisation behaviour in this area.

CONCLUSIONS

This chapter has presented an analysis of surgeries attended by respondents and a number of behavioural variations have been highlighted. Different behaviour by low status and high status respondents was evident in all survey areas except Penllergaer where a virtual monopoly situation existed with one health centre being attended by a majority of respondents. Low status respondents appeared to attend either local, convenient facilities or to otherwise go to some more distant surgeries, omitting intermediate facilities. High status respondents generally attended local facilities but not necessarily the nearest, a 'local-variable' pattern of attendance.

The attendance by a majority of respondents in the Penllergaer area at one health centre was explained by the 'local history' of the practices which had established the health centre and had closed local branch surgeries. Restrictive arrangements and distances being too great to alternatives have helped to maintain this virtual 'monopoly' by the Gorseinon health centre practices.

A number of other variables were investigated to test for their effects upon utilisation behaviour in the other survey areas. The age of respondents and the possession by their household of a child aged under 5 years did not appear to be of significance to the surgery attended. However, the high status 'local-variable' behaviour did appear to be explained partially by the choice afforded them by a greater personal mobility than was possessed by lower-status respondents. This also permitted some high status respondents to attend more distant facilities.

Low status behaviour appeared to be explained by first, attendance at local facilities due to restricted mobility and secondly, attendance at a surgery in an area of previous residence. This was often associated with the 'enabling factor' of the availability of easy 'bus routes, usually

to former residences in the central city areas.

Therefore, a major feature to emerge from this investigation is that the historic element of 'place of previous residence' is a highly significant variable in explaining spatial patterns of utilisation behaviour. What might be termed 'relict patterns of travel' were found which were especially noticeable in Blaen-y-Maes/Foresthall, West Cross and Baglan areas. In terms of current health care delivery policy, many of these respondents may be out-of-accord with the policy of using a nearby local health-centre or surgery.

If any major conclusion can be drawn from these findings, it could be that the point has been emphasised that, even today, to a certain extent, the choice of surgery attended is a personal one. It has certain implications for the usage of these facilities however. Hillman and Whalley (1977) have suggested that, with regard to voluntary attendance at sporting facilities, the use and rate of use of facilities falls progressively with increasing distance, particularly for people without access to a car. Thus, the larger a facility, "the less it serves its intended population unless they have use of a car or live within walking distance", (Hillman and Whalley 1977, p. 107). The extent of fall-off of demand has been such as to cause them to propose that large facilities create areas of deficiency within their intended catchment areas in respect of people whose travel potential, or personal mobility, is low.

The results of this investigation tend to suggest that the accessibility of a medical service might be of secondary consideration to many respondents. At this stage, however, rates of use are not being examined, but it is suggested that considerations of age and personal mobility are very much of secondary importance when compared with the tendency to remain with a G.P. from a previous area of residence despite distances intervening ('inertia')

This is class-related in so far as the higher-status respondent is usually more likely to have moved at an inter-urban scale and will therefore be less likely to have been able to retain an original G.P. and, as a result, respondents in higher-status sites appear to have more rational patterns of utilisation behaviour (in terms of Central Place Theory), although still locally variable relating to choice. Since the effects of concentrations of young children were found to be of little significance to distance travelled to surgery and age itself was similarly insignificant, an interim conclusion might be to suggest that arguments such as Buttimer's (1971) which claim that vast numbers of young mothers are forced to take their children long distances compared with the rest of the population, are more emotively based than founded upon empirical evidence. The effects that these patterns of spatial behaviour have on satisfaction and on rates of attendance will subsequently be examined but, prior to this, the important issue of attitudinal attachments to the service will be investigated. The need to investigate attitudes to general practitioner services is strongly suggested by all these results, to attempt to answer the question, "Why do these relict patterns of behaviour still exist?"

The position found in the West Cross and the Baglan low status sites, in which there was a dual-attachment by proportions of the respondents to, first, a nearby small, conveniently-operating facility and, secondly, to distant facilities, in both cases instead of attending their nearby larger health centres, also strongly suggests that some attitudinal factors might intervene to modify spatial behaviour. Whether these factors relate to the more macro-scale features of distance, administrative procedures or surgery type or to more micro-scale features of physician's 'affective behaviour' requires investigation. Proximity to a service does not necessarily guarantee that it is the service attended, although certain

factors concerning the respondent's past do give a clearer picture of why the patterns of attendance have become established. Why they remain is to be discussed in the latter part of this thesis.

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CHAPTER FIVE : ATTITUDES TO GENERAL PRACTITIONER SERVICES

CHAPTER FIVE - ATTITUDES TO GENERAL PRACTITIONER SERVICES

Introduction

During the earlier chapters of this research it has been emphasised that, although it provides at least a partial explanation of consumer behaviour with regard to G.P. services, the analysis of socio-economic and demographic characteristics of the respondents omits the consideration of a number of personal attributes and attitudes which are not represented in them. To undertake an examination of 'attitudes' to G.P. services, an additional section was included during the questionnaire interview, the contents of which were described in chapter three. The methodology adopted was to present each respondent in the survey with thirty stimulus-statements, (Table 5.1) to which they could respond according to a five-point Likert scale, ranging from strong agreement to strong disagreement. (The background to this technique is described more fully in Appendix 4). The results from this section were used to construct aggregate attitude profiles for each of the stimulus statements for the pairs of sites in the four survey areas. A response-frequency histogram display is also presented for each pair of sites (Figures 5.5a-1). Statistical analysis was undertaken to present mean attitudes for all respondents in each site for each statement and the contingency tables prepared for each pair of sites were analysed using the chi-square test (Tables 5.4a-d).

The attitude profiles were constructed for mean response scores calculated for each site (Figures 5.2a, b, c) and are presented for each stimulus statement in pairs of sites. In all cases, a higher score indicates a more favourable attitude to the statements than does a lower score. The research design adopted allows direct comparisons to be made between the pairs of sites in each of the four survey areas, whilst the mean score attitude profiles present a visual comparison between sites and across the

survey areas. These attitude profiles represent a summary of the responses for the four pairs of sites and conveniently summarise attitude variations for the initial analysis.

However, it is well-known that the mean is a descriptive measure of central tendency which does not describe the distribution to which it relates. Therefore, to present the data upon which the statistical analysis was performed, frequency histograms were constructed to show the response patterns between pairs of sites for each stimulus statement (Figures 5.5a to 1) and these will be examined in conjunction with the mean response profiles. They have been presented in pairs, one histogram for each statement, to be read left to right across the page. From them, percentages of respondents who endorsed each attitude-category on the Likert scale as well as the overall pattern of responses may be seen. It should be noted that the scoring has been arranged so that, again, a higher score indicates a favourable attitude (discussed in Appendix 4).

At this stage, it is 'aggregate' attitudes of all respondents in each site which are being examined and therefore, comparatively small numerical differences in mean values can represent considerable differences in terms of numbers of respondents answering in certain manners. This first attitudinal analysis has been presented under the four sub-headings: attitudes to journey and distance to surgery; attitudes to administrative procedures involved in consulting the doctor; attitudes to the G.P's 'affective behaviour' and attitudes to general factors. Where appropriate, each survey area will be discussed separately under these four headings. The degree of overall satisfaction displayed towards each stimulus statement will be discussed as well as the elements which appear to cause satisfaction or dissatisfaction and then any class differences in attitudes will be examined. Later in this chapter, certain behavioural variables will be

included in an examination of attitudes to medical services, such as the age of respondents and length of time attending the practice.

Table 5.1STIMULUS STATEMENTS

(in order as in questionnaire and in subsequent analysis)

Distance/Journey

1. It is a long and involved journey to get to the doctor's surgery.
2. If I thought I could get on the list of a more conveniently located practice, I would change.
3. If I really need to visit the surgery, the travelling does not discourage me from attending.

Administrative Procedures

4. When you arrive at the surgery, there is often a considerable delay before seeing the doctor.
5. The waiting room is spacious enough.
6. The waiting room is well-kept.
7. The receptionist staff at my surgery tend to be rather unhelpful.
8. The receptionists appear intent on protecting the doctor from his patients.
9. I do not think sufficient time is allocated per patient for seeing the doctor.
10. The receptionist staff at my surgery are generally polite to patients.

'Affective Behaviour'

11. My doctor is a most approachable person on all medical matters.
12. The doctor often appears to lack interest throughout a consultation.
13. I find the doctor is always willing to spend sufficient time in his examination and does not hurry you.
14. My doctor is always polite to me.
15. The doctor does not seem to be very devoted to his patients or interested in their problems.
16. My doctor is very good with children.
17. At times, I have felt the doctor is not telling me all I ought to know about a condition.
18. The doctor always does all he can for a person.
19. The doctor seems genuinely concerned about the outcome of an illness.
20. The doctor is often brief and hurried in his explanations.
21. I am always confident that the doctor is giving the correct and best treatment.
22. I am certain my doctor would send me for tests or a second opinion if it were necessary.
23. My doctor, due to his profession and training, could be a correct person to approach on a matter that was not strictly medical.
24. I am usually reassured as a result of seeing the doctor.

General Factors

25. I would be happy to see any of the doctors of my practice.
26. On the whole, I am very happy with my present doctor and would not consider a change.
27. Doctors are too eager to give prescriptions for medicines whenever you see them.
28. I have never considered complaining about any aspect of the general practitioner services.
29. It is time the health service got away from health centres and giant practices back to the days of the one-and two-man 'family doctor' practices.
30. I think an appointment system is very useful.

(1) Attitudes to Journey and Distance to Surgery

The first three stimulus statements related to attitudes to the journey involved and distance in travelling to attend surgery. In chapter four, it was illustrated that lower-status respondents were frequently travelling further to surgery than their higher-status counterparts, who often displayed variable attendance at local facilities. Attendance at distant facilities had been found to be closely related in many cases to attendance at a surgery in a previous area of residence.

<u>Area 1</u>	<u>Site 1. Blaen-y-Maes (Distant from facilities)</u>	}	Low Status
	<u>Site 2. Foresthall (Near to facilities)</u>		

This first pair of sites were both of low status and they had been included specifically to test whether significant attitude differences to distance existed between low status respondents living in more and less convenient for surgery locations. Similar rates of personal mobility as reflected by car-ownership rates were evidenced (chapter four) and between this pair of low status sites an interesting surgery utilisation pattern was seen. In Foresthall, which was situated adjacent to a large health centre, a majority of respondents (60%) attended this centre, whilst from Blaen-y-Maes, 60% of respondents attended surgeries elsewhere in Swansea.

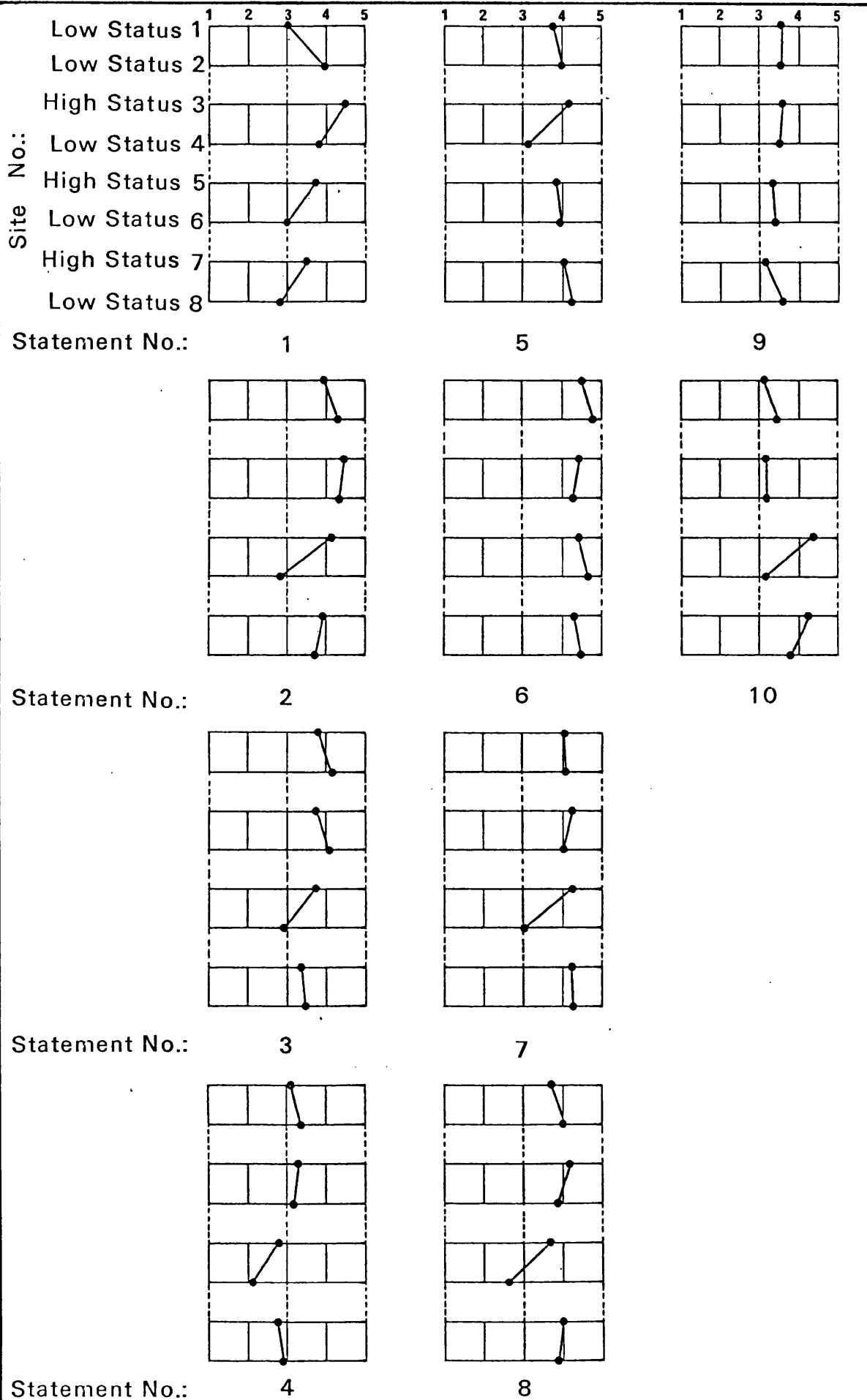
Therefore, in the nearby-site, respondents were expected to produce an aggregate more-favourable attitude to stimulus statements concerned with the distance and journey aspects involved in consulting the doctor. Examining the attitude mean-response profiles and histograms, it will be noticed that these have been presented with a high score indicating a favourable attitude, so the scoring on some stimulus statements has been reversed.

Table 5.3a indicates the mean attitude responses for statements concerning attitudes to distance and journey, whilst table 5.4a shows

Figure 5.2a

Attitude Profiles: Mean Scores

Attitudes to Distance & Attitudes to Administrative Procedures

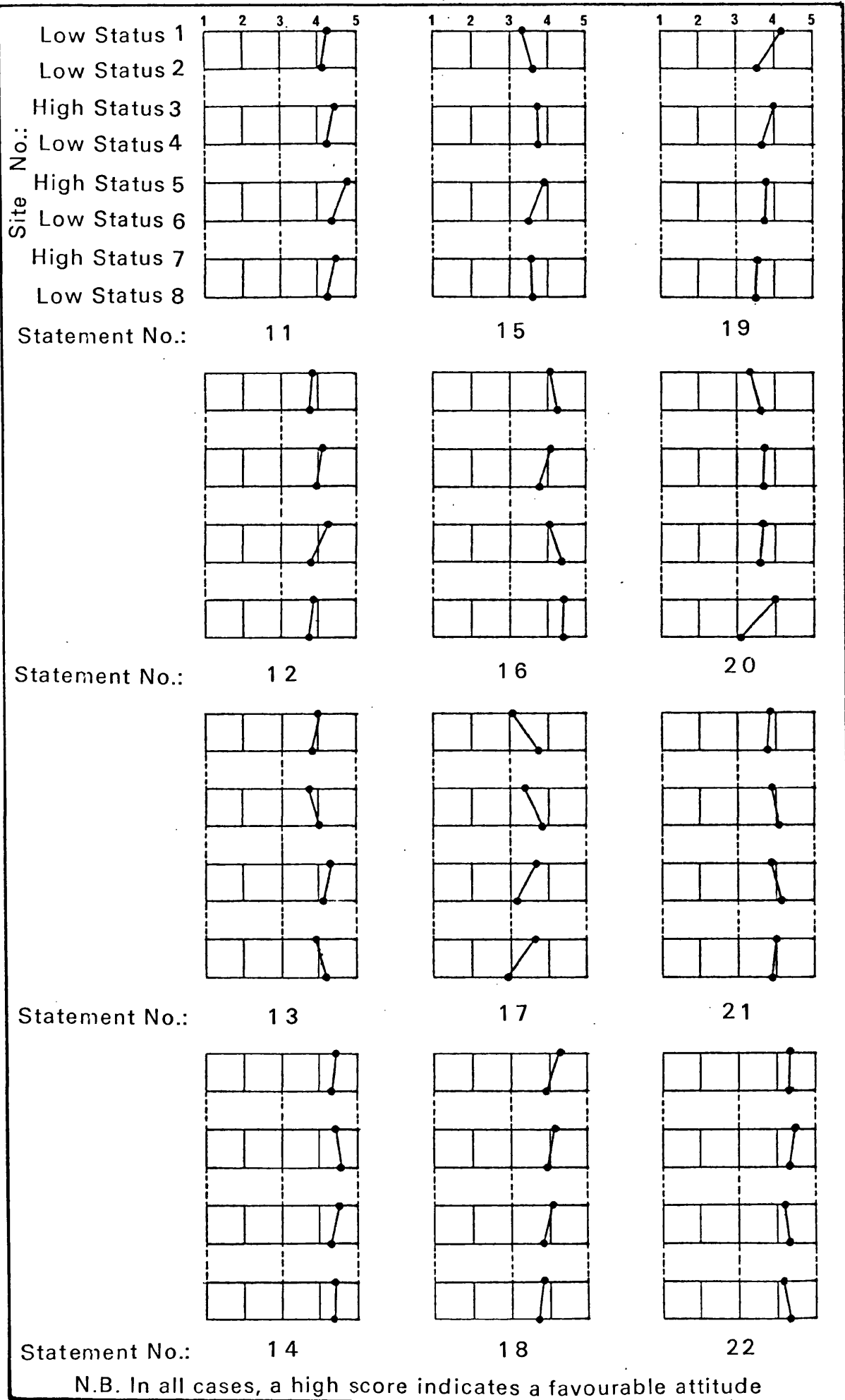


N.B. In all cases, a high score indicates a favourable attitude

Attitude Profiles: Mean Scores

Figure 5.2b

Attitudes to G.P.'S "Affective Behaviour"

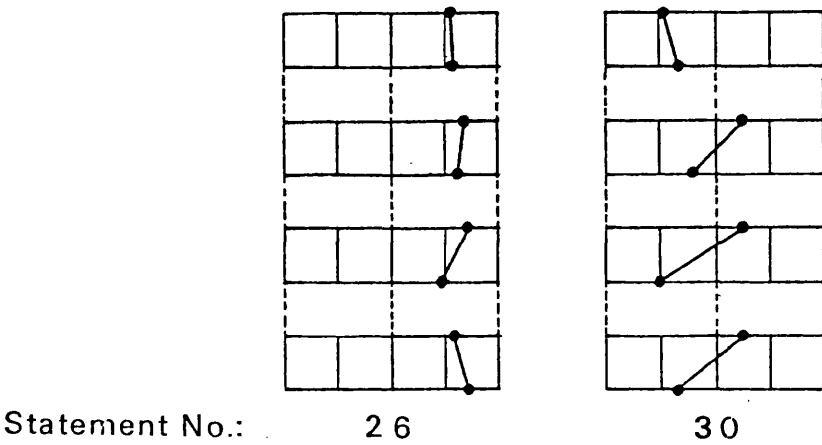
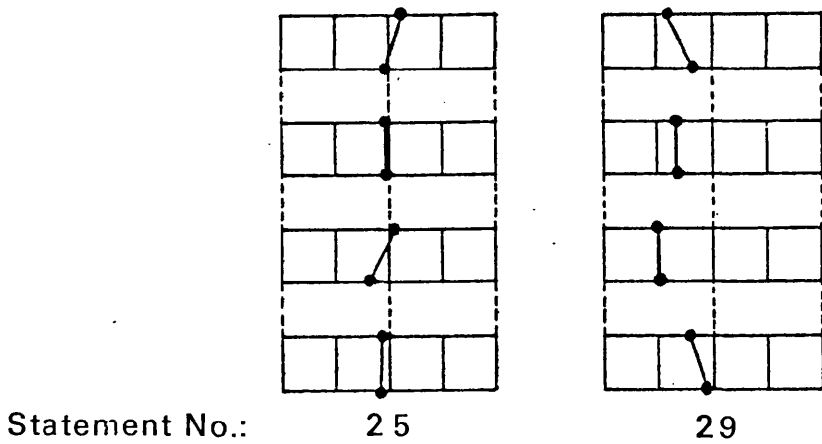
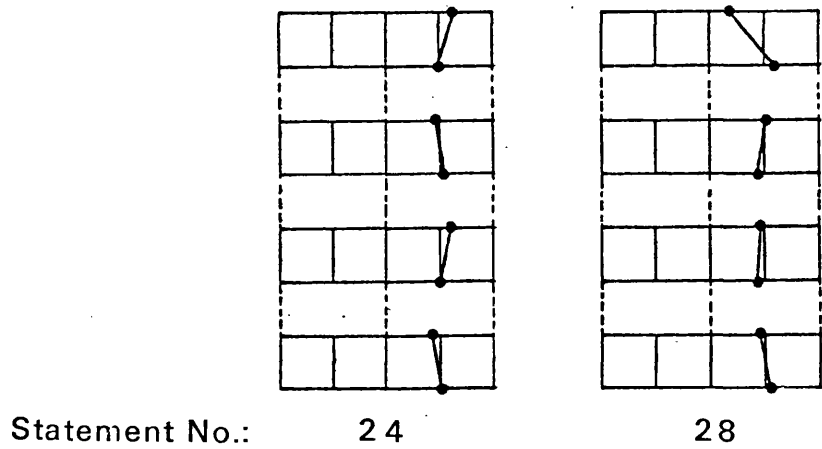
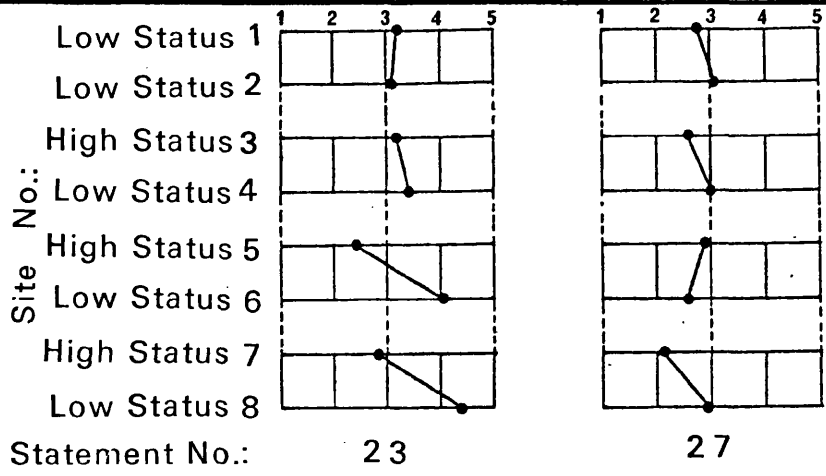


N.B. In all cases, a high score indicates a favourable attitude

Figure 5.2c

Attitude Profiles: Mean Scores

Attitudes to G.P.'S "Affective Behaviour" & Attitudes to General Factors



N.B. In all cases, a high score indicates a favorable attitude

Table 5.3a

Table 5.3b

MEAN ATTITUDE RESPONSES TO STIMULUS STATEMENTS
(All Respondents)

<u>Statements:</u> <u>Distance and Journey to</u> <u>Surgery</u>				<u>Statements:</u> <u>Administrative Procedures</u>							
Statement No.				Statement No.							
Site	1	2	3	4	5	6	7	8	9	10	
Blaen-y-Maes	1	3.04	3.06	3.80	3.08	3.80	4.52	4.02	3.70	3.56	4.12
Foresthall	2	3.98	4.31	4.16	3.31	3.98	4.74	4.06	4.00	3.57	4.49
West Cross											
H.S.	3	4.43	4.42	3.77	3.26	4.11	4.42	4.28	4.19	3.55	4.13
L.S.	4	3.82	4.38	4.10	3.17	3.17	4.27	4.08	4.83	3.54	4.19
Penllergaer											
H.S.	5	3.73	4.15	3.73	2.77	3.85	4.48	4.27	3.65	3.38	4.31
L.S.	6	2.98	2.82	2.96	2.18	3.92	4.63	3.04	2.61	3.43	3.18
Baglan H.S.	7	3.50	3.94	3.39	2.72	4.09	4.37	4.22	4.00	3.17	4.24
L.S.	8	2.89	3.74	3.45	2.89	4.26	4.47	4.25	3.91	3.60	3.80

Table 5.3c

MEAN ATTITUDE RESPONSES TO STIMULUS STATEMENTS(All Respondents)Statements: Physician's 'Affective Behaviour'

Statement No.

Site		11	12	13	14	15	16	17	18	19	20	21	22	23	24
Blaen-y-Maes	1	4.24	3.82	4.00	4.46	3.38	4.06	3.04	4.24	4.12	3.32	3.88	4.36	3.18	4.20
Foresthall	2	4.10	3.71	3.88	4.35	3.63	4.20	3.70	3.92	3.51	3.55	3.78	4.33	3.08	3.94
West Cross															
H.S.	3	4.40	4.08	3.76	4.45	3.77	4.02	3.38	4.11	3.94	3.70	3.98	4.49	3.19	3.92
L.S.	4	4.23	3.90	4.00	4.56	3.77	3.73	3.73	3.98	3.67	3.65	4.06	4.37	3.37	4.00
Penllergaer															
H.S.	5	4.71	4.21	4.29	4.52	3.90	4.02	3.69	4.06	3.73	3.62	3.85	4.21	2.42	4.17
L.S.	6	4.39	3.80	4.12	4.37	3.49	4.39	3.16	3.86	3.71	3.59	4.12	4.33	3.98	3.98
Baglan															
H.S.	7	4.46	3.85	3.98	4.43	3.52	4.39	3.61	3.87	3.54	3.90	4.00	4.20	2.78	3.85
L.S.	8	4.28	3.70	4.15	4.40	3.60	4.36	2.92	3.72	3.53	3.09	3.91	4.38	4.36	3.96

Table 5.3d

MEAN ATTITUDE RESPONSES TO STIMULUS STATEMENTS
(All Respondents)

Statements: General Factors

Site		Statement No.					
		25	26	27	28	29	30
Blaen-y-Maes	1	3.24	4.12	2.72	3.34	2.18	2.08
Foresthall	2	2.98	4.14	2.98	4.18	2.61	2.31
West Cross H.S.	3	2.90	4.38	2.57	3.96	2.36	3.49
	L.S. 4	2.90	4.25	2.93	3.88	2.33	2.58
Penllergaer	H.S. 5	3.13	4.48	2.81	3.89	3.06	3.50
	L.S. 6	2.61	3.98	2.55	3.84	3.06	1.92
Baglan H.S.	7	2.87	4.20	2.20	3.91	2.59	3.48
	L.S. 8	2.81	4.26	2.85	4.02	2.87	2.30

Table 5.4a

CHI-SQUARE VALUES FOR CONTINGENCY TABLES OF PAIRS OF SITES
AGAINST THE LIKERT-SCALE ATTITUDE STATEMENTS
 (All Respondents)

Attitudes to the Distance and Journey to Surgery

Sites	Statement No.		
	1	2	3
Blaen-y-Maes - Foresthall (1 - 2)	25.13**	1.72	5.34
West Cross H.S. - L.S. (3 - 4)	6.37	4.83	1.60
Penllergaer H.S. - L.S. (5 - 6)	10.29	24.77**	9.47
Baglan H.S. - L.S. (7 - 8)	14.17*	10.46	2.13

χ^2 values : 18.46 significant at 0.001 level with 4 d.f.**
 13.28 significant at 0.01 level with 4 d.f.*
 9.49 significant at 0.05 level with 4 d.f.

16.27 sig. 0.001 level with 3 d.f.
 11.34 sig. 0.01 level with 3 d.f.
 7.82 sig. 0.05 level with 3 d.f.

(d.f. = 4)

Table 5.4b

CHI-SQUARE VALUES FOR CONTINGENCY TABLES OF PAIRS OF SITES
RESPONSES TO LIKERT-SCALE ATTITUDE STATEMENTS
 (All Respondents)

Attitudes to Administrative Procedures in the Surgery

Statement No

Sites	4	5	6	7	8	9	10
Blaen-y-Maes - Foresthall (1 - 2)	4.03	7.90	3.15	2.78	3.61	0.60	4.14
West Cross H.S. - L.S. (3 - 4)	5.84	18.87**	5.86 d.f.=3	4.96	3.50	0.95	17.78**
Penllergaer H.S. - L.S. (5 - 6)	8.38	5.42	5.63 d.f.=3	20.72**	<u>12.28</u>	2.98	27.01**
Baglan H.S. - L.S. (7 - 8)	5.33	2.46	2.26	5.32	7.93	3.87	4.60

χ^2 values: 18.46 significant at 0.001 level with 4 d.f.**
 13.28 significant at 0.01 level with 4 d.f.*
 9.49 significant at 0.05 level with 4 d.f.

with 3 d.f. χ^2 16.27 sig. at 0.001 level**
 11.34 sig. at 0.01 level*
 7.82 sig. at 0.05 level

(d.f. = 4 except where otherwise stated)

Table 5.4d

CHI-SQUARE VALUES FOR CONTINGENCY TABLES OF PAIRS OF SITES
AGAINST THE LIKERT-SCALE ATTITUDE STATEMENTS
 (All Respondents)

Attitudes to General Factors

Sites	Statement No					
	25	26	27	28	29	30
Blaen-y-Maes - Foresthall (1 - 2)	1.51	0.64	3.48	10.49	4.19	4.66
West Cross H.S. - West Cross L.S. (3 - 4)	3.39	2.82	4.98	1.63	5.01	14.24*
Penllergaer H.S. - L.S. (5 - 6)	3.98	7.04	6.76	3.82	1.94	34.68**
Baglan H.S. - Baglan L.S. (7 - 8)	1.14	2.56	9.11	3.95 (d.f.=3)	4.09	21.09**

(with 3 d.f.)

χ^2 values: 18.46 significant at 0.001 level with 4 d.f.** 16.27
 13.28 significant at 0.01 level with 4 d.f.* 11.34
 9.49 significant at 0.05 level with 4 d.f. 7.82

(d.f. = 4 except where otherwise stated)

chi-squared values for contingency tables of pairs of sites on each of these statements. Figure 5.5a shows frequency histograms for the pair of low status sites at present under consideration.

As expected, statement 1 produced responses in these two sites which reflected their proximities to surgery: Blaen-y-Maes respondents were definitely divided as to the effects of distance, with 42% of respondents agreeing that the journey to surgery was rather long and difficult whereas only 22.4% of Foresthall respondents felt this to be the case. This probably reflected the proportions of respondents in Blaen-y-Maes who travelled to central and northern Swansea surgeries, as well as the longer distance (than Foresthall respondents) to the local health centre. Only 10% of Blaen-y-Maes respondents strongly disagreed with statement 1, whilst 55.1% did so in Foresthall. The patterns for these responses were highly significantly different (Table 5.4a).

Statement 2 was included to test for the effects of convenience of location of surgery on attitudes to changing doctors. The Blaen-y-Maes respondents did appear more likely to change surgeries for the sake of nearness and convenience than did Foresthall respondents, who were conveniently located anyway.

Statement 3 asked if the travelling involved would actually discourage a respondent from attending surgery. The response pattern noted above was broadly replicated, as in the Foresthall site, 61% of respondents agreed strongly with the statement. In the less-conveniently situated Blaen-y-Maes site, however, only 42% of respondents agreed strongly with this statement. Thus, attitudes to the travel involved in visiting the surgery did vary with distance between these two low status sites, although high statistical significance was only obtained with regard to statement 1.

Area 2 West CrossSite 3: High StatusSite 4: Low Status

The three pairs of sites in West Cross, Penllergaer and Baglan had been included to test for class differences in attitudes. It was expected that, due to considerations of personal mobility, lower-status respondents would, on average, present less-favourable attitudes to the stimulus statements in this section. Each will be discussed individually, but each statement will not necessarily be examined in the same detail in each site or area. Statement 1 did, in fact, produce this hypothesised profile in all areas and it concerned attitudes to the actual journey involved to attend surgery. The frequency histograms (Figure 5.5b) show that on this first statement, the high-status respondents recorded more favourable attitudes to the journey element (69.8% of high status respondents disagreed with the statement whilst only 48.1% of low status respondents did so).

With regard to statement 2, the West Cross sites did not display significant differences although, again, low status respondents appeared to be more ready to display an unfavourable attitude to distance. Statement 3 produced different attitudes in that high status respondents were slightly more ready to admit that the travel involved discouraged them from attending surgery (26.4%) whilst only 19.2% of low status respondents thought this. This feature again is related to the high rates of attendance at the local branch surgery, barely 200 yards away from the low status site.

Area 3 PenllergaerSite 5: High StatusSite 6: Low Status

Low status respondents in the Penllergaer site displayed significantly less favourable attitudes to the first statement, 43.1% of these respondents

agreeing that the journey to the surgery was difficult, whereas only 25.0% of high status respondents felt this. Regarding statement 2, very highly significant differences (see Table 5.4a) between the responses of high and low status residents were evidenced. 51% of low status respondents stated they would change surgeries if there was one more conveniently located, whilst only 11% of respondents agreed they would change surgeries for the sake of convenience.

Since almost all respondents in both these sites attended the large health centre in Gorseinon, two and a half miles away, this area probably gives the fairest indication of the comparative attitudes to distance as they vary by social status. The discouraging effects of distance to less mobile low status persons are clearly indicated in this pair of sites, which is confirmed by examining statement 3. 43.1% of low status respondents felt, more or less strongly, that the travelling did discourage them from attending surgery. 25.5% felt very strongly that this was the case, whilst only 8.3% of high status respondents displayed this attitude (Figure 5.5c).

Area 4 Baglan

Site 7: High Status

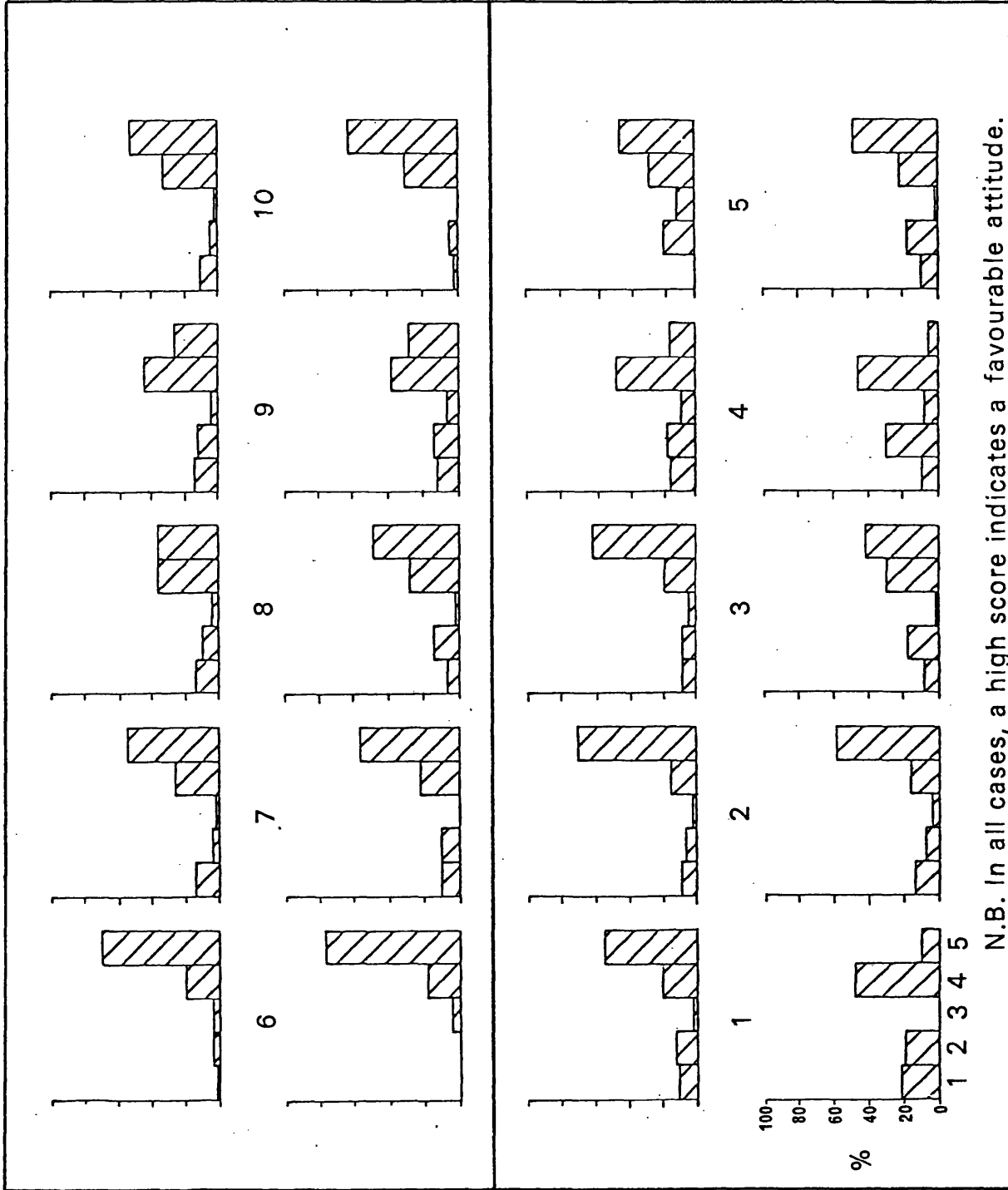
Site 8: Low Status

Broadly the same patterns as displayed in the previous two areas were found in the Baglan sites. Statement 1 once again provided significantly different patterns of responses between high status and low status sites. 44.7% of low status respondents felt the journey to the surgery was not easy, whilst only 28.3% of high status respondents felt this. 30% of low status respondents expressed very unfavourable attitudes to this statement whilst only 13.0% of high status respondents did so.

Significant differences were seen for statement 2. However, in this case, there was a slightly greater tendency for high status respondents to state they would be willing to change surgery for the sake of convenience,

Figure 5.5a

Attitudes to Journey & Attitudes to Administrative Procedures



Site 1

Site 2

Site 2 Foresthall
Near to facilities

Site 1 Blaen-y-maes
Distant to facilities

Statement No.:

Statement No.:

N.B. In all cases, a high score indicates a favourable attitude.

Figure 5.5b

West Cross : Attitudes to Journey & Attitudes to Administrative Procedures

Site 3

Site 4

Site 4
Low Status

Site 3
High Status

Statement No.:

Statement No.:

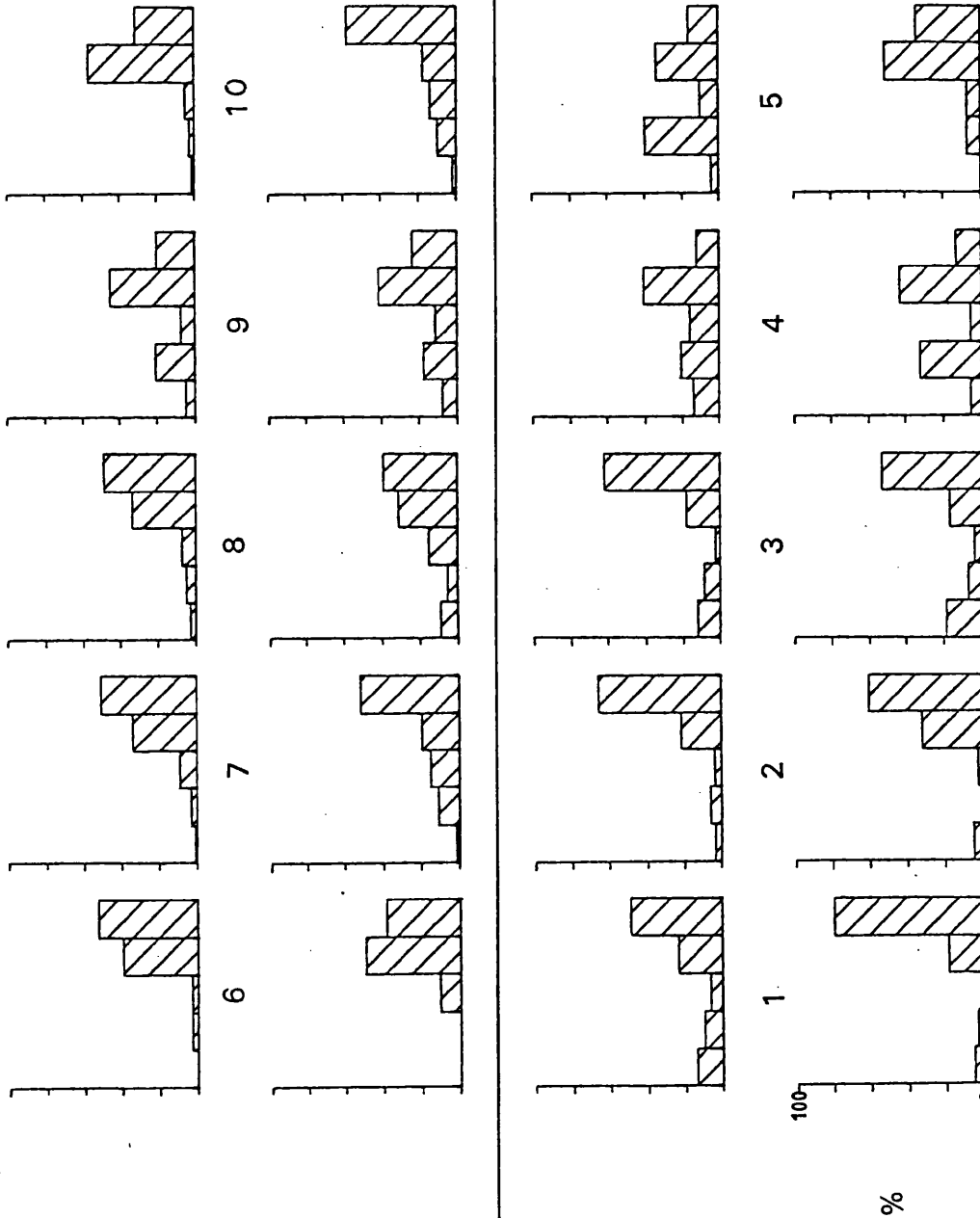


Figure 5.5c

Penllergaer : Attitudes to Journey & Attitudes to Administrative Procedures

Site 5

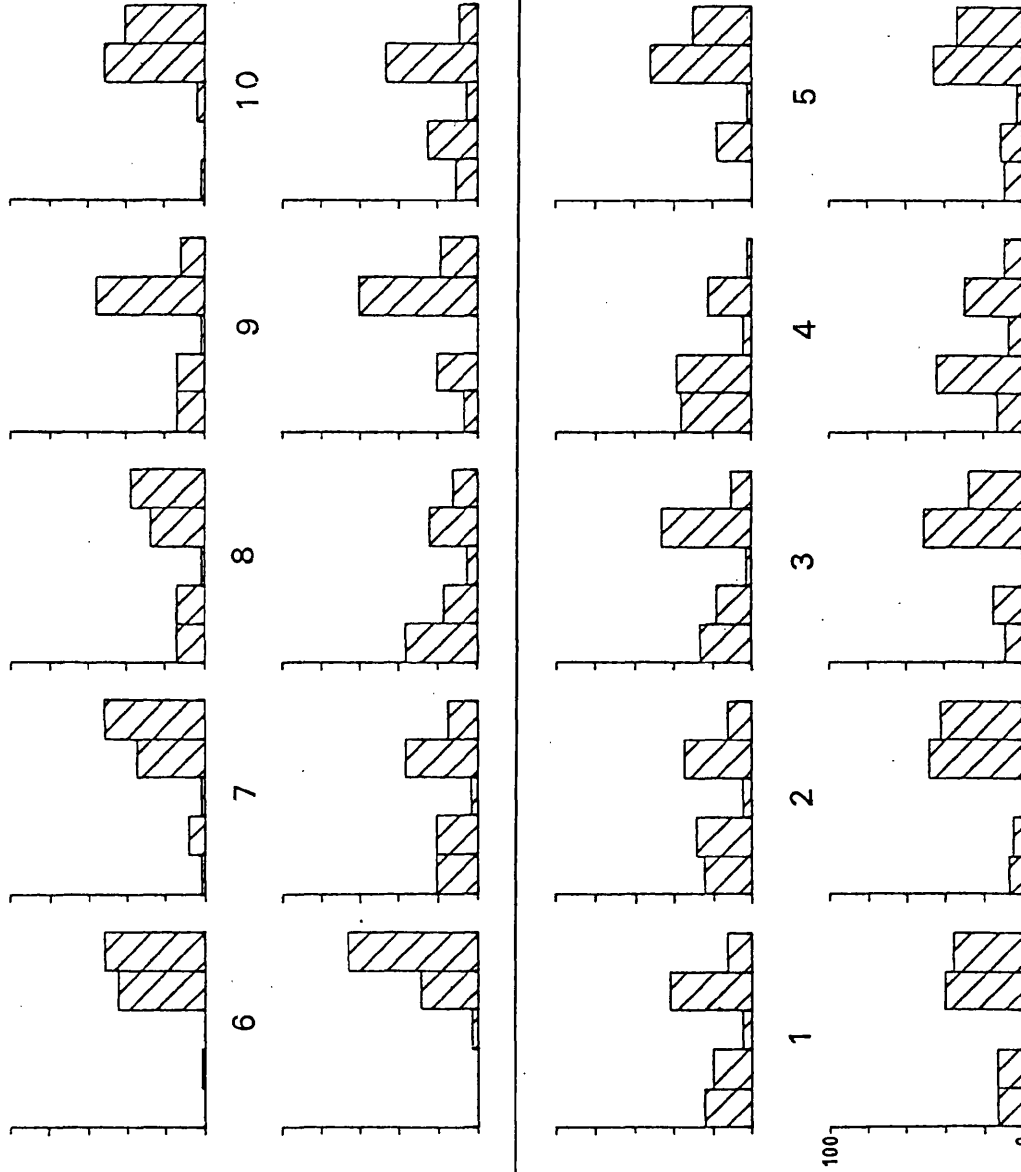
Site 6

Site 6
Low Status

Site 5
High Status

Statement No.:

Statement No.:



N.B. In all cases, a high score indicates a favourable attitude.

Figure 5.5d

Baglan: Attitudes to Journey & Attitudes to Administrative Procedures

Site 7

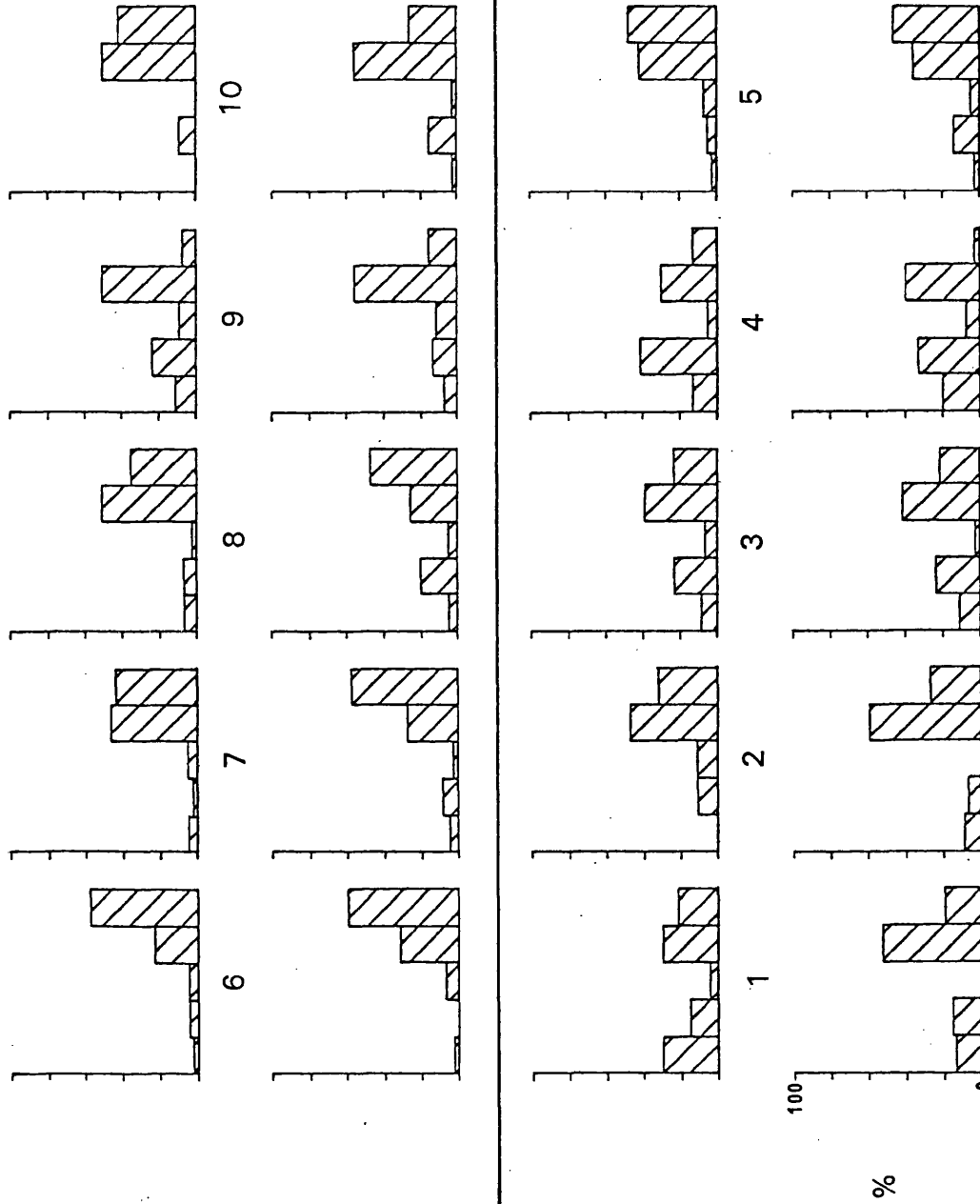
Site 8

Site 8
Low Status

Site 7
High Status

Statement No.:

Statement No.:



which was not found earlier and which lends some support to the contention that the middle-class are more ready to complain about their health care. Responses to statement 3 did not actually differ significantly, although 34.8% of high status and 31.9% of low status respondents felt discouraged from attending due to distance. The fact that one-third of both high status and low status respondents expressed a disinclination to attend surgery due to the travelling involved in doing so is obviously a feature which deserves consideration in the examination of the location of health care facilities and is possibly a reason for encouraging the use of nearest facilities to minimise travelling.

Over the three status-different areas and the two low status sites. the effects of distance and the journey for health care were seen to be significant variables in differentiating respondents' attitudes to medical services. In particular, low status respondents on average reviewed the distance and journey element of the consultation process less favourably than did higher status respondents.

In Penllergaer Low Status site, 43% of respondents reacted unfavourably to statement 1 concerning the distance to surgery whilst only 25% of high status respondents did. In Baglan, 44.7% of low status respondents reacted in this way compared with 28.3% of high status respondents and the West Cross sites produced similar directions of responses with 23% of low status and 9.4% high status respondents producing unfavourable attitudes. Between the pair of low status sites in Area 1 attitudes to distance were significantly different since 42% of respondents in the more distant site were unfavourable in their attitudes to this element of the consultation process whilst only 22.4% of respondents in the nearby site expressed unfavourable attitudes.

Although the average response to statement 2 concerning the likelihood

of a respondent changing surgeries for the sake of convenience was favourable (except in Penllergaer L.S. and Baglan) a generally less favourable attitude was displayed when many respondents agreed that they were sometimes discouraged from attending surgery because of the travel involved in doing so. Thus, the element of dissatisfaction was again apparent. The fact that some of the attitudes in this section were not always in an expected direction emphasises the importance of examining not only average scores (presented in the mean response attitude profiles) but also of examining the frequency histograms and χ^2 tables for each statement (Figures 5.5; Tables 5.4).

(2) Attitudes to Administrative Procedures

Freidson (1961) considers a number of 'administrative procedures' which might influence the layman's satisfaction with medical services. These may affect attitudes and satisfaction with the G.P. if the client has to pass through an irritating path of bureaucratic procedures and lengthy waiting before seeing the doctor. Chapter two reviewed the modern trends which are occurring in Britain and within the study area, which include the employment of ancillary staff and receptionists in larger numbers than previously and the introduction of appointment systems and consultation time-limits.

Time spent waiting in the surgery to see the doctor might be in surroundings of varying comfort. Cartwright (1967) found that middle-class and, in particular, professional people, were the most critical about their doctor having a well-equipped, up-to-date surgery, a pleasant and comfortable waiting room and explaining things to them fully. The process of consulting a doctor is becoming more and more organised and, as was described in chapter one, it has been found that lower-status persons often lack the required expertise for performing effectively in various types of

formal organisational settings (McKinlay, 1972). The stimulus statements in this section sought to examine whether different attitudes exist to such 'administrative procedures', as Ben Sira (1976) has called them. If they do, then this would test if the features which make up the "plush new health centres" such as new waiting rooms, use of appointment systems and employment of ancillary staff, actually do a disservice to lower-status groups, as has been suggested by Stacey (1977).

Statements 4 to 10 in the questionnaire concerned time allocation, waiting conditions and the behaviour of receptionist staff and two of the general statements (statements 29 and 30) concerned attitudes to health centres and group practices and to the use of appointment systems. The mean attitude responses to these statements are provided in Tables 5.3b and 5.3d. From the previous discussion, it was expected that higher status respondents might, on average, express a less-favourable attitude towards waiting conditions and physical conditions in the surgery than would lower status respondents but that they might be better able to cope with receptionists and the more formalised aspects of gaining an appointment, as suggested by McKinlay (1972). The time factor was initially proposed as an adjunct to the statement regarding the use of appointment systems as this factor was to be more fully explored in the section examining the physician's 'affective behaviour'. Other than these propositions, no other firm variations in responses were anticipated and thus to an extent this data may be regarded as exploratory.

Area 1 - Blaen-y-Maes/Foresthall (Low Status)

In this pair of low status sites, attitudes were, on balance, favourable towards the physical aspects of the surgery (statements 5 and 6) especially towards the waiting room being well-kept. However, only a medium mean-score was recorded for statement 4 which proposed that a considerable delay might

be experienced on attending surgery and a similar score was recorded for statement 9, asking if sufficient time were allocated per patient for seeing the doctor. The attitudes to use of appointment systems (statement 30) and to health centres and group practices (statement 29) were definitely on balance unfavourable in these two sites. Statements 7, 8 and 10, which concerned receptionists' behaviour were fairly favourably received, although statement 10, which asked if the receptionists were generally polite, received an only barely favourable average response (Figure 5.2a).

Having considered the direction of attitudes (favourable or unfavourable) detailed inter-site differences may now be examined. Attitudes did not differ significantly with regard to statement 4 (delay on attending surgery). There were also not any well-developed differences with regard to the physical waiting-room conditions found in the surgery, nor to the behaviour of receptionists. This consistency of attitudes between the pair of low status sites was expected since they had been included primarily to examine the effects of varying proximity to services upon attitudes, discussed previously. With regard to statements 29 and 30, similar results were found. In addition, if Figure 5.2c is examined, it will be noted that there is a remarkable consistency between the scores for this pair of sites and those for the three other low status sites for statement 30, as low status attitudes appeared especially unfavourable towards the use of appointment systems.

The slightly more favourable average response to statement 29 (concerning health centres and group practices) found in Foresthall is interesting, since a majority of respondents actually did attend a health centre from this site. It is possible, therefore, that it is the 'image' of a health centre which produces an unfavourable attitude rather than attendance at such a facility. However, all sites displayed a largely unfavourable

mean-score to statement 29 (Figure 5.3c) which indicates considerable consistency in attitudes to such large health-centres.

The three areas of differing-status sites will now be examined and a brief conclusion regarding the role of administrative procedures in influencing attitudes will then be made.

Area 2 - West Cross (High Status and Low Status)

Statement 4, indicating that a considerable delay was experienced at surgery, did not produce different responses in this site either but statements 5 and 6 did. These two statements concerned conditions in the waiting room, whether it was spacious enough and well-kept. Unexpectedly, low status respondents in West Cross were more ready to agree that their waiting room was not spacious enough. This was considered to be a direct reflection of the fact that 50% of low status respondents in this area attended the nearby branch-surgery, which had very limited available waiting and seating space. This highly-significant result (Table 5.4b) was therefore not in the hypothesised direction.

Statements 7, 8 and 10 all concerned the manner in which respondents found themselves dealt with by administrative staff in the surgery. The 'watchdog' or 'guardian' behaviour of some receptionist staff has been a matter for comment in the medical press and it was hypothesised that lower-status respondents might experience more difficulty in dealing with such officious behaviour than would higher-status persons. However, on examining the attitude-profiles and frequency histograms (Figures 5.2a and 5.5b) this hypothesised result was not significantly visible in this area, although the hypothesised direction of attitudes may be seen (statements 7 and 8). Attitudes towards these aspects of receptionists' behaviour were generally favourable.

Statement 9 concerned the allocation of time per appointment or per

patient. Many respondents thought that this was between 5 and 10 minutes per patient and the average attitude score regarding this statement was only barely favourable over all the survey areas, with no significant variation between status sites. Despite appreciating that a large number of patients needed attention at a surgery, this still did not make attitudes to this statement much more favourable and generally a dissatisfaction with time allocated for consultations was expressed.

The on average, unfavourable, responses to statement 9 appear to indicate that the different status groups do not perceive themselves as being allowed different periods of time to see the doctor although regarding the time actually spent in consultation, medical sociologists have found class differences, as will be discussed later.

The West Cross sites recorded very similar, unfavourable, mean scores to statement 29 (concerning group practices and health centres) which is a reflection again of high rates of attendance at the local branch surgery. This is probably also enhanced by the fact that, although a considerable number of high status respondents attend the local group practice, they usually only see one G.P. consistently (as was also tested by statement 25; few people reported they would be happy to see any of the doctors in a group practice). However, on closer examination of the responses to this statement (29), certain differences in distribution of responses becomes apparent (Figure 5.5b; Table 5.4d). The low status site has 27% of respondents who were 'uncertain' of their responses, with a smaller proportion than in the high-status site recording favourable attitudes. Although not quite reaching statistical significance, these differences indicate the necessity of examining more than average attitude scores in isolation.

A similar result is seen with regard to statement 10. Although the

mean scores for both low and high status sites are almost identical and, on average, barely favourable (Figure 5.2a) regarding the politeness of receptionist staff, very significant differences in the pattern of responses may be seen (Table 5.4b; Figure 5.5b). High status respondents were usually favourable to this statement, although not strongly so. Low status respondents appeared more divided: some were very favourable in their attitudes to this statement (57.7%) whilst 23% recorded rather uncertain attitudes - either neutral or slightly unfavourable. Very few high status respondents (only 9%) recorded these types of attitude. Thus, it might appear that, despite a similar average score, on aggregate, the higher-status respondents receive a rather more polite approach from the receptionists in this area than do the lower-status persons.

Finally in the West Cross area, statement 30, concerning attitudes towards the use of appointment systems, provided interesting results. Since making an appointment to visit the doctor involves either telephoning the surgery or making a visit there, it was expected that lower-status respondents, who were shown in chapter three (Figure 3.15) rarely to possess a telephone in the household and infrequently a car, would express unfavourable attitudes to the use of appointment systems. This was found to be as hypothesised in both the attitude profiles (Figure 5.2c) and the frequency response histograms (Figure 5.5h). Statement 30 did, in fact, provide one of the most significantly different response patterns between low status and high status respondents over this area and over the Penllergaer and Baglan areas. A number of high status respondents reported attending health-centres because it was possible to make an appointment, whilst lower-status respondents often preferred to be able to arrive at a branch surgery without making an appointment.

Differences in low status and high status responses to statement 30

were significant at the 0.01 level in West Cross. 54.7% of high status respondents found that appointment systems were beneficial or useful to them, whilst only 26.9% of low status respondents did.

Area 3 - Penllergaer (High Status and Low Status)

It was previously suggested that this area probably gives the fairest indication of comparative attitudes since almost all respondents from the two sites attend the same health centre in Gorseinon. Status-related differences in attitudes to administrative procedures may be seen for almost all the statements in this section for the Penllergaer area. Interestingly, the main area of agreement in attitudes for low and high status respondents is with regard to the actual conditions found in the health centre, which was modern and fairly spacious. As a result, both status groups expressed similar favourable attitudes to statements 5 and 6. A slight class bias was evident for statement 4 and low status respondents were more ready to say they experienced a delay than were high status respondents.

Statements 7, 8 and 10, referring to the behaviour of receptionist staff, all displayed significantly different patterns of attitudes between low status and high status respondents. For each of these statements, low status respondents felt that the staff at the health centre were rather unhelpful (statement 7), impolite (statement 10) or were attempting to keep them away from the doctor (statement 8), and their attitudes were significantly less favourable to these statements than were those of the high status group (Table 5.4b). Thus, the hypothesised direction of attitudes was evident in this site, where lower status respondents appeared to be experiencing differing behaviour than that displayed towards higher-status respondents. Such unfavourable attitudes were, however, not necessarily displayed towards the physician himself as will be discussed subsequently, but were directed, rather towards the 'administrative'

features of the health centre.

Statement 9 concerning time allocated per patient for seeing the doctor did not show a different pattern of responses. In this area again, attitudes were barely favourable to the time allocation but, on average, very unfavourable attitudes were displayed towards the health centre and group practice organisation (statement 29). Both low status and high status respondents showed very mixed attitudes towards such organisations. 51% of low status and 41.7% of high status respondents recorded unfavourable attitudes, whilst 50% high status and 41% of low status respondents showed favourable attitudes to the centre (Figure 5.5j).

Finally in this area, statement 30 produced very significant differences between the two sites (.001 level). Low status respondents expressed very unfavourable attitudes to the use of appointment systems whilst the attitudes from the higher-status site were on average just favourable. In particular in this area, respondents claimed difficulty in obtaining an appointment and remarks such as "you must be ill to order" were frequently made.

Area 4 - Baglan (High Status and Low Status)

This area did not produce many different responses regarding statements 4, 5 and 6 between the two status sites. As in the earlier sites, the differences were seen between high status and low status responses to the stimulus statements concerning receptionists' behaviour (statements 7, 8 and 10). Again, the average high status responses were slightly more favourable for statements 8 and 10, although these were not statistically significant (Table 5.4b). High status respondents in this site were slightly more likely to express unfavourable views towards the health centre and group practice organisation than were low-status respondents. However, as in West Cross and Penllergaer, the most significant difference (.001) was between high status and low status responses to statement 30.

Once again, the low status respondents displayed generally unfavourable attitudes towards the use of appointment systems whilst high status respondents, on balance, expressed favourable attitudes towards their use.

In summary, it is possibly fair to say that class differences in attitudes towards the administrative features of time allocated for appointments and towards physical waiting room facilities were not visible in as marked a form as the medical sociological literature has tended to suggest. It does not appear that higher status respondents are consistently prepared to express less favourable attitudes towards such aspects of the consultation process.

However, the less well-tested aspects of the consultation process do appear to cause fairly well-marked class differences. In particular, the lower-status respondents with reasonable consistency report less favourable attitudes to receptionists' behaviour. It is interesting that the Penllergaer area in which most respondents attended one large health centre produced the most consistent class-differences in this respect.

Class-differences in opinions concerning health centres and group practice were not well developed, however. Both status groups tended to display a similar unfavourable bias against such organisation, especially in the Penllergaer area. A distinct desire for the return to the one-and-two-man 'family doctor' form of primary health care delivery was stated. A number of respondents reasoned that health centres and group practices did enable the doctors to have the use of modern facilities and equated the developments with trends in amalgamation in other services.

More important, perhaps, is the emergence of a distinct class bias against the use of appointment systems on the part of low status respondents. The implications of these results for the planning of general practice are considerable. At present, all newly-opened health centres in West Glamorgan

use appointment systems for the organisation of daily consultations. This is an aspect of the service which appears to detract from the satisfaction of a large proportion of the population, serving to create a feeling of isolation, helplessness and of being 'cut-off' from being able to attend the surgery freely. Due to the added hardships of making an appointment for lower-status persons who lack a car or telephone, a distinct class bias has been introduced into the delivery of primary medical care. The existence of such a bias is well-demonstrated by the patterns of responses to statement 30. It may well be that, from a managerial perspective, the doctor's time is being more 'efficiently' used, but apparently this is at the expense of a reduced accessibility to patients, especially those of lower social status. Before the adoption of appointment systems is further officially encouraged, it should first be established that their use does not disadvantage certain sectors of the community and that they will not operate as a quasi-rationing device to keep persons waiting for long periods to see a G.P.

(3) Attitudes to the G.P.'s 'Affective Behaviour'

It was discussed in chapters one and three that some authors have suggested that a portion of utilisation behaviour could be accounted for by varying attitudes to the 'affective behaviour' presented by the G.P. to different patients. This micro-scale social scientific level of investigation was previously included under the social-psychological approach and a model was proposed to test the effects of the physician's 'affective behaviour' upon client satisfaction. The social interaction between a patient and doctor is clearly a very important part of the consultation process and is also closely related to the degree of satisfaction which people have with the service. It is reasonable to expect that a more favourable attitude towards the physician's 'affective behaviour' might

induce a patient to remain registered with a doctor despite a move away from the surgery area by the patient.

Up to this point, various categories of respondents have displayed significantly different attitudes to aspects of the journey to surgery and to certain 'administrative procedures' involved in consulting a doctor. The more micro-aspects of the consultation process are now to be examined, in broad terms adopting Ben Sira's (1976) model to test whether any underlying class differences are apparent towards the physician's 'affective behaviour'. It will be recalled that this model tested the extent to which the doctor treated the patient as a person rather than as a case: in an interactive process in which the client is unable to judge the content of a professional's response, the client's immediate satisfaction will be a consequence of the mode of the response rather than of its content. The mode of this response (the G.P.'s 'affective behaviour') requires the physician to allow sufficient time to a patient, to show interest and to demonstrate sufficient devotion to the management of the problems presented.

Certain items included in the 'affective behaviour' model were adopted in this research design as a basis for testing whether respondents of known social status differed in their attitudes to each item, rather than as a test of the consistency of 'affective behaviour' as a model for determining comparative levels of satisfaction. However, an indication of the aspects of the model which provide the most differentiation will be gained. To test for such class differences in attitudes to the physician's 'affective behaviour', a number of additional stimulus statements were included (statements 11 - 24) as well as certain of these which sought to determine more directly levels of satisfaction with the G.P.

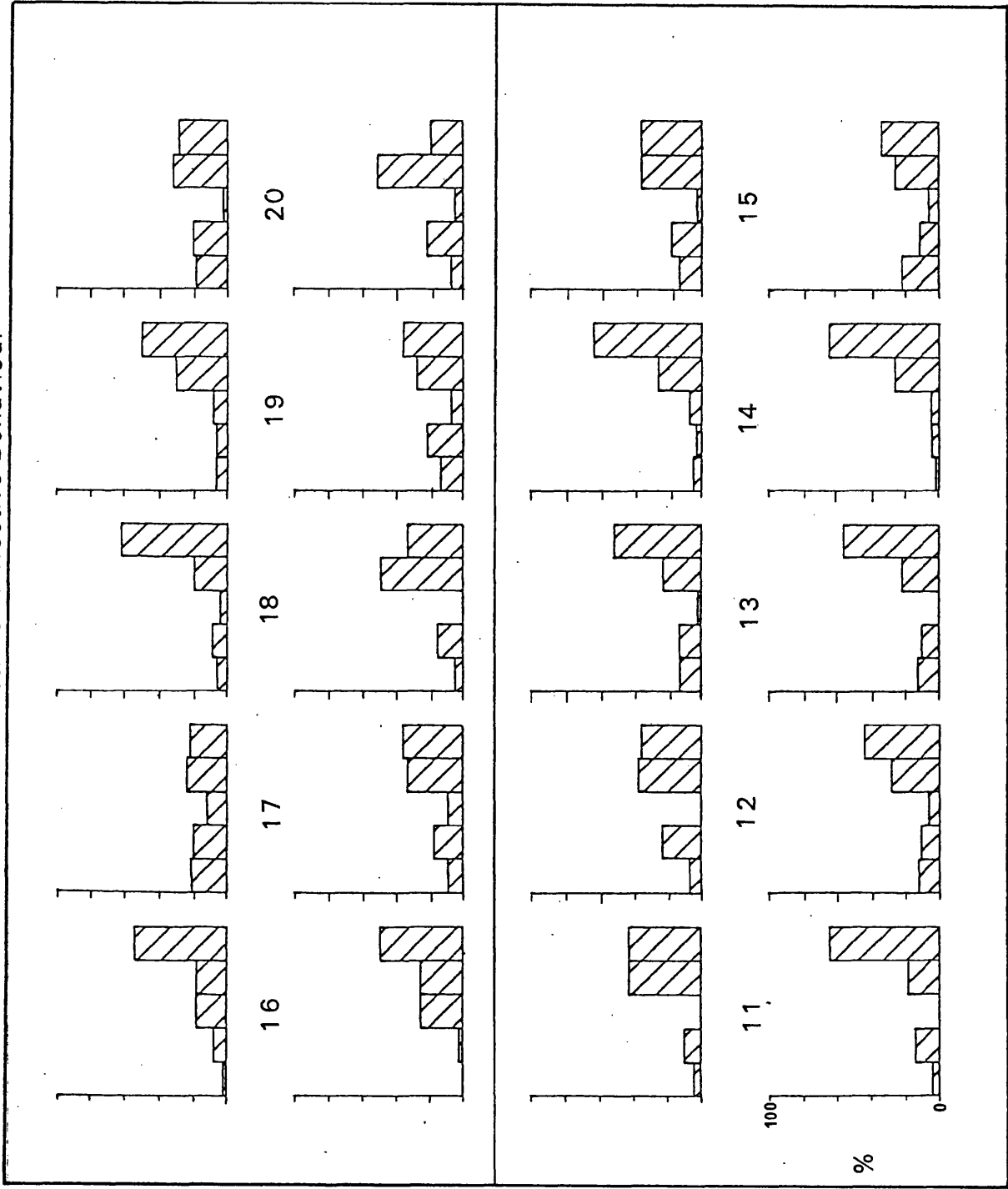
Balint (1957, 1968), a medical sociologist, has called the activity

of a doctor vis-à-vis his patients 'apostolic', in which the physician's 'affective behaviour' is of the utmost importance. As Sowerby (1977) points out, Balint's major contribution was to show that scientific skills alone are not enough if doctors are to understand their patients properly. In many instances, the 'artistic' aspects of treatment (including the doctor's personal behaviour towards his patients) are just as important as the scientific aspects of treatment.

In spite of the variety of stimulus statements which has been presented to test the hypothesis that certain micro-features of the service such as the physician's 'affective behaviour' might cause class differences in attitudes, an examination of the attitude-profiles, response-frequency histograms and chi-square tables, showed that only on a few items in the pool of stimulus statements were significant differences reached. Most of the stimulus statements in this section provided, on average, fairly favourable mean responses which suggested that the physician's 'affective behaviour' was well-regarded by a majority of respondents. Since this was the case, it was felt to be more appropriate to discuss the results from this section statement by statement rather than area by area to enable some gauging of degrees of satisfaction with this aspect of the service. Statements 11 to 15 concerned the physician's approachability, interest shown and time spent on examination. On balance, the responses to these statements were very favourable although the mean responses to statement 15 were somewhat less favourable, which concerned the devotion and interest shown by the doctor towards his patients. These statements showed no significant differences in areas according to social class for any of these aspects of 'affective behaviour'. The response patterns to statement 13, concerning time spent on examination, confirmed the results from statement 9 in which no significant differences had been found regarding class attitudes

Figure 5.5e

Attitudes to G.P.'S "Affective Behaviour"



Site 1

Site 2

Site 2 Foresthall
Near to facilities

Site 1 Blaen-y-maes
Distant to facilities

Statement No.:

Statement No.:

Figure 5.5f

Attitudes to G.P.'S "Affective Behaviour" & Attitudes to General factors

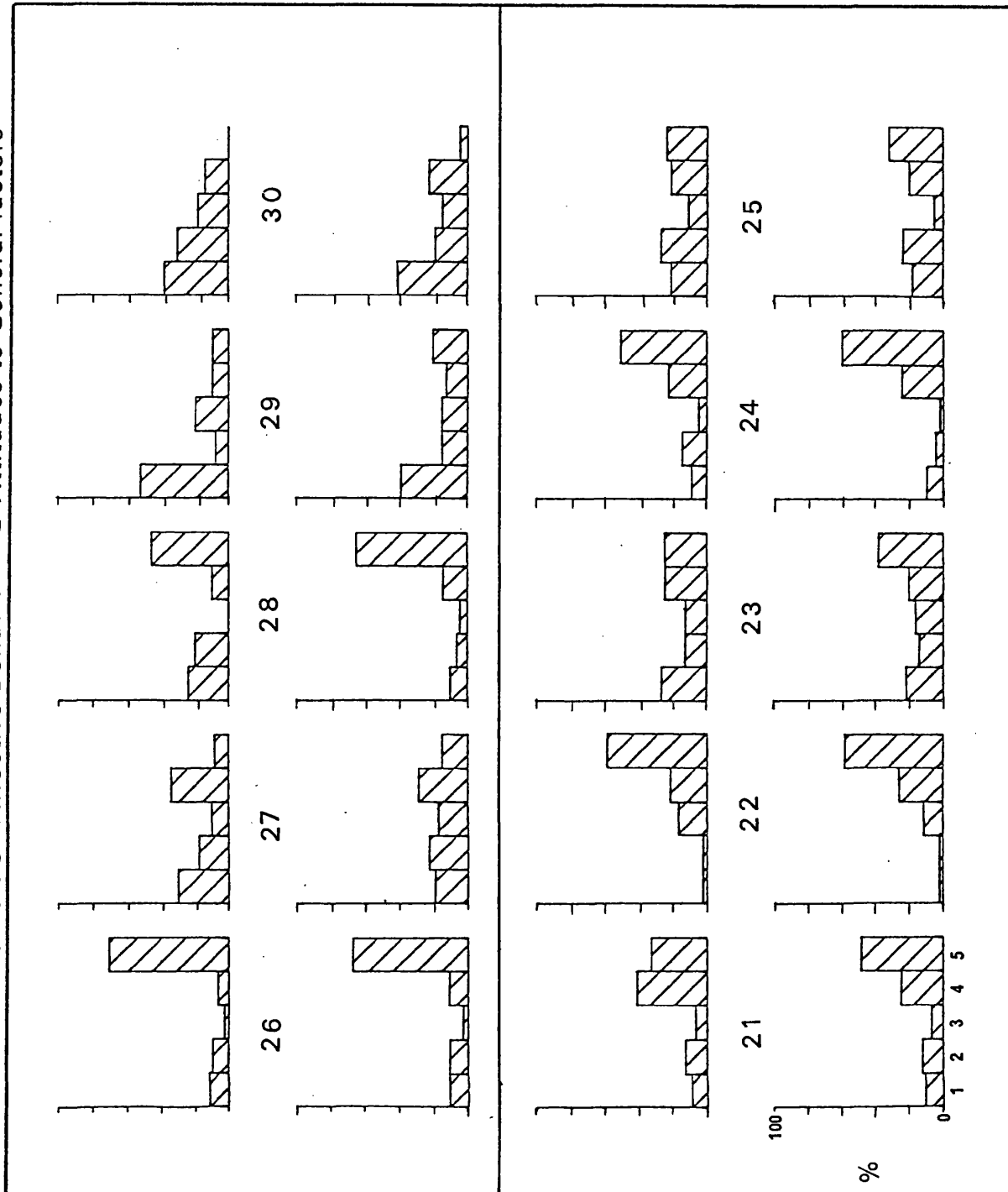


Figure 5.5g

West Cross: Attitudes to G.P.'S "Affective Behaviour"

Site 3

Site 4

Site 4
Low Status

Site 3
High Status

Statement No.:

Statement No.:

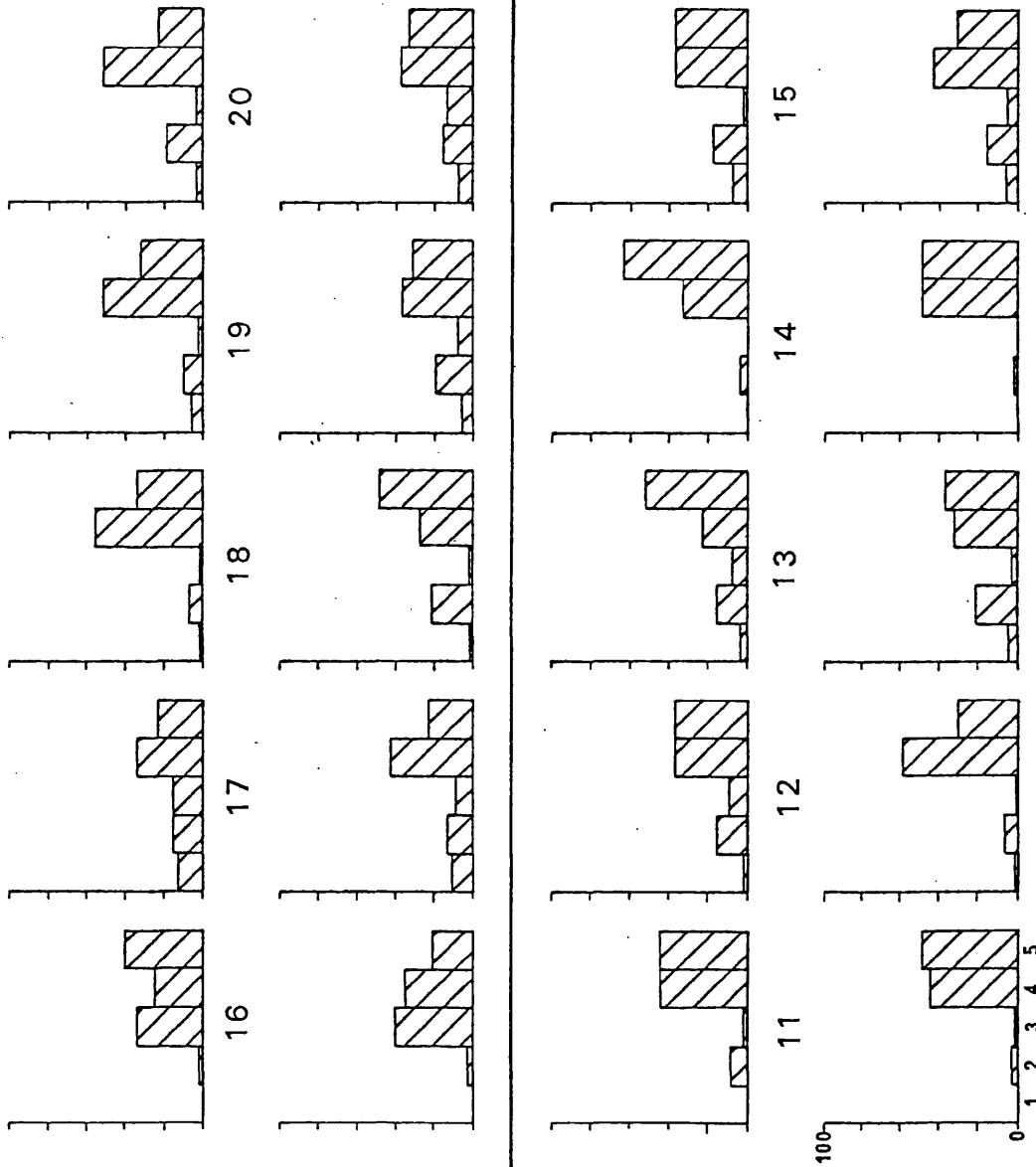


Figure 5.5h

West Cross: Attitudes to G.P.'S "Affective Behaviour" & Attitudes to General factors

Site 3

Site 4

Site 4
Low Status

Site 3
High Status

Statement No.:

Statement No.:

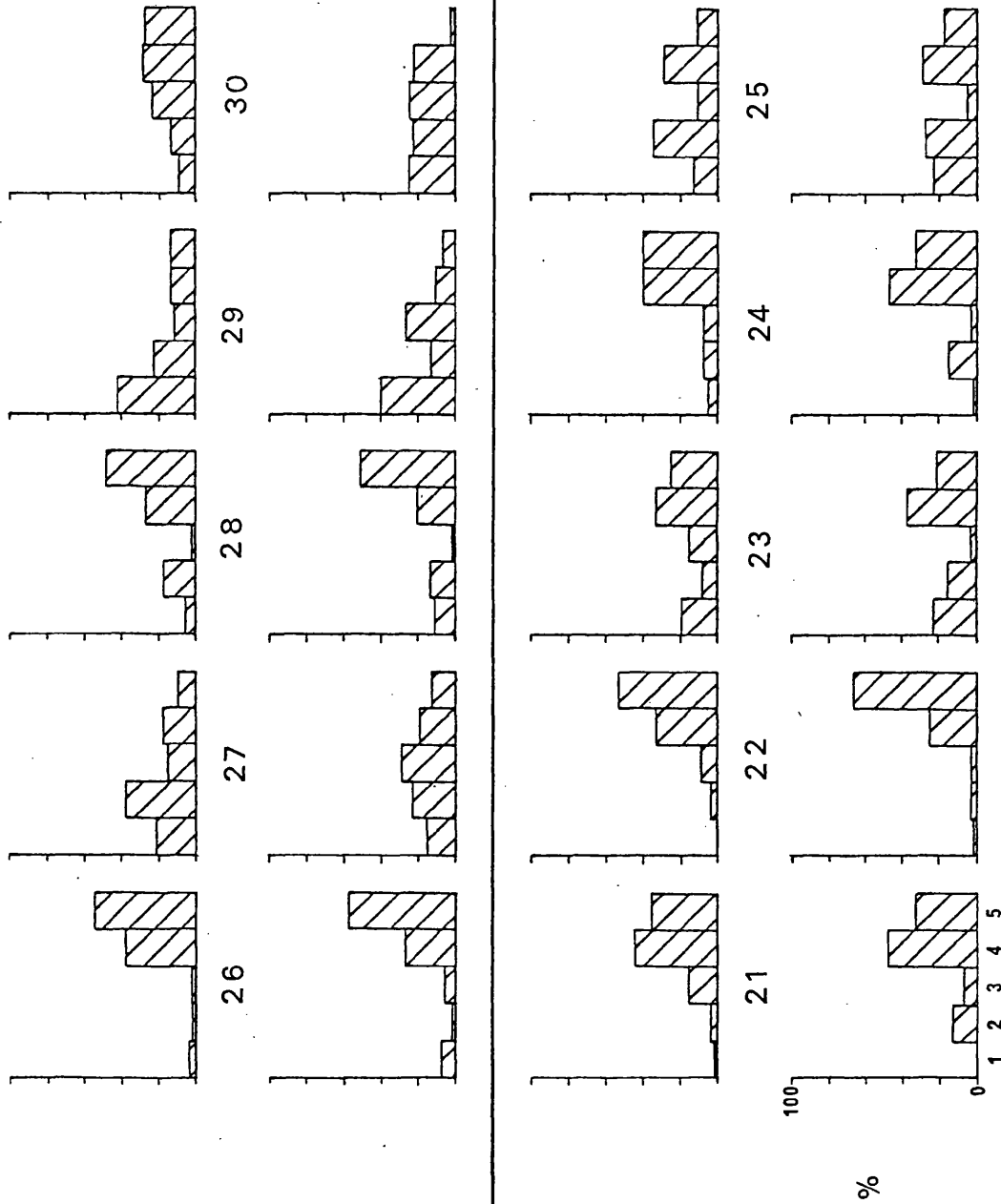
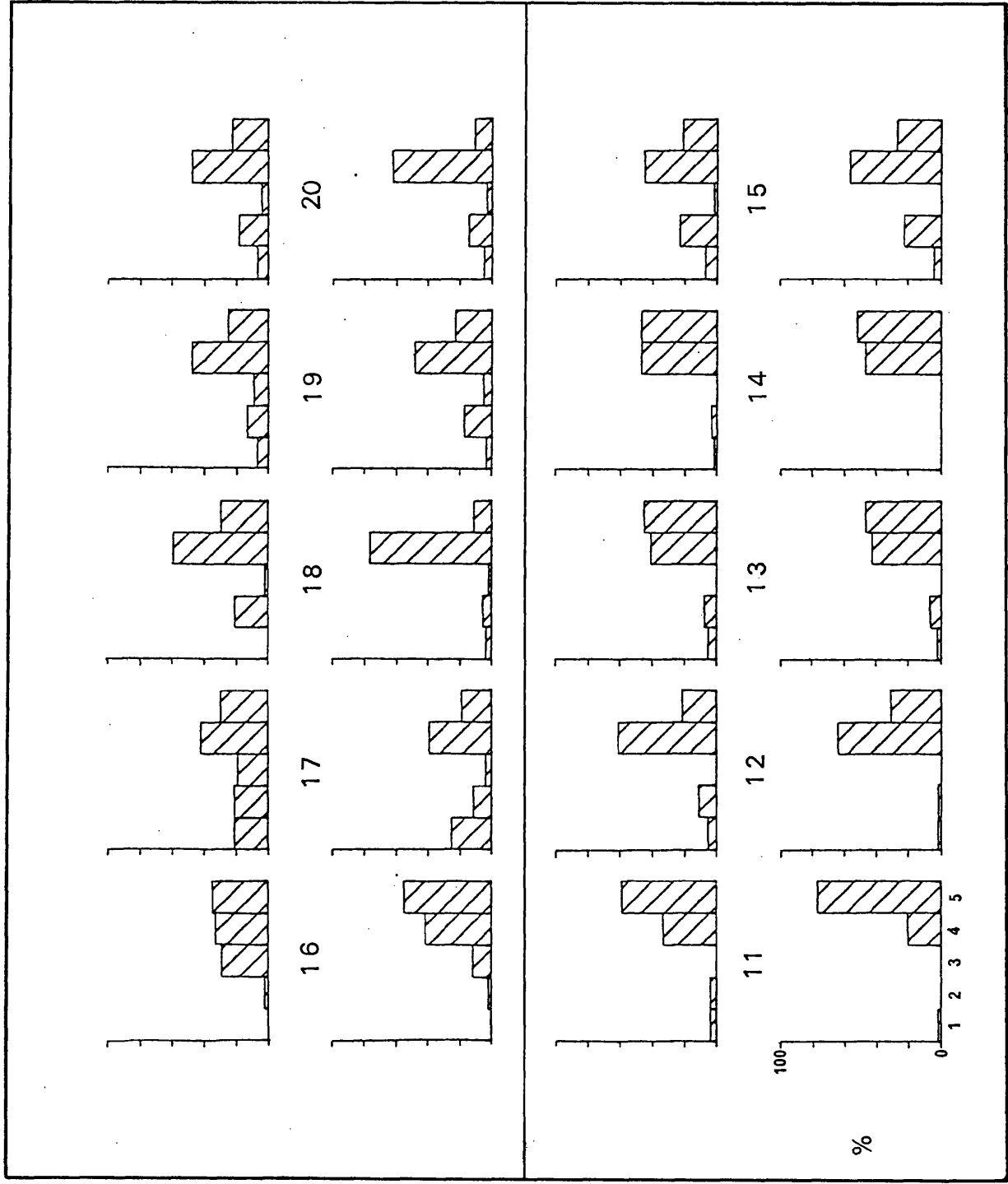


Figure 5.5i

Penllergaer: Attitudes to G.P.'S "Affective Behaviour"



Statement No.:

Statement No.:

%

Figure 5.5j

Penllegaer: Attitudes to G.P.'S "Affective Behaviour" & Attitudes to General factors

Site 5

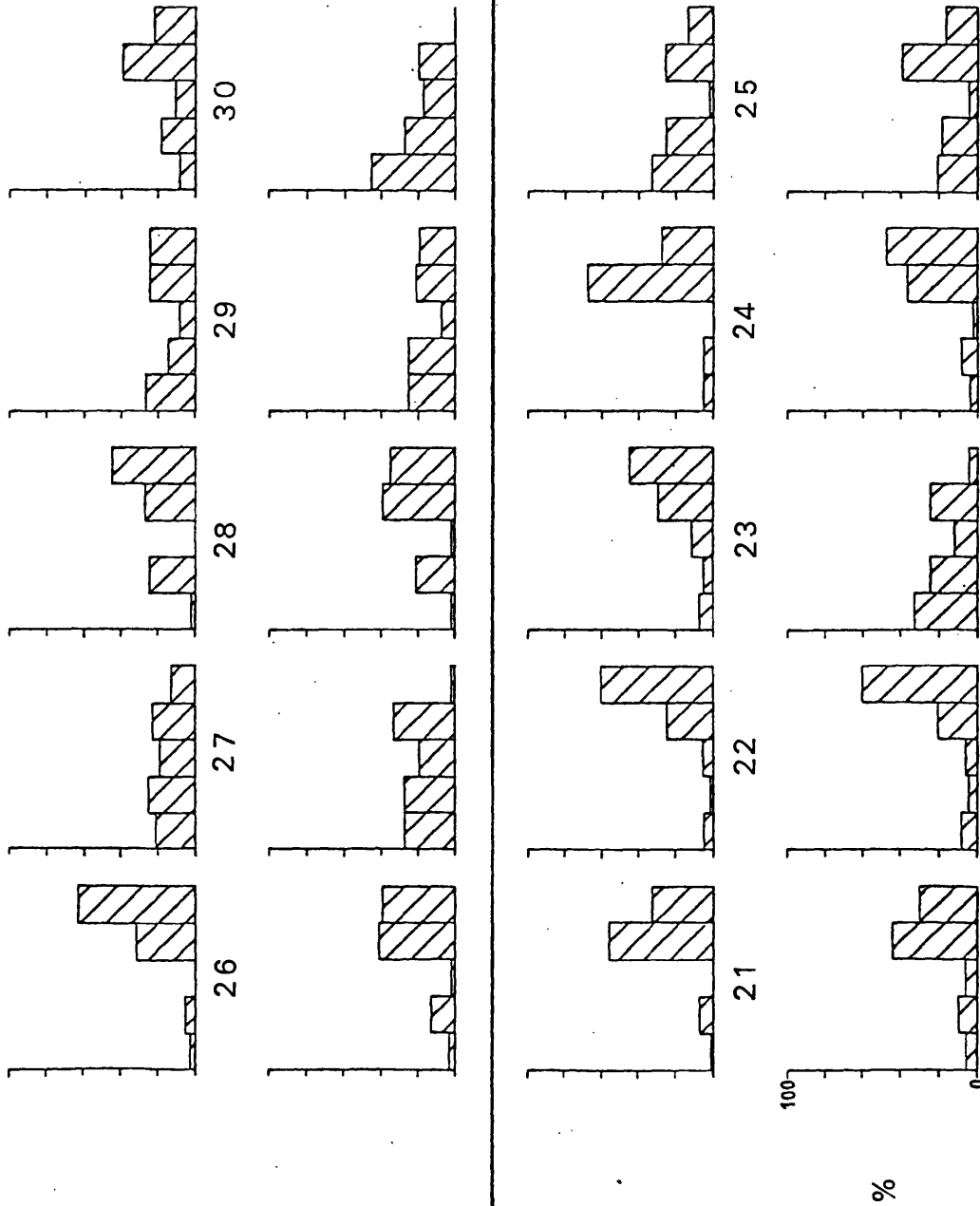
Site 6

Site 6
Low Status

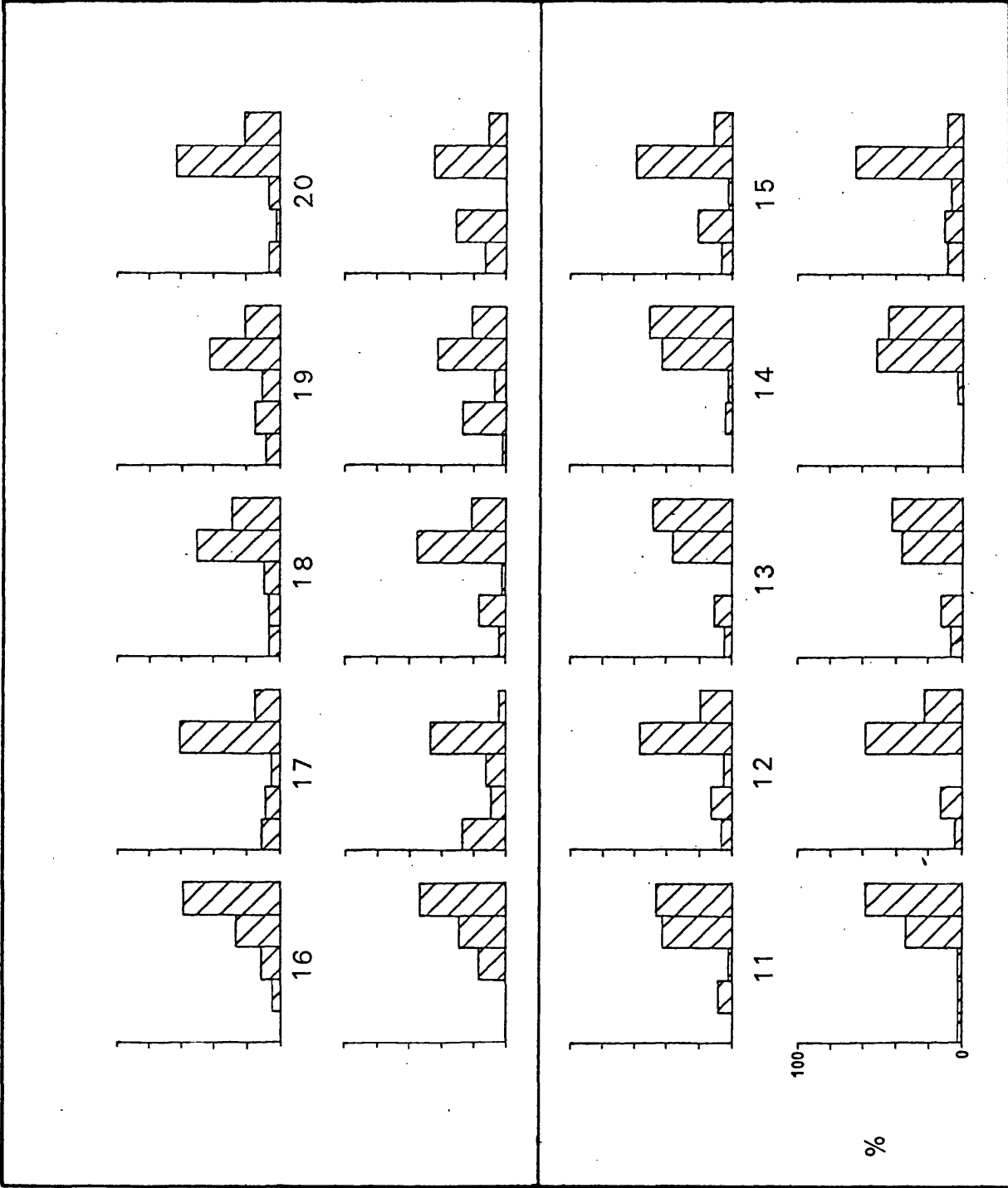
Site 5
High Status

Statement No.:

Statement No.:



Baglan : Attitudes to G.P.'S "Affective Behaviour"

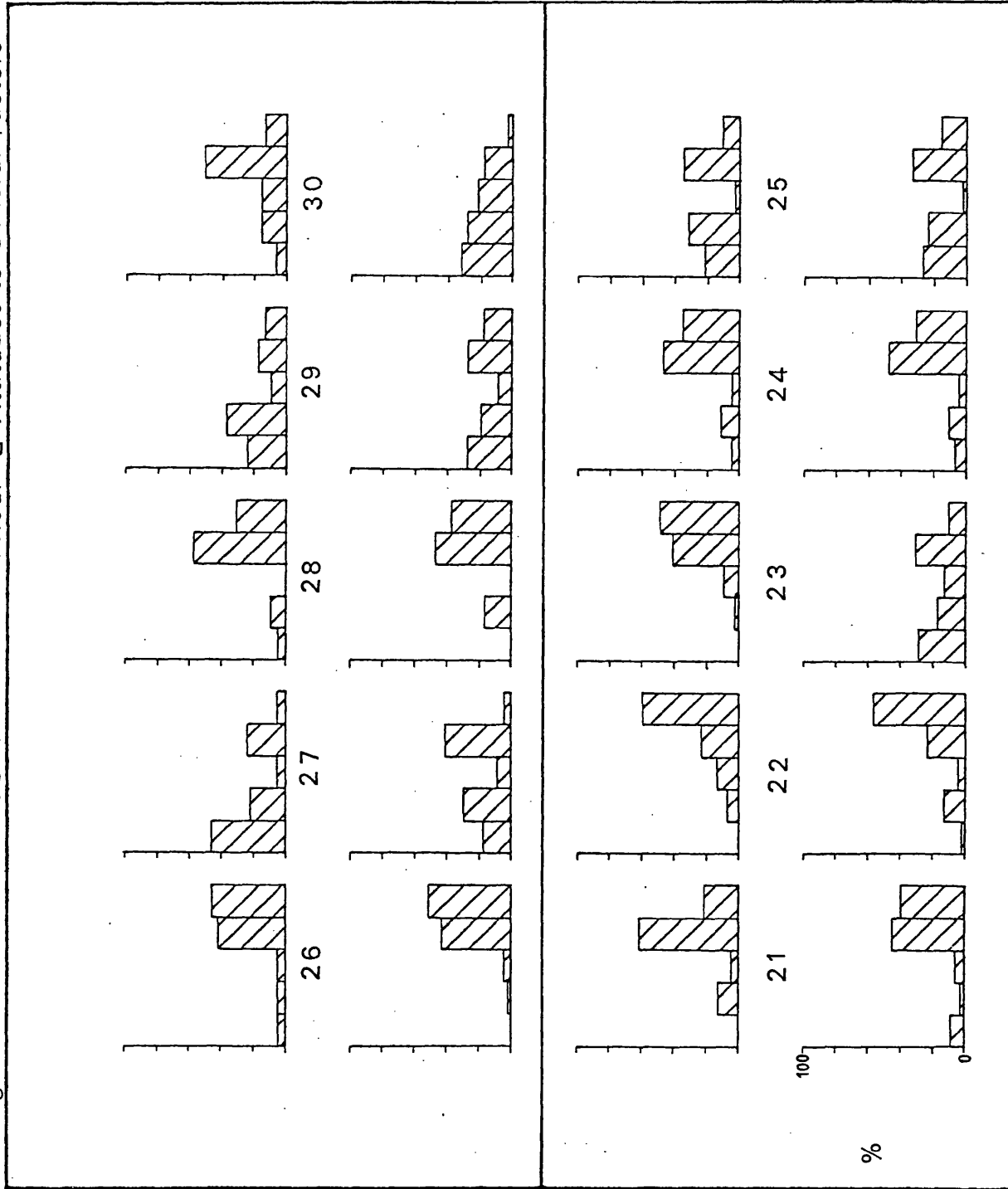


Statement No.:

Statement No.:

Figure 5.51

Baglan: Attitudes to G.P.'S "Affective Behaviour" & Attitudes to General Factors



to time allocation.

Statement 16, which asked if the G.P. was good at dealing with children, was generally well-received by most respondents who appeared satisfied with this aspect of 'affective behaviour'. However, a seemingly-significant result was to be seen in Penllergaer where high status respondents felt that the doctor was less good at this than did low status respondents. This was due largely to 29% of high status respondents being uncertain as to this factor.

Statement 17 considered whether a respondent felt that the doctor was telling her sufficient details about a problem and this statement did show that some doubts were held concerning this aspect of consultation, especially by lower status respondents. A barely-favourable average response may be seen to this statement (Figure 5.2b) but no significant class differences were found. However, for statement 22 (which asked whether the doctor would send a person for a test or a second opinion) although no class differences were found a generally more favourable attitude was expressed. As a result, the overall confidence and levels of reassurance which the doctor provided (statement 24) were perceived fairly equally by all status groups and attitudes to this aspect of 'affective behaviour' were generally very favourable for all sites.

Similarly, levels of satisfaction were high regarding the question of whether the physician did all he could for his patients (statement 18). However, although not reaching statistical significance, there was a trend across the three status-different sites for low status respondents to record a less-favourable attitude towards this statement. These differences were significant at the 5% level in West Cross.

In addition, although the responses and levels of satisfaction expressed up to and including statement 19 (which considered the doctor's concern

about the outcome of an illness) were generally favourable, this tendency was seen again in response to statement 20 in which lower status persons were more inclined to agree that the doctor's explanations were too brief and hurried. In the Baglan survey area, this difference was significant (.001 level) with 44.7% of low status respondents feeling that the explanations were too brief and hurried and only 8.7% of high status respondents expressing such an attitude (Figure 5.5k). However, a majority of respondents in all sites (over 70% in all sites) felt that the doctor was providing the correct and best treatment (statement 21) although a few high status respondents in all sites tended to disagree with this statement, but statistical significance was not reached except in Baglan (where the χ^2 test was based upon certain small expected frequencies in this case).

Thus, only statement 23 of this section remained to be explained. This concerned the likelihood of a respondent approaching the doctor on a non-medical matter. This statement provided some highly significant differences. In both the Baglan and the Penllergaer high status sites and to a lesser degree in West Cross, high status respondents were far more inclined to say that they would not approach their doctor on a non-medical matter than were low-status respondents. In the Penllergaer high status site, 58.3% of respondents stated that they would not approach their doctor on a non-medical matter, whilst 74.5% of low status respondents here said they could do so. Similar proportions were seen in Baglan: 45.7% of high status respondents proved unwilling to consult the doctor on a non-medical matter, but 89.4% of low status respondents said that they could do so. The pattern of responses was the same between West Cross high and low status sites although differences were not statistically significant (Table 5.4c). This statement thus tests attitudes of respondents to the doctor, whether he could be used as a counsellor on non-medical matters.

A brief discussion of the results from this section in the light of previous findings tends to show that previously-noted class differentials have not emerged very distinctly in this study with regard to these aspects of the physician's behaviour. Cartwright and O'Brien (1976) and Buchanan and Richardson (1973) found a class-gradient in time allocated by G.P.'s to patients from different social classes. The length of face-to-face consultations fell from about 6 minutes with Social Class I patients to about 4.5 minutes with Social Class V patients. Although this research did not attempt to verify length-of-consultations (since this is normally done by measuring or recording consultations at surgeries), it would appear that none of the status groups actually perceive themselves to be hurried or to be allocated too short a time. The only indication of any difference was when (in statement 20) certain lower status respondents felt the doctor was rather brief in his explanations. There was actually a general worry about the short times allocated for appointments, as indicated previously (statement 9).

Cartwright (1964) has found that lower status persons are more likely to use a nurse as a source of information, whilst the present research suggests that, at present, low status respondents are as likely to feel that they are adequately informed as are high status respondents (statement 17), although the mean-scores for this statement were not high.

Where the greatest consistency with past studies was found was in regard to statement 23. Cartwright and O'Brien (1976) consider that working-class patients are more likely to ask the doctor's advice on a non-medical matter than are middle-class persons. This tendency was very distinct but Cartwright and O'Brien have also suggested that although lower-status persons may claim to be willing to consult a G.P. on a non-medical matter more often than do higher status persons, they actually do so only about

as often as do high status persons. However, the 'attitude of mind' towards this aspect of the service was found to be significantly different between the status groups in this current research.

Undoubtedly, research into these aspects of the consultation process is moving into a complex area. This research tends to suggest that the classical 'accepted' class differentials towards these micro-aspects of the service may not be as well-defined as past studies have suggested, which is a substantive finding in itself. Overall, the hypothesised class differences in attitudes to the physician's 'affective behaviour' and general levels of confidence in the doctor did not emerge convincingly. It appears that even a number of carefully designed stimulus statements have been unable to elicit many significant differences. Thus, it may be concluded that micro-sociological features such as the physician's 'affective behaviour' do not produce many significantly-different attitudes amongst the different status groups and a generally high level of satisfaction with the physician's 'affective behaviour' has been evidenced.

So far, more significant differences in attitudes have been detected with regard to attitudes to the journey and distance to surgery and to administrative procedures. This is encouraging since the significant scales and subjects of investigation and of differentiation appear, arguably, to be those more appropriate to the expertise of the social geographer than is the examination of micro-sociological features; namely, aspects of spatial distribution and of administrative organisation. Also, general satisfaction with the doctor's behaviour supports the contention introduced in chapter 4 that there is little stimulus from this to move away from an existing doctor and that 'inertia' will therefore tend to maintain the relict patterns of surgery attendance found previously.

The final stage of this analysis moves to examine the remaining

attitude statements which concern certain general characteristics of the primary medical care system and levels of satisfaction with, and propensity of complaining about, the service on the part of respondents.

(4) Attitudes to General Factors

This final stage of analysis of aggregate attitudes moves to look at four more general items. The first statement (25) was aimed at persons who were in group practices to test whether any attachment was maintained for specific G.P.'s and thus is related to the 'affective behaviour' section previously discussed. The statement asked if the respondent would gladly consent to see any of the doctors in her practice. No significant class differences emerged and, generally, attitudes were divided towards this statement. In all sites, opinions were virtually equally divided between respondents who would willing see any doctor in the group and those who would consent to see only their own doctor.

Attitudes did not differ significantly by class for the remaining three statements although some points of interest with regard to levels of satisfaction emerged. Attitudes were rather unfavourable to statement 27 which suggested that doctors are too eager to give prescriptions for medicines to their patients. This tends to indicate a higher degree of discrimination upon the part of patients than might otherwise be assumed. To test satisfaction more directly, statement 28 asked whether respondents had considered complaining about any aspects of G.P. services. No significant differences emerged between the three status-different sites and a generally high level of satisfaction was recorded overall. However, over 10% of respondents in all these sites felt that they might have complained about some aspect of the service.

In Blaen-y-Maes (Site 1), 44% of the (low status) respondents claimed to have considered complaining and, as mentioned earlier, a number of these

respondents had actually been 'struck off' their doctor's lists and sent elsewhere. This sort of response is possibly related to a lower regard for certain aspects of 'affective behaviour' in this site - for example, regarding the physician's devotion (statement 15) and to receptionists' politeness (statement 10). In the Foresthall site (Site 2) only 16% of respondents felt a complaint could have been necessary (Figure 5.5f). Overall, however, general satisfaction with the present doctor was high in all sites (statement 26). 76% of respondents in Blaen-y-Maes and 77.5% in Foresthall were either satisfied or very satisfied with their present G.P. Rates of satisfaction were also high in West Cross, where over 90% of high status respondents and 84.5% of low status respondents were satisfied. The Baglan sites recorded similar proportions responding favourably to this statement, 86% of high status respondents and 93.5% of low status respondents either agreed or strongly agreed that they were satisfied with their present G.P. and would not consider a change. However, in Penllergaer, rather more low status respondents recorded dissatisfaction - 17.6% in all, whilst only 6% of high status respondents did so. This finding appears consistent with less-favourable attitudes recorded in this area which were discussed previously, especially with regard to receptionist behaviour (statements 7, 8 and 10), waiting time (statement 4) and convenience (statement 2). It is worthwhile reiterating that this dissatisfied element attending the large health centre in Gorseinon appears discontent with aspects of travel, convenience and administrative procedures rather than with the physician's 'affective behaviour'. Attitudes to 'affective behaviour' did not appear to differ, on balance, very much over most areas. It therefore appears that attendance at the large health centre may be a factor inducing some degree of overall dissatisfaction with the service.

(5) The Class Differentials Reassessed

The previous discussion was based upon attitude responses by all respondents in each site surveyed. Despite being designated as broadly 'high status' or 'low status' sites, a certain overlap is inevitable due to certain numbers of respondents in each site who belong to the very broad-ranging Social Class III as shown in Table 3.14a. It has also become customary to further subdivide Social Class III into 'manual' and 'non-manual' groups, but the majority of Social Class III respondents in this survey were in the manual category. The distinctive 'high' status and 'low' status biases of each site are contributed to by the numbers of persons in each who belong to Social Classes I and II and Social Classes IV and V respectively. To take the analysis a stage further, it was decided briefly to examine the attitudes displayed by respondents in Social Classes I and II compared with those in Social Classes IV and V. The exclusion of Social Class III respondents meant that the totals involved in each category were reduced and therefore a detailed statistical analysis has not been presented here but, rather, a comparison of response patterns over each statement. This is to identify whether any noticeable differences emerge between these response patterns and the aggregate patterns, or between the two contrasting groups. To avoid repetition only results of interest will be discussed, whilst all mean-responses for these groups have been tabulated for illustrative purposes.

The removal of respondents in Social Class III from consideration did not, in the vast majority of stimulus statements, produce a mean score which differed very much from the original aggregate mean response. It did, however, emphasise certain differentials in attitudes. For example, with regard to attitudes to the journey to surgery (statement 1), the low status respondents situated distant to facilities in Blaen-y-Maes (site 1) were

Table 5.6

MEAN ATTITUDE RESPONSES TO STIMULUS STATEMENTSSocial Classes I and II (high status) and
Social Classes IV and V (low status)

Site	No. of Respondents included	Statement No.										
		1	2	3	4	5	6	7	8	9	10	
(1) Blaen-y-Maes S.C. IV and V	22	2.91	3.86	4.04								
(2) Foresthall S.C. IV and V	27	4.04	4.44	4.07								
(3) West Cross S.C. I and II	36	4.44	4.47	3.75	3.17	4.08	4.42	4.33	4.17	3.44	4.11	
(4) West Cross S.C. IV and V	21	3.66	4.38	3.90	3.24	3.24	4.24	4.33	3.76	3.66	4.14	
(5) Penllergaer S.C. I and II	34	3.82	4.03	3.76	2.79	3.91	4.53	4.27	3.59	3.62	4.38	
(6) Penllergaer S.C. IV and V	34	3.06	2.88	3.00	2.26	3.94	4.68	3.15	2.97	3.35	3.32	
(7) Baglan S.C. I and II	23	3.22	3.83	3.39	2.70	4.09	4.48	4.26	4.17	2.61	4.30	
Baglan S.C. IV and V	24	2.87	3.87	3.46	2.83	4.17	4.33	4.46	3.54	3.46	3.58	

Table 5.6 (contd)

MEAN ATTITUDE RESPONSES TO STIMULUS STATEMENTS
Social Classes I and II and Social Classes IV and V

	Statement No.													
	11	12	13	14	15	16	17	18	19	20	21	22	23	24
(1) Blaen-y-Maes IV & V														
(2) Foresthall IV & V														
(3) West Cross I & II	4.33	3.94	3.50	4.47	3.58	3.19	3.22	4.05	3.92	3.61	3.92	4.72	3.33	3.81
(4) West Cross IV & V	4.38	4.10	3.90	4.38	3.81	3.90	3.29	3.95	3.52	3.62	4.1	4.1	3.24	4.0
(5) Penllergaer I & II	4.65	4.21	4.41	4.62	3.85	4.06	3.56	4.09	3.76	3.56	3.85	4.03	2.94	4.24
(6) Penllergaer IV & V	4.41	3.68	4.09	4.26	3.32	4.35	3.09	3.88	3.56	3.53	4.21	4.26	3.71	3.85
(7) Baglan I & II	4.26	3.74	3.65	4.43	3.52	4.26	3.39	3.87	3.39	3.65	3.69	4.13	2.65	3.65
(8) Baglan IV & V	4.17	3.54	4.21	4.17	3.37	4.29	2.92	3.42	3.33	3.12	3.91	4.12	4.33	3.67

Table 5.6 (contd)

MEAN ATTITUDE RESPONSES TO STIMULUS STATEMENTS
Social Classes I and II and Social Classes IV and V

	Statement No.					
	25	26	27	28	29	30
(1) Blaen-y-Maes IV & V						
(2) Foresthall IV & V						
(3) West Cross I & II	2.97	4.39	2.39	3.94	2.22	3.37
(4) West Cross IV & V	2.95	4.14	2.95	4.24	2.76	2.33
(5) Penllergaer I & II	3.12	4.35	3.09	3.97	3.0	3.53
(6) Penllergaer IV & V	2.79	4.00	2.68	3.88	2.82	2.00
(7) Baglan I & II	2.61	4.00	1.52	3.83	2.17	3.43
(8) Baglan IV & V	3.10	4.29	2.92	4.0	2.79	2.21

found to have an even less-favourable attitude than those situated nearby the health centre (Foresthall), when compared with the aggregated attitudes displayed between these sites (Table 5.6).

West Cross high status respondents produced a more favourable attitude to distance involved than did their low status counterparts, although over the Penllergaer and Baglan areas, differentials were not enhanced noticeably. A similar emphasis of differences was seen with regard to statement 2 for the pair of low status sites although differences were not altered to any degree over the other three areas.

It was, as previously, in the stimulus statements concerning distance and certain items of administration involved in visiting the G.P. that class differences were emphasised. Statements 29 and 30, concerning attitudes to health centres and group practice and to appointment systems, produced stronger results than in the aggregate analysis, over a majority of the sites (Table 5.6). However, attitude differences regarding the physician's 'affective behaviour' were not much altered. Only isolated items produced any noticeable differentials: statement 15, concerning the doctor's devotion to patients, produced a slightly less-favourable attitude amongst low status respondents in Penllergaer and Baglan, which had not been as strongly evident when all respondents from these sites had been included in the analysis. Statement 23, which had provided some significant differences at the aggregate level concerning the likelihood of approaching the doctor on a non-medical matter, produced broadly the same response patterns although differentials were not altered to any great degree.

Overall, this second level of analysis seemed to vindicate the adoption of an areal sampling framework, in which sufficiently well-differentiated areas may be designated as 'high status' or 'low status' and a sample randomly selected on this basis. The adoption of a 'quota

sample' whereby sampling would proceed until a required number of respondents of each social class (high or low) will therefore not be necessary since attitudes appear reasonably consistent between respondents within areas and a random sample whereby the first 'n' respondents in the area are interviewed may suffice. It would appear possible that some 'neighbourhood effects' may contribute towards consistencies in attitudes; these were discussed in chapter one and have been examined by Johnston (1976) who considers them to be the 'structural effects' which are sought by the urban geographer. Ecological studies which test for the existence of such effects require three data sets, referring to individual predispositions towards certain behaviour, to the distribution of individuals with those predispositions, and to the resultant behaviour (Johnston, 1976).

The current research has collected these types of information as well as other types of behaviourally-oriented information. Attitudinal information and locational information have already been analysed and therefore, only a certain amount of utilisation information remains to be examined.

(6) Age and Attitudes to Medical Services

In the preceding analysis, it was assumed that the attitudinal variations noted reflected the influence of the social status of respondents in the three areas of socially-different populations and some aspects of social status and differential access for the pair of low status sites. It is now proposed to investigate whether the socio-demographic feature of the age of respondents has any consistent effect upon attitudes to medical services. The analysis presented in chapter four of the age of respondents and surgery attended did not produce any significant differences over the survey areas with regard to this factor.

However, it is possible that some of the attitudinal differences related more closely to the age-structures of the samples (which were

discussed at the end of chapter three) than to pure differences in social status. Indeed, certain attitudes are often felt intuitively to be more appropriate to older or younger persons. It is possible that, for example, older persons find the journey to surgery more difficult than do younger persons; hence, concentrations of older persons might lead to biased opinions. Other aspects of the consultation process might be found to have age-specific attitudes. It might seem reasonable that differences in attitudes might prevail amongst respondents who remember the days prior to the 1948 N.H.S., sometimes thought of as times when a more 'personal' form of general practice was available from the 'board' or 'panel' doctor. It is also possible that these older respondents might find it less easy to adjust to, or to approve of, modern large practices and administrative procedures, than do persons brought up under the 'cradle to grave' system of the N.H.S.

Therefore, this section examines attitudes with regard to the age of respondents. For this analysis, the same age-groupings as were used in chapter four were employed: 18 - 35 years; 36 - 55 years and 56 + years. For the purposes of this section, respondents in West Cross (Area 2, high and low status), Penllergaer (Area 3, high and low status) and Baglan (Area 4, high and low status) were combined together. The constraint of social stratification was therefore removed although the spatial constraints were maintained. In the pair of low status sites (Blaen-y-Maes/Foresthall), the spatial constraint was relaxed to allow the combination of the two sites for this analysis. In the first instance, all stimulus statements were examined although only certain of these will be chosen for illustrative purposes. A summary of the χ^2 values for the selected statements is provided in Table 5.7 whilst full tabulations for these statements are included in Appendix 5, Tables A - K,

Table 5.7

SUMMARY OF
AGE GROUPS AND ATTITUDE DIFFERENCES
RESPONSES TO SELECTED ATTITUDE STATEMENTS

(χ^2 Tables)

(Full tabulations are presented in Appendix 5, Tables A - K)

χ^2 Values

AREA	Statement No.										
	1	3	7	8	15	19	23	26	27	29	30
1. Blaen-y-Maes/ Foresthall	6.27	5.38	2.57	5.52	15.15*	3.56	4.93	4.11	6.57	4.15	4.10
2. West Cross	5.95	3.66	20.94*	<u>10.92</u>	4.96	<u>10.65</u>	12.50	0.94	10.97	8.09	11.49
3. Penllergaer	9.57	16.44*	16.62*	23.86***	<u>10.90</u>	14.27*	10.71	11.79*	<u>14.70</u>	4.59	8.77
4. Baglan	10.22	20.55**	14.39*	20.32**	<u>11.08</u>	13.26*	10.92	9.77*	<u>14.15</u>	3.96	7.97
d.f.	6	6	6	6	6	6	8	4	8	8	8

<u>significance levels:</u>	***	0.001	<u>4 d.f.</u>	<u>6 d.f.</u>	<u>8 d.f.</u>
			18.46	22.46	26.12
	**	0.01	13.28	16.81	20.09
		(0.02	11.67	15.03	18.17)
	*	0.05	9.49	12.59	15.51
	<u>0.10</u>		7.78	10.65	13.36

(i) Attitudes to Journey and Distance to Surgery

The first stimulus statement did not provide the hypothesised direction of attitudes according to age, since it appeared that older respondents were as likely to express an unfavourable attitude towards the journey to surgery as were younger respondents. No significant differences were found over the four survey areas with regard to statement 1. However, in statement 3, concerning the possibility of being discouraged from attending surgery because of the travelling involved, younger age-groups appeared more likely to be discouraged than older respondents. In both Baglan and Penllergaer, younger respondents were more likely to express an unfavourable attitude to this part of the consultation process. The difference was not as well-marked in the Blaen-y-Maes - Foresthall area, nor in the West Cross area, where local facilities were used by a number of respondents (Table Appendix 5B).

(ii) Attitudes to Administrative Procedures

Statements 7 and 8, concerning attitudes to receptionists and to their apparent shielding of the doctor from his patients, produced some of the most well-defined age-differences in attitudes. In all the three different-status areas (West Cross, Penllergaer and Baglan), significant and highly significant differences were noted. In both the Baglan and Penllergaer areas, the younger age-group and, to a lesser extent, the middle age-group more often found that the receptionists were unfriendly or likely to attempt to 'shield' the doctor from his patients, whilst the older age-group did not feel that this was so. There was a tendency also for this to be apparent in Blaen-y-Maes/Foresthall, although statistically significant age-differences were not obtained (Table 5.7). The West Cross area produced a considerable number of older persons who were uncertain of the influence of receptionist staff, probably as a result of the high rates of attendance

at the local branch surgery which usually employed no receptionists (Table Appendix 5C). Thus, the administrative procedures associated with receptionist staff produced the most marked differences in attitude by age over most areas.

It was surprising, therefore, that attitudes to appointment systems, which had been found to be unfavourable amongst most low status respondents, did not vary significantly according to the age of respondents in any area. Table Appendix 5K illustrates that the hypothesis that older respondents would be less likely to approve of the use of appointment systems was not supported, since significant differences in attitudes to appointment systems (statement 30) according to the age of respondent were not found. It appears, therefore, that considerations of social status are more likely to cause attitude differences with regard to this feature than is the age of a respondent. Similarly, attitudes to group practices and health centres (statement 29) did not differ significantly according to age, which might have been expected since such practices have often only emerged over the past ten years (Table Appendix 5J). The generally unfavourable attitude to this form of organisation was shared by all age-groups.

(iii) Attitudes to the G.P.'s 'Affective Behaviour'

Re-examination of the statements concerning the doctor's 'affective behaviour' according to the age of respondents did not produce many significant differences. Statement 15, concerning the devotion shown by the physician produced a weakly significant tendency for older persons to be more likely to find the doctor to appear devoted or interested, over all areas except West Cross (Table Appendix 5E). However, statement 19, which asked if the doctor appeared genuinely concerned, did produce significant differences. In West Cross, Penllergaer and Baglan, and less strongly in Blaen-y-Maes/Foresthall, the older age groups showed a more

favourable attitude towards this aspect of 'affective behaviour'. This statement had not provided significant differences when attitudes had been examined by social class alone (Table 5.4c) which illustrates the importance of examining other behavioural variables. Conversely, statement 23, which asked if the doctor could be a suitable person to approach on a non-medical matter, had provided highly significant differences according to social class but did not appear to produce significant attitudes according to the age of respondents (Appendix 5G). It may thus be concluded that certain aspects of the 'affective behaviour' model are status-specific whilst attitudes to some other aspects of it are influenced by the age of respondents.

(iv) Attitudes to General Factors

Finally, two statements of a more general nature will be discussed. Statement 26, regarding the likelihood of a respondent changing doctor, showed that younger aged respondents were significantly more likely to change their G.P. due to dissatisfaction (Table 5.7) in both Penllergaer and Baglan, although such significant levels were not found in West Cross or Blaen-y-Maes/Foresthall.

Statement 27, which suggested to respondents that doctors might be too eager to give prescriptions for medicines, was earlier found to indicate a generally unfavourable attitude which did not vary significantly according to social status. When analysed by age of respondent, this statement showed a slight tendency for younger age-group respondents to display a less favourable attitude to over-eager prescribing. Although this was not highly significant (Table 5.7), the same pattern of responses was visible over all four survey areas (Table Appendix 5.1).

This further level of analysis has been useful to indicate that certain behavioural variables may be of explanatory significance regarding attitudes

to primary medical care. Younger age-group respondents appeared more likely to report an unfavourable attitude towards receptionists and their behaviour, whilst older respondents found the G.P.'s 'affective behaviour' more to their liking for some statements. This level of analysis has also indicated that some attitudes may be age-specific, rather than status specific, a point which is of importance in the planning and development of facilities in certain areas. These results suggest that populations should be disaggregated with respect to age in future behavioural research of this nature if more complete explanations of attitudes and satisfaction are to be obtained.

(7) Attitudes and Length of Time with Practice

To conclude the analysis of attitudes to general practitioner services, one more item was included. Age itself was previously shown to have certain effects upon respondents' attitudes and a related variable is 'length of time with the doctor's practice'. A working hypothesis was adopted that respondents who had been attending a practice a longer time might express more favourable attitudes towards certain of the statements.

Attitudes were therefore examined in conjunction with the length of time respondents had been attending their practices. The same area groupings were used as in the analysis of attitudes and age and an attempt was being made to answer the question posed at the end of chapter four, "why do the relict patterns of travel to surgeries persist?". It was hypothesised that those respondents who had attended the same surgery for a long time period (over 5 years) might have a more favourable attitude to the service and thus a partial explanation at least might be found of why such patterns of surgery usage are maintained. However, the results overall were very disappointing in this section and few significant differences in attitudes were found with regard to the length of attendance at the practice by

respondents. A partial answer must therefore lie in the generally high levels of satisfaction (particularly with the doctor's personal attributes) which leads to there being no great stimulus to change practices. Consequently, inertia may contribute the maintenance of the relict patterns of utilisation, as suggested earlier in this chapter and in chapter four,

Table 5.8 indicates the length of time respondents in each site had attended their surgeries. In all areas, the proportions of low status respondents who had been attached to their surgeries for more than 10 years were considerably higher than the corresponding proportions of high status respondents, which was expected due to higher rates of mobility in higher status areas. However, to achieve the numbers necessary for statistical analysis, the combined sites in each survey area were examined.

Few statements provided any significant differentiation of attitudes according to length of attendance at practice. Statement 22, which asked if respondents thought the doctor would send them for appropriate investigations, provided some differences. In the Blaen-y-Maes/Foresthall area, newcomers to their surgeries were more likely to express doubts about this than were older attenders. Newcomers in the West Cross area similarly were more likely to express such doubts concerning this statement and the same pattern of responses was seen in Penllergaer although statistical significance was not reached.

No other statement provided statistically significant response patterns according to length of attendance over more than one survey area. In West Cross, newer patients were more likely to state that they were not usually reassured by the doctor than were longstanding attenders (statement 24) and were more likely to express a willingness to change doctor because of dissatisfaction (statement 26). An element of loyalty to practitioners with greater length of time attending the surgery was thus apparent. The

same directions of attitudes were seen in Blaen-y-Maes/Foresthall and in Penllergaer although attitude differences were not statistically significant.

Finally, newcomers to Penllergaer expressed more willingness to complain about the service (statement 28) and the same trend was evident in Blaen-y-Maes/Foresthall. This also suggests an element of loyalty to practitioners by patients of longer-standing, which could contribute towards 'inertia'.

However, when considered overall, there was only weak differentiation of attitudes according to the length of time respondents had been attending their surgeries. This may suggest that all respondents receive similar treatment from the service, from receptionists and doctors, irrespective of the length of time they have been attending the surgery. Alternatively, it may mean that respondents very quickly sum up the situation in their surgeries and adapt their attitudes accordingly. Either of the latter explanations could account for the apparent lack of differentiation in attitudes according to length of time respondents have been attending their practices.

It is noticeable that the few statements in this section which were significantly different concerned aspects such as the propensity to complain or levels of reassurance received, rather than attitudes to the surgery or administrative features. The latter factors are likely to affect respondents equally, regardless of the length of time they have been attending their surgery. The other factors might be differently perceived by newer and older patients who may differ in the loyalty or faith they feel for their doctors. However, in the absence of more well-defined patterns of results regarding this variable more firm conclusions than these cannot be drawn.

Changes of Doctor caused by Dissatisfaction

It was earlier suggested that the generally high levels of satisfaction with the services leads to there being no great stimulus to change doctors because of dissatisfaction, contributing to 'inertia'. Such a conclusion is supported by data from the survey. Table 5.9 shows the proportion of respondents in each site who had changed surgeries in the five years prior to the survey and the reasons for such changes. Few respondents in any site changed because of dissatisfaction and the main reason for change was a move on the part of the respondent or the retirement of a doctor. Fewer low status than high status persons had changed doctor at all during the previous five years as shown earlier in Table 5.8, whilst between one quarter and a half of high status respondents had done so.

The main site in which dissatisfaction was cited as a reason for a change was Blaen-y-Maes, in which 10% of respondents had changed doctor during the previous five years for this reason. At least three of these five respondents had been removed from their doctors' lists following disagreements. Noticeably, however, no respondents in the Penllergaer survey area reported dissatisfaction as a reason for a change, despite the highest levels of dissatisfaction being found there. This is a direct result of the monopoly which the single health centre in the area enjoys and 'dissatisfied customers' have no alternative surgery to attend.

On balance, it did appear that low status respondents were marginally more likely to have changed doctors as a result of dissatisfaction than were high status respondents. For example, in Baglan, 8.51% of low status respondents had changed because of this whilst only 4.35% of high status respondents had. The low numbers involved in these changes do not, therefore, invalidate the concept of inertia encouraged by satisfaction and lend support to the findings of fairly high overall satisfaction with the service.

This is a direct contrast with the North American context in which Kasteler and co-authors (1976) have reported 48% of upper-income and 37% of lower-income families in a sample changing doctors within a one year period due to dissatisfaction with some aspect of care. Such findings have led them to term this behaviour 'doctor-shopping', which certainly does not appear to exist at present within Britain.

SUMMARY

The initial analysis of attitudes to certain identified parts of the process of consulting a G.P. examined in this chapter produced a number of interesting results. In the pair of low status sites, distance and the journey to surgery were more likely to be unfavourably regarded in the site situated further from the medical services. This feature of distance has appeared to cause persons in this site to travel to central city surgeries as presumably when the facility becomes beyond easy walking distance, necessitating the use of public transport, a number of alternatives may be considered.

In the three areas of low status and high status sites, low status respondents' attitudes to distance and journey to surgery were consistently less favourable than those of their higher status neighbours. This accorded with the hypothesised expectations based upon relative levels of personal mobility in the respective sites. A less well-marked difference in willingness to change surgeries for the sake of convenience of accessibility was noted. More low status respondents agreed that they might change surgeries for this reason. Overall levels of satisfaction with the distance element to surgery were moderately favourable although in some areas, notably Penllergaer and Baglan, distance was perceived as a factor which might discourage surgery attendance.

Attitudes to administrative procedures such as the delay before seeing the doctor were rather unfavourable and attitudes to the time allocated for seeing the doctor were barely favourable. On balance, attitudes to receptionists' helpfulness were favourable although attitudes to their levels of politeness were less favourable. High levels of satisfaction were generally recorded regarding the physical features of the waiting room. However, with regard to status differences in attitudes to administrative procedures involved in consulting the doctor, these did not appear in as well-defined a manner as earlier reports have suggested, although the hypothesised directions were usually visible. The most significant class variations in attitudes to receptionists were seen in Penllergaer, where low status persons found the receptionists more obstructive, less helpful and less polite than did higher status respondents. Other than this, the most well-marked status difference was with regard to the use of appointment systems. Low status respondents on average expressed far less favourable attitudes to the use of appointment systems. It is interesting that a dislike of such systems coupled with difficulty in obtaining an appointment, should produce such a marked class difference in attitude, since the use of appointment systems clearly reflects the 'managerial perspective' discussed in chapter two which attempts to manage the doctor's time better and to order the behaviour of patients to suit this. Generally unfavourable attitudes to group practice-health centre organisation were recorded, without a significant class bias.

The main differences in attitudes do not appear with regard to the physician's 'affective behaviour' itself and the majority of respondents of all status groups felt that the physician was devoted, spending enough time on problems and showing sufficient interest. The suggested differences in time given to high and low status persons did not emerge convincingly.

However, certain low status respondents expressed doubts concerning the amount of information they were given regarding illness. A generally unfavourable attitude was expressed towards over-eager prescribing with higher status respondents being rather more critical of this. The hypothesised behaviour of lower status respondents being more willing to discuss non-medical matters with their doctor was clearly illustrated. Overall, confidence expressed in the G.P. was fairly high and not noticeably biased with regard to social status of respondents.

Thus, the micro-sociological features of the physician's 'affective behaviour' appear to be of subordinate importance, in differentiating class attitudes to medical care, to the more macro-features of the service such as administrative procedures and the journey. From this it follows that the Ben Sira model may be less useful for predicting and describing patterns of variation in levels of satisfaction and attitudes to medical care than would be a model which incorporated more items to measure administrative aspects and features of the journey. Ben Sira's 'affective behaviour' model may well include those items which contribute to the crystallisation of a layman's satisfaction with medical care but, in terms of the research objectives of this thesis, which are to determine differences between social groups as well as overall levels of satisfaction, adequate differentiation is not readily apparent for many items which are included in this model.

The later stages of analysis in this chapter examined attitude differences between respondents in Social Classes I and II and those in Social Classes IV and V, which did not substantially alter the original results but did emphasise certain differences in attitude.

The age-groupings to which respondents belonged were then examined in conjunction with their attitudes. Younger respondents were more likely to express less-favourable attitudes to the journey, and were also more

likely than those in the oldest age-groups to find the behaviour of receptionist staff displeasing. Certain aspects of the G.P.'s 'affective behaviour' appeared to be influenced by the age of respondent. Older age-groups were more likely to find the doctor was genuinely concerned with the outcome of an illness. Attitudes to appointment systems were not influenced by the age of respondent but rather by their social status.

Finally, attitudes were examined according to the length of time respondents had been attached to the practice. This variable did not appear to influence attitudes to any great extent although newcomers to the practices were more likely to criticise the service or feel less reassured by their doctor. It appears likely that the concept of inertia introduced earlier may help towards an understanding of which relict patterns of travel to surgeries are maintained in certain cases. With a generally favourable attitude to the G.P.'s personal behaviour and in the absence of many markedly-unfavourable attitudes, there may be no great stimulus to change surgeries either for one closer or for one in which other features are more to the consumers' liking. It is interesting to note that in the Penllergaer area, where a majority of respondents have no choice other than to attend a single health centre, the highest levels of dissatisfaction were recorded and the highest proportions of respondents stated they would consider a change of surgery were it possible. This latter element of inflexibility within the system may be an aspect worthy of attention from Community Health Councils in the future. It appears that in Britain, the position has not yet been reached as it has in the United States, where it was previously discussed that 'doctor-shopping' has become quite common due to dissatisfaction with aspects of the service (Kasteler et al, 1976).

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CHAPTER SIX : UTILISATION RATES OF
GENERAL PRACTITIONER SERVICES

CHAPTER SIX - UTILISATION RATES OF GENERAL PRACTITIONER SERVICES

Introduction

In chapter four an analysis of variations in places of attendance for primary medical care was presented. This chapter now moves to investigate rates of use of these facilities and the way in which rates of use are influenced by this spatial behaviour. In the overview of approaches to study of medical service usage which was presented in chapter one, the current debate concerning variations in rates of use of medical services by sub-sections of the population was introduced. Although it was not a primary aim of this research to clarify the position, it was apparent that the spatial and socio-demographic information collected during the course of the questionnaire survey might add to an understanding of what was evidently a complex issue.

It was felt that spatial aspects might be of considerable influence upon the behaviour of certain sections of the population. In chapter four, the effects which personal mobility had upon distances travelled to surgery were examined. A case could be argued that personal mobility is a more important consideration in cases where frequent attendance at facilities required. Thus, it could be proposed that for less mobile persons, the distance involved in travelling to surgery might provide a disincentive to attending surgery and might provide an incentive to request a doctor to make a domiciliary visit. Alternatively, other factors such as social status or age of respondent might prove to be of greater importance in influencing utilisation rates. It is not intended to provide a complete review of the debate surrounding this topic here as the discussion referred to in chapter one is the context within which this investigation lies.

Three basic confusions were identified in chapter one. First, a confusion was seen between the examination of the availability of services (structural) and their utilisation (behavioural). Secondly, inappropriate

data were often used to examine these two aspects. For example, selective data or data relating to highly specific services were used by a number of studies quoted in chapter one. In addition, behavioural-type data were being used to draw conclusions regarding service type and availability. Thirdly, a confusion is to be seen concerning the scales of investigation undertaken, both social-demographic scales and geographical scales. The debate has sometimes focussed upon aggregate figures for the use of various facilities as well as upon national figures for morbidity and mortality, where behavioural data disaggregating persons according to specified characteristics would be more appropriate, and national statistics have been quoted where local-scale survey statistics would be of greater value. Investigations of specific services have been used to draw general conclusions regarding utilisation behaviour of a wide range of services. It is, however, the use of inappropriate data which has probably contributed most to the confused picture which has arisen. In a sphere of research which is very suitable for the small-scale, locally organised social survey, these have seldom, if ever, been adequately performed.

Therefore, this research has presented rates of use unequivocally. It has not asked for self-assessments of health which are of dubious value, nor has it considered visits to medical services other than general medical services provided by the G.P. By this means, it was hoped to avoid confusions arising from comparisons of use-rates over a multiplicity of services (Titmuss, 1968; Rein, 1969; Alderson, 1970).

The methodology adopted was to examine consultation rates subdivided according to the place of consultation (either at the doctor's surgery or at the respondent's home) for the respondents themselves. By this means it was hoped to avoid loss of accuracy caused by respondents having to answer for other members of their household, although some information

concerning rates of use for children and spouses was collected.

A certain amount of doubt has been sounded as to how far questioning about retrospective behaviour yields accurate results. The shorter the time-period asked about, the more accurate are likely to be the results. However, since the average number of consultations per adult in Britain is thought to be about 3.8 visits to the doctor per year (Cartwright, 1969; O.H.E. 1974) and estimates of the number of home-visits per person per year range from 0.1 per person to 3.3 per person (OHE, 1974) questioning about a short period of, for example, one month, would be unlikely to produce many consultations. In addition, questioning concerning such a short time would become season-specific and, for a fair comparison to be made, all questionnaires would have to be completed at the same time of year. The questionnaire therefore sought information concerning utilisation behaviour during the past twelve months and to avoid the dangers of assigning absolute values to consultations they were grouped 0 (no consultations); one consultation only; 2 to 5 consultations; 6 to 10 consultations and 10 consultations or more, as described in chapter three (Questionnaire; Appendix 2). It has been thought that broad groupings such as these are likely to produce fairly accurate results overall (Cartwright, 1967) and for discursive purposes in the text, they were described:

Consultation Categories (Annual Consultation Rates)

No. of Consultations

0	non-user/non-attender	
1	infrequent	
2-5	'casual' or average user	
6-10	frequent	} grouped together for analysis
10+		

(1) AN INITIAL EXAMINATION OF CONSULTATION RATES(a) Surgery Attendance

Tabulations were prepared to show overall consultation rates and inter-site differences over the four survey areas. Table 6.1 shows surgery attendance rates, for which respondents themselves attended surgery. These are rates for all respondents in each site and no account is taken at this stage of demographic variations between respondents. In a number of ways, this is a fair comparison, since pairs of sites with approximately equal numbers of respondents in each were chosen in an objective manner with their main distinguishing factors being their different status levels. Therefore, the utilisation rates of respondent in the pairs of sites should be directly comparable and the 'burden' which any individual in a site places upon the 'system' could be compared with that of other persons in the other site. By this means it may be possible to identify if any sub-groups are placing a greater demand upon services.

An initial examination of figures in Table 6.1 shows a number of marked features. It is appropriate here to discuss surgery attendances by respondents according to survey areas:

AREA 1 - BLAEN-Y-MAES/FORESTHALL

This pair of low status sites displayed some differences in their surgery attendance rates, possibly attributable to the effects of a greater distance from facilities in Blaen-y-Maes. Attendance rates were generally higher in Foresthall (near to facilities) in the 'casual user' attendance category (2-5 consultations per year). 40.8% of respondents in Foresthall fell into this category, whilst only 28.0% of respondents in Blaen-y-Maes did. A larger proportion of respondents in Blaen-y-Maes, 38.0%, had attended surgery only once or not at all during the previous twelve months, whilst the corresponding proportion for Foresthall was lower, at 26.5%.

Table 6.1

SURGERY ATTENDANCE RATES
(DURING 12 MONTHS PRIOR TO INTERVIEW)

<u>Site 1. Blaen-y-Maes</u>			<u>AREA ONE</u>			<u>Site 2. Foresthall</u>		
No. of Visits	Respondents %	No.	No. of Visits	Respondents %	No.	No. of Visits	Respondents %	No.
0	22.0	11	0	16.3	8	0	16.3	8
1	16.0	8	1	10.2	5	1	10.2	5
2-5	28.0	14	2-5	40.8	20	2-5	40.8	20
6-10	12.0	6	6-10	8.2	4	6-10	8.2	4
10+	22.0	11	10+	24.5	12	10+	24.5	12
100.0 n=50			100.0 n=49					
<u>Site 3. High Status</u>			<u>AREA TWO:WEST CROSS</u>			<u>Site 4. Low Status</u>		
No. of Visits	Respondents %	No.	No. of Visits	Respondents %	No.	No. of Visits	Respondents %	No.
0	17.0	9	0	26.9	14	0	26.9	14
1	24.5	13	1	15.4	8	1	15.4	8
2-5	32.1	17	2-5	26.9	14	2-5	26.9	14
6-10	9.4	5	6-10	17.3	9	6-10	17.3	9
10+	17.0	9	10+	13.5	7	10+	13.5	7
100.0 n=53			100.0 n=52					
<u>Site 5. High Status</u>			<u>AREA THREE:PENLLER-GAER</u>			<u>Site 6. Low Status</u>		
No. of Visits	Respondents %	No.	No. of Visits	Respondents %	No.	No. of Visits	Respondents %	No.
0	35.4	17	0	27.4	14	0	27.4	14
1	16.7	8	1	11.8	6	1	11.8	6
2-5	29.2	14	2-5	19.6	10	2-5	19.6	10
6-10	4.1	2	6-10	17.7	9	6-10	17.7	9
10+	14.6	7	10+	23.5	12	10+	23.5	12
100.0 n=48			100.0 n=51					
$\chi^2=7.43$ d.f.=4 (N.S) With d.f.=2, $\chi^2 = 5.94$ Almost Sig. 0.05								
<u>Site 7. High Status</u>			<u>AREA FOUR: BAGLAN</u>			<u>Site 8. Low Status</u>		
No. of Visits	Respondents %	No.	No. of Visits	Respondents %	No.	No. of Visits	Respondents %	No.
0	30.4	14	0	25.5	12	0	25.5	12
1	23.9	11	1	12.8	6	1	12.8	6
2-5	26.1	12	2-5	25.5	12	2-5	25.5	12
6-10	8.7	4	6-10	14.9	7	6-10	14.9	7
10+	10.9	5	10+	21.3	10	10+	21.3	10
100.0 n=46			100.0 n=47					

This suggests that distance may be a discouraging feature to more regular attendance for respondents in the more distant site and was reflected in the previous chapter in a less-favourable attitude towards distance and journey to surgery which had been found on the part of respondents in this site. However, a similar proportion of respondents in both sites attended regularly or frequently (6-10 times or more than 10 times), which suggests that a chronic condition requiring unavoidable regular monthly or bi-monthly attendance might be involved to cause such high rates of use. Therefore, it is between the 'casual/average' user and non-user/infrequent user categories that a difference is apparent in this pair of sites. It will be recalled that a very similar age-structure existed between these two sites and bias from such a source is thus reduced. An initial suggestion could be that the additional distance involved in travelling may discourage the more distant respondent from attending on an average number of occasions and may 'convert' such respondents to non-attenders, infrequent users (or possibly to request domiciliary calls, which will be subsequently examined).

AREA 2 WEST CROSS

Again, in this area age-structure between sites was very similar (Table 3.14b). A very similar proportion of non-users and infrequent users was found in this pair of sites, 41.5% of high status respondents and 42.3% of low status respondents fell into these two categories. A slightly higher proportion of frequent and regular users was found in the low status site, however, 30.8% of low status respondents compared with 26.4% of high status respondents, although these were not statistically-significant differences. Therefore, this pair of sites did not display very marked differences in proportions of respondents attending surgery although a trend for somewhat higher rates of use amongst low status respondents was suggested.

AREA 3 - PENLLERGAER

The pair of sites in Penllergaer do, however, provide considerable contrast. Non-attenders and infrequent attenders, who comprised 52.1% of high status respondents, fell to 39.2% of low status respondents. 29.2% of high status respondents were 'average users' (2-5 attendances) compared with 19.6% of low status respondents but regular and frequent attenders, only 18.8% of high status respondents, rose to 41.2% of low status respondents, which is a more obvious direction of utilisation behaviour than found in West Cross.

AREA 4 - BAGLAN

These results were replicated in the Baglan area. As in Penllergaer, over half of the high status respondents were either non-attenders or infrequent attenders, 54.3% of high status respondents compared with 38.3% of low status respondents. Very similar proportions of respondents in both sites were in the 'casual user' category, 26.1% of high status and 25.5% of low status respondents. The low status respondent was far more likely to be a frequent or regular attender, 36.2% of low status respondents were in this category compared with only 19.6% of high status respondents.

Although statistical significance is only just reached in one of these three areas (Penllergaer) for patterns of attendance at surgery by social status, the consistency of direction of these results is worthy of note. This consistency tends to lend strength to the findings beyond that which is statistically significant. This is often the nature of social scientific research where, in an investigation of this type, clearly-defined differences will seldom emerge. A consistent trend across a number of areas is then probably of greater importance than isolated results of high statistical significance.

(b) Domiciliary Visits: Attendance by doctors to homes of respondents.

Table 6.2 shows home-consultation rates of respondents over the twelve months prior to the interview. As in the case of surgery attendance, statistically-significant differences were not found but a consistent direction of results was found. Overall home-visit rates in this survey, previously found to average over a range of studies from 0.1 to 3.3 per person annually (OHE, 1974), seem on balance to be within this accepted range. Few respondents in any site had received more than six home visits in a year and, where they had, this was usually related to chronic illness on the part of the respondent.

HOME VISITS - (TABLE 6.2)AREA 1 - BLAEN-Y-MAES/FORESTHALL

This pair of low status sites did exhibit certain trends, especially in that there was a tendency for respondents living in Foresthall (near to the health centre) to have called out the doctor on fewer occasions on average than had respondents living in the more distant Blaen-y-Maes site. A similar proportion of respondents in both sites had received one domiciliary visit (falling into the 'very infrequent' category) and similar proportions in both sites fell into the frequent-regular categories. As in the case of surgery visits, it was in the 'casual' or 'average' user category that a difference was noticeable between the two sites. Whereas 20% of respondents in the more distant site had received from 2 to 5 visits at home during the previous 12 months, only 6% of respondents in Foresthall had. This suggests that for a 'casual' user of the service, the disincentives posed by distance to the facility may possibly encourage a person to call the doctor rather than to attend surgery. This also relates to attitudes displayed which were discussed earlier when the more distant site respondents were more likely to report being discouraged from attending surgery because of the travelling involved.

Table 6.2

HOME VISIT RATES
(DURING 12 MONTHS PRIOR TO INTERVIEW)

<u>1. Blaen-y-Maes</u>			<u>AREA ONE</u>			<u>2. Foresthall</u>		
No. of Domiciliary Visits	Respondents		No.	No. of Domiciliary Visits	Respondents		No.	
	%				%			
0	56.0		28	0	65.3		32	
1	20.0		10	1	18.4		9	
2-5	20.0		10	2-5	6.1		3	
6-10	2.0		1	6-10	6.1		3	
10+	2.0		1	10+	4.1		2	
100.0			n=50	100.0			n=49	

<u>3. High Status</u>			<u>AREA TWO: WEST CROSS</u>			<u>4. Low Status</u>		
No. of Domiciliary Visits	Respondents		No.	No. of Domiciliary Visits	Respondents		No.	
	%				%			
0	77.4		41	0	61.5		32	
1	7.5		4	1	17.3		9	
2-5	15.1		8	2-5	15.4		8	
6-10	0.0		0	6-10	1.9		1	
10+	0.0		0	10+	3.9		2	
100.0			n=53	100.0			n=52	

<u>5. High Status</u>			<u>AREA THREE: PENLLERGAER</u>			<u>6. Low Status</u>		
No. of Domiciliary Visits	Respondents		No.	No. of Domiciliary Visits	Respondents		No.	
	%				%			
0	77.1		37	0	58.8		30	
1	10.4		5	1	23.5		12	
2-5	6.2		3	2-5	11.8		6	
6-10	2.1		1	6-10	2.0		1	
10+	4.2		2	10+	3.9		2	
100.0			n=48	100.0			n=51	

<u>7. High Status</u>			<u>AREA FOUR: BAGLAN</u>			<u>8. Low Status</u>		
No. of Domiciliary Visits	Respondents		No.	No. of Domiciliary Visits	Respondents		No.	
	%				%			
0	80.4		37	0	68.0		32	
1	8.7		4	1	17.0		8	
2-5	8.7		4	2-5	4.3		2	
6-10	0.0		0	6-10	4.3		2	
10+	2.2		1	10+	6.4		3	
100.0			n=46	100.0			n=47	

AREA 2 - WEST CROSS

Certain trends were noticeable in this pair of sites of differing status. High status respondents were less likely to have received a visit from the doctor at their homes than were low status respondents, 77.4% of high status respondents compared with 61.5% of low status respondents had not received a home visit from the doctor for themselves during the previous twelve months. This in itself is an interesting finding since it implies that higher-status persons may be placing a lesser burden upon the domiciliary-call workload of G.P.'s. 5.8% of low status respondents in this site had received six or more home visits whereas no high status site respondent had received this many visits. Similar proportions fell into the 'casual' user category, approximately 15% of both high status and low status respondents had received between two and five home visits, which suggests that neither status-group were using this part of the service differently. However, low status respondents were more than twice as likely to have received a single home-visit during the year; 17.3% of low status respondents had done so whilst only 7.5% of high status respondents had received such a visit.

AREA 3 - PENLLERGAER

These trends were seen again quite clearly in the Penllergaer site. 77.1% of high status respondents had not received a visit from the doctor during the previous twelve months compared with 58.8% of low status respondents and 10.4% of high status respondents had received a single visit compared with 23.5% of low status respondents. Therefore, it appears again that lower-status persons were more likely to call the doctor out for a single visit than were high status persons. In this pair of sites, both low status and high status persons received approximately the same proportion of 'frequent/regular' home visits - in both sites approximately 6% of the

total. 11.8% of low status respondents in this area were in the 'casual' user category compared with only 6.2% of high status respondents.

AREA 4 - BAGLAN

The same direction of results as found in the previous two survey areas was evident in Baglan. Again, high status respondents were less likely than low status respondents to have received a domiciliary visit at all during the twelve months preceding the survey. 80.4% of high status respondents and 68.1% of low status respondents had not received such a visit. Again, low status respondents were more likely to have received a single visit but in this site a small number more of high status respondents received between two and five home visits than low status respondents. However, 10.7% of low status respondents had received six or more home visits whilst only 2.2% of high status respondents had done so.

Thus, over all three status-different survey areas, low status respondents were more than twice as likely to have received at least one home visit during the year than were high status respondents. This could lend support to the suggestion that low status persons suffer more frequently from acute illnesses (Brotherston, 1976; Stacey, 1977), but this could also relate to a greater propensity amongst lower social status groups to 'call the doctor out'. In either case, it may be seen that, per capita, they appear to make as much use or even more use of their G.P. domiciliary visit facilities than do higher-status groups. Such a disposition to request a home visit could be a result of the less-favourable lower-status attitudes to the journey to surgery discussed in chapter five or could even be related to the less favourable low status attitudes to receptionist behaviour and attitudes to appointment systems found earlier.

(2) OUT-OF-HOURS CALLS TO THE DOCTOR

The previous section discussed domiciliary visits to the doctor requested as an alternative to visiting the surgery, which would normally take place during the day and which might be regarded as a 'usual' part of the G.P.'s workload. It is the nature of primary medical care that a certain proportion of workload is generated outside normal hours and, as was described in chapter two, a number of alternative ways of dealing with such work have evolved. Basically, a doctor can either manage his out-of-hours work by himself (or on a rota-basis with his partners), in a rota with other practices or by using a commercial 'deputising service' which have become common in most medium and large sized towns since the early 1970's.

Although visits requested out-of-hours are to some extent 'emergencies' many are of a less serious nature. Medical emergency cases are to some extent class related and associated with poor living conditions (Thomas and Phillips, 1978) whilst surgical emergencies are probably less so, but it was felt that, even if a full picture could not be given, an indication of the relative incidence of requests for out-of-hours visits from the doctor was necessary for the sake of completeness in this research.

Table 6.3 shows the frequency of out-of-hours visits by doctors to households during the twelve months prior to the survey. The few households with very high rates of use (two in Penllergaer and one in Baglan) relate to households which had chronically ill people in them. The method of presentation of this data is not ideal since it relates to households and will therefore be influenced by household size and demographic structure. However, since the respondent households are broadly comparable, this table may give a fair indication of, again, the direction of utilisation rates.

Table 6.3

OUT - OF - HOURS VISITS
(to Households)

SURVEY AREAS

Visits	(1) Blaen- y-Maes Foresthall		(2) West Cross				(3) Penllergaer				(4) Baglan					
	No.	%	No.	%	High Status	Low Status	No.	%	High Status	Low Status	No.	%	High Status	Low Status		
0	33	66%	39	79.6%	43	81.1%	38	73.1%	38	78.2%	28	54.9%	34	73.9%	32	68.1%
1	11	22%	6	12.12%	9	17.0%	11	21.2%	8	16.7%	15	29.4%	9	19.6%	6	12.8%
2-5	6	12%	4	8.2%	1	1.9%	3	5.8%	0	0.0%	8	15.7%	3	6.5%	8	17.0%
6-10	0	0%	0	0.0%	0	0%	0	0%	1	2.1%	0	0%	0	0%	0	0%
10+	0	0%	0	0%	0	0%	0	0%	1	2.1%	0	0%	0	0%	1	2.1%
χ^2	2.36		1.50				11.41				2.93					
d.f.	2		2				2				2					
sig.	NS		NS				0.01				NS					

When questioned, few respondents were aware of what system of out-of-hours cover their doctor operated, which was a fair reflection on the generally low proportions of respondents who had had occasion to request out-of-hours visit. As large a proportion as 81% of respondents in West Cross high status site had not required such a visit although this proportion fell to 54.9% in Penllergaer low status site. A considerable range was seen, therefore, in the proportions of respondents requiring an out-of-hours visit, although nowhere had more than 45.1% of respondents required a visit.

An examination of table 6.3 shows that, although rates of use of G.P. services out-of-hours were by no means high, distinctive class-related trends were apparent. There was no guidance to be found in the literature as to what results to expect, so the following findings may be regarded as largely in the nature of exploratory data.

Considering first the three status-different pairs of sites, the West Cross pair display broadly similar patterns, with more respondents households requiring one visit than 2-5 visits. However, slightly higher proportions of low status households had received an out-of-hours visit although the differences were not significant.

The Penllergaer area did, however, provide some significant differences between low status and high status behaviour. If the two frequent users of the out-of-hours cover are discounted in the high status site, then the trend is very noticeable for low status respondents to have received visits more frequently than had high status respondents. 15.7% of low status respondents had received between two and five visits whilst no high status respondents had done. 29.4% of low status respondents had received one visit whilst only 16.7% of high status respondents had.

Finally, in the Baglan area, the same trends were noted. Although slightly more high status than low status respondents had received a single

visit, 17% of low status respondents compared with 6.5% of high status respondents had received between two and five visits after hours.

The research design allowed a fairly balanced comparison to be made between sites in survey areas. Such differences as noted above could have been accounted for by differing age-structure, but the Penllergaer and West Cross sites were very well-matched (Table 3.14b). However, more low status households in Penllergaer had children under 5 who might have been expected to generate out-of-hours work, which might account for a portion of their high use of this aspect of the service. All pairs of sites had similar proportions of respondents over 66 years of age who might similarly require more after-hours visits, so this source of bias would be minimised.

Although no firm conclusions can be drawn from exploratory data of this nature, the consistency of direction of results does suggest that lower status households tend to receive more out-of-hours visits than do their high status neighbours. A number of possible explanations could be proposed for this which are speculative. For example, it could be that the lower status households suffer from a greater amount of acute illness requiring after-hours attention. Some support for this contention may be found since an association between council house residence and medical emergency admissions found (Thomas and Phillips, 1978) and all the low status survey sites were in council estates. Linked with this could be low education whereby a number of unnecessary requests for calls after normal hours are made since such persons may be less able to discriminate between conditions which require immediate attention and those which do not. However, substantive conclusions cannot be reached at the present time on this subject and it is an obvious area with considerable scope for future behavioural and attitudinal research.

(3) THE INFLUENCES UPON UTILISATION RATES OF DISTANCE TO SURGERY AND PERSONAL MOBILITY

Having discussed surgery attendance patterns reported by respondents and found certain consistent if not statistically significant trends, it was decided to investigate whether any features other than social status of respondents caused differentiation. The earlier empirical chapters of this thesis found that considerations of personal mobility were in some instances of importance to spatial behaviour in the choice of surgery attended and relict patterns of travel to surgeries had been found. Therefore, distance to surgery and means of attendance at surgery were analysed in an attempt to determine their effects, if any, upon rates of utilisation.

It would appear possible that respondents attending a more distant surgery make less frequent use of the surgery and might possibly request home visits more frequently than do respondents attending a nearer surgery. If this was found to be the case, then a good argument could be made for encouraging the use of nearby surgeries on a purely G.P. work load basis, since it is claimed that between five and six patients can be attended in the surgery during the time taken to visit one person at home. To test whether distance to surgery or means of transport used to reach surgery affected utilisation rates in any way, cross tabulations were prepared for each site for attendance at surgery on the part of the respondents themselves.

In this section also, the effects of distance were not anticipated. In chapter one it was discussed that in the Canadian rural environment, Girt (1973) had found distance to have an effect on consulting behaviour. However, this effect appeared to vary according to the hypothetical conditions, and it appeared to have both a positive and a negative influence. Individuals may become more sensitive to the development of disease the further they live from a physician but those at a distance might be more discouraged from actually consulting than persons living nearer because

of the additional effort involved. Although the distances involved in his study were much greater than in the present intra-urban study, it does appear that distance to facilities may be a factor influencing levels of utilisation, although the direction of this influence was not anticipated in the present study. In the British N.H.S. the option is also open for patients to request a domiciliary visit and therefore it was considered to be a possibility that the more distant or less mobile respondent might request a visit from the doctor in preference to attending surgery.

(a) Distance to surgery, means of transport and surgery attendance rates

Table 6.4 shows surgery attendance rates for respondents according to their distance from surgery. From these figures, it does appear that, in some instances, living within two miles of the surgery tends to increase the frequency of surgery attendance. In one of low status sites, Blaen-y-Maes, as well as in the West Cross high status site, higher proportions of respondents living within two miles of their surgeries had attended surgery more than once during the previous twelve months than those living at a distance greater than this. The respondents living further away from surgery were here less likely to have been casual or frequent attenders.

However, in the Foresthall, West Cross low status and Baglan low status sites, attendance at a more distant surgery did not appear to be associated with lower rates of attendance. Both groups of respondents living near to their facilities and those living at a greater distance appeared to have similar proportions of frequent attenders. There was a slight tendency, however, in Baglan low status for attendance at a more distant surgery to reduce the number of 'average' attenders (2-5 visits) and infrequent attenders (one visit only) and increase the proportion of non-attenders. About one-third of respondents in this site living at more than two miles from surgery had not attended at all during the previous twelve months.

Table 6.4

DISTANCE TO SURGERY X UTILISATION RATES
(SURGERY VISITS, % RESPONDENTS)

<u>1. Blaen-y-Maes</u>			<u>2. Foresthall</u>		
<u>AREA ONE</u>					
Surgery Visits	0-2 miles	2+ miles	Surgery Visits	0-2 miles	2+ miles
0	9.52	31.03	0	24.14	5.00
1	9.52	20.69	1	6.90	15.00
2-5	38.10	20.69	2-5	37.93	45.00
6+	32.86	27.59	6+	31.03	35.00
	100.00	100.00		100.00	100.00
	n=21	n=29		n=29	n=20

<u>3. High Status</u>			<u>4. Low Status</u>		
<u>AREA TWO: WEST CROSS</u>					
Surgery Visits	0-2 miles	2+ miles	Surgery Visits	0-2 miles	2+ miles
0	17.07	16.67	0	25.81	28.57
1	19.51	41.66	1	16.13	14.29
2-5	36.59	16.67	2-5	22.58	33.33
6+	26.83	25.00	6+	35.48	23.81
	100.00	100.00		100.00	100.00
	n=41	n=12		n=31	n=21

<u>7. High Status</u>			<u>8. Low Status</u>		
<u>AREA FOUR: BAGLAN</u>					
Surgery Visits	0-2 miles	2+ miles	Surgery Visits	0-2 miles	2+ miles
0	0.00	31.12	0	0.00	31.58
1	0.00	24.44	1	11.11	13.16
2-5	100.00	24.44	2-5	55.56	18.42
6+	0.00	20.00	6+	33.33	36.84
	100.00	100.00		100.00	100.00
	n=1	n=45		n=9	n=38

Table 6.5

MEANS OF TRANSPORT TO SURGERY X UTILISATION RATES
(SURGERY VISITS, % RESPONDENTS)

<u>1. Blaen-y-Maes</u>				<u>AREA ONE</u>	<u>2. Foresthall</u>			
<u>No. of Surgery Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>		<u>No. of Surgery Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>
0	0.00	21.43	28.57		0	25.00	6.25	0.00
1	0.00	16.67	14.29		1	8.33	18.75	0.00
2-5	100.00	26.19	28.57		2-5	37.50	43.75	57.14
6+	0.00	35.71	28.57		6+	29.17	31.25	42.86
	100.00	100.00	100.00			100.00	100.00	100.00
	n=1	n=42	n=7			n=24	n=16	n=7
<u>3. High Status</u>				<u>AREA TWO: WEST CROSS</u>	<u>4. Low Status</u>			
<u>No. of Surgery Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>		<u>No. of Surgery Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>
0	16.67	0.00	15.38		0	22.22	16.67	36.37
1	20.83	50.00	26.92		1	18.52	8.33	18.18
2-5	20.83	50.00	42.32		2-5	22.22	50.00	18.18
6+	41.67	0.00	15.38		6+	37.04	25.00	27.27
	100.00	100.00	100.00			100.00	100.00	100.00
	n=24	n=2	n=26			n=27	n=12	n=11
<u>5. High Status</u>				<u>AREA THREE: PENLLERGAER</u>	<u>6. Low Status</u>			
<u>No. of Surgery Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>		<u>No. of Surgery Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>
0	0.00	50.00	31.42		0	0.00	27.27	28.58
1	0.00	25.00	14.29		1	20.00	13.64	9.52
2-5	100.00	8.33	34.29		2-5	40.00	27.27	9.52
6+	0.00	16.67	20.00		6+	40.00	31.82	52.38
	100.00	100.00	100.00			100.00	100.00	100.00
	n=1	n=12	n=35			n=5	n=22	n=21
<u>7. High Status</u>				<u>AREA FOUR: BAGLAN</u>	<u>8. Low Status</u>			
<u>No. of Surgery Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>		<u>No. of Surgery Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>
0	0.00	23.08	34.38		0	15.38	30.00	16.67
1	0.00	15.38	28.12		1	15.38	15.00	8.33
2-5	100.00	30.77	21.88		2-5	46.16	15.00	25.00
6+	0.00	30.77	15.62		6+	23.08	40.00	50.00
	100.00	100.00	100.00			100.00	100.00	100.00
	n = 1	n=13	n=32			n=13	n=20	n=12

The availability of a car by which to travel to surgery appears to be associated with higher rates of attendance, especially amongst the low status respondents (where car ownership rates are lower, however)(Table 6.5). This is seen quite clearly in Foresthall, Baglan and Penllergaer low status sites although not as distinctly in West Cross. However, the availability of a car does not appear to influence high status attendance rates to the same degree and a relatively even spread of respondents with a car available may be seen over all attendance-rate categories in the survey sites. Bus travel amongst low status does not appear to influence attendance rates uniformly and its effects are not marked in any survey site. However, for the few high status respondents who reported attending surgery by 'bus, this does appear to be associated with lower rates of attendance in Penllergaer although not in Baglan.

In chapter four, mode of transport used to reach surgery was found to be associated with distance travelled to surgeries and respondents with cars available were usually more likely to attend a more distant surgery than were respondents with no car available. The nearness of good 'bus routes to central areas was also found to be of significance in that they allowed low status respondents especially to attend more distant surgeries. Public transport availability appears also to be a permissive factor allowing low status respondents to use facilities at quite high consultation rates. Car availability appeared to be a factor associated with higher attendance rates for low status respondents.

(b) Distance to surgery, means of transport and home-visit rates

To investigate whether an increased distance to surgery or lower mobility rates were associated with an increased propensity to request home-visits from G.P's, two additional cross tabulations were prepared (Tables 6.6 and 6.7).

Table 6.6

DISTANCE TO SURGERY X UTILISATION RATES
(DOMICILIARY VISITS, % RESPONDENTS)

<u>1. Blaen-y-Maes</u>			<u>2. Foresthall</u>		
<u>AREA ONE</u>					
Home Visits	0-2 miles	2+ miles	Home Visits	0-2 miles	2+ miles
0	52.38	58.62	0	65.52	65.00
1	19.05	20.69	1	20.69	15.00
2-5	23.81	17.24	2-5	3.45	10.00
6+	4.76	3.45	6+	10.34	10.00
	100.00	100.00		100.00	100.00
	n=21	n=29		n=29	n=20

<u>3. High Status</u>			<u>4. Low Status</u>		
<u>AREA TWO: WEST CROSS</u>					
Home Visits	0-2 miles	2+ miles	Home Visits	0-2 miles	2+ miles
0	75.61	83.33	0	67.74	52.38
1	9.76	0.00	1	19.36	14.29
2-5	14.63	16.67	2-5	12.90	19.04
			6+	0.00	14.29
	100.00	100.00		100.00	100.00
	n = 41	n=12		n=31	n=21

<u>7. High Status</u>			<u>8. Low Status</u>		
<u>AREA FOUR: BAGLAN</u>					
Home Visits	0-2 miles	2+ miles	Home Visits	0-2 miles	2+ miles
0	100.00	80.00	0	77.78	65.79
1	0.00	8.89	1	22.22	15.79
2-5	0.00	8.89	2-5	0.00	5.26
6+	0.00	2.22	6+	0.00	13.16
	100.00	100.00		100.00	100.00
	n=1	n=45		n=9	n=38

Table 6.7

MEANS OF TRANSPORT TO SURGERY X UTILISATION RATES
(DOMICILIARY VISITS, % RESPONDENTS)

<u>1. Blaen-y-Maes</u>				<u>2. Foresthall</u>			
<u>AREA ONE</u>							
<u>No. of Home Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>	<u>No. of Home Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>
0	0.00	54.76	71.43	0	66.67	75.00	57.14
1	100.00	21.43	0.00	1	20.83	25.00	0.0
2-5	0.00	19.05	28.57	2-5	4.17	0.00	14.29
6+	0.00	4.76	0.00	6+	8.33	0.00	28.57
	100.00	100.00	100.00		100.00	100.00	100.00
	n=1	n=42	n=7		n=24	n=16	n=7
<u>3. High Status</u>				<u>4. Low Status</u>			
<u>AREA TWO: WEST CROSS</u>							
<u>No. of Home Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>	<u>No. of Home Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>
0	75.00	50.00	80.77	0	62.96	58.33	72.73
1	12.50	50.00	0.00	1	22.22	16.67	9.09
2-5	12.50	0.00	19.23	2-5	14.82	25.00	9.09
				6+	0.00	0.00	9.09
	100.00	100.00	100.00		100.00	100.00	100.00
	n=24	n=2	n=26		n=27	n=12	n=11
<u>5. High Status</u>				<u>6. Low Status</u>			
<u>AREA THREE: PENLLERGAER</u>							
<u>No. of Home Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>	<u>No. of Home Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>
0	100.00	75.00	77.14	0	20.00	72.72	61.90
1	0.00	16.67	8.57	1	80.00	18.18	14.29
2-5	0.00	8.33	5.72	2-5	0.00	4.55	19.05
6+	0.00	0.00	8.57	6+	0.00	4.55	4.76
	100.00	100.00	100.00		100.00	100.00	100.00
	n=1	n=12	n=35		n=5	n=22	n=21
<u>7. High Status</u>				<u>8. Low Status</u>			
<u>AREA FOUR: BAGLAN</u>							
<u>No. of Home Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>	<u>No. of Home Visits</u>	<u>Walk</u>	<u>Public Transport</u>	<u>Car</u>
0	0.00	76.93	84.38	0	76.92	75.00	58.34
1	100.00	7.69	6.25	1	15.38	15.00	25.00
2-5	0.00	7.69	9.37	2-5	0.00	5.00	8.33
6+	0.00	7.69	0.00	6+	7.70	5.00	8.33
	100.00	100.00	100.00		100.00	100.00	100.00
	n=1	n=13	n=32		n=13	n=20	n=12

Mode of transport used to reach surgery did not have a consistent relationship with frequency rates of home visits. It might be expected that respondents requiring public transport to attend surgery could display a greater tendency to request a domiciliary visit but this was not visible in a significant form in any site. Thus, possibly surprisingly, ease of attendance (or difficulty of attendance) does not appear to increase or decrease the propensity for respondents to require home visits.

Distance to surgery does seem to influence to an extent the number of home visits received. This is not apparent over all survey areas but in both high status and low status sites in Baglan, there is a tendency for some respondents attending a more distant surgery to have received a greater number of home visits. Low status respondents in West Cross also appear to include a greater proportion of respondents attending a more distant surgery who have received six or more home visits than those attending a nearby surgery. However, since this tendency is not well developed over other survey areas, it may be concluded that, at this level of investigation, considerations of social status appear to be of greater importance in influencing rates of home visits received from doctors than are considerations of distance to surgery and of personal mobility. This might lend partial support to the suggestions made in an earlier study, quoted in chapter one, which found that the more distant patients in an urban practice did not necessarily place a greater burden upon the G.P.'s home-visit workload. In that study it was suggested that only 'acceptable' or less troublesome persons might be allowed to remain registered with the G.P. if they lived beyond a two mile radius (Hopkins *et al.*, 1968).

(4) AGE AND UTILISATION RATES

The possibility that the age of respondent might be a factor influencing the rate of use of primary medical facilities required consideration. This

was examined using the same age-groupings as were employed earlier in the research: 18-35 years, 36-55 years and 56 years and older. As was discussed in chapter one, age has been identified as a factor directly influencing utilisation behaviour. Within younger age-groups of female respondents is the possibility of an increased usage of medical services associated with bearing and raising of children. Use-rates may then reduce in middle age-groups to increase once more with older age. It was felt that it might be instructive to examine in this concluding chapter whether this assumed sequence was visible in the survey sites or whether it is a possibly oversimplistic assumption.

Tables 6.8 (surgery attendance) and 6.9 (home visits) show consultation rates according to age of respondents. It is fair to say that a simple age-related use pattern does not emerge although a number of important points may be seen.

Over all survey sites except Penllergaer low status site, the most frequently attended category for surgery attendances amongst the young age-group was 2-5 attendances. In all the sites, over half the young respondents had attended more than 2-5 or 6 occasions.

In contrast to this, the oldest age-group, especially in the Baglan, Penllergaer and West Cross low status sites, had significant proportions of respondents who had not attended surgery at all during the previous twelve months. Over 40% of the 56+ age group in West Cross and Baglan low status sites had not attended. Conversely, the oldest age-group also have high proportions of regular/frequent attenders (6 or more visits) 45.5% in Blaen-y-Maes, 35.7% in Foresthall, 43.8% in Penllergaer and 33.3% in Baglan. This pattern suggests that older respondents may either be non-attenders or frequent attenders (possibly associated with chronic conditions requiring regular examinations). Interestingly, although not tabulated

Table 6.8

AGE AND SURGERY ATTENDANCE RATES
(% Respondents)

<u>1. Blaen-y-Maes</u>				<u>2. Foresthall</u>			
<u>AREA ONE</u>							
Surgery	Age Groups			Surgery	Age Groups		
Visits	18-35	36-55	56+	Visits	18-35	36-55	56+
0	28.57	9.10	18.18	0	7.14	14.29	28.57
1	10.72	18.18	27.27	1	0.00	19.05	7.14
2-5	32.14	36.36	9.10	2-5	64.29	33.33	28.57
6+	28.57	36.36	45.45	6+	28.57	33.33	35.72
	100.00	100.00	100.00		100.00	100.00	100.00
	n=28	n=11	n=11	n=14	n=21	n=14	
<u>3. High Status</u>				<u>4. Low Status</u>			
<u>AREA TWO: WEST CROSS</u>							
Surgery	Age Groups			Surgery	Age Groups		
Visits	18-35	36-55	56+	Visits	18-35	36-55	56+
0	7.14	16.67	23.81	0	0.00	17.39	43.47
1	28.57	22.22	23.81	1	16.67	21.74	8.70
2-5	35.72	33.33	28.57	2-5	50.00	26.09	21.74
6+	28.57	27.78	23.81	6+	33.33	34.78	26.09
	100.00	100.00	100.00		100.00	100.00	100.00
	n=14	n=18	n=21	n=6	n=23	n=23	
<u>5. High Status</u>				<u>6. Low Status</u>			
<u>AREA THREE: PENLLERGAER</u>							
Surgery	Age Groups			Surgery	Age Groups		
Visits	18-35	36-55	56+	Visits	18-35	36-55	56+
0	23.08	42.86	35.71	0	31.25	21.05	31.25
1	7.69	19.05	21.43	1	12.50	21.05	0.00
2-5	46.15	28.57	14.29	2-5	12.50	21.05	25.00
6+	23.08	9.52	28.57	6+	32.75	36.85	43.75
	100.00	100.00	100.00		100.00	100.00	100.00
	n=13	n=21	n=14	n=16	n=19	n=16	
<u>7. High Status</u>				<u>8. Low Status</u>			
<u>AREA FOUR: BAGLAN</u>							
Surgery	Age Groups			Surgery	Age Groups		
Visits	18-35	36-55	56+	Visits	18-35	36-55	56+
0	26.09	31.58	50.00	0	23.08	18.18	41.67
1	21.74	31.58	0.00	1	15.38	0.09	16.67
2-5	30.43	15.79	50.00	2-5	38.46	27.27	8.33
6+	21.74	21.05	0.00	6+	23.08	45.46	33.33
	100.00	100.00	100.00		100.00	100.00	100.00
	n=23	n=19	n=4	n=13	n=22	n=12	

Table 6.9

AGE AND HOME VISIT RATES
(% Respondents)

<u>1. Blaen-y-Maes</u>				<u>2. Foresthall</u>			
<u>AREA ONE</u>							
Home Visits	Age Groups			Home Visits	Age Groups		
	18-35	36-55	56+		18-35	36-55	56+
0	57.14	63.64	45.46	0	71.43	66.67	57.14
1	25.00	18.18	9.09	1	14.29	14.29	28.57
2-5	14.29	18.18	36.36	2-5	7.14	9.52	0.00
6+	3.57	0.00	9.09	6+	7.14	9.52	14.29
	100.00	100.00	100.00		100.00	100.00	100.00
	n=28	n=11	n=11		n=14	n=21	n=14
<u>3. High Status</u>				<u>4. Low Status</u>			
<u>AREA TWO: WEST CROSS</u>							
Home Visits	Age Groups			Home Visits	Age Groups		
	18-35	36-55	56+		18-35	36-55	56+
0	92.86	72.22	71.43	0	83.33	69.57	47.83
1	7.14	5.56	9.52	1	16.67	13.04	21.74
2-5	0.00	2.22	19.05	2-5	0.00	17.39	17.39
	100.00	100.00	100.00	6+	0.00	0.00	13.04
	n=14	n=18	n=21		100.00	100.00	100.00
					n=6	n=23	n=23
<u>5. High Status</u>				<u>6. Low Status</u>			
<u>AREA THREE: PENLLERGAER</u>							
Home Visits	Age Groups			Home Visits	Age Groups		
	18-35	36-55	56+		18-35	36-55	56+
0	76.93	80.95	71.43	0	62.50	63.16	50.00
1	15.38	4.76	14.29	1	31.25	21.05	18.75
2-5	7.69	4.76	7.14	2-5	6.25	10.53	18.75
6+	0.00	9.52	7.14	6+	0.00	5.26	12.50
	100.00	100.00	100.00		100.00	100.00	100.00
	n=13	n=21	n=14		n=16	n=19	n=16
<u>7. High Status</u>				<u>8. Low Status</u>			
<u>AREA FOUR: BAGLAN</u>							
Home Visits	Age Groups			Home Visits	Age Groups		
	18-35	36-55	56+		18-35	36-55	56+
0	78.26	78.95	100.00	0	61.54	68.18	75.00
1	13.04	5.26	0.00	1	30.77	18.18	0.00
2-5	8.70	10.53	0.00	2-5	0.00	4.55	8.33
6+	0.00	5.26	0.00	6+	7.69	9.09	16.67
	100.00	100.00	100.00		100.00	100.00	100.00
	n=23	n=19	n=4		n=13	n=22	n=12

because of the small numbers involved, the over 66 years age group appeared to have even greater proportions in the non-attender category.

Among the middle age-group (36-55 years), high status respondents had high proportions of non-attenders and infrequent attenders in Penllegaer and Baglan, with over 60% of respondents in these two sites falling into such a category. This tendency is reversed when low status respondents in the middle age-group are considered, and 57.9% in Penllergaer, 72.7% in Baglan, 72.7% in Blaen-y-Maes, 66.6% in Foresthall and 60.9% in West Cross low status sites attended 2 or more times during the year. Large proportions of these were in the regular/frequent attendance categories. This suggests that social status considerations play a considerable part in influencing behaviour between similar age-groups of differing status. Additionally, low status middle age-group respondents do not appear to exhibit lower use rates than do other age-groups, whilst the high status middle age-groups do tend to have lower attendance rates than their younger and older neighbours.

Somewhat different patterns are visible when domiciliary visits are examined with regard to age of respondent. There is a consistent pattern over all survey sites except Baglan high status (where there were smaller numbers involved) for older age-group respondents to have received proportionately more home visits in the average and regular/frequent categories (2-5 visits and 6 or more visits) than had younger age-groups. This might accord with the expectation of a higher incidence of illness in later life, when levels of personal mobility might be lower.

Between the two younger age-groups there is not, however, a consistent pattern of use rates over all sites although in the three low status sites of West Cross, Penllergaer and Baglan, the middle age-groups have received more 'average' and 'frequent' home visits than have younger respondents.

Thus, the low-status middle age-group appear to receive proportionately more domiciliary visits as well as attending surgery more frequently. This does not conform to the expectation that younger age-groups may use the services more. It appears instead that middle age-group respondents of low status and, to a certain extent, of high status, are placing proportionately greater demands upon the home visit side of the service.

Age of respondent does, therefore, appear to be related to rates of use of services but not exactly as in the proposed way. Considerations of social status still appear to be important since the same age-groups of different social status tend to display somewhat varying patterns of use rates and any conclusions reached upon the influence of age of respondent upon these rates would therefore tend to be status-specific.

SUMMARY

This chapter has attempted to place in perspective the question of utilisation rates of G.P. services first, in actual attendance levels found amongst respondents at their surgeries and rates of receipt of domiciliary visits and secondly, in comparative terms of differential utilisation rates found amongst respondents of differing social status in the survey areas. It was introduced in the first chapter of this thesis that such investigations in the past have been characterised by a number of confusions of scale, scope and service. Therefore, by adopting the approach in this research of asking respondents approximate consultation rates (using categories of frequency of consultation) for G.P. services specifically, it was hoped to avoid the dangers inherent in erroneously drawing conclusions about one type of medical service from data referring to another type.

As was evident from the debate discussed in chapter one, the question of comparative rates of use of medical services is by no means easily

answered. An initial examination of frequency of attendance at surgery by the status groups showed that low status respondents consistently used their services more frequently on balance than did high status respondents. This difference was especially well-marked in Penllergaer and Baglan but less so in West Cross.

Under the existing N.H.S. arrangements, G.P. visits may be obtained to respondents' homes and differences were seen in the number of such visits received by respondents of differing social status. Over all the survey areas of differing status, the low status respondent was more likely to have received a visit at home from the doctor than was the high status respondent. This was also well-marked in the Penllergaer and Baglan survey areas and less well so in West Cross. The main difference was that the low status respondent was more likely to have received a single visit or between two and five visits at her home than was a high status respondent. The proportions of respondents receiving frequent and regular home visits were generally similar in all survey areas, possibly suggesting that similar proportions of 'chronic' sufferers might be responsible for such domiciliary visits. In such cases, British G.P's are still of the opinion that domiciliary visits are valuable in that they enable the domestic and social circumstances of patients to be assessed and they can assist in retaining patients in the community for as long as possible. This is not the same situation as obtains in the United States and parts of Europe, however, where home visits are either rarely or never performed or are very costly.

The greater incidence of domiciliary visits to homes of low status respondents could possibly be as a result of different illness patterns amongst the social classes or could be a reflection of an attitude whereby it is acceptable to call for a doctor rather than to attend surgery. This

could be promoted by a greater difficulty for low status persons to attend surgery which might encourage the use of the home-visit facility. It was earlier proposed that a geographical orientation to this problem might enhance the understanding of such utilisation behaviour. Therefore, the effects of differences in accessibility and in means of transport to surgery were examined.

A tentative suggestion may be made on the basis of this examination that increased distance from surgery did to some extent provide a disincentive for frequent attendance at surgery. Conversely, use of a surgery within easy walking distance also appeared associated with more frequent rates of attendance, irrespective of status of respondent, especially noticeable in the West Cross area.

Similarly, means of transport to surgery appeared to be of some significance to attendance rates. Low status respondents travelling by car appeared to use their surgeries more frequently than did their neighbours who used public transport. The availability of a car did not appear to influence high status behaviour to the same degree. The availability of public transport did, however, appear to allow low status respondents to attend surgery with reasonable frequency.

Similar investigations were carried out for home-visit frequencies. Somewhat surprisingly, ease of attendance at surgery (or, conversely, difficulty of attendance) did not appear to significantly influence rates of home-visits received. Distance to surgery was also found to be of little explanatory significance in this respect and there was generally no increase in home visits to respondents attending more distant surgeries. It may therefore be suggested that social status is a more important consideration influencing domiciliary visit rates.

The final behavioural variable to be examined for its effects upon

utilisation rates was the age of respondent. Consultation rates were disaggregated according to age and the expected increase in the use of services with increasing age was apparent for home visits but not consistently so for surgery visits. A large proportion of the oldest age-group had not visited surgery at all during the previous year whilst conversely, a similar proportion had visited regularly. Thus there is almost a dichotomy between non-attenders at surgery and regular attenders. This could possibly be associated with suffering from chronic ailments although this was not specifically examined. Higher rates of use for younger women (associated with childbearing) did not emerge convincingly when compared use-rates for the middle age-group women. Indeed, the middle age-group appeared to be placing a greater demand upon home visit services than were younger age-group respondents.

The results from what is essentially an exploratory examination of utilisation rates have necessarily been presented in an apparently simplified form in order that underlying associations may become apparent. As suggested earlier, this indeed emerges as a contentious area of study, but when discussed in association with the analysis of places of attendance presented in chapter four, the contributions of the social geographer become important. The necessity for a separate examination of surgery attendance rates and home visit rates has been emphasised, since essentially different sub-patterns of behaviour emerged. An area of considerable potential for future research was identified in the examination of out-of-hours demands on the service.

It appears that low status persons are, in general, placing greater demands upon all sections of their G.P. services than are high status groups. The question of whether this is a result of greater needs has not been addressed but is similarly an area in which considerable scope exists for future behaviourally-oriented research. Indeed, this is essential if further understanding of consultation behaviour is to be gained.

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CONCLUSIONS

CONCLUSIONS

At the outset of this research, a number of overlapping academic spheres of influence were identified and as a result of this, some form of integration or synthesis of aspects from each was proposed. This was felt to be essential in a research work which attempted to assess public attitudes to general practitioner services and which hoped to investigate comparative utilisation behaviour in relation to population characteristics, service characteristics and service location, since no single approach appeared to examine these matters comprehensively.

A basic aim of the research was to investigate and explain consumer behaviour within the field of primary medical care and to highlight recurrent trends and any problems in the service. In doing this, it was hoped that it would be possible "to feed to and to augment the body of knowledge concerning consumer behaviour in the setting of a personal social service" (chapter two, p.154). The use of a constrained research design would also hopefully enable emerging information to be used in an explanatory and predictive manner. This summary of conclusions will take the form of an attempt to indicate how far the original research objectives have been fulfilled. In a final section, the prescriptive power of the research will be discussed as well as indications for future research.

First, patterns of surgery attendance were investigated and some distinctive status-related patterns were found. The Penllergaer area provided an example of a near-monopoly situation in which respondents had no choice other than to attend their nearest health-centre in Gorseinon. Elsewhere, the nearest-centre hypothesis of central place theory proved to be largely inadequate in explaining a majority of attendance behaviour. Low status respondents appeared to attend either their nearest local facility (within walking distance) or to go beyond any intervening surgery to a more

distant facility. This behaviour was seen amongst both West Cross and Baglan low status respondents.

High status respondents in these areas were seen to attend local surgeries variably, although not necessarily their nearest, only infrequently travelling further afield than their local areas for a surgery.

The pair of low status sites illustrated the effects of distance upon attendance patterns. The Foresthall site, very close to a large health centre, had a majority of respondents attending this centre. In the more distant Blaen-y-Maes site, a majority of respondents attend surgeries in Central and Northern Swansea rather than this health centre.

An attempt to explain these patterns of attendance was undertaken in the light of earlier empirical behavioural studies of consumer behaviour. In particular, the effects of personal mobility, age and previous residence were investigated. The latter issue was included since the patterns emerging suggested that this might be an important explanatory variable. Modal split of transport used to attend surgery emphasised the importance of car-borne trips for high status respondents and of walking for low-status respondents. However, the availability of public transport routes to the town centre substituted to a considerable extent for car ownership amongst low status respondents and enabled them to attend far more distant facilities than they might otherwise have done.

Neither the age of respondent nor a child under 5 years of age living in the household appeared to influence the distance travelled to surgery. A possible reason for this was suggested as the more long-term commitment involved in attending a doctor than, for example, in retailing, where behaviour may be temporarily modified to meet life-cycle requirements.

'Place of former residence' was found to be a highly significant explanatory variable, involving in particular low status respondents who

had moved from inner-city areas and who had retained their connection with a G.P. in their old neighbourhood. Fewer high status respondents were influenced by this factor, since high status moves are often at the inter-urban scale, negating the possibility of remaining registered with a previous G.P. It was therefore suggested that certain 'relict patterns' of travel to surgeries persisted as a result and a concept of 'inertia' in attendance patterns was introduced. The results in this section seemed to emphasise that even today with official encouragement to attend local facilities, within broad limits, the choice of surgery remains a personal one except in the areas in which 'monopolies' are established (as in the Penllergaer survey area).

The next empirical section of the thesis examined public attitudes to, and associated levels of satisfaction with, the service, in conjunction with the research proposition that the consumer should enjoy a more active role in the planning of health services. By this means it was hoped to highlight any recurrent trends or problems in the service and to articulate methodically consumer opinion. This section examined attitudes to the distance and journey involved in attending surgery, attitudes to 'administrative procedures' encountered at surgery, attitudes to the interaction with the physician and attitudes to the service generally.

Overall levels of satisfaction with the mode of the physician's response or 'affective behaviour' were high and attitudes to this micro-scale aspect of the service did not significantly differ according to the social status of respondents. Low status respondents were, however, more prepared to approach the doctor on a non-medical matter than were high status respondents. Thus, this micro-scale of physician's 'affective behaviour' did not appear to be causing much dissatisfaction nor any great variations in attitudes. It was felt that this could contribute towards

'inertia' in surgery attendance since there was little incentive or pressure to change from this direction.

Less favourably received overall were statements relating to distance and to travel to surgeries. A consistent class-bias was seen, with low status respondents reacting less favourably to the journey and more low status than high status respondents stated that they might be willing to change surgeries for the sake of convenience.

In addition, a number of administrative procedures involved in attending surgery were not very favourably received. The physical conditions in the waiting room were generally deemed to be satisfactory but the behaviour of receptionist staff, their tendency to be unhelpful and to prevent access to the doctor, was unpopular. A class element was found with regard to receptionist behaviour and low status respondents on average found their behaviour less favourable. Attitudes in general were barely favourable to the delay before seeing the doctor and to time allocated for consultations.

A generally unpopular feature was the trend towards group practices and modern centralisation of facilities into health centres although the modern facilities offered were appreciated. There was no significant class difference in this respect. More significantly, a very distinctive class-bias appeared in attitudes to the use of appointment systems in surgeries. Low status responses were very unfavourable whilst high status responses were, on average, more favourable. This is a disturbing matter since the use of appointment systems is a clear reflection of the 'managerial perspective' discussed in chapter two, which attempts to order the behaviour of patients to suit a notional timetable. However, a significant proportion of high status respondents reacted favourably to the use of appointment systems and deliberately attended at main surgeries rather than branch surgeries because an appointment could be made. Therefore, no simple solution

may be proposed regarding the use or non-use of appointment systems due to this difference in attitudes and further investigation into this aspect of the service is required.

Certain general features of the service, such as over-eager prescribing, were unfavourably regarded, with no class-bias. Overall, however, levels of satisfaction with the medical aspects of the service were high especially with the physician himself. The micro-scale of investigation of the doctor-patient relationship appears therefore to be of subordinate importance to investigations of geographical features such as distance to surgery and administrative features such as practice and surgery organisation.

Age of respondent affected certain attitudes expressed, as did the length of time respondents had been attending a particular doctor. Older age-groups tended to find the behaviour of receptionist staff more favourable than did younger age-groups. Surprisingly, young age-groups found aspects of the journey less satisfactory. Older age-group respondents were more likely to report that they found the doctor himself appeared genuinely concerned and interested in their problems. Age of respondent did not significantly influence attitudes to the use of appointment systems but social status was more important in this respect. Respondents who had attended their surgery for a longer time-period appeared more 'loyal' to their doctors and this general satisfaction appeared to reinforce the 'inertia' referred to previously and did not provide incentive to change doctors. Only a small proportion of respondents in each site had changed doctors because of dissatisfaction and the habit of 'doctor-shopping' which has become common in North America was not evident in this research.

Finally in the empirical section of this thesis, rates of use of general practitioner services were investigated. A number of interesting

trends emerged. Overall consultation rates were similar to national average figures found in other studies but consistent class consultation-biases were found. Low status respondents appeared on balance to be using their services more frequently than high status respondents. This was found for both visits to surgery and for visits to respondents' homes by the doctor. Geographical features of increasing distance did appear to have some effect of providing a disincentive for frequent surgery attendances. Conversely, attendance at a surgery within walking distance appeared to be associated with higher rates of consultation amongst both high and low status respondents.

Similarly, means of transport used to attend surgery was found to have some influence on attendance rates. The availability of a car appeared to be associated with higher attendance-rates amongst low status respondents but did not appear to affect high status rates. Public transport also appeared to allow low status respondents to attend surgery fairly frequently. Somewhat surprisingly, these geographical considerations of distance and of means of transport to surgery did not seem to influence home-visit rates and social status itself appeared to be a more important differentiating variable in this respect.

The age of respondent did not consistently affect consultation rates although increasing rates of home visits were found for the oldest age-group. However, this was not the case for surgery visits. The oldest age-group of respondents appeared, in fact, to be divided between those who were regular surgery attenders and non-attenders. Amongst the two younger age-groups attendance rates did not exhibit any clear trends and, indeed, the middle age-group appeared to be using the services generally more than the younger group.

This section did, therefore, add to the debate on usage introduced

in chapter one during the review of the literature. The somewhat different use patterns for surgery attendance and domiciliary visits emphasises the need to examine these separately. This area was identified as one of considerable potential for future behavioural research especially in conjunction with the examination of differential medical requirements. Ideally, a combined study by medically-qualified researchers working in conjunction with social scientists might prove fruitful.

The use of out-of-hours G.P. services was similarly identified as a subject of considerable potential for future research. Low status respondents' households in this survey appeared to use this part of the service more frequently than did high status respondents' households but a great deal of information concerning medical conditions involved in the use of such services is required for study of what will be a very interesting area for continuing research.

This research has therefore demonstrably added empirically to knowledge of the way in which population sub-groups use and view their primary medical facilities. The effects of previous residence, personal choice and 'inertia' have helped to point to deficiencies in the explanatory power of the nearest-centre hypothesis in the use of these services. Different class-attitudes to various administrative procedures and overall generally favourable attitudes to the physician's behaviour have been found. Finally, some additional empirical evidence has given insights into differential rates of usage of facilities. This has been specifically concerned with G.P. use-rates which hopefully avoids some of the pitfalls identified in earlier studies.

Since previous residence, age, personal mobility and distance have all been implicated as having some degrees of influence upon usage of, and

attitudes to, general practitioner services, the importance of including behavioural variables in research on this subject has been emphasised. The explanatory and predictive power of these and other variables identified in this research would encourage their inclusion in any future modelling undertaken of medical service utilisation.

The research design adopted appeared to have been broadly adequate for the purpose of the study. Of course, in detail it is retrospectively evident that a number of alterations would be possible. In particular, the balance of stimulus statements in the questionnaire could now justifiably be altered to include more statements concerning attitudes to distance and to specific aspects of administrative procedures, as these are the areas of main concern identified in the research. These could relate especially to a breakdown of difficulties encountered by respondents on the way to surgery (travelling, parking); at the surgery (receptionist behaviour, delay); and after surgery (returning home, prescription filling). Fewer statements would need to be included concerning the physician's 'affective behaviour' since this was largely favourably viewed by most respondents, although this could not have been anticipated in view of the literature discussed.

An alternative method of undertaking such a research project could arguably be to sample a number of surgeries and to select a sample of their patients to interview with a similar behavioural questionnaire. In this way, results could be more specifically related to types of practice and to catchment areas. The main drawback in this sort of investigation would naturally be gaining a sufficient sample of local general practices in an area willing to co-operate in such a sensitive area of research. The results from this current study could be quoted as a reassurance that personal

qualities of physicians were not being questioned but that a more general investigation into what form of service delivery was most popular was to be undertaken.

In the absence of such a research design, the use of an areal sampling framework has been valuable in delimiting defined, comparable areas for social survey. The empirical-behavioural research design by which juxtaposed sites of known social composition were chosen has proved of considerable utility in highlighting sub-groups of the population whose differential behaviour could be related to a known set of available services. This design was especially valuable in the current area of research since results to be expected were largely unknown whereas, for example, in the retailing sphere there are now a number of studies available to which reference may be made.

The research has added to knowledge of the problem if only in emphasising the complex nature of the topic. The broadly interdisciplinary or integrative approach needed in such an investigation should not discourage social geographers from attempting this sort of research. With the expertise of spatial as well as social investigation, they are uniquely qualified amongst social scientists to undertake a study of medical service usage and to understand this behaviour in the majority of its implications. Most research almost invariably raises more questions than it answers and by this means, fruitful avenues for future investigation become apparent. It was with this in mind that a medical-social geographical orientation was proposed at the outset, as opposed to more traditional medical geographical research aimed at examining disease and illness incidence.

To relate the findings of the research to the original literature, it

will be apparent that, from the earlier review of approaches, a more comprehensive approach to the study of utilisation behaviour has been developed. The empirical findings from the survey have suggested that, of the earlier models proposed, the Gross model (Figure 1.4) including behavioural components probably holds the greatest possibilities for explaining behaviour. However, this research has not proposed a conceptual orientation nor did it attempt a theoretical-behavioural explanation, since the need for a great deal more empirical work is evident before issues may be clarified. The research has emphasised the need for the inclusion of behavioural variables in any attempt to provide a theory of consumer behaviour in the health services. Possibly, of the models discussed in chapter one, the Gross model of behavioural components to explain utilisation in conjunction with Aday and Andersen's framework for access (Figure 1.5) which considers characteristics of the delivery system and of the population at risk as well as consumer satisfaction, together present a starting point for further study. This research has emphasised that these models generally need considerable clarification and that, to date, the models have been more in the nature of attempts to specify the problem rather than to resolve it. This does not exclude the possibility of a theoretical explanation of behaviour which will not only fit unique circumstances, but a great deal of empirical testing is required to obtain the necessary refinements of detail before such a theory may be developed.

The implications for primary medical care delivery in practical terms require mention, since the prescriptive power of any research is considered by some to be a measure of its ultimate value. The question of public attitudes to selected aspects of the service could be a matter to which

Community Health Councils could justifiably devote attention if they are to be effective 'watchdogs' of general practice which is, after all, that part of the NHS which deals with the majority of doctor-patient consultations.

This is especially relevant for matters such as the difficulty which some respondents claimed to encounter in making or obtaining an appointment or of travelling to surgery. It seems that general practice is becoming increasingly 'administered' both by the use of appointment systems and the increasing use of ancillary staff and, to date, no studies appear to have produced comprehensive coverage of the problem. In practical terms it would appear that despite the manifest unpopularity of impersonal group practices and the desire for a return to the 'family doctor' days, this is now a forlorn hope and therefore the worst features of this form of organisation, such as excessive bureaucratisation, should be controlled.

This is even more so since the physicians' personal behaviour seems broadly to be satisfactorily viewed. The form of delivery and the 'accessibility' of the doctor is therefore the key to future developments in the delivery of primary medical care. Personal choice in which surgery is attended still appears to operate at least to an extent, and since distance does not appear to greatly increase or decrease workload, possibly a more flexible official outlook may be possible. This would help avoid the type of situation as found in Penllergaer where a virtual monopoly by one service offering has developed which resulted in the most unfavourable overall attitudes to the service and the lowest levels of overall satisfaction.

For an academic researcher, the study of a personal social service is very rewarding, since there are always practical implications such as these to be gained from the work. For a social geographer, it is of interest to see that the meso-scale of contribution may in many ways be the most appropriate level of investigation of this subject. Finally, for social

scientists there is the knowledge that their research could, in the long term, be of practical application in improving the delivery of what is an essential public service. In this modest way, they may assist the development of what is still probably the most enlightened nationally-provided health service in the world.

APPENDICES

APPENDIX 1Analysis of Interdependence and Methods of Classification1A. Principal Components Analysis - Technical Aspects

Principal components analysis, like other factor analytical models, operates to provide economy of description in a large data set, the underlying principle being that the relationships between a number of interconnected variables may be summarised in terms of a smaller number of basic dimensions. In other words, a large number of measurements are replaced by a smaller number of measurements without the loss of much information, for convenience of interpretation and analysis of the data. The data set is transformed into one in which the 'composite variables' are mutually uncorrelated - these 'principal components' being new, composite variables, pairwise uncorrelated. "Each principal component is a linear combination of the observed variables, and these linear functions are chosen to be orthogonal" (Mather, 1976, p.215). In fact, there is a likelihood that the original variables have some intercorrelations, but there can be as many dimensions (or 'components') in the solution as there are initial variables, in which case it would be assumed that all the variables were independent at the start. Each of these components will explain a certain proportion of the total variability ('variance') within the data matrix and may be produced in order, according to the amount of variance explained.

The principal components are composites of the original variables. The first principal component is defined as that linear combination of variables which has the maximum variance of all linear functions derivable from the given variables. The second principal component is the linear combination of all linear functions of the given variables that are orthogonal to the first principal component, and so on (Mather, 1976).

The coefficients of the principal components are called 'principal component loadings' while the measurements of the principal components upon each of the individuals are termed 'principal component scores'.

There are a variety of ways to factor a data matrix. Johnston (1976) explains the two main alternatives succinctly, in that they differ in the way in which they treat the communalities, the entries on the major diagonal of the correlation matrix. Principal components analysis maintains unities as communality estimates. Thus, it is a closed model which accepts that all of the variance amongst the variables may be accounted for internally. Factor analysis accepts that there are external variables influencing those in the matrix; it isolates only the common variance. To do this, its communalities are estimates of that common variance, which is frequently done by entering in the main diagonal the squared multiple correlation between the relevant variable and the others.

If the input to a principal components analysis is a number of initial variables, then most computer programs provide the following output (After Mather, 1976):

- i) a copy of the raw data, where raw data is input.
- ii) means and standard deviations (where raw data is input).
- iii) the lower triangle of the correlation matrix.
- iv) eigen values and cumulative proportions of total variance.
- v) principal components loadings matrix.
- vi) proportion of the variance of each variable accounted for by principal components.
- vii) principal components scores (where raw data is input).
- viii) - rotated solutions if requested -

The first stage is therefore to be seen as the compilation of a correlation matrix, in which the figures in the diagonal define the total common variance ('communality') of the variable, which is to be distributed

amongst the factors. Thus, since the principal components solution treats all variance as common by maintaining the value of one in the diagonal column, one of the greatest problems of using a factor analysis model, that of estimating the size of the communalities, is eliminated. It may be argued that, since such early estimations do not have to be made, the principal components solution tends to produce the more reliable loadings.

The component loading matrix defines the correlations between each variable and the component as a whole. Each component or 'hybrid variable' may be identified from its significant loadings and, as stated previously, these loadings may be termed the coefficients of the principal components. The sum of the loadings squared provides a measure of the 'strength' of the component, and is known as the eigen value or 'latent root'. The size of the eigen value becomes smaller with the number of components derived and, as mentioned in the text, it is up to the researcher to decide upon the size of the eigen value below which components may be ignored.

The solution produced thus far is known as the 'primary' solution and this method is variance-maximising in its search for parsimony in the initial data - hybrid variables which account for the maximum variance are located. In the n-dimensional variable-space, it may be, therefore, that components/factors are associated with two clusters of variables. Thus, although the primary solution summarises the greatest proportion of the variance, it may produce components which are rather too generally structured for the purpose of precise interpretation. This has especially been seen in the past in the first and second 'primary' components. To overcome this problem, rotation techniques have been developed, which involve the rotation of component/factor axes to another best-fit position,

to obtain a notional 'simple structure'. The simplest rotation is an orthogonal one, in which the 90 degree axes are maintained, but more complex oblique rotations have been developed which allow relaxation of the constraint of orthogonality - i.e. they allow the components/factors to become correlated with each other.

The notion of 'simple structure' was introduced by Thurstone (1954), defined according to the following criteria:

1. each variable should load significantly on one or a very few factors.
2. there should be zero-loadings in each factor at least equivalent to the number of factors used in the rotation.
3. for every pair of factors, there should be several variables with zero loadings on one factor, but have significant loadings on the other.
4. for every pair of factors, a large proportion of the loadings should have zero values in both factors.
5. for every pair of factors, there should be only a small proportion of loadings with significant values in both factors.

Harman (1967, p.98) has summarised these above features.

The use of rotations has been the subject of a certain amount of debate, but now many geographers agree that rotations do, indeed, increase parsimony and interpretability, and make for an altogether tighter solution. The most commonly used rotation is the varimax procedure, employed in this research, whereby the primary components are rotated orthogonally, and more specific clusters of related variables are sought. This is accomplished by redistributing the variance of what are considered to be the most important primary components so that the medium value loadings are transformed into either high or low loadings. The resulting solution

summarises a similar amount of the original variance but the components can be interpreted as rather more precise dimensions of variation. An element of personal choice is involved in whether to use rotations and how many components to rotate, but it appears that the increased precision in the description of a factor is useful provided the investigator first examines the primary solution and is aware of the nature of the changes being imposed on the output.

It is also felt by some researchers that the orthogonality criterion introduces an unnecessary constraint on the researcher's ability to identify the proper structure of the underlying dimensions and a case is often proposed for the use of oblique rotations. An orthogonal solution may be seen as a special case of the more general oblique. Unfortunately, the application of an oblique method involves more analyst decision and experimentation (Johnston, 1976) and, in the present study, a promax rotation was applied (Hendrickson and White, 1964). In the present research, it actually did not provide a much more refined solution for any value of k , although the $k = 4$ solution has generally been found satisfactory (Hendrickson and White, 1964). Since the varimax rotation had provided a sound interpretive solution, and description being a main aim of this analysis, the oblique rotation was not employed in the final sampling framework.

A second source of controversy has involved the nature of the raw data to be input to any analysis, whether it should be transformed or remain untransformed. Purists argue that prior to using a parametric technique such as principal components analysis, variables should be tested for normality and, if necessary, normalised by transformation. However, many researchers do not state whether any data transformation has been undertaken, nor if any tests for normality in the data were employed.

Clark (1973) found that transformation of variables did alter the principal components solution, whereas Moser and Scott, (1961) found no differences in their results after blanket logarithmic transformation. Recent evidence suggests that the normality or otherwise of original variables is a fairly irrelevant consideration with regard to the application of principal components analysis (Roff, 1977), and that "normal or not, principal components analysis draws on only a very restricted source of relationships and, with large samples, will tend to draw attention to relationships that are strong enough regardless of distribution" (Roff, 1977, p.198). An optimistic view is that this provides confirmation of the 'robustness' of the technique of principal components analysis. Roff concludes that normalising transformations may be used as a check on results, in that, if the correlation matrix and principal components solution remain unaltered, then 'real' relationships and patterns have been located. If any differences are noted, then several options - including the analysis of scatter diagrams, rank correlations, and skewness might be useful.

The present research, as a check, carried out a blanket logarithmic transformation of the data, which reassuringly did not make a significant difference to either the importance, ordering or structure of the resulting components.

The program employed here was by P.M. Mather of Nottingham University, entitled FAC-2, with which program is available computational details. In conclusion, Mather's (1976, p. 239) observation is worthy of note "Principal components analysis is a robust technique. This does not provide an excuse for misusing it" Provided a rational choice of input variables is made and the statistical decisions and interpretations carefully undertaken, then this is a very useful summarising device to describe the patterns of statistical association between a set of variables.

1B. Classification by means of Cluster Analysis

"Classification is essentially the identification of groups of similar objects within the set of objects under study" (Mather, 1976, p.307). Two approaches to classification may be seen - the identification of groupings (classification proper) and the allocation of individuals to existing groups (discrimination). Classification may be divided into clustering methods (- for the extraction of discrete groups - either hierarchical, in which each group is part of another group at the next level of the hierarchy, or nucleated, in which the groups are discrete) and ordination methods which display in graphical form the inter-object similarities. Points, representing objects, are close together if their mutual similarity is high or they are far apart if their mutual similarity is low. Groups are thus represented by areas of high point density, and are evident from a visual check. Cluster analysis itself emphasises discontinuities whilst ordination methods display the continuity of the data.

Cluster analysis is a common term for techniques which seek to extract groups from data, and may be applied in many situations. Many methods of cluster analysis exist but basically may be differentiated according to whether they are:

- (a) divisive or agglomerative
- (b) hierarchical or nucleated

Agglomerative techniques build up groups, by a process of accumulation, from a set of individuals, whereas the reverse procedure is followed in divisive methods. Agglomerative methods are either hierarchical or nucleated. Hierarchical agglomerative methods are based on the idea that each group at one level is part of a larger group (in turn part of a universal cluster) at a next level. Alternatively, some structures may be better represented

in terms of discrete, non-overlapping clusters. Mather (1976) states that agglomerative methods are to be preferred on the grounds of computational speeds, since divisive methods tend to be slow when the number of individuals is increased to 100 or so. Agglomerative methods need much less computer time, although this time is still considerable for large values of n . For the purposes of this study, with $n = 700+$, divisive methods were unpractical, and most investigators of areal classifications have consequently relied upon the agglomerative type of method.

The agglomerative methods all begin with the construction of a 'similarity matrix' which indicates the 'distance' between observations. It is the means by which this matrix is calculated which creates the variety of types of agglomerative methods. Wishart (1970) in the 'Clustan 1A manual' (the program used in this study) lists eight types which are summarised:

(i) 'Nearest Neighbour', Single Linkage or 'Minimum' method

This is one of the oldest of the hierarchical clustering techniques. Groups (initially consisting of individuals) are fused according to the distance between their two closest members, fusing groups with the smallest distance. However, its 'space contracting' properties are known, and Wishart states that this tends to find 'straggling' clusters and will often be less successful with large populations because of 'chaining', when a hierarchical structure results in which individuals are added sequentially to one group. (The chance that an object will join an existing group rather than act as the nucleus of a new group may result in 'chaining').

(ii) 'Furthest Neighbour', Complete Linkage or 'Maximum' method

The converse of (i), the distance between pairs of groups is defined as the distance between their most remote members. This usually results in a hierarchical structure consisting of well-separated, compact groups. In contrast to (i), it is markedly space-dilating, since a group will tend

to recede from some points but move closer to none; but irregular results may be obtained because the similarity criterion is determined for only two individuals, and thus does not account for group structure.

(iii) Average Linkage method

By this method, the distance between groups is defined as the average of all the similarity coefficients for pairs of individuals, one from each cluster. Mather (1976) considers it is probably the most widely used of hierarchical clustering methods. It represents an early attempt to take account of group structure, and Wishart (1970, p.39) thinks it is 'reasonably well-behaved'. It is a space-conserving method, although less so than the centroid method (iv).

(iv) Centroid Sorting method

Sokal and Mitchener (1958) proposed this method whereby groups are depicted as lying in Euclidean space, and on formation, they are replaced by the coordinates of their centroid - the similarity coefficient is obtained by treating the two mean coordinate vectors of two clusters, and the distance between groups is defined as the distance between the group centroids (centres of gravity, multivariate means). Wishart considers the results obtained using centroid method often exhibit the 'chaining' effect although to a lesser extent than that found with the single-linkage method, although this is a matter of some debate.

(v) Median (Gower's method)

In using the centroid method, it is possible that if the sizes of the two groups to be fused are very different, the centroid of the group resulting from their fusion will lie close to, and possibly within, that of the larger group, and the characteristics of the smaller group are lost. Gower (1967) has proposed a modification by which the two groups are given equal weight, and the median may be used instead of the mean. This solution, however, is

only valid for distance coefficients in Euclidean space.

(vi) Lance-Williams' flexible method

In this method, the same general formula as in other methods to derive the distance between groups is used, except that the user has to decide a 'beta value'. This obviously adds another subjective decision to the analysis, although it has been found that a value of -0.25 produces reliable results similar to Ward's method (see viii).

(vii) McQuitty's method

McQuitty has produced a number of techniques, of which one is included in the Clustan Program, which may be used with all similarity coefficients, although again tending to 'chain' when populations are large.

(viii) Ward's method (Error Sum)

Wishart lists this as "possibly the best of the hierarchical options", and its use has been fairly wide. Ward (1963) proposed that at any stage of the analysis, the loss of information resulting from a fusion of individuals into a cluster may be measured by the total sum of the squared deviations of every point from the mean of the cluster to which it belongs. At each step in the analysis, the conjunction of each pair of clusters is considered, and those two clusters whose fusion yields the least increase in the error sum are united. This method finds minimum-variance spherical clusters, and Ward (1963, p.236) suggests its use for large-scale studies where $n > 100$. As mentioned in the text, this was the method finally selected for use in this analysis.

Everitt (1974), comparing the results of the single-linkage method, the centroid method and Ward's method, found that although the dendrograms produced by each method showed certain contrasts, a similar number of groups were identifiable in each solution. This illustrates the caution needed not only in choice of method but in the interpretation of any cluster analysis

results. Careful consideration of linkage coefficients in combination with dendrograms is needed, to provide a meaningful classification of a set of observations. Mather (1976) provides a useful review of the methods noted above, as well as of the more general properties of hierarchical strategies.

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APPENDIX 2

University College of Swansea. Department of Geography. Confidential Survey.

Attitudinal Survey of
Primary Health Care Provision

Date of Interview.....
Address..... Area of Interview..... Site No.....
.....
.....

Record of Calls

First (Interview Granted).. 1
First Recall " " .. 2
Second Recall " " .. 3
Refused .. 4

1. Housing Information

	detached	semidetached	terraced	flat	rooms
Pre-1918	1	2	3	4	5
Inter-war Private	6	7	8	9	10
Inter-war Council	11	12	13	14	15
Post-war Private	16	17	18	19	20
Post-war Council	21	22	23	24	25

2. Age Group of Respondent

18-25	26-35	36-45	46-55	56-65	66+
1	2	3	4	5	6

3. Sex
Male..... 1
Female 2

4. Residential Information

How long have you lived at this address?

Less than 12 months	1
1-3 years	2
4-5 years	3
6-10 years	4
11-20 years	5
More than 20 years	6

previous address/area of residence.....
How long were you there?..... Reasons for move to present
home?

Previous Area of Residence

N.A.	0	S. Wales	4
Same area	1	Wales	5
Swansea (Pt.Talbot/Br.Ferry/Neath	2	England ,....	6
25 ml. radius	3	Scotland	7
		Overseas	8

5. Occupancy of Household:

Some details about the people who live in this household:

How many people are there in this household?	males	.....	females
How many of these are under school age (-5)?	m	.....	f
How many are between 5 and 16 years?	m	.....	f
How many other adults?	m	.....	f
How many are past retiring age?(+65 men)	.....	m	.....
(+60 women)	.....	m	.....

If Less than 5 years:

How many times have you changed your practice in the last 5 years?

once only 1
 twice 2
 three or more 3

Probe for reasons for moves:

Why did you change: this most recent time time before time before

You moved 1
 Doctor moved/retired/died 2
 Dissatisfied with old doctor 3
 Other reasons (specify) 4

Moves: From Dr. to Dr.

Discuss moves: esp. with regard to reasons for dissatisfaction.

Surgery Location and Attendance

What distance is your doctor's surgery from your home (approximately)?

Is your practice the nearest one to you?

Yes definitely 1
 Some about the same 2
 No, definitely 3
 Not certain 4

Code: Distance? miles

0- $\frac{1}{4}$	.....	1
$\frac{1}{4}$ - $\frac{1}{2}$	.....	2
$\frac{1}{2}$ -1	.....	3
1-2	.....	4
2-5	.....	5
5+	.....	6

Surgery:

Nearest/Second Nearest 1
 Third or more distant 2

If Not Nearest,

Why did you not go to the nearest? Reasons and comments:

Surgery Premises: Code:

Purpose-built modern surgery premises 1
 Purpose-built older surgery premises 2
 health centre 3
 converted shop premises 4
 converted house premises 5
 from a surgery in his own home 6

If Branch Surgery, what sort of premises? (1-6 above)

Attendance

Have you consulted your doctor at his surgery at all during the past 12 months?

	<u>On Own Account</u>	<u>For Child</u>	<u>Husband</u>	<u>Other</u>
Never	0			
once only	1			
2-5 times	2			
6-10 times	3			
more than 10 times	4			

During the past 12 months, have you had a visit at your home from the doctor?

	<u>For self</u>	<u>For Child</u>	<u>Husband</u>	<u>Other</u>
Never	0			
once only	1			
2-5 times	2			
6-10 times	3			
more than 10 times	4			

During this time, have you spoken to someone at the surgery/or doctors home for ADVICE (not merely to make an appointment)? (BY TELEPHONE)

	<u>Spoke to surgery on phone</u>	<u>spoke to doctor's home</u>
Never	0	0
once only	1	6
2-5 times	2	7
6-10 times	3	8
more than 10 times	4	9

Who did you speak to on the phone on each occasion?

If spoken on phone - did any advice you received mean you did not have to visit the doctor, or make it unnecessary for him to visit you?

How did you choose your present practice?

Nearest to present home	.....	1
Nearest to previous home	.....	2
Was spouse's practice	.....	3
Recommended by	.....	4
Old practice amalgamated/took over from old practice	.....	5
Had since childhood	.....	6
Wanted practice with a woman doctor	.....	7
Local reputation good	.....	8
Informed there was room on its list/Assigned by local council ...		9
Other reasons (specify)		X

How did you choose your doctor within the practice? (group practices only)

Met or knew him before	.....	1
Will see any of the practice	.....	2
Wanted the woman member	.....	3
His/her local reputation good	.....	4
Recommended by	.....	5
Was spouse's doctor	.....	6
Assigned	.....	7
Had since childhood	.....	8
Other reasons (specify)	.....	9

Attendance (Time/Means of transport)

How long does it or would it take you to reach the surgery?

Less than 5 mins	.....	1
5-10 mins	.....	2
10 - 20 mins	.....	3
More than a 20 min. journey	.....	4
More than a 30 min. journey	.....	5

How would you normally get to the surgery?

Walk all the way	.....	1
Public transport	.....	2
Private transport - own vehicle	.....	3
Private transport - other's vehicle	.....	4
Doctor always calls	.....	5

Appointment Systems

Does your doctor run in his surgery:

An appointment system	.....	1
A queue-ticket system	.....	2
A first come, first seen' system	.....	3
Combination of appointment/first come systems	.....	4
Not certain which is in use	.....	5

If attended surgery, and Appointment System:

When you attend an appointment, how long do you usually have to wait?

or is the appointment usually on time?

If another System

Approximately how long do you have to wait usually before being seen by the doctor?

Less than 10 mins.	.....	1
10-20 mins.	.....	2
20-30 mins..	.....	3
30-45 mins.	.....	4
45-60 mins.	.....	5
More than 1 hour	.....	6
Considerably longer than 1 hour (specify)	.....	7

If Appointment System

How do you, or how would you, normally make your appointment?

By telephone from home	.....	1
from a friend or neighbour	.....	2
from a call-box	.....	3
By calling at the surgery personally	.....	4
or a friend calling	.....	5
or a relative calling	.....	6
By a return visit at your request	.....	7
at the doctor's request	.....	8

If you ask for an appointment, do you normally speak to:

the doctor	..... 1
the receptionist	..... 2

and do you normally get an appointment:

without trouble	..... 1
after some explanation	..... 2
with some difficulty	..... 3

and do you normally get an appointment for:

the same day	..... 1
the next day	..... 2
later than the next day	..... 3
depends on urgency	..... 4

Do you usually (after attending surgery) (Multipurpose trips)

call at chemist	..... 1
visit shops	..... 2
visit other places	..... 3

Which surgery do you normally attend and why? (a.m., p.m., etc.)

Not attended	0	morning usually	1	evening normally	2
		either	3		

Do you know what the surgery hours are? Latest time you can see the doctor

morning ...	morning ...
evening ...	evening ...

Is the surgery closed at all during the day (For collecting prescriptions etc.)

Yes ...	1	No ...	2	Not certain ...	0
---------	---	--------	---	-----------------	---

OUT-OF-HOURS COVER

Do you know what arrangements your doctor has for his night and weekend calls?

Rota with his partners	..... 1
Rota with other doctors	..... 2
He's always on duty himself	..... 3
Always uses the doctors deputising service	..... 4
Sometimes uses the DDS	..... 5
Not certain of his arrangements	..... 6

During the past 12 months, have you ever had occasion to call your doctor outside normal hours? (That is, after the end of evening surgery to the next morning, or from Saturday noon to Monday morning).

Never	..... 0
Once only	..... 1
2-5 times	..... 2
6-10 times	..... 3
10+ times	..... 4

If you have tried to contact him outside normal hours, what happened?

	<u>In Day</u>	<u>Weekday Evenings</u>	<u>Weekend</u>
N.A.	0		
Spoke to him directly/or one of his partners	1		
Left message with his wife/receptionist	2		
Answering machine gave another number/transferred	3		
Spoke to Deputising Service	4		
Could get no reply	5		
Cannot remember	6		
Other (specify)	7		

If you have requested a visit outside normal hours in the past 12 months, HOW LONG was it before you were attended to?

	<u>Requested before 11pm</u>	<u>After 11pm</u>
Less than 15 mins.	1	
15-30 mins.	2	
30-45 mins.	3	
45-60 mins.	4	
1-2 hours 5 2+6 hours	6	
Doctor did not turn up	7	
Doctor refused to attend	8	
Other (specify)	9	

STIMULUS STATEMENTS IN A LIKERT SCALE WERE ASKED HERE (AS IN TABLE 3.20).

To complete the interview, could you indicate:

Had any treatment in hospital during the past 2 years?

How Often

For Self Child Husband

Not attended	.....	0
Attended casualty after an accident	.....	1
Attended an outpatient clinic	.....	2
Received in-patient treatment	.....	3
Seen a specialist elsewhere (privately)	.....	4

And could you tell me what is the occupation/former occupation of the head of the household?

and your occupation/former occupation?

What age did you leave school?

Do you have any experience of higher education?

And your highest educational attainments?

local school leaving cert.
 matric.
 'O' level/C.S.E.
 'A' level
 degree
 professional
 vocational training

other

Thank you very much for your helpful responses. It only remains for me to assure you once again of the confidential nature of this survey and to try to answer any points you may wish to raise.

APPENDIX 3Statistical NoteChi-Squared Test (χ^2)

Experts differ somewhat on how small the numbers in contingency tables may be for the χ^2 test to yield an acceptable result. Most authors quote Cochran (1954) who advises the following. The χ^2 test is applicable to data in a contingency table only if the expected frequencies are sufficiently large: Siegel (1956) - after Cochran (1954) -

In a 2 X 2 Case

If the data are in a 2 x 2 contingency table the decision concerning the use of χ^2 should be governed by these considerations:

1. When $N > 40$, χ^2 should be used corrected for continuity.
2. When N is between 20 and 40, the χ^2 test may be used if all the expected frequencies are 5 or more. If the smallest expected frequency is less than 5 the Fisher Exact Probability Test may be used.
3. When $N < 20$ the Fisher test should be used in all cases.

Contingency tables with d.f. larger than 1

The χ^2 test may be used if fewer than 20 per cent of the cells have an expected frequency of less than 5 and if no cell has an expected frequency of less than 1. If these requirements are not satisfied by the data in its original form of collection, then the researcher must combine adjacent categories to increase the expected frequencies in the various cells. Once these conditions are met the χ^2 forms a meaningful test, but amalgamation of cells unavoidably results in a loss of detail, which must be sacrificed for the sake of statistical validity.

When the values in a fourfold table are fairly small a 'correction for continuity' devised by Yates (1934) may be applied. There is no precise rule defining the circumstances in which Yates's Correction may be applied,

but it has been used to incorporate it into tables in which N is under 100 or with a cell containing a value less than 10. Armitage (1971) has even said that it is probably wise to apply it for almost all χ^2 tests for 2 x 2 tables. The effect of Yates's correction is always to reduce the value of χ^2 .

In this thesis, the χ^2 test has been applied as far as possible incorporating the provisions with regard to the size of values for expected frequencies but no correction for continuity has been used. When all the requirements regarding cell size have not been met, it is appreciated that the χ^2 values derived may not be as meaningful as the significance levels attached to them would otherwise imply. Any interpretation of the data must remember that in these cases the association may only be an indication of direction of relationship.

Degrees of Freedom (d.f.)

The number of 'degrees of freedom' reflect the number of observations that are free to vary after certain restrictions have been placed on the data and are determined by the organisation of the data. They are equal to -

$$(\text{number of columns} - 1) \times (\text{number of rows} - 1).$$

They are presented in this thesis as d.f. = n.

Expected frequencies of cells when included are presented under observed frequencies in this way : (expected value).

The conventional significance level of 0.05 or 5% is used throughout.

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APPENDIX 4Attitude - measuring techniques for use in geographical research

A number of alternative methods for measuring respondents' attitudes are available, which attempt to quantify opinions and feelings to enable their statistical analysis. The background against which many of the following have been devised is that of 'psychological measurement' and a range of types of method have been devised.

Checklists are probably the simplest, which contain terms which the respondent may recognise and make known his views about. They are generally of a rather crude nature although careful piloting work can make them less so. Oppenheim (1966) is a basic reference which describes their compilation, and he considers that, since they operate at the conscious and overt level, they run the risk of the respondent grasping the hypothesis and trying to 'help' the results come out as he considers they should.

"Rating gives a numerical value to some kind of judgment", (Oppenheim, 1966, p.83) and it may be applied to almost anything. Usually, 'so many marks out of so many' are awarded, or a percentage equivalent. They are therefore widely used but a chief source of error lies in the fact that they can be easily influenced by some variable of which the researcher is unaware. Their use can be dangerous as they may provide a "spurious air of accuracy, which misleads the uninitiated into regarding the results as hard data...." (Oppenheim, 1966, p.84).

However, some amount of error is almost unavoidable in the use of scaling techniques. A scale may be considered valid when it actually measures what it claims to measure and as this is inferred from the variables selected, this can often be difficult to establish. It has been said that the essence of scaling is to combine several qualitative characteristics into a quantifiable variable. Thus scales typically present a series of

qualities which are either present or absent and the combination of these provides the scale (Goode and Hatt, 1952).

Attitude scales are complex forms of scales because there is no one universally accepted definition of attitude. Allport's (1935) definition (quoted in chapter three) implies a tendency to act or react in a certain manner when confronted with certain stimuli and attempts to measure 'attitudes' have often involved using attitude scaling. Attitude scales consists of from half a dozen to two dozen or more 'attitude statements' with which the respondent is asked to agree or disagree and which will place persons on a continuum in relation to one another, in relative and not absolute terms. Moser and Kalton (1971) consider that they merely count how many people choose to express certain views. The degree of complexity of these varies with the type of scale employed, but Likert scaling and Guttman scaling have been found to be the most appropriate for social research.

Likert scales allow subjects to place themselves on an attitude-continuum choosing between several response categories indicating various strengths of agreement or disagreement. These categories are assigned scores and the respondent's attitude may be measured by his total score, the sum of the scores of categories endorsed for each item. Five categories, as used in this present questionnaire, have been found to cater for most situations and are normally described:

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
Score	5	4	3	2	1

It is generally considered best not to have too many neutral items as 'stimulus statements' in a Likert scale, nor too many items to which most respondents will react in the same way, since the aim is to spread the respondents over the response categories. Attitudes are emotional and thus emotionally-charged statements might be included.

It should be noted that Likert scaling has been criticised for its lack of reproducibility - the same total score may be achieved in many different ways, and for this reason, a total score is not as interesting as is the pattern of responses, which has been relied upon in this research. Neutral points have not a great deal of importance in such scales, but "...in practice, if we remember that equal score intervals do not permit us to make assertions about the equality of underlying attitude differences and that identical scores may have very different meanings, the Likert scales tend to perform very well when it comes to a reliable, rough ordering of people with regard to a particular attitude..." (Oppenheim, 1966, p.141). This is the most which can be expected in many instances in social research and it was for these reasons - practicality and robustness - that the author relied largely upon responses to Likert-scaled attitude statements to gain knowledge of patterns of attitudes for the current research. Likert scales also allow for a greater flexibility in their construction than do some other more mathematically-based scales, since stimulus-statements not obviously connected with the topic under investigation may be included. In addition, the degree of agreement or disagreement may be judged with rather more precision than is possible with a simple agree-disagree score.

In the present study, scoring on some stimulus statements was reversed in order that in all cases, a higher score indicated a more favourable attitude to the item being tested. This enabled average scores to be placed on 'attitude profiles' with higher score positions indicating more favourable responses and visual comparison of profiles was thus facilitated (shown in Figures 5.2a, b and c).

An interesting area of research in social psychology has concerned the prediction of behaviour from a knowledge of attitudes (Tittle and Hill,

1967; Sample and Warland, 1973). The nature of attitude-behaviour consistency was recently reviewed by Gross and Niman (1975) who assert that in general, researchers have reported a poor relationship between attitude and behaviour, which was indeed confirmed by this present study. Statistical relationships between attitudes to G.P. services (chapter five) and usage rates (chapter six) were in all cases quite weak and from this it may be inferred that, to some extent, attitudes exist independently from overt behaviour. This also confirms the contention of Wicker (1969) that caution must be exercised to avoid making the claim that a given study or set of studies of verbal attitudes, however well done, is socially significant merely because the attitude objects employed are socially significant. Further research is required on various postulated sources of influence on overt behaviour. "Many research projects may be interested only in verbal responses to attitude scales, in which case the question of attitude-behaviour relationships is not particularly relevant or important" (Wicker, 1969, p.75). In the present study, the investigation of consumer satisfaction may be seen as an end in itself and the study of overt behaviour (utilisation) may be viewed as a second aim which may or may not relate strongly to the previously-tested attitudes. This is an important recognition in many types of social research and the whole issue of the nature of the relationship between attitudes and behaviour is an area of controversy in the social sciences.

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APPENDIX 5 : AGE AND ATTITUDESStatement: 1Area 1. Blaen-y-Maes/ForesthallArea 2. West CrossAttitude Response Category

Age Group	1	2/3	4	5	Total	Age Group	1	2/3	4	5	Total
18-35	10	7	16	9	42	18-35	1	3	5	11	20
36-55	3	6	9	14	32	36-55	4	1	8	28	41
56+	3	4	9	9	25	56+	5	7	9	23	44
	16	17	34	32	99		10	11	22	62	105

$$\chi^2 = 6.27. \text{ d.f.} = 6 \text{ N.S.}$$

$$\chi^2 = 5.952 \text{ d.f.} = 6 \text{ N.S.}$$

Area 3. PenllergaerArea 4. BaglanAttitude Response Category

Age Group	1	2/3	4	5	Total	Age Group	1	2/3	4	5	Total
18-35	8	6	9	6	29	18-35	8	4	9	6	27
36-55	3	5	19	13	40	36-55	2	4	19	12	37
56+	7	7	12	4	30	56+	7	7	11	4	29
	18	18	40	23	99		17	15	39	22	93

$$\chi^2 = 9.571. \text{ d.f.} = 6 \text{ N.S.}$$

$$\chi^2 = 10.217. \text{ d.f.} = 6 \text{ N.S.}$$

(N.S. = Not Significant)

Statement: 3

Blaen-y-Maes/ForesthallWest Cross

Attitude Response Category

Age Group	1	2/3	4	5	Total	Age Group	1	2/3	4	5	Total
18-35	3	5	13	21	42	18-35	2	2	4	12	20
36-55	3	4	8	17	32	36-55	6	3	5	27	41
56+	2	7	3	13	25	56+	8	6	9	21	44
	8	16	24	51	99		16	11	18	60	105

$$\chi^2 = 5.384 \text{ d.f.} = 6 \text{ N.S.}$$

$$\chi^2 = 3.656 \text{ d.f.} = 6 \text{ N.S.}$$

PenllergaerBaglan

Attitude Response Category

Age Group	1	2/3	4	5	Total	Age Group	1	2/3	4	5	Total
18-35	8	5	10	6	29	18-35	8	3	10	6	27
36-55	6	1	25	8	40	36-55	5	1	23	8	37
56+	3	11	12	4	30	56+	3	11	11	4	29
	17	17	47	18	99		16	15	44	18	93

$$\chi^2 = 16.442 \text{ d.f.} = 6 \text{ Sig.} = 0.02-0.01 \quad \chi^2 = 20.548 \text{ d.f.} = 6 \text{ Sig.} = 0.01$$

Statement: 7Blaen-y-Maes/ForesthallWest CrossAttitude Response Category

Age Group	1	2	3/4	5	Total	Age Group	1/2	3	4	5	Total
18-35	5	4	13	21	42	18-35	1	0	10	9	20
36-55	5	2	7	18	32	36-55	5	1	10	25	41
56+	2	2	5	16	25	56+	4	12	8	20	44
	12	7	25	55	99		10	13	28	54	105

$$\chi^2 = 2.573 \text{ d.f.} = 6 \text{ N.S.}$$

$$\chi^2 = 20.942 \text{ d.f.} = 6 \text{ Sig.0.01}$$

PenllergaerBaglanAttitude Response Category

Age Group	1	2	3/4	5	Total	Age Group	1	2	3/4	5	Total
18-35	7	6	12	4	29	18-35	6	6	11	4	27
36-55	4	8	15	13	40	36-55	4	8	12	13	37
56+	1	1	12	16	30	56+	1	1	10	15	29
	12	15	36	33	99		11	15	35	32	93

$$\chi^2 = 16.621 \text{ d.f.} = 6$$

Sig. = 0.02

$$\chi^2 = 14.393 \text{ d.f.} = 6$$

Sig. = 0.05

Statement: 8

Blaen-y-Maes/Foresthall

West Cross

Attitude Response Category

Age Group	1	2	3/4	5	Total	Age Group	1/2	3	4	5	Total
18-35	5	7	16	14	42	18-35	4	1	7	8	20
36-55	3	4	12	13	32	36-55	5	1	14	21	41
56+	2	1	7	15	25	56+	4	10	13	17	44
	10	12	35	42	99		13	12	34	46	105

$\chi^2 = 5.519$ d.f. = 6 N.S.

$\chi^2 = 10.922$ d.f. = 6 (Sig.=0.10)

Penllergaer

Baglan

Attitude Response Category

Age Group	1	2	3/4	5	Total	Age Group	1	2	3/4	5	Total
18-35	13	6	8	2	29	18-35	12	6	7	2	27
36-55	10	9	12	9	40	36-55	10	8	8	9	37
56+	2	1	11	15	30	56+	3	1	10	14	29
	26	16	31	26	99		25	15	28	25	93

$\chi^2 = 23.86$ d.f. = 6 Sig. 0.001

$\chi^2 = 20.3154$ d.f. = 6 Sig.=0.01

Statement: 15Blaen-y-Maes/ForesthallWest CrossAttitude Response Category

Age Group	1	2/3	4	5	Total	Age Group	1	2/3	4	5	Total
18-35	7	11	17	7	42	18-35	1	6	7	6	20
36-55	7	5	8	12	32	36-55	5	7	16	13	41
56+	3	2	5	15	25	56+	1	8	19	16	44
	17	18	30	34	99		7	21	42	35	105

$$\chi^2 = 15.146 \text{ d.f.} = 6 \text{ Sig.} = 0.02$$

$$\chi^2 = 4.955 \text{ d.f.} = 6 \text{ N.S.}$$

PenllergaerBaglanAttitude Response Category

Age Group	1	2/3	4	5	Total	Age Group	1	2/3	4	5	Total
18-35	2	8	17	2	29	18-35	2	6	17	2	27
36-55	3	9	17	11	40	36-55	3	9	14	11	37
56+	1	2	16	11	30	56+	1	2	15	11	29
	6	19	50	24	99		6	17	46	24	93

$$\chi^2 = 10.901 \text{ d.f.} = 6 \text{ N.S.}(0.10)$$

$$\chi^2 = 11.083 \text{ d.f.} = 6 \text{ N.S.}(0.10)$$

Statement: 19Blaen-y-Maes/ForesthallWest CrossAttitude Response Category

Age Group	1	2/3	4	5	Total	Age Group	1	2/3	4	5	Total
18-35	5	8	12	17	42	18-35	3	4	9	4	20
36-55	3	8	10	11	32	36-55	2	8	22	9	41
56+	1	4	6	14	25	56+	1	8	15	20	44
	9	20	28	42	99		6	20	46	33	105

$$\chi^2 = 3.564 \text{ d.f.} = 6 \text{ N.S.}$$

$$\chi^2 = 10.65 \text{ d.f.} = 6 \text{ N.S.}(0.10)$$

PenllergaerBaglanAttitude Response Category

Age Group	1/2	3	4	5	Total	Age Group	1/2	3	4	5	Total
18-35	9	2	14	4	29	18-35	8	2	13	4	27
36-55	9	3	22	6	40	36-55	9	2	20	6	37
56+	2	2	12	14	30	56+	2	2	11	14	29
	20	7	48	24	99		19	6	44	24	93

$$\chi^2 = 14.271 \text{ d.f.} = 6$$

Sig. = 0.05-0.002

$$\chi^2 = 13.262 \text{ d.f.} = 6$$

Sig. = 0.05-0.02

Statement: 23Blaen-y-Maes/ForesthallWest CrossAttitude Response Category

Age Group	1	2	3	4	5	Total	Age Group	1	2	3	4	5	Total
18-35	12	6	6	9	9	42	18-35	7	3	3	6	1	20
36-55	7	6	5	6	8	32	36-55	10	3	1	17	10	41
56+	5	1	3	7	9	25	56+	5	6	6	14	13	44
	24	13	14	22	26	99		22	12	10	37	24	105

$$\chi^2 = 4.927 \text{ d.f.} = 8 \text{ N.S.}$$

$$\chi^2 = 12.495 \text{ d.f.} = 8 \text{ N.S.}$$

PenllergaerBaglanAttitude Response Category

Age Groups	1	2	3	4	5	Total	Age Groups	1	2	3	4	5	Total
18-35	6	7	0	7	9	29	18-35	6	7	0	6	8	27
36-55	7	5	7	14	7	40	36-55	7	4	7	12	7	37
56+	7	3	5	6	9	30	56+	7	3	5	5	9	29
	20	15	12	27	25	99		20	14	12	23	24	93

$$\chi^2 = 10.707 \text{ d.f.} = 8 \text{ N.S.}$$

$$\chi^2 = 10.918 \text{ d.f.} = 8 \text{ N.S.}$$

Statement: 26Blaen-y-Maes/ForesthallWest CrossAttitude Response Category

Age Group	1/2/3	4	5	Total	Age Group	1/2/3	4	5	Total
18-35	11	1	30	42	18-35	2	6	12	20
36-55	7	3	22	32	36-55	6	14	21	41
56+	5	4	16	25	56+	4	14	26	44
	23	8	68	99		12	34	59	105

$$\chi^2 = 4.112 \text{ d.f.} = 4 \text{ N.S.}$$

$$\chi^2 = 0.940 \text{ d.f.} = 4 \text{ N.S.}$$

PenllergaerBaglanAttitude Response Category

Age Groups	1/2/3	4	5	Total	Age Groups	1/2/3	4	5	Total
18-35	8	11	10	29	18-35	7	10	10	27
36-55	5	15	20	40	36-55	5	12	20	37
56+	0	10	20	30	56+	0	10	19	29
	13	36	50	99		12	32	49	93

$$\chi^2 = 11.79 \text{ d.f.} = 4 \text{ Sig.} = 0.02$$

$$\chi^2 = 9.772 \text{ d.f.} = 4 \text{ Sig.} = 0.05$$

Statement: 27Blaen-y-Maes/ForesthallWest Cross

Attitude Response Category

Age Group	1	2	3	4	5	Total	Age Group	1	2	3	4	5	Total
18-35	11	8	4	15	4	42	18-35	7	6	3	3	1	20
36-55	7	9	4	10	2	32	36-55	8	14	9	4	6	41
56+	6	3	5	6	5	25	56+	4	12	11	12	5	44
	24	20	13	31	11	99		19	32	23	19	12	105

$$\chi^2 = 6.570 \text{ d.f.} = 8 \text{ N.S.}$$

$$\chi^2 = 10.973 \text{ d.f.} = 8 \text{ N.S.}$$

PenllergaerBaglan

Attitude Response Category

Age Group	1	2	3	4	5	Total	Age Group	1	2	3	4	5	Total
18-35	9	13	3	3	1	29	18-35	9	12	2	3	1	27
36-55	9	10	5	13	3	40	36-55	8	9	5	12	3	37
56+	6	3	6	12	3	30	56+	6	3	6	11	3	29
	24	26	14	28	7	99		23	24	13	26	7	93

$$\chi^2 = 14.70 \text{ d.f.} = 8 \text{ N.S. (0.10)}$$

$$\chi^2 = 14.148 \text{ d.f.} = 8 \text{ Sig.} = \text{N.S. (0.10)}$$

Statement: 29Blaen-y-Maes/ForesthallWest CrossAttitude Response Category

Age Group	Attitude Response Category					Total	Age Group	Attitude Response Category					Total
	1	2	3	4	5			1	2	3	4	5	
18-35	22	3	7	4	6	42	18-35	10	1	2	3	4	20
36-55	13	6	5	4	4	32	36-55	13	8	10	6	4	41
56+	10	2	5	3	5	25	56+	20	9	8	4	3	44
	45	11	17	11	15	99		43	18	20	13	11	105

$$\chi^2 = 4.15 \text{ d.f.} = 8 \text{ N.S.}$$

$$\chi^2 = 8.09 \text{ d.f.} = 8 \text{ N.S.}$$

PenllergaerBaglanAttitude Response Category

Age Group	Attitude Response Category					Total	Age Group	Attitude Response Category					Total
	1	2	3	4	5			1	2	3	4	5	
18-35	9	5	4	4	7	29	18-35	8	4	4	4	7	27
36-55	11	9	2	10	8	40	36-55	11	8	2	8	8	37
56+	6	6	2	9	7	30	56+	6	6	2	8	7	29
	26	20	8	23	22	99		25	18	8	20	22	93

$$\chi^2 = 4.59 \text{ d.f.} = 8 \text{ N.S.}$$

$$\chi^2 = 3.96 \text{ d.f.} = 8 \text{ N.S.}$$

Statement: 30Blaen-y-Maes/ForesthallWest CrossAttitude Response Category

Age Group	1	2	3	4/5	Total	Age Group	1	2	3	4	5	Total
18-35	17	12	8	5	42	18-35	7	3	2	4	4	20
36-55	12	8	4	8	32	36-55	6	9	10	8	8	41
56+	10	4	4	7	25	56+	5	7	13	15	4	44
	39	24	16	20	99		18	19	25	27	16	105

$$\chi^2 = 4.104 \text{ d.f.} = 6 \text{ N.S.}$$

$$\chi^2 = 11.485 \text{ d.f.} = 8 \text{ N.S.}$$

PenllergaerBaglanAttitude Response Category

Age Group	1	2	3	4	5	Total	Age Group	1	2	3	4	5	Total
18-35	12	6	4	3	4	29	18-35	11	6	3	3	4	27
36-55	11	9	5	12	3	40	36-55	11	8	4	11	3	37
56+	4	8	5	9	4	30	56+	4	7	5	9	4	29
	27	23	14	24	11	99		26	21	12	23	11	93

$$\chi^2 = 8.769 \text{ d.f.} = 8 \text{ N.S.}$$

$$\chi^2 = 7.967 \text{ d.f.} = 8 \text{ N.S.}$$

APPENDIX 6Practice Organisation

It is necessary to describe briefly the nature of medical practice type and organisation as it currently exists since this will be an unfamiliar field for many geographers. There is no 'hierarchy' in General Practice as becomes established in retailing whereby a higher hierarchical level service will provide a fuller range of goods or services, since legally all General Practitioners are regarded as being equal, fully qualified medical practitioners capable of looking after a certain number of patients on his list (a minor exception is that some G.P.'s do not wish to be included or do not qualify for inclusion due to lack of postgraduate training, on an obstetric list for a Family Practitioner Committee).

Three 'scales' of medical practice do, however, exist, and it is arguable that the larger scale of practice can offer more of a range of ancillary services to the patients. This is part of the reasoning behind health centre policy. The three types of organisation recognised are, as mentioned in chapter two:

- (1) Single-handed practitioner: One 'principal' (a G.P. included on the F.P.C. principal lists will usually have been in general practice as a full G.P. for a period of about 2 years) plus an assistant or trainee. (Assistants are generally salaried and do not share in the business running-costs and are in a different legal category as regards liability and profit sharing but, as far as the public are concerned, are fully-qualified medically, as are trainees).
- (2) Partnership: of two principals, with possibly an assistant or trainee.
- (3) Group Practice: G.P.'s organised into 'groups' are paid a group practice allowance as it is DHSS and B.M.A. policy to encourage their

formation (currently £420 p.a. per principal). Four 'rules' govern group formation: a group must consist of not fewer than three principals (in urban areas); all members of the group must work in close association from a common main and central surgery, even if they sometimes work from a branch surgery; a group must provide a 24-hour service to their patients possibly by use of a deputising service or locum; a group must employ at least one full-time member of staff on secretarial, nursing-receptionist or medico-social work (Lowe, 1978).

Approximately 17,000 principals now qualify for the group allowance and also, today, 9 out of 10 new G.P.'s undertake a vocational traineeship of 3 years hospital and general practice work in addition to their basic qualification. By 1981 it had been intended that all new G.P.'s would have undergone such training (but this may now be delayed: NHS Vocational Training Act, Nov. 1976)(Lowe, 1978).

This 'group practice' orientation underlies the health centre policy and 'primary health care team' philosophy referred to in chapter two (OHE, 1974). F.P.C.'s have to approve of and be satisfied that a branch surgery is 'essential' which is not always an easy thing to justify except on the grounds of 'convenience'. A health centre is F.P.C. financed and rented to the doctors working in it. The aim of the policy was to bring together under one roof a number of primary medical care services: the G.P., the dentist, opticians, chiropodists, district nurses and to be able to run family planning and baby clinics, as well as other specialities such as E.N.T. and dermatology clinics. The idea was to bring 'community care' away from the dominance of hospitals. Unfortunately the policy appears to have resulted only in centralisation of G.P.'s and very few health centres (especially in West Glamorgan; West Glamorgan AHA, 1975) have the originally-envisaged range of facilities. Thus, it appears that the possible benefits

of centralisation and modernisation are not gained whilst some of the disadvantages of reduced physical and social accessibility accrue (Stacey, 1977).

The practice types and sizes attended by respondents, as well as a summary of some reasons for their choices of practices and their length of residence in their sites are summarised.

1. Size of Practice Attended by Respondents

AREA

PRACTICE SIZE	ONE		TWO: WEST CROSS		THREE: PENLLERGAER		FOUR: BAGLAN									
	No.	%	No.	%	No.	%	No.	%								
Singlehanded Dr.	2	4.0	2	4.1	4	7.5	1	3.8	0	0.0	1	2.0	0	0.0	0	0.0
Partnership (2 Drs.)	13	26.0	9	18.4	3	5.7	4	7.7	3	6.3	0	0.0	17	37.0	19	40.4
Group of 3 or 4 Doctors	34	68.0	24	49.0	20	37.7	16	30.8	29	60.4	29	56.8	14	30.4	9	19.2
Group of 5 or more Doctors	0	0.0	13	26.5	26	49.1	30	57.7	16	33.3	21	41.2	15	32.6	19	40.14

2. Surgery Premises Usually Attended by Respondents

AREA

SURGERY PREMISES	ONE Blaen-y-Maes Foresthall		TWO: WEST CROSS High Status Low Status		THREE: PENLLERGAER High Status Low Status		FOUR: BAGLAN High Status Low Status							
	No.	%	No.	%	No.	%	No.	%						
Modern Surgery	1	2.0	14	26.4	3	5.8	1	2.1	0	0.0	1	2.2	9	19.1
Older Surgery	1	2.0	1	1.9	1	1.9	0	0.0	0	0.0	6	13.0	4	8.5
Health Centre	25	50.0	33	67.3	14	26.4	4	7.7	42	87.5	50	98.0	39	84.8
Converted Shop	6	12.0	2	4.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Converted House	16	32.0	12	24.5	11	20.7	17	32.7	5	10.4	0	0.0	0	0.0
Surgery in Doctor's Home	0	0.0	0	0.0	12	22.6	27	51.9	0	0.0	1	2.0	0	0.0

3. Main Reason for Choice of Present Surgery

AREA

	ONE		TWO: WEST CROSS		THREE: PENLLERGAER		FOUR: BAGLAN									
	No.	%	No.	%	No.	%	No.	%								
			High Status	Low Status	High Status	Low Status	High Status	Low Status								
Nearest Now	6	12.0	6	12.2	5	9.4	6	11.5	11	22.9	19	37.3	2	4.3	4	8.5
Nearest (Previously)	18	36.0	15	30.6	10	18.9	17	32.7	4	8.3	0	0.0	2	4.3	5	10.6
Spouse's Practice	1	2.0	4	8.1	6	11.3	3	5.8	2	4.2	2	3.9	2	4.4	9	19.2
Recommended	4	8.0	5	10.2	11	20.7	6	11.6	17	35.4	8	15.7	14	30.	4	8.5
Old Pr. Amalgamated																
Took over from Old Pr.	2	4.0	2	4.1	6	11.3	4	7.7	2	4.2	0	0.0	0	0.0	2	4.3
Had since childhood	14	28.0	16	32.7	8	15.0	13	25.0	6	12.5	19	37.3	24	52.2	22	46.8
Wanted Woman Dr.	0	0.0	0	0.0	1	2.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Local Reputation Good	2	4.0	0	0.0	1	2.0	1	1.9	0	0.0	0	0.0	0	0.0	1	2.1
Assigned	2	4.0	0	0.0	0	0.0	0	0.0	1	2.1	2	3.9	0	0.0	0	0.0
Other Reasons	1	2.0	1	2.0	5	9.4	2	3.9	5	10.4	1	1.9	2	4.3	0	0.0

The above table indicates the importance of 'inertia' in the area of previous residence may have an influence on choice of practice; similarly, large proportions reported having attended the practice 'since childhood'.

4. Length of Residence at Present Address

AREA

LENGTH OF RESIDENCE	ONE Blaen-y-Maes Foresthall		TWO: WEST CROSS		THREE: PENLLERGAER		FOUR: BAGLIAN									
	No.	%	No.	%	No.	%	No.	%								
Less than 12 months	12	24.0	2	4.0	3	5.7	4	7.7	8	16.7	3	5.9	8	17.4	2	4.2
1 - 3 years	14	28.0	7	14.3	8	15.0	4	7.7	10	20.8	3	5.9	7	15.2	7	14.9
4 - 5 years	3	6.0	2	4.1	3	5.7	0	0.0	7	14.6	5	9.8	6	13.0	3	6.4
6 - 10 years	9	18.0	21	42.9	10	18.9	4	7.7	15	31.2	8	15.7	17	37.0	6	12.8
11 - 20 years	10	20.0	8	16.3	15	28.3	10	19.2	6	12.5	21	41.2	5	10.9	6	12.8
20 + years	2	4.0	9	18.4	14	26.4	30	57.7	2	4.2	11	21.5	3	6.5	23	48.9

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